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# INDIANA MANUFACTURING EDUCATION AND TRAINING INITIATIVE

## Final Report



BALL STATE  
UNIVERSITY.

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

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# **SECTION I: INTRODUCTION, CONTEXT, AND OVERVIEW OF RECOMMENDATIONS**

## **Introduction**

This is the final report of the Indiana Manufacturing Education and Training research project (I-MET). I-MET was initiated in March 2003 by the Central Indiana Corporate Partnership (CICP) as an integral part of its on-going program to improve the economy of Central Indiana. The goal of this project was to develop and strengthen the strategies and partnerships that would improve education and training for the manufacturing workforce of the region. Toward this objective, CICP contracted with Ball State University's Center for Organizational Resources, which in turn organized a team of researchers and program development specialists to carry out the research and analysis and develop recommendations.

This is the report of that Ball State University-led team. It culminates a six-month dialogue with business and labor leaders, educators, and public officials about the problems and possibilities for manufacturing workforce education and training in Central Indiana. The conclusions and recommendations in this report reflect that dialogue, research findings and the team's collective experience in this field. This first section reviews the economic context of dramatic change in the manufacturing economy of the region and presents an overview of the findings and recommendations. Later sections of this report discuss the findings and recommendations in more detail and appendices included with this report offer a still more detailed summary of the research activities as well as implementation recommendations.

## **Context**

The scope of this project did not include a detailed analysis of all the trends and issues facing the manufacturing economy of Central Indiana. Rather, our charge has been more narrowly focused on examining how well the education and job training systems of Indiana support the manufacturing sector and offering suggestions about how to improve those systems. However, even a cursory review of the current situation of manufacturing in the region reveals an economic sector and a regional economy both facing an extraordinarily challenging situation, perhaps even crisis. This context permeated our research and analysis -- as we carried out our research, the economy was the number one topic everyone wanted to talk about. As will become clear in the rest of this report, the severe competitive challenge facing the region's manufacturing base has shaped our findings and recommendations in very important ways.

Manufacturing is in steep decline in the state and region. All the impressive job gains of the previous decade (over 60,000 manufacturing jobs were added in the 1990s) have vanished and the manufacturing base is eroding further at an alarming

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rate. Since July of 2000, Indiana has lost nearly 100,000 manufacturing jobs. Almost 15% of its manufacturing jobs have disappeared. Based on recent plant closing announcements and forecasts, there is yet no end in sight for Indiana, even as the national economy shows some signs of recovery.

This hemorrhage of manufacturing jobs has had a devastating impact on Central Indiana. Manufacturing has long been the dominant economic sector in the state and region and, in contrast to most of rest of the nation, its contribution to total employment and total state wealth actually increased in the good economy years of the 1990s. By 1999, manufacturing accounted for 19% of all jobs and 31% of gross state product. Moreover, these manufacturing jobs were the very best jobs Indiana had to offer. In Central Indiana, average manufacturing wages have been 25% higher than the national average of manufacturing wages.

With these high wages, manufacturing has carried the regional economy more than any other economic sector. So, as these jobs have disappeared, the ripple effect on the rest of the regional economy has become a tidal wave of dislocation. A moderate national recessionary dip became a deep trough for the state. Since the beginning of the recession in June 2000, Indiana has experienced the highest rate of job decline of any state in the nation. The state and the region have lost hundreds of millions of dollars of wealth.

Manufacturing itself has long been narrowly concentrated in a few sub-sectors in Indiana, especially in Central Indiana. About 25% of all the earnings generated by the wealth producing or "trade" sector of this roughly \$30 billion regional economy has for years come from a relative handful of big manufacturing plants producing transportation equipment. All other kinds of manufacturing combined contribute another 23% to traded sector earnings.

This dependency on a narrow base of manufacturing has long been noted in the region. Consider this observation from a 1998 report that helped lay the basis for establishment of the CICIP:

*"RTS calculated that General Motors employment in the region contributes more earnings to the regional economy than all biomedical manufacturing industries, all of finance and insurance, almost twice as much as travel and tourism, and about four times as much as all technology services. If General Motors were to reduce its employment in the region by even 20% (which many industry observers believe is inevitable), the earnings impact of that would be enormous. Even if every one of those laid-off employees found jobs elsewhere in the economy at average wage levels, the RTS team estimated that the net loss to the regional economy conservatively would be about \$300-350 million annually. Recall that average annual wages for GM employees in this region are probably about twice the average for all workers in the regional economy as a whole."*

The reasons for the precipitous decline over the past three years of manufacturing jobs go well beyond Indiana and solutions will not be found here. The loss of competitive advantage of US manufacturers is a national problem that will yield only partially to federal policy action. Even more frustrating, and important, there is no reason to believe that the rate of job decline in the overall US economy will slow dramatically, much less reverse. Some of Indiana's and the nation's manufacturing job loss is the result of a cyclical downturn, but much of what is going on reflects a

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huge structural shift in the global economy. This structural change reflects significantly lower costs of production in countries like Korea and China and in the Southern Hemisphere, the commitment of these other nations to build their own manufacturing base, major shifts in the demand for manufactured goods, and the dramatically increased mobility of production technologies.

Re-structuring of manufacturing is already well underway in Indiana and there are even some positive implications. Robust manufacturers -- and there are some, in spite of the bleak overall picture -- seem to be those who embrace new technologies through investment and engage in both technical and organizational productivity improvement strategies. Growing groups of companies in the medical implement and surgical implant field for example, offer compelling models of high technology manufacturing. Over the last several years these firms have begun to reshape the local economy and preview what could become a vibrant manufacturing community, which blends high skill manufacturing technologies with advanced medical research and development. New product development and the growth of smaller companies in such new fields as the life-sciences offer glimpses of new types of firms and new employment opportunities that are very different than the model represented in traditional large production facilities in the automotive and transportation industries. And even in the traditional industries, leaner and more technologically dependent forms of production suggest that the future for much of the manufacturing sector lies in what has come to be called "advanced manufacturing" practices.

So, what is the best possible future for this regional economy? We believe it lies in the survival and, eventually, the prospering of the highest value segments of the manufacturing sector -- advanced manufacturing segments where quality, precision, sophistication, and time trump cost as the determinant of competitive success. But that prospect brings its own tough challenge. Over time, these modern segments of the manufacturing sector will remain in or shift to those regions where the workers have or can quickly gain the education and skills to optimize the advanced technology and sophisticated business strategies and systems that produce high value products. Unfortunately, Indiana and the Central Indiana region lag, not lead, in this competitive domain.

Skill is not the only critical determinant of what part and how much of Indiana's manufacturing base will survive the global restructuring. However, skill is the only dimension where public and private leaders in the state and region can have significant impact. The state has only a small margin of influence in tax policy and trade and monetary policy are wholly federal responsibilities.

*Building the skills for high value-added manufacturing is the only major course of action available for the state and public policy advocacy.*

New companies assess the availability of skilled workers and the infrastructure to produce them in making decisions to grow or locate in a region. Traditional industries, as they transform themselves, seek to shed unskilled labor and retain core skills required in advanced manufacturing settings. The *qualifications* of the workforce and the ability to produce quickly and efficiently more qualifications as needs emerge in a region or state have become far more important elements than-as was perhaps in the past-the simple presence of adequate numbers of workers.

Unfortunately, Central Indiana's manufacturing workforce is almost certainly not as

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well educated or skilled as is the workforce in many other competing regions. On almost all measures of educational attainment (high school graduation, two year degrees, four year degrees, advanced degrees), Indiana ranks in the bottom quartile of states (or worse) and metropolitan Indianapolis ranks in the bottom quartile of major metro areas (or worse).

Over the past decade, the state and the region fell further behind because, until very recently, Indiana has not had a strong community/technical college system producing technically proficient graduates with sub-baccalaureate degrees and certificates.

In summary then, the context of this report is gloomy at best and foreboding at worst. Indiana's manufacturing sector is facing perhaps its greatest competitive challenges of the past 30 years and, in the one determinant of competitiveness where states and regions can distinguish themselves -- the dimension of education and skills -- Indiana and Central Indiana have not done well.

In this context, we were asked by CICIP to examine the adequacy of education and training systems for Indiana's evolving manufacturing economy. Our charge has been primarily to investigate how education and training providers, public and private, support incumbent worker training in manufacturing firms. We have not had the responsibility or opportunity to look at how well the formal education system prepares new job entrants for careers in manufacturing.

We have focused on the current workforce because there is little expectation any longer of net job growth in Central Indiana manufacturing (even though there was net growth in the 1990s). As older employees leave the workforce, there will be the need to replace some particularly highly skilled workers with recent graduates of two and four year (or even advanced degree) programs. However, like most of manufacturing employers we talked with, we believe that developing the skills and educational attainment of *current workers* represents the most critical challenge in Indiana and Central Indiana.

Our approach has been very deeply influenced by the context of massive restructuring manufacturing and the rapid emergence of a dramatic bias toward skills as the critical determinant of regional competitiveness in global manufacturing. Given this region's lagging position in this area, our focus has been on identifying those actions that are both doable and carry the promise to reach a scale that can make a real difference for the manufacturing economy of central Indiana.

## **Overview Of Findings And Recommendations**

Our work began with a hypothesis that the biggest problems would be found in weak connections between, on one hand, manufacturing firms who need help to develop the skills of their incumbent workers and, on the other hand, the education and training providers that could help them. We anticipated that our recommendations would revolve around building new "brokering" or "bridging" mechanisms to strengthen those connections in ways that better inform the firms of education and training capabilities and better inform providers of skill development needs. We expected to find some shortcomings and some frustration on both the demand and on the supply side of the education and training market

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We did find an education and training marketplace that certainly could be strengthened and we offer recommendations toward that end. However, our research over the last several months has not revealed an education and training system that is in any sense "broken" nor has our work uncovered a system that is deeply flawed by poor quality or that is critically lacking services. On the contrary, we find many very high quality educational services, multiple public funding mechanisms in support of workforce education, and a genuine commitment to worker education on the part of educators, public leaders, union leaders, and employers. Some elements of the education and training, like the Department of Workforce Development's Certificates of Achievement program are, in our experience, unique in the country. More important they comprise elements which, if more sharply focused and used creatively, can build a world class workforce education service.

On the demand side, we found that most manufacturing firms were generally satisfied that they could get training if they needed it. We did find that demand for training was significantly diminished due to the recessionary pressures in the economy. Historically, firms have been quick to cut back on training in a slow economy and in the last three years, Indiana's manufacturing firms have scaled back sharply. Still, most firms told us that if and when they wanted training, finding the right provider was not a major problem.

We also found a workforce development brokerage system that was far more extensive than we had expected. Just two organizations, for example, the Indiana Business Modernization and Technology Corporation and the Ivy Tech state College have deployed, collectively, about 150 "brokers" throughout the state seeking systematically to connect manufacturing firms with training and education resources. Other colleges and universities also have education and training outreach workers, although not at the scale of Ivy Tech. In addition, there are scores of private training firms and individual consultants and capital equipment vendors who routinely provide training in the equipment and technologies they sell to manufacturers.

These existing brokerage mechanisms can and should be improved. Things like a better provider database that would be more accessible to the firms themselves; more consistent use of common instruments for assessing training needs; and training and possibly certification, for brokers would strengthen connections and improve the effectiveness of training.

Still, our team has concluded that the lack of effective "brokering" is not the problem, or at least not the main problem for private and public sector decision-makers in the region. In fact, the extensive reliance on the brokering model may be at least a small part of the problem. Good brokering depends on familiarity, trust and person relationships. Often these relationships substitute for more objective assessments and more formal provider selection criteria. Moreover, both the brokers and firms told us these relationships demand lots of time and on-going attention. The brokering approach assumes each firm and each provider is effectively on its own in the education and training market place. The worker is treated as a passive participant with no individual incentive to invest in the training. The brokering model assumes each training "contract" is not related to any others and not connected to any coherent, long-term program of manufacturing skill development.

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There are important limitations inherent in this relationship-intensive model of incumbent worker education and training. Brokering-by-relationship limits the total numbers of companies served and often substitutes for more rigorous assessment. In addition, it may reduce incentive to market training to new clients or even encourage new approaches to training for existing clients. Some of these shortcomings can be ameliorated by the more rigorous approach to assessment and training for the brokers themselves that we are recommending elsewhere in this report. However, we are reluctant to recommend major new financial investments in expanding what already seems to be a generally robust brokerage system, especially because we see it as having some inherent limitations. We do not believe that, even with the improvements we urge, expanding the brokering model will yield dramatic gains in either the supply or demand for training.

So, what is the problem? If the education and training system is better than commonly thought, if manufacturers are generally satisfied that they can get what training they need, and if there is a fairly extensive brokering system in place, why the concern?

We have concluded that the critical human resource development problem facing manufacturing in Indiana and Central Indiana is that there simply is not much education and training going on. There is no systematic, focused effort to increase the education attainment and career skills of manufacturing workers. Each firm, each education and training institution, and each worker is effectively on its own in the education and training marketplace and, on its own, they do relatively little.

The reasons for this are complex, but not mysterious. They may be summarized as follows:

- Especially in the midst of this severe recession and re-structuring in Indiana's manufacturing sector, many firms are simply unwilling to invest in new skill development for their workers. They see no quick payback and little financial incentive since investments in human capital do not receive as favorable tax benefits as investments in physical capital.
- Many firms, especially small and mid-sized ones, fear that they will be unable to secure the benefits of training investments as higher skilled workers might move to other firms for small wage increases.
- On their own, many manufacturing firms are not confident that they can predict changing skill requirements much less design the mix of training and new skill development that will adequately prepare their workers. There are no widely understood and commonly accepted skill requirements, much less a general understanding of the competencies needed to exhibit these skills. Many employers do not think their workers have the learning skills to take advantage of job-related education and training even if it were available.
- Individually, most firms simply don't know much about education and training systems. They don't know how to negotiate for quality, speed of delivery, work site programs that minimize downtime, or cost efficiencies. They don't know which credentials help them or their employees.

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- Education and training providers lack the detailed knowledge of advanced manufacturing practices to develop on-going programs of education and skill and development.
  - Education and training providers lack clear incentives from their state government to develop strong, long-term, focused programs of education and skill upgrading for manufacturing firms. State training programs tend to encourage relatively small grants to as many firms as possible for non-credit training that is typically unconnected with any career objectives of the trainees.
  - Many workers themselves see little benefit from investing their time, energy, and resources in training. It often is not clear from their employers that higher skills lead directly to better jobs or higher pay. Often labor contracts value skill development less than seniority as a criterion to qualify for better jobs.
  - On their own, workers are even less capable of navigating the world of post-secondary education than their employers. Tuition reimbursement programs often work poorly because workers have to front the tuition and fees. They don't really know what credentials would enhance their career opportunities or what institutions might best deliver those credentials. They lack confidence in their ability to be successful. They are daunted by education systems that are unfriendly to working adults who can attend school only part-time.

While we do not think that focusing exclusively around *improvements to current approaches and strategies* of manufacturing workforce development is going to "fix" these shortcomings, we do believe that many aspects of the existing system can and should be improved. In a later section of this report we offer detailed recommendations toward this goal that include the following:

- Creating a "brand of training service" to unify the image of workforce skill improvement and resources;
- Building a web-based incumbent worker electronic "tool kit" around this brand identity;
- Developing common assessment instruments to identify skill requirements;
- Creating an accessible data base of all providers;
- Training and certifying brokers; and
- Increasing usage of Indiana's "Certificates of Achievement" and linking them more effectively to post-secondary education.

But that certainly will not be enough. A more ambitious, aggressive, and focused strategy is needed. We therefore recommend implementation of a new model that we call a "Manufacturing Skills Alliance." This Alliance would pull manufacturers in Central Indiana together into a new collaborative relationship with each other, with education and training providers, and with workers.

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Based on the joint commitment and common interest of these partners, the Alliance would design and deliver a focused program of education and skill development to manufacturing workers in the region. All the partners would invest and the state would provide substantial and highly focused financial assistance through the Alliance in ways that benefits the common needs and interest of all the stakeholders.

Here, briefly, is how this new Alliance would work: A new organization would be created as a non-profit education entity, with a mission of promoting the development and delivery of high quality, credentialed education and training services to manufacturers in the region. It would be membership-based, consisting of manufacturing firms in Central Indiana, education and training providers, unions, and government officials. It would provide a broad range of human resource development services to manufacturing firms, not just its members. It would have a staff for administration, for program development, design, and operation, and for marketing. It would design and package education and training programs that build the credentialed skills of workers and promote career pathways to higher skill, higher wage jobs. We see the Alliance as a value-added reseller and integrator of these programs, not the actual deliverer.

Using the collective purchasing power of the regional manufacturing sector, the Alliance would negotiate new programs, new credentials (including new degrees), and new delivery modalities (internet, work site, on-the-job, etc.). It would track educational benefits to workers. All programs would be outcome-tested and competency-based. Programs delivered by one participating institution would "count" toward the credentials and degrees issued by all participating institutions.

We see the Alliance as substantially subsidized by the state. In our judgment, viewing the very serious problems facing the regional economy, the level of subsidy should cover effectively the full cost of program design and development and as much as 50-75% of the cost of program delivery. That subsidy could take the form of direct appropriation or grants (which would not require new legislation) or it could take the form of tax credits (which would require new legislation).

Our charge has been to determine how to stimulate skill development for the Central Indiana manufacturing economy. We acknowledge however that state support might be conditioned upon a statewide strategy and impact. We believe other manufacturing skill alliances could be developed separately in other regions (and among non-manufacturing firms). The alternative of a single statewide manufacturing alliance is worth considering but only if employers and education and training providers can find and develop regionally specific "sub-alliances."

We agree that these are bold and challenging recommendations. They entail establishing and subsidizing a new organizational form, led by industry, to significantly increase both the quality and quantity of workforce education in manufacturing. The recommendations require the collaboration--more than simple cooperation--of business and education. It requires them to be creative and imaginative and to put into operation now those elements of a 21st century educational structure that can carry Indiana manufacturing workers into the future. We believe that the current situation in Indiana's and Central Indiana's manufacturing community demands nothing less than this ambitious effort to dramatically increase the quantity and quality of education and training to the manufacturing workforce.

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We believe these recommendations and the model of workforce training and education proposed here are very complementary to other initiatives supported by the Central Indiana Corporate Partnership. Purdue's Advanced Manufacturing Center plan, for example, seeks to provide research services and product development support to the same newer industries included in the target market for the recommendations here. The research team has benefited from discussion with faculty and the administration at Purdue and at Ivy Tech State College.

Happily, none of the many individuals we spoke with seemed complacent with what is; all said we can do better and we should do more in Indiana. These recommendations, then, are made on what we hope is fertile ground and made among colleagues who will receive them as distillation of our common dialogue.

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## **SECTION II: STATEMENT OF OBJECTIVES**

The objective of the *Manufacturing Education & Training Network Initiative* is to recommend viable means of improving the connections between the training needs of manufacturing firms in Central Indiana and the providers of education and training in the state.

The Central Indiana Corporate Partnership defined this charge to the research team and cast the image of those connections as a bridging or brokering function. As these terms imply, they are connecting functions that provide active linkages for a company that has a need for training of its workforce with the resources for training that may reside in many different sources. Although the term brokering or bridging often suggests matching existing supply with a customer's demand—in this context it also usually includes ancillary features such as marketing, information, assessments, program design, and other services to define what services a company needs and to structure the provision of services to the company. The charge to the research team was to identify ways of developing these functions if they were not present and recommending improvements in the existing methods of linking manufacturing employers to the provision of education and training.

In creating this initiative, the Central Indiana Corporate Partnership gave voice to a concern about workforce training in Indiana's manufacturing sector that has been expressed elsewhere over a long period. The concern is that employers were not able to access the training resources they needed to provide skills training to their employees. Despite a variety of federal and state funded training programs and despite an extensive post-secondary educational system, employers often reported they could not find the right training for the skills their workers needed. From an economic development and public sector point of view, the concern was expressed in the difficulty of targeting training resources to those companies that would provide employment and tax revenues to communities. Solutions were often posed in terms of fostering better communication and understanding between the consumers of training and the providers; brokering and bridging were methods of enabling communication and understanding.

In the early stages of the project, four additional key points emerged. These deepened the project's core objective, shaped the research agenda, and eventually came to underscore the need for more far reaching recommendations than originally anticipated. These points are as follows.

**1. The consequences of deep structural change in Indiana manufacturing sector, their impact on the workforce, and the preparedness of institutions for a response to these changes.**

Proposals for change in the education and training services structures for manufacturing must take into account trends in Indiana's manufacturing base and anticipate services that will help Indiana's workforce keep pace with the changes and support future areas of growing industry and new firms.

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**2. The legacy of an under educated workforce (compared to other states), unprepared for changes in the manufacturing sector or for the future.**

A low educational achievement level in the workforce may no longer be acceptable for positions that require higher level skills; the involvement of larger numbers of workers in *educational* programs is important.

**3. Too few manufacturing employers provided sufficient training to their employees.**

A clear understanding of the interests of employers in workforce training and understanding barriers to more effective methods and greater volumes of training is important in assessing the capacities of the current delivery scheme and new strategies that employers will find useful.

**4. Key mechanism(s) and resources to address the training needs of the manufacturing workforce were simply missing or ineffective.**

Understanding the array of existing resources and how delivery mechanisms actually worked in Indiana was crucial to addressing both specific improvements as well as systemic change for the future.

These points shaped the emphases of the research work and, for example, informed a considerable amount of the in-depth discussions we held with manufacturers, educators, and leaders. In particular, these assumptions helped us understand more fully that the task was not one of simply recommending a few quick-fix alterations to existing services or a new program to compensate for weaknesses we found in other programs. Some of the more global assumptions outlined above meant that our task was to place our recommendations in the context of more far-reaching future-oriented structure or organization of services. It was our role to offer what *could be* to the client and to make a case as to why it *should be*.

A final objective of the project was to make our recommendations in a form that suggested not only what might happen but also how they could be implemented in Central Indiana. To this end, we have taken the somewhat unusual step in projects of this type to include a *Business Plan*<sup>1</sup> for a new organization. It is an appendix to this report and does outline startup procedures, organization, and startup budgets for a regional skills alliance in Central Indiana.

## **Overview of the Project Team**

Central Indiana Corporate partnership contracted with Ball State University's Center for Organizational Resources to lead the initiative. Ball State assembled a consulting team with wide expertise in the areas of manufacturing education programs, conducting workforce development research, and creating regional strategies for economic growth and workforce education.

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<sup>1</sup> Refer to **Appendix A** for the *Central Indiana Skills Alliance (CISA): Regional Skills Alliance for Advancing Manufacturing Skills Business Plan*.

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The coordination of the project team through Ball State University's Center for Organizational Resources provided opportunities for synergy and innovative thinking. The team employed a division of labors that allowed in depth focus on specific areas.

*The Ball State University Team*

- Dr. Frank J. Sabatine, Dean, School of Extended Education
- Delaina D. Boyd, Director, Center for Organizational Resources
- E. Suzanne Jones, Project Coordinator, Center for Organizational Resources

*Minnis and Associates*

- Dr. William C. Minnis, Principal. Dr. Minnis assisted with facilitation and coordination of the project process and meetings.

*FutureWorks Company*

- Brian Bosworth, Founder and President; Dr. John Hoops, Senior Associate. Bosworth and Hoops, along with a FutureWorks research staff member conducted the research of a survey of workforce development programs around the country, conducted on-site in-depth interviews with key stakeholders in Indiana, and coordinated overall research analyses and recommendation formation for inclusion in the final report.

*Thomas P. Miller and Associates*

- Dr. Daniel Miller, Managing Partner. Miller and staff at TPMA conducted quantitative and qualitative local research<sup>2</sup> including: 1) focus groups of employers on general issues and needs; 2) focus group of training and education vendors; 3) individual interviews with temporary employment agencies; and 4) individual interviews with manufacturing employers that had received state funding for training and education.

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<sup>2</sup> Refer to **Appendix B** for the *Indiana Manufacturing Education and Training Network Initiative Research Report*.

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## **SECTION III:** **WORK ACTIVITIES**

The report, in several ways, is the culmination of a several month dialogue with business and labor leaders, educators, and public officials about concerns and hopes for workforce education and training in Central Indiana. The research design included the collaborative involvement of manufacturers, service providers, employment services, and key government and higher education entities. These were not only subjects of our research process but also participants in developing solutions. The project obtained a high level of stakeholder input. Considerable effort was made to share with and listen to those in the state that were currently providing, brokering and receiving training and education services. The recommendations in the report reflect that dialogue, our research findings, our own experience in this field, and reflects the nature of our charge from the Central Indiana Corporate Partnership.

Presentations, research, meetings and interviews served to both gather information and also to promote this essential level of participation. Efforts to identify successful best practice programs were conducted to get “outside the box” perspectives on potential models. The idea was not to find one ideal program but to gather elements of applicable program initiatives that could assist in the design of the Indiana plan. As seen in *Section IV: Findings*, several insights were found during the research effort.

Project activities included the following steps:

- **A national best practice scan and analysis:** Although we had no means (or objective) to objectively identify “best” our research goal was to use several criteria to identify outstanding and interesting education and training practices from around the country. The criteria and classification scheme we used to guide us is outlined in more detail in part of our discussion of findings. We collected information on approximately 300 education and training programs. Sifting through these programs, we identified several outstanding models from which we can identify features relevant to service building in Indiana.
- **An inventory/analysis of existing brokerage/training models in Indiana:** Our original research design step originally planned to include an inventory of training providers in Central Indiana and a survey of training brokers. We soon found that inventories were under development by other organizations and promised development of a more extensive database than we could accomplish in our shorter research project. Therefore, design for both the inventory and the resulting survey were changed to focus on more in-depth interviews with key service providers and with brokers. We gathered considerable and very illuminating information about the workings of programs and brokerage models as they were practiced on the front lines of service delivery.
- **An advisory/resource group:** With the assistance of CICP an advisory group convened three times to give feedback and insight to the research and

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to the developing analysis. The group was composed of 10 business leaders, organization representatives from education and business, providers, and government policy makers.<sup>3</sup> As we progressed in the analysis, the advisory group formed an important sounding board for group and for individual discussions.

- **Focus groups of manufacturing employers from across Indiana** (*though most participating employers were from the central region of the state*): Based on the experience that few manufacturers are willing to complete pencil and paper surveys about training, we obtained participation in small focus groups of manufacturers. These groups utilized structured discussion format to explore perceptions, opinions, and recommendations about workforce training inside companies as well as about experience with educational providers.
- **Individual interviews with manufacturing employers that had received state funding for training and education activities**: As a subset of manufacturing employers, the group that uses the education and training system has valuable insights and perceptions. Using a list of companies that had received “Advance Indiana” workforce training funds, we interviewed this “user group” about general needs and attitudes toward education and training and how education and training actually occurs in individual workplaces.
- **Discussions with training and education vendors and temporary employment agencies**: In a similar fashion to our focus groups with employers, we conducted focus groups with education and training vendors and interviews with temporary employment agencies. Again, our purpose was to gather data on the perceptions of delivering education and training services to manufacturers and, in interviews with temporary agencies to obtain additional information on education needs and trends by those “suppliers” of workers to manufacturers.
- **Ongoing face-to-face interviews with providers, manufacturers, and brokers throughout Central Indiana**: The project staff conducted onsite visits to employers, providers and conducted interviews with stakeholders in the educational and training arena. These provided opportunities to see and hear specific program strengths and limitations and gave a better understanding of the existing infrastructure in operation.
- **Model development and implementation planning**: Based on the research activities, the team developed a conceptual model to organize the recommendations and proposals for change.

## **Other Activities**

The consulting team made a panel presentation at the Work Force Development session of the *Advancing Manufacturing Summit* hosted by Purdue University. Attended by approximately 100 manufacturers, educators and government officials,

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<sup>3</sup> Refer to **Appendix C** for the *Advisory/Resource Members and Meeting Minutes*.

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this panel presented the study and led a discussion on issues relating to workforce development.

Additional presentations by the consulting team to the Indiana Department of Commerce Regional Office representatives; Directors of other CACP funded initiatives, and participation in a phone conference with the Indiana Health Initiative group, further promoted awareness of the project's direction and outcomes.

The final action is the planned visit to a model program New Century Careers in Pittsburgh, Pennsylvania. This site visit will be hosted by Ball State University and will include a delegation of select Indiana leaders from the brokerage, education/training, and manufacturing communities.

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## **SECTION IV:** **FINDINGS**

What thematic pictures of manufacturing education and training in Indiana emerge from our work? As described in the previous section, the research team explored manufacturing education and training inside Indiana to develop recommendations for improvements. We also looked outside the state for practices and programs that had relevance for Indiana.

This section of the report assesses our findings in terms of the pictures we hold—and are held by employers, educators, and public leaders—of manufacturing training for the workforce. First we look inside Indiana at our research findings on the approach to incumbent worker training by manufacturers, educational providers, and public leaders. Next, we summarize our findings about relevant programs from elsewhere around the country.

### **Research Inside Indiana**

Our central finding about manufacturing education in Indiana stands in relatively sharp contrast to our findings about some outstanding models outside the state that we discuss in the next section. Incumbent worker training for manufacturing in Indiana is generally *unfocused*; it is unfocused on the part of manufacturing firms as well as on the part of the educational providers themselves.

What we mean by lack of focus is the following: although a number of strong components and features of the delivery of workforce training for manufacturing exist, neither the components nor the principals—manufacturers, leaders, or educators—are guided by a vision of manufacturing education for the present or the future. There are many organizations involved in the training delivery process but none act in coordination to present a coherent approach to manufacturers or manufacturing workers. Nor is there a core of leadership in either the private sector or public sector who can articulate a vision for manufacturing training in Central Indiana.

On the manufacturer side, the absence of focus comes from lack of planning for training, ad hoc methods of determining training needs, relatively ad hoc methods of selecting training providers, and almost no methods of determining whether the training effort was effective. Most of the employers interviewed or involved in discussion groups reported skill training was important and most felt they should do more training. Yet less than a handful reported having any sort of training plan and almost none reported systematic use of any tools for assessments for the workforce or judging the effectiveness of training. Training was generally done on an “as needed” or when required as part of implementation of a new program or piece of equipment. Often, a training course or courses are a part of fulfilling mandated requirements for certification programs.

On the educational provider side the method in which training for manufacturing companies is offered—basically as a sale of services to customers—has come to

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mean that the providers *almost exclusively* respond to specific requests for individual courses or training modules. Local providers, in seeking to be responsive to industry needs, do offer what companies ask for and their experience tells them that that is all the companies will buy. The result, however, is fragmentation of skill development and incoherent delivery of manufacturing education; a company may seek a math course for some workers and then a couple years later ask for a course in measurement. Unlike almost any other kind of educational planning, curriculum design, or program development in academia or in educational services, the ways nearly all training gets delivered to companies is a little piece at a time. Indeed, in higher education, educational services developed for manufacturing (and other companies) are segregated from academic structures and placed in community/industry offices that run on a fee for service basis and are responsible for selling the training. Although this certainly enables them to respond to specific employer demands for a “piece” of education, it also means that neither educators nor employers develop a clear picture of workforce development that will carry them into the future.

The way most employers “buy” training and the way most training is “sold” to companies does not encourage anyone to promote or form a strategy for manufacturing workforce training or education. Employers have no real incentive to develop such a strategy on their own because they don’t want to invest the time or dollars in planning, they respond to immediate needs for discrete training on a particular topic, and they maintain a short time horizon about action planning. Moreover, since many larger manufacturing firms in Indiana are headquartered elsewhere, local management will not have the responsibility or mandate to independently develop or invest in a training strategy. Educators do not have an incentive toward strategic planning either because they respond to employer demand (that are not strategically expressed) and the structure of “selling” training services maximizes the incentive to sell education in a more or less fragmented fashion.

Right now whole business units of Indiana’s higher education structure—Ivy Tech State Colleges Corporate and Community Services for example-- and whole training programs are based in practices that are antithetical to strategic thinking or future oriented training and education programs for manufacturing workers.

Part of the lack of focus for manufacturing training in Indiana is the inherited legacy of Indiana’s manufacturing past. Indiana’s high concentration of manufacturing employment is marked by a heavy influence of automotive, machinery, and transportation related industries and a large number of lower skilled jobs in assembly and production operations. There were smaller, but important, numbers of workers in the skilled trades of manufacturing. In this context, most employment in manufacturing was conceived simply as a job, not as a career; most of the jobs did not require much skills training. The skilled trades, which did require very extensive training and education, by and large relied on apprenticeship type programs to educate workers. In other words, there was very little in the way of educational programs needed for the semi-skilled jobs and the skilled trades already had career education in the form of apprenticeship. The legacy shapes manufacturing education today: neither employers nor educators conceive of manufacturing careers that require an educational vision or strategic programs.

Our research included many interviews and discussions with public leaders in organizations and government about their views of the strengths and needs of

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manufacturing training. One finding from this part of the research is the need to introduce new terms and ideas about manufacturing education into the dialogue among leaders. Public leadership tends to rely on ideas about training for the manufacturing workforce more appropriate to the kinds of manufacturing now disappearing from Indiana. There is in the discussions a reliance on existing institutional arrangements for provision of training in manufacturing and reliance on existing mechanisms of delivery. This will lead to more of the same but may not meet the needs of companies or workers in the near future.

Public leadership is very aware of the structural changes occurring in Indiana's manufacturing sector. Over and over our discussions with public leadership have revolved around the profound changes in manufacturing and the urgent need to foster new manufacturing through product innovation and technology-led industries. Leaders recognize that manufacturing has and will move toward a smaller scale, reliance on technology, and higher value manufacturing. They also recognize that a more highly educated and skilled manufacturing workforce is essential to sustaining manufacturing in the future. Yet, despite the appreciation of structural change in manufacturing, we do not encounter a vision for training and manufacturing education among public leaders parallel to their appreciation of structural change. For example, much discussion is set in terms of skill training for "manufacturing jobs;" however, in the future there will be manufacturing technicians whose skills are career skills. In order to support relevant and effective training for the current workforce, experiencing change now, and for the workforce of the future, leadership must engage in a new—future oriented—dialogue.

The research also revealed several interesting aspects of incumbent worker training in Central Indiana as it is currently organized.

**First**, a relatively large number of people, who can be termed "training brokers" are making connections between companies and educational providers. With the exception of the staff of Indiana Business Modernization and Technology Corporation (BMT), some government employees, and some independent consultants, educational providers employ almost all other training brokers. For the most part they are representing their own institution but this does result in a wide array of services being offered to employers. It is difficult to get a precise number of training brokers in Central Indiana but upwards of 200 people are employed statewide in formal brokering-type roles.

**Second**, there is a rich set of offerings by numerous training providers in Central Indiana and around the state. Our research focused primarily on public-sector training providers and higher educational providers; every higher educational institution supports some level of effort to deliver training to manufacturing companies. These account for the bulk of incumbent worker training in manufacturing. (The majority of the rest are equipment vendor-related providers where training is provided after a new equipment purchase.) We found extensive capacity to design, structure, and deliver training ranging from basic skills and literacy to advanced technical skills. Training providers also maintain contacts of independent consultants who are hired to provide training in areas of expertise that are not on the provider's staff; this considerably enlarges the capacity of training organizations. Technical skills that are almost equipment specific are the most difficult for providers to deliver because either maintaining the equipment is too

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expensive or it is difficult to find people who can do advanced technical training. It is in these latter cases that employers will turn to consultants or vendors for training.

**Third**, among the companies that do invest in training programs and courses, employers perceive the services as being of generally high quality. Educators who do provide training to the workforce are generally perceived as doing a good job. Our research had no means of independently assessing the quality of training but relied on reports from users of training. Perceptions of quality varied considerably and the same provider could be ranked both low and high—employers had a high opinion of the providers they had used with but generally a lower opinion of those they had not.

**Fourth**, the finding about provider quality also reflects our finding that providers generally neither had a systematic means of selecting training providers nor a means of assessing the results of training once delivered. Company managers most often contracted with training providers that were familiar to them and who may have provided good service in the past. Opinions about the results of training were based on subjective views about adequacy and whether or not any positive outcomes were experienced. Positive views on training often revolved around the effectiveness of the instructor as a communicator to manufacturing workers.

**Fifth**, many times, employers and providers reported that they value the longstanding relations that develop over time between a provider and a company. The brokers will develop knowledge of the company and perceptions of needs while the company develops trust that the broker understands the needs well and can deliver good training. Many brokers are justifiably proud of their ability to develop these relationships and proud of the trust placed in them by employers. This relationship substitutes, very effectively in some cases, for assessments and provider selection criteria.

**Sixth**, in discussing brokering with employers and with brokers themselves we found the nature of the relationship between a broker and a company raised some significant questions about the brokering-technique. In general, there is pride by both companies and brokers in this relationship; it places human faces, memory and personal interest into the service mix; good brokers are valuable to companies in helping obtain funding and interpreting a world (education) that is significantly different from that of manufacturing.

At the same time, brokers reported that trust and relationship building required a very significant amount of time and careful pacing. These relationships were built one by one with each company. They also noted that once a good relationship was built with a company, it generated repeat business; some reported that most of their work was with mostly the same group of companies which periodically or regularly asked for assistance.

Is this the best way to serve the educational needs of a company's workforce or the workforce of a region? As we think more broadly about the needs of the workforce in manufacturing some of the key elements of the broker model also suggest limitations to the techniques. From an individual company or broker point of view these relationships do produce results, but as described to us we find that brokering-by-relationship limits the total numbers of companies served because a great deal of time is spent on developing fruitful relations with a handful of companies (and their

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workforce). As a substitute for assessments, it perpetuates fuzziness about training needs and outcomes making judgments about the value of training and the reason to do training more or less a matter of faith. Although it works as a form of relational selling (a standard sales technique) and generates business for the broker's employer, this kind of brokering tends to reduce a broker's incentive to either go after more 'difficult' customers or to venture far from what the customer already wants.

Brokering has many positive features and does work effectively to respond to needs as stated by manufacturing customers. However, it also has significant limitations that, in our view, make it less attractive as a way to enhance the development and delivery of manufacturing workforce training. We believe modifications to broker roles could be very helpful and make brokering more effective; these are outlined in the report's recommendations. However, we doubt that more brokers marketing training will have a significant impact on the overall quantity or quality of manufacturing training that will be needed in the near future.

**Seventh**, we found unique and exciting programs and activities happening in incumbent worker skill training in Indiana. These could become more important elements of a new focus for manufacturing training. For example, a program with much potential is the Department of Workforce Development's Certificate of Technical Achievement. We discuss these in more detail in the sections on recommendations, but our research showed this to be a strong resource that, we believe, should be strengthened and used as a building block of a future oriented system for manufacturing education. Indiana has nurtured this program for a number of years and it has made some remarkable achievements in developing credentials and definitions of core skill-sets for occupations. Moreover, its growth in incumbent worker certification is due to the foresight of legislators who have linked incumbent worker training to the requirement of some form of certification or credit. Few other states around the country have done this, or addressed a statewide credential system. Unfortunately, these Certificates and the award program also suffer from lack of focus similar to other elements of incumbent worker training in manufacturing. They are neither well integrated (i.e. accepted by educators) with other forms of manufacturing education nor is it clear within the program as to exactly what the certificates should represent. As a result, the CTA program is an underutilized, but extremely promising, element of a skill credentialing system for manufacturing training.

Other programs and services provide valuable examples of creativity, commitment and a strong impulse to assist manufacturing companies in Indiana. DWD's Advance Manufacturing is a good example of a state program that is flexible and committed to long-term support of manufacturing. It is especially creditable for example in maintaining transparency of services even as funding sources (and institutional requirements) shift. BMT's small training networks are a credit to the commitment of the brokers and their ability to work with smaller firms on common issues.

Moreover, in practice there is an unspoken but relatively strong current of inter-organizational collaboration on training development provision. The front-line providers of services rely on a variety of organizations and regularly collaborate with one another to build service packages for companies. For example, BMT works with many providers to set up training services. Ivy Tech programs recruit a wide range of consultants from outside the institution to teach courses. However, this practical

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collaboration does not translate into a more unified vision among institutional leadership.

In summary, our core finding about Central Indiana’s delivery of incumbent worker training to the manufacturing workforce shows a lack of focus which thus fails to unite the underlying strengths of rich education and training resources, relatively generous state funding for training, and relatively strong networks between educators and manufacturers. Discussions about what is to be done tend to rely on terms and concepts more appropriate to the past than the future and evidence reliance upon existing institutional practices as solutions.

As our research progressed, and our findings pointed us in the direction described here, we began to look for organizations and institutions within the region that could provide leadership and coalesce a movement among stakeholders to re-shape and focus education and training in manufacturing. This led to our final research finding.

**Eighth**, the results and analysis of our interviews with leaders, educators, employers and labor officials suggest *no* existing Central Indiana institution has sufficient resources or standing among stakeholders to develop this strategy. Partly, this reflects undercurrents of doubt and competition within the institutional community—educators, for example, are perceived as mainly representing their own institutional interests and are not neutral. Initiatives by one organization tend to be viewed as self-serving by others. Indiana’s trade organizations do not have a history of leadership in the education arena and, in this field, will not have the full faith of other organizations or labor leaders. Industry service organizations and the local public training organization have neither the resources nor the standing within the manufacturing community to lead a far-reaching effort to define a strategic vision and delivery system for manufacturing. Manufacturers who have an interest in training and education are atomized—they tend to act alone to fulfill their company’s mission— and the tasks of assembling a leadership group among manufacturers will not happen spontaneously.

## **Research Outside Indiana**

As part of the research into the Central Indiana workforce development system, the research team also carried out a “scan” of interesting and well-regarded employment and training programs around the county. Our central finding in this part of the research is that across the programs we encountered the direction is toward increasing focus of services on more narrowly defined targets. A trend in much of the workforce development world—and exemplified in the best models we found outside the state —can be placed on a continuum of *increasing* focus of well-defined targets and programmatic structure. These program models stand in relatively sharp contrast to the general lack of focus within Indiana’s workforce development services for manufacturing firms.

This section reports on our findings about programs outside Indiana. First we describe how we collected and analyzed the information and then describe our overall findings.

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In this part of the project, the goal was twofold. First, we wanted to identify promising practices among employment and training programs and organizations that would offer relevance to our recommendations to the client. In this goal we would seek to identify key factors that seemed to underlie or support the success of education and training services.

The second 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, revenue streams, 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 or employers and offer training in skills required by jobs in a company to individuals regardless of their personal needs or population characteristics.

Project research staff gathered names and program descriptions through a variety of means: Internet searches, reviews of literature on employment and training programs, recommendations from national organizations such as the National Governors Association and National Alliance of Business, and interviews with practitioners in the field to identify programs and education and training organizations across the country. These sources resulted in information on about 300 programs since, for example, each state maintains federal and state employment and training programs, many community colleges sustain partnership programs with various industries, etc. It is important to note that we did not restrict our collecting efforts only to programs that focused on manufacturing industries or only on incumbent worker training; our collection encompassed many different kinds of training.

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

Table 1

*Classifications of Education and Training Programs*

<p><b>Categorical</b></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><b>Partnerships</b></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><b>Industry/ Employer Sponsored</b></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><b>Brokerage/ Intermediaries</b></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:

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- **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 a few of these programs in more depth. We gathered this information through reviewing additional published material and through telephone interviews with key personnel.<sup>4</sup>

For purposes here, we present some global observations and refer to program categories outlined above. 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.

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 we 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. Indeed, we are recommending that our clients 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. Again, however, despite our interest in this program we are not

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<sup>4</sup> Refer to **Appendix D** for the *Promising Practices in Workforce Development: A National Scan*.

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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.

The 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 health care.

**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, yet 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

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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.

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 with 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.

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

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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, number of 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

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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. In state education and training programs, such as the one-stop system, staff members are often account representatives and some of these exclusively work with employers to broker training and employment services. Brokers around the country play very 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.)

## **Summary**

Our research *inside* Indiana provided a picture that we did not quite expect as we set out on our tasks. We found more robust elements of manufacturing training than we were prepared to find. Provision of training to manufacturing firms in Indiana has several very robust features and some outstanding elements. Training is reported to be of high quality and employers are generally satisfied with that quality and with the people who represent educational providers. Training services are neither broken nor ill-serving their customers. At the same time, some of these same elements present limits on the abilities of manufacturers, providers and leaders to improve the practices and respond well to structural changes in Indiana’s manufacturing sector. The lack of focus in the provision of training to manufacturing workers and the ways constituent groups perpetuate the lack of focus is the central limit on both the present training structures as well as the potential to create an enhanced delivery system. Services are fragmented in both content and delivery; moreover, the responses to demand and supply of these services perpetuate the fragmentation. The fragmentation runs deeper than we anticipated; public leadership largely accepts the framework of what is.

*Outside* Indiana, among the programs we examined, there is a very strong trend toward more focused services that reflect both an organizing *strategy* and *method* for the delivery of services. These trends cross the spectrum of training service types. Many programs, even those which provide basic skills and entry level training to disadvantaged populations target specific industries such as health care and design their services around a comprehensive assessment of industry needs and a coherent method of delivery. Another key feature of programs we reviewed was *coordination* of both educational providers and employers; these take the form of strong partnerships or, in fewer cases, alliances that are led by representatives of industry. The services go well beyond brokerage type models and rely on organizations to bring together the key constituents to develop and deliver services that they cannot or have not accomplished on their own.

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## **SECTION V: RE-THINKING THE CONCEPTUAL MODEL**

### **From a Two-Sided Problem to a Three-Sided Solution**

Central Indiana is certainly not alone in concerns over the linkage between educational resources and the needs of the employer community. The models and programs reviewed in the best practice scan in this research are in some ways all a response to the perception that better connections can be formed between the skills needed by employers and the ability of educators to provide skill development services. Many of these are linked to the perception that workforce education is an important way to help support retention and growth of key traditional and new industries. Education and training partnerships, employer sponsored programs and many brokerage models focus on practices to link employers with educators. Numerous reports have documented both the need for and the attempts to make this connection more robust and more responsive and more deeply rooted in both the private sector and among educational providers. In Central Indiana the research team participated in discussions about the relationship between business and education that could have taken place almost anywhere in the country.

**A two-sided problem:** The ubiquity of the issue begins to draw attention to the way these issues are posed. Indeed, our research findings in Central Indiana suggests we do take a step back and look at the way we have asked questions about the relationship between an employer sector such as manufacturing and the education sector. Our analysis of the information we've collected shows that a number of key ingredients of a responsive workforce development system are, in fact, present in central Indiana.

For example, manufacturing has a large presence in the region (there are many employers of many high or medium skilled workers); the educational resources are fairly rich with both public and private providers offering quality general and technical



services; the region holds a substantial cadre of public and private “brokers” whose job includes developing training for employers. Yet, at the same time, each of these groups and members of the larger public community believes these elements are not working together effectively, not fully responding to one another, or not doing “enough” to meet the needs. Thus, it appears that the major elements sought are in place but the perception persists that they are not working well. The research team believes that, in part, this conundrum is a reflection of the way the question about workforce education is conventionally posed in terms of the relations between employers and educators.

When we look at the workforce training from the conventional demand/supply point of view (pictured above), we place two parties in an imaginary marketplace: employer (the customer for the training) and educator (provider to the customer).

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Customers seek a service the provider creates and offers. We try to apply marketplace notions of matching supply with demand to these two. We define the problems in this picture as how to get these two elements to work together in a demand (employers) and supply (educational providers) relationship. Programs and services are then conceived to help bring the two sides together and to align interests in order for each to get what they want. This picture leads us to think of better linkages, translators, information, brokers and market mechanisms to assist the companies and the educational resources.

However, we've learned that Indiana already has linkages and brokers. Will more of these --even with better tools--be a solution to either the perception or the reality of the issues posed in this research? The research team believes that increasing the effectiveness of brokering and linkage mechanisms between employers and educational providers will have a partial effect but will not resolve the mismatch that characterizes this marketplace. The partial effects revolve around increasing the ability of brokers to assist those companies that want training and assisting in the connection between those companies and the appropriate resources. In the recommendations section of this report the research team proposes some steps in this regard. The issues will not be completely resolved because even with an enhanced linkage system we are largely just doing *more* of what is now happening. More may be better but doing more of the same also may increase the perceptions that the system is not working well. Moreover, the research team has observed that the current linkage and brokerage methods are relatively inefficient—a relatively large number of brokers develop fruitful and productive relationships with a relatively *small* number of companies. This inefficiency seems to be inherent in a brokerage model that champions personal and trusting relationships with companies

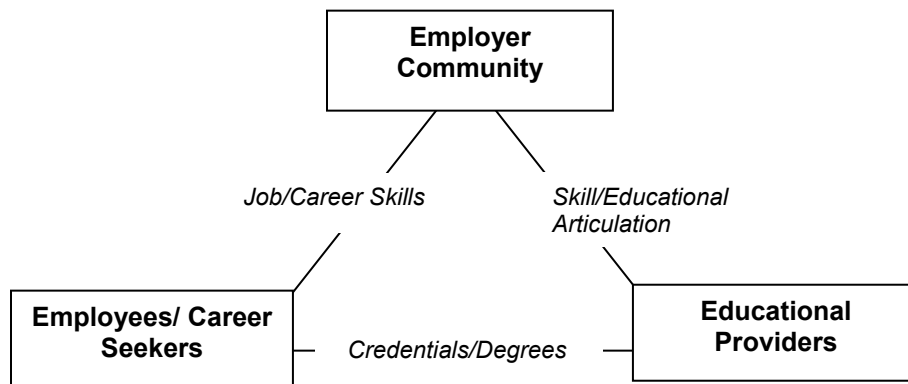
We should step back and question this marketplace picture and ask whether this model gives us an accurate portrayal of the relationships between educational providers and companies. Are there other conceptual models that offer a better way of approaching the goals and assumptions outlined by CIGP in this project?

The research team doubts that this marketplace picture is an accurate portrayal of what happens in workforce development. We should recognize that employers want workers who are adequately skilled to do the job required; but their main interest is to make products for sale in their markets and not to educate their employees. We should also recognize that educators and training providers want to help companies grow and be successful but that is not their core mission either. Their main interest is to enroll and educate students within their own institutional setting. These are two fundamentally different interests. In large part, companies and educators really operate in two *different* markets—the educational marketplace (which involves funding, tuition, credits, and courses) and the production marketplace (which involves suppliers, products, and customers). Because educators and companies are responding to their own primary market relationships they are not going to align themselves to the other's requirements that reflect a different market orientation. Regardless of the rhetoric of partnerships, manufacturing firms and educators will not develop congruent interests no matter how much brokering is applied.

**Toward a three-sided solution:** A new way to conceive of the marketplace for education is to think about what's missing from this picture of a marketplace for workforce development. Ironically, what is often not discussed in workforce development is the impact of the workforce. It is almost as if employees are

considered the silent recipients of whatever training services their employers determined the workforce should have. Educators, in stressing the need to meet the needs of employers in incumbent worker training, do not often directly address the needs or interests of the workforce. When we recall the original assumptions behind the CICP initiative, one concern is the too low educational achievement of the workforce. This is measured in the educational achievement of individual workers in years of schooling or degrees granted. Does the workforce have an interest in degree-related education? Evidence would suggest it does; a very large proportion of students enrolling in colleges (especially two-year schools) today are working adults. More locally, for example, one of five workers at Rolls Royce Corporation taking part in tuition assistance programs is formally enrolled in degree granting college credit programs. Clearly, the workforce's interest in education should be part of any discussion about workforce development.

What happens when the educational interests of the workforce get included in a model of incumbent workforce development? Including a perspective on the interests of the workforce allows us to think of a three-sided approach to enhancing workforce education. This is presented, simply, below:



The linkages in this model rest on the interests of each party:

- *Interests of the workforce who can gain credentials and career skills through educational programs offered within companies they work for.* Linking incumbent worker training to degree granting curricula provides an incentive for workers themselves to become the customers of workforce education and to participate more fully in educational programs. It is important to note that much incumbent worker training takes place at the work-site yet it is mostly not-for-credit. If educational providers were able to offer (and there is no reason they cannot) for-credit content at the worksite it would increase the enrollment of workers in credit programs, help launch some workers into high skill technical career tracks, and help create a more fertile atmosphere (than the existing way incumbent worker training is offered) of continuous education for the workforce.
- *Interests of employers who can leverage educational programs that will gain more highly skilled workers.* Our research into the perceptions of Indiana employers suggest they have very little interest in developing, on their own, career tracks or educational strategies for their workforces. However, when incumbent worker training is more closely

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linked to degree granting programs, the employer literally gains an educational path and strategy with almost no effort. For example, if a machine maintenance course was linked to a manufacturing technology degree *program*, the employer will, almost by default, gain access to a plan (the curriculum) for technical education programs. To the extent such curricula is validated by employers, a single employer can use this as an educational strategy for groups of workers in his or her company. Employers may gain confidence that at least workers are enrolled in a program that gives them, the employer, the skills the employer (and the worker) wants.

- *Interests of educators who can deliver credit programs for employers that will create more student enrollments within their institutions.* Now, most incumbent worker training offered through Indiana's two- and four-year colleges are not-for-credit courses that run through separate fee-for-service organizations. Generally, the schools operate these on a break-even basis, i.e. revenues should cover the cost of personnel, administration, and services. Academic administrators often view these programs as a form of community service. Yet, the major funding for these schools is based on enrolled students in for-credit programs; and this reflects the core mission of the schools and the public mandate for their operation. The research team believes that linking incumbent worker training more closely to the core mission of educational institutions will increase the value of this training to the schools, will help increase the numbers of students in for-credit programs, and will help provide incentives to educators and training providers toward a more creative approach to workplace education.

One need only examine the history of technical training in fields such as nursing, or even early forms of engineering training, to know that occupational education can be integrated into degree-based academic programs. Yet, we have seen very little of this development applied to technical fields in manufacturing. Fostering a way to do this will not only assist educational institutions but will also have an impact on the future of high skill manufacturing as a whole.

Including consideration of the workforce in the model for incumbent worker training offers a way of re-defining how to meet the interests of each party and does not require any party to significantly alter their own interests. In the research team's view, the interests of each group in providing effective incumbent worker training is more easily met: workers pursue career building credentials; employers gain a more skilled workforce; and educators gain students.

At the same time, a three-sided model is more complex than a two-sided model. Yet, it is certainly more realistic. It is unrealistic to hope that educational institutions will substantially change their mission to accommodate manufacturing corporate skill needs. And it is equally unrealistic to believe that manufacturing firms will take on the roles of college faculty. Taking on a more complex approach to incumbent worker training in Central Indiana may lead, in the long run, to more effective approaches to workforce development.

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We believe this conceptual model can be translated into programmatic elements that will:

- enhance the effective utilization of education and training services in Central Indiana;
- assist workers in obtaining credentials they need to enhance their own career skills; and,
- help employers develop the skills of the workforce they need to become more competitive.

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## **SECTION VI:** **RECOMMENDATIONS**

The project team offers two sets of recommendations. The first set is a series of steps designed to improve the *existing* elements of education and training for manufacturing workers. These steps respond to the concerns expressed by CICP and reflect a distillation of our research and discussions. These recommendations reflect an important finding in our research: Central Indiana holds a rich resource of educational facilities and in training providers. Some training areas, such as equipment-specific technical education, pose challenges to the educational system inherent in fields with rapidly evolving and expensive technologies such as manufacturing. It is a capital-intensive field where few training providers can afford to maintain state of the art facilities. Yet, Indiana education and training providers do offer a great deal of advanced educational resources in both technical and organizational areas. The research team did find both the perception and reality of misalignment of these resources and distinct under-utilization of resources by manufacturing companies.

A second, more far reaching set of recommendations revolves creation of a regional skills alliance to focus on manufacturing skill development in Central Indiana. The research team recommends, as strongly as possible in the measured terms of a report, that the Central Indiana Corporate Partnership take up this model and the tasks to create the alliance. As manufacturing firms reshape themselves into new forms and as policy makers and leaders work to foster new industries, it is more than appropriate to think of new forms for workforce education. If Central Indiana is to fully support this potential growth in manufacturing then supporting organizations and forms of assistance need to reflect a commitment to effectiveness. The research team believes a regional skills alliance, if implemented, will have significant and long lasting effects within Central Indiana.

### **Improving the Existing Elements**

We offer five recommendations that we believe will enhance performance of the current system. They are as follows:

- 1. Create a “brand of training service” for Central Indiana that unifies the image of workforce skill improvement and resources.** Incumbent worker training now appears fragmented and appears as the province of various educational providers. The Department of Workforce Development’s “Advance Indiana” is a good example of a service that relies on multiple sources of support but which presents a single face or ‘brand’ to the public. We recommend an initiative to create a brand for workforce training that will unite as many providers as possible under a single rubric, image and message. Employers complain that workforce training services and providers are confusing. As a result, those that do engage in training will identify one or two training suppliers and rely on them for training; this reliance results in a kind of simplicity but also limits access to training to whatever that provider has to offer. Branding workforce training may help employers develop trust

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and a relationship with a *system* of providers rather than a linkage to only one or two.

Building a brand identity for training involves, minimally, linking providers around an identity and marketing efforts. Over the long run, this brand could result in integrating common tools (such as assessments) and a common database of resources. The brand will reinforce a consistent and coordinated commitment to training and education on the part of providers and will present a message to both employers and to workers that Indiana and participating providers share this vision.

A branding of training should reinforce and sell existing training resources. It is not necessary or even desirable to create new competing services since the existing training and education services in Central Indiana are plentiful and of generally high quality.

Many institutions in Central Indiana, ranging from the Workforce Investment Board to colleges have an interest in presenting a single image to employers. This will be especially so if the image conveys a commitment to quality, service and the goal of advancing manufacturing. Resources required to create the branding and materials could come from a partnership of provider institutions with the Central Indiana Corporate Partnership or the Department of Workforce Development.

- 2. Build a web site around this brand identity and use the web site as a service tool for companies, workers, and brokering functions.** If advancing manufacturing is a target group for incumbent worker training, then the tools and methods employed in the training process should parallel some of the technologies and tools these companies use in day-to-day business. To the research team this means an effort to use a web site as a source for good information and as a tool to do business.

The research team observed the ways in which face-to-face brokering is both a positive service in terms of building relationships between providers and companies but also an inefficient service in terms of limiting the numbers of companies served, controlling information flow and slowing the steps of identifying a training need and arranging the training. Collecting information, placing tools on-line (such as assessments, design tools, and applications for support of training) could help make training brokers more efficient and could make information more readily available to economic development generalists like the regional offices of the Department of Commerce. Moreover, giving wide access to this information allows individuals (companies, workers, others) to become more informed about the range of options available and to help them make decisions about the resources they want to use.

A robust web site that is useful can have a profound impact on the provision of education and training services to the workforce. The difficulty of this effort should not be underestimated and the cost and level of effort involved to create a useful web site should be carefully planned as a multi-year effort. Yet, we believe a good web site could become a focal point for a new way of

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doing business and organizing services for the business community and for workers. Some of the benefits of this could be:

- Increasing the speed of information flow about training to companies;
- Reducing time from decision-to-train to availability-of-resources (funding, courses, and provider information);
- Moving more information into the hands of consumers of training: companies and workers;
- Helping brokers become more effective marketers of workforce skill improvement instead of potential bottlenecks or competitors with each other; and
- Allowing employers to “place an order” for training services.

In sum, the research team recommends an investment in building and maintaining a *good* web site that will offer three main elements:

- Convey a unified image or brand of commitment to a skilled workforce;
- Provide information about workforce education and about educational resources; and
- Offer tools to brokers, companies, and to workers.

- 3. Utilize common assessment instruments.** The Department of Workforce Development has recently established a new initiative to use Work Keys (a skills assessment tool) to assist workers, employers and eventually school systems to develop profiles of the skills required for various jobs and then to compare the skill sets of job seekers or entry level employees to those profiles. In schools (now middle and high schools), the Work Key profiles will help instructors develop course content to reflect the real job skills that students may encounter on the job.

The scale of this effort as a statewide project with considerable resources argues that it should be used wherever possible within the incumbent worker training system. Our research into assessment tools for workforce skills did not identify a reliable or widely used tool. Work Keys does have the validity to become a common tool to profile jobs and identify skill sets.

However, the current application of Work Keys does not go far enough into specific skill sets or into advanced skill sets to be really useful in high skill job assessments. Current plans for the implementation of Work Keys through the Department of Workforce Development mainly concentrate on basic skills required for occupations. This is good as a start and may be very useful to employers who are concerned about general skill levels (especially literacy, math and some process skills). It falls short however, of assisting employers in developing more sophisticated analyses or strategies for developing higher order skills.

However, most current assessments are cumbersome paper and pencil formats which look and feel a lot like tests. More often than not, assessments are made informally in discussion with management, course designers (the provider), unions, or brokers. Most employers don't like to do them because they take up time and the results are ambiguous. But assessments have a

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useful role in helping develop plans. We believe that two kinds of assessments are needed. First, to design good training programs and to help manufacturers gauge their own need for training, an assessment is needed that can function as a benchmarking tool. Assessments as a benchmarking tool means developing a database of worker assessment results showing levels of occupational skills by industries. Thus an employer or broker can look at comparisons between the workers in an individual company with those in an industry. Work Keys may do this eventually, which is another reason to support its usage.

A second type of useful assessment is the return on investment (ROI). While a number of tools exist to calculate ROI for training (notably the results of research by the American Society of Training and Development), none are without ambiguities. The ambiguities are due in large part to the imprecision of setting initial measures that can isolate the impact of training as opposed to changes in other variables. Moreover, training is often accompanied by other changes in technology (new equipment) or changes in organization (lean manufacturing), either of which can have related or independent impact on performance goals.

It is important to recognize that in many cases an assessment of ROI is simply unnecessary. For example, courses that train individuals in Computer Numerical Control don't require an ROI analysis. Or, courses in basic math don't need an ROI analysis. Thus, a general requirement for ROI type analyses is not useful and, if attached to public funding mechanisms for training, will only antagonize employers encountering one more unnecessary requirement. However, some educational *programs* may benefit from an ROI analysis. In the cases where there is significant investment of time or funds for a training program, we believe an ROI analysis is called for and will be supported by employers as well as providers. In other words, ROI should be calculated where there is an expected transformation of the role of the workforce and its performance. By selectively applying ROI analysis to programs that are expected to have significant impact (and may require significant public or private investment) companies get information they need to assess the pay off for a program and the training providers receive information they need to show that training is worthwhile.

Our questions to employers and to training providers about ROI assessments produced no standard instrument to measure ROI. Some companies design these assessments around specific programs to measure change. These involve identifying up front the key measures of anticipated change and a simple design for collecting information. Employers and providers should agree on a method to share this information with others.

Possibly the most important questions about assessments—either skill or ROI—are not about design or which tool, but about usage and ease of usage. The research team recommends that assessments be moved to an online format and that assessments of skills contribute to a general database similar to that being developed by Work Keys. In addition, ROI assessments could be moved online relatively easily. Simple help tools could guide providers and employers (and workers) in the process of designing ROI measures and could also easily organize data collection and calculate results. Right now,

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the Department of Workforce Development is using a paper and pencil version of Work Keys which requires workers, or employers to either organize testing or go to a location where it is administered. An online system—made accessible to employers and workers—would promise more usefulness.

Finally, a benefit of moving assessment on line is that the information would become available as a marketing tool and as a way to define markets. Similar to commercial approaches of web-site operators the information supplied by consumers is then used to market services back to them. Applied to workforce development, such information will be useful in identifying outstanding training programs, developing market analysis, and tailoring educational services to manufacturing firms and workers. This is a long-term process that will require investment, but it has the potential of making market judgments more accurate.

- 4. Help the existing brokerage system access better information about training resources.** While it is not clear that *more* brokers offering workforce development services would address the issues raised by this initiative, it is clear the existing brokers in Central Indiana need better access to more information about training resources. As discussed, most brokers in the current system represent organizations or schools and the training services offered by them. There is relatively little crossover between institutions and relatively little incentive to be creative in utilizing diverse resources.

Two steps in particular can help brokers become more effective within their current positions:

- Create a searchable database for workforce development services and providers. Ideally, this should be an on-line tool that anyone can access, but at minimum a database should be available to personnel in the “system.” It should provide information about general and specialized resources for training in manufacturing services. It should be searchable by keywords so that a topic or technical area can be found quickly.

Data of this type have limited shelf life. It must be maintained to have any relevance or usefulness or to gain the confidence of users. In other words collecting, updating, and even distributing the information is an ongoing activity.

- Develop broker training programs and a ‘certification’ of training brokers. Currently, training for brokers is almost exclusively On-the-Job training. Not only is there now no good comprehensive source of information for training brokers (beyond their own contact file) but also there is no common understanding of what brokers do. The research team recommends that a training program be developed to help brokers become more effective in their roles. The training should include information (what is out there to broker, what are the latest programs), content (what are some of the latest development in manufacturing organization and various technologies that may require educational services, and methods (what are good ways to understand and meet the needs of ‘customers’).

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5. **Increase usage of DWD’s Certificates of Technical Achievement and link to college degree programs.** In the early stages of the research for this project we encountered the Department of Workforce Development’s Certificates of Technical Achievement (CTA), which are now increasing in use in incumbent worker training programs as certification of competencies. This is a unique program which, to the best of our knowledge, is not duplicated elsewhere in the country. Employers who use CTAs like them for a variety of reasons -- ranging from skill certification to finding them useful in meeting documentation requirements. The research team believes the CTA program forms a real linchpin in enhanced manufacturing training services. It should be expanded, deepened, and, most important, linked to college credit for incumbent worker training in occupational fields.

As we understand it now, the CTA program is a mixture of activities to develop “standards” for occupational core skills and also awards certifications of competencies relative to the standards. Employers and educators both play roles in defining the standards and awarding certificates. Workers who accumulate certificates eventually hold what amounts to a portfolio of skill certifications.

With more well-defined linkages to higher education, the CTA could function very much like Continuing Education Units in professional education. Colleges in Indiana could grant credits for CTA and assist workers in achieving degrees or additional education. Some schools within the IVY Tech system are now granting some credits for CTA but this is very ad hoc and is not consistent. The CTA forms a “natural” link between knowledge achieved through a training course delivered at work and the credentialing requirements of higher education. Given the recent statistics on the numbers of working adults enrolling in college degree programs, the linkage of incumbent worker training to higher education credential programs would be a significant step in creating pathways into higher education for working people.

This, of course, requires cooperation from higher education but precedents exist and there is no strong reason why such a linkage cannot be nurtured.

## **Creating A New Central Indiana Skills Alliance**

Our work has led us to the conclusion that the broader goals of this project can best be realized through the creation of a manufacturing skills alliance. The alliance would capture and organize the three critical constituencies—employers, educators, and employees—into a consistent and integrated set of education and training services. Key advantages of this approach include the following:

- A regional skills alliance is an inclusive model of organization that draws together economic leaders, employers, labor, and educators into a formal organization with a cohesive mission and vision for workforce development.
- A skills alliance creates focused resources (through program funding and/or fees for membership or service) that promote and deliver (directly and/or

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through partners) high quality workforce development services to companies and their employees.

- An alliance can distill and articulate the workforce development needs of many employers into a consistent message to which educators and training providers can tailor and deliver effective services.
- An alliance can develop “brand” awareness of services for workforce development that presents a consistent positive image to business and the workforce.

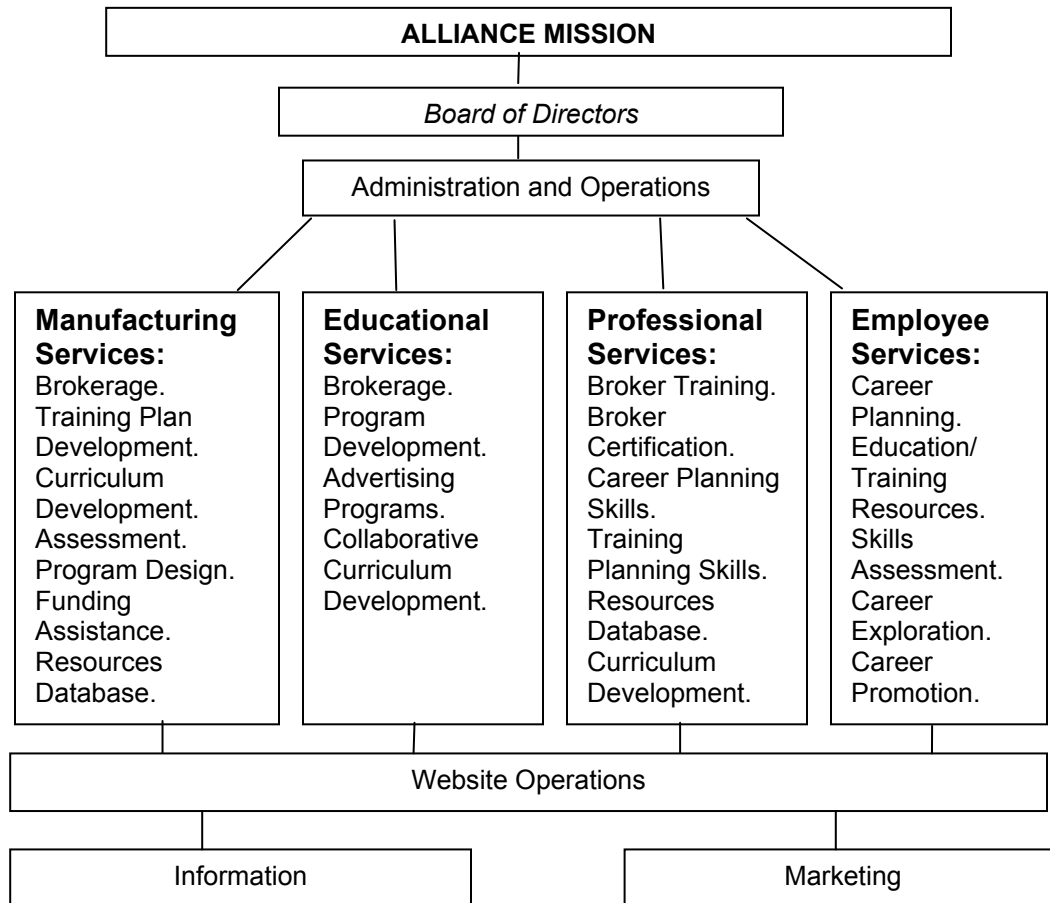
A skills alliance can create a platform on which the existing stakeholders (consumers and providers) join together in a collaborative set of activities around the design, implementation, and delivery of workforce development services. By design, the partners in the alliance agree to a common set of goals and agree to respond. As others have noted, being in an alliance increases the accountability of the members to each other through contact and expectations built into the structure. In other words, tighter relationships through an alliance increase the likelihood that its members will act to support the goals of the alliance. We believe this is a very important feature that has a great deal of applicability to Central Indiana where the major providers of incumbent worker training in Central Indiana don’t have any compelling reason to change *unless* they agree to and can be held accountable for their agreement.

Indications from other skills alliances around the country suggest that successful skills alliances result in a net increase in the *volume* of training delivered to the workforce through companies. We believe this is also a key consideration in Central Indiana in relation to the goal of eventually increasing the achievement levels of post-secondary education in the manufacturing workforce. By acting to make training more accessible to members of the alliance (and others) and better targeted to their needs, not only is better training delivered, but also more training is delivered.

Importantly, we have found that there is really no critical piece of the incumbent workforce training system that is “missing” in Central Indiana but there is also no “voice” within the system to give it coherence and direction. There are good providers, companies that want training for their employees, and quite a few people whose job it is to market training services, and robust funding mechanisms. However, nothing really holds these resources together in a coherent way; in fact, they seem to have a tendency toward entropy—on their own, each organization and company moves farther away from a center.

We believe that defining a center for workforce development in the form of a regional skills alliance will be a large contribution toward improving the quality and delivery of training services to manufacturing (and potentially other) companies in Central Indiana. In our discussions with several organizations about the direction of the manufacturing economy we have been encouraged to *look toward the future* of the manufacturing sector and its workforce. In developing this view we are proposing to define a vehicle for analyzing, for helping to organize, and for helping to deliver workforce development services that can last into the future. Let’s consider some key elements of the alliance.

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1. **Mission:** The alliance will promote the development and delivery of high quality and timely training and educational services to manufacturing firms and workers in Central Indiana.
  2. **Organizational Form:** An independent, not-for-profit educational organization.
  3. **Membership:** The alliance will be a membership organization open to industry organizations, government, educators, training providers, unions and manufacturing companies. It should include key stakeholders and consumers in the workforce development system. Membership should be defined as inclusive of *all* organizations and companies that are investing in workforce development and which agree with the by-laws and guiding principles. Provision of services, however, should NOT be limited to member companies.
  4. **Governance:** The alliance by-laws should specify a business led board of directors composed of key stakeholders and consumers. We believe that business and labor should form a majority on the board of directors. Depending on the initial size of the membership, the board could be composed of the founding member organizations and companies.
  5. **By-Laws and Guiding Principles:** In addition to non-profit operating by-laws the alliance should develop a set of Guiding Principles concerning the scope of activities for the alliance and the rights and responsibilities of membership. The principles should include a clear statement of the mission and vision for the alliance, a set of areas of actions that the alliance will undertake, and the expected benefits and obligations of membership. Agreement with the guiding principles should be the main criteria for membership in the alliance.
  6. **Staffing:** After a start-up phase (organizational), the alliance should have sufficient staff for administration, project development and operation, and marketing. The size of the staff will depend on the level of services and funding for the services. We believe that there should be a ramp-up period of 3 years in which services and scale of services are developed.
  7. **Funding:** Initial funding is required for organizational development, start-up, recruitment of members, etc. On-going funding from foundations and state and federal sources will be required for basic operations. We believe that, over time, an increasing proportion of the alliance's operational budget should be derived from membership dues and fees for services.
  8. **Services:** The board of directors should define the type and schedule of service development for the alliance. A functional organization chart is presented illustrating the potential scope of services for the alliance.



Based on our understanding of the major forms of manufacturing-related education and training delivery in the region (primarily through Purdue, Ivy Tech, Vincennes, with other colleges and a few private training providers), the alliance should not deliver its own training programs (thus creating competition) but instead work with the providers to promote effective curriculum design and training program design. The alliance, in this case, can act as an *integrator* and a *value-added reseller* of existing services. However, we believe the alliance can play a critical role in creating and promoting education and training plans and manufacturing career paths that will help manufacturers and workers understand their skill needs, resources available to them and a plan for implementing training and education.

We strongly believe that a unique contribution of the alliance will be as an active electronic clearinghouse of information for employers, educators, brokers and potential students. A robust web site will be, in itself, an important service delivery tool and marketing arm. Funding applications, educational resources, assessments, and curriculum planning tools can all be placed on line and made available on an “any-time, any-place” basis for brokers, workers, employers and educators to explore their options of available resources. Finally, if more of these resources can be placed on line it will have a couple of important beneficial impacts. First, it will enable the brokers and sales representatives to save time (e.g. in proposal writing) and to shift to more value-added activities, such as training planning or meeting with more companies. In addition, a second important benefit will be to allow economic

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development offices and officials to have a valuable information resource at their disposal. Economic development staff or Department of Commerce Regional Staff will be able to do much more than offer phone numbers or contact names to their customers.

We need to be mindful that the concept of a regional skills alliance is not a wholly new idea and several areas of the country offer examples of successful organizations that have gained the respect and participation of industry, education, and the public sector. We have looked at several of these alliances (and research team personnel have been directly involved in some). We have been impressed by, above all, the investment in them by their member companies. These alliances would not have grown or gained investment had they not been providing good services that companies and workers valued.

We believe that the CICIP's constituency and Central Indiana manufacturing companies would greatly benefit from a well functioning skills alliance. Individual workers would gain skills they and their employers need. Educators would gain new students and help them deepen their skills and educational attainment. The region would offer employers a more highly skilled workforce and evidence, through the alliance, of an ongoing commitment to sustaining the educational infrastructure growing companies and industries increasingly require.

The approach to the testing of the design and plan's ongoing input involved the I-MET Advisory Group and other stakeholders from various channels in the education/training process. Their input provided a "reality check" for adapting the proposed model to the Indiana culture and existing system. Based on the project research and assessments of the manufacturing training landscape, a model for manufacturing training in Central Indiana was developed and shared with constituents throughout the state. The model included recommendations for existing training providers as well as new service structures to address gaps. The model and business plan stress the following design considerations: Financial and Organizational Sustainability (a business model), Responsiveness (needs assessment process), Areas of Education and Skill Development Content (services), Outcomes for Employees (certifications), and Outcomes for Employers (ROI metrics), Service Delivery, and Marketing.

The I-MET Team first formally presented the proposed model during the Workforce Development session at *Summit 2 – Advancing Manufacturing* hosted by Purdue University on May 20, 2003. More than 100 individuals representing education, government, manufacturing, and training providers attended the session. The Team provided an overview of the project including a discussion of the project objectives, action steps and research methodology. The audience received an update on the data collected and a summary of the proposed Regional Skills Alliance model.

Following the presentation, participants were asked to share their thoughts about the information presented using the *Reaction and Feedback* instrument provided in their packets. Responses from the 55 instruments returned were quite positive. Generally, the respondents indicated a high level of acceptance and agreement with the information presented. It is important to note that the average response to the question regarding interest (low of 1 to a high of 10) in exploring membership in a Regional Skills Alliance was 7.7.

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Information gathered from the Summit was used to refine the model. A *Regional Skills Alliance Case Statement* was submitted to CICIP for review. The concept was approved and provided the basis for the development of the Business Plan. A draft of the Business Plan was distributed to select stakeholders for review and comments. A series of follow-up, face-to-face meetings assisted in clarifying concerns and suggested improvements. Still, the true test of the plan will be the actual implementation of this new model.

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## **SECTION VII: IMPLEMENTATION**

As described in this report and in the business plan for the Central Indiana Skills Alliance, creation of the alliance is a large project and will involve a considerable amount of preliminary work to engender broad support and create a solid foundation on which to build. Careful attention to the developmental steps will help assure a successful implementation and the support of the business and educational communities.

The scope of this project and potential difficulties in building a successful alliance should not be underestimated. Section four of the business plan for the Alliance outlines an array of services that the Alliance can develop. These services are both broad and very comprehensive; not everything can be accomplished quickly or easily. Nearly all the proposed services require the support and involvement of training providers, manufacturing employers and eventually the manufacturing workforce. Each group presents challenges. New Century Careers in Pittsburgh, for example, took two years of development design and building the support of critical constituencies. The Wisconsin Regional Training Partnership took several years to build a critical mass of trainees and corporate/union members. The results in both organizations are impressive and will help the Central Indiana Corporate Partnership; however, it is doubtful that the implementation process and steps toward implementation in Central Indiana can be short cut. In particular building support for an alliance among a diverse group will present significant challenge.

In discussing formation of a regional skills alliance with others, the research team heard several potential barriers to the concept and learned that while the idea of a regional skills alliance had several appealing features, it “couldn’t happen here.” Among the potential barriers mentioned we found the most significant to be:

- Manufacturers in Indiana do not have a culture of collaboration for joint purposes.
- Educators (including training providers) are not interested in helping form or supporting an organization that could reduce their existing market share of training services.
- Manufacturing workers are not particularly interested in degree programs or career development skills.

These potential barriers are significant concerns and it is beyond the scope of this report to confirm or allay them. However, in our research on education and training services in Indiana and in our review of partnership and alliance programs around the country we noted the following relevant to the above concerns:

- Manufacturers (as well as other employers in health care and logistics) in several locations in Indiana are working together to secure training services in small, collaborative groups;

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- Alliances, elsewhere, tend to increase the total amount of training delivered to companies and workers within a region and therefore expand markets for training services;
  - Nationally, the largest increases in college enrollments and degree programs are coming from working adults who are pursuing careers.
  - Education officials in Indiana have noted an upsurge in enrollments by working adults. It is true, however, that many of these career pursuits are not in manufacturing technologies. It is also true that neither manufacturers nor educators have worked to define careers in this industry.

In other words the concerns expressed are very real concerns based on perception and experience. These perceptions must be addressed, but at the same time we have not found conclusive evidence that these concerns cannot be successfully met or that there is no support for attempts to improve the delivery of education and training for the workforce. On the contrary, we have found relatively strong, but appropriately cautious interest in change.

The research team has already benefited from involvement of many individuals in the research and preparation of the final report. However, like all such efforts in the end it is only the product of the few individuals who comprised the team; no other specific individuals are responsible for the conclusions. In the same vein, few others know the full extent of the conclusions. While a relatively large number of people in business, education and in public organizations know of the project and have contributed to its findings, relatively few are now aware of the recommendations and almost none have been asked to commit their support for the recommendations. It remains the judgments of the Central Indiana Corporate Partnership as to how or whether to embark on implementation of all or of some of the recommendations in this report. In several ways, the decisions of the CICIP will mark a *beginning* of the critical work of communicating the Partnership's opinions about these recommendations and beginning the work of implementation.

Below are several steps of implementation that we believe are necessary to begin work on the Central Indiana Skills Alliance. We focus implementation suggestions on the alliance model for the reason that the other set of recommendations in this report can be implemented relatively quickly although a task in this set of recommendations is to identify an entity to carry them out.

1. **Create a *Champions'* steering committee.** A small group of manufacturers and community leaders should be developed to champion the CICIP initiative and sustain momentum.

Either from within the membership of the CICIP or drawn from the community, a group of leaders should become the champions of this initiative. By leaders we mean the heads of educational organizations, manufacturing companies and business related organizations. This group should become well versed in the issues in the original CICIP initiative (which led to this research) and should become well educated in the features of a regional skills alliance.

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Much of the work of this group involves drawing the attention of peers and members of key constituencies to the need for a regional skills alliance. However, the committee should do more than draw attention to a need, it should establish a goal and timetable for obtaining the buy-in of key constituencies—education, business (including labor) and government. The committee should allocate several months of contacts and meetings for this work.

In addition, this group should have some resources at its disposal to develop informational tools, hold meetings, and for meetings one-on-one with others to answer questions about the alliance.

2. **Visit existing models (New Century Careers, Pittsburgh).** The steering committee should be informed and inspired by existing successful models. The research team believes that the closest model to that proposed here is New Century Careers in Pittsburgh. Shortly after a champions group is identified, a visit to this program should be scheduled. Interviews with key staff members, visits to participating companies, and discussion with supporting organizations (including fund providers) will help give a sense of reality and applicability to the alliance. New Century Careers' director Paul Anselmo has already expressed an interest in arranging a site visit.
3. **Disseminate publications to develop support among stakeholders.** The report (or a short CICIP white paper) should be disseminated to other leaders in Central Indiana. The audience is leaders of manufacturing companies, educators, government officials and potential funders. Once the CICIP acts on the recommendations in this report, a summary or white paper should be published and disseminated to key leaders in the community.

The purpose is to call attention to the work done by CICIP on this issue and to propose a concrete set of steps to address the issues. This paper is informational and serves as an announcement that action steps are being taken.

In some ways, once the CICIP has taken action, a publication can be viewed almost as a 'prospectus' or case statement outlining the alliance and anticipated results.

Issuing the publication and formation of the steering committee can be coordinated and an announcement made with appropriate media coverage.

4. **Identify likely funding streams.** The steering committee should take the lead in securing expressions of support from private and public funders for creating an alliance.

Funding for this project includes both development funds (for establishing the organization and developing services) and operational services (the delivery of services to the community). The business plan for the alliance outlines a minimal cost structure and required revenues for start up and the first three years of alliance operations. CICIP may wish to target greater resources; however, the estimates in the plan establish minimal requirements.

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Based on discussion of the alliance concept with members of the Indiana governmental, business, and organizational communities, we believe that there are several potential sources of funding for the alliance:

- Indiana Department of Workforce Development
- Indiana Department of Commerce
- Lilly Foundation
- CICP
- Larger Manufacturing Corporate Foundations

Each of these sources will have specific guidelines for funding yet their coordinated response to the alliance is essential. Coordinated and well-crafted proposals addressing the requirements of various funding sources will be important. Part of the challenge in developing funding is to respond to the requirements of each funding source and, at the same time, maintain the integrity of the alliance's overall mission and vision. Multi-year, multi-source funding will help ensure sufficient resources for the alliance and help ensure that the alliance can carry out a strategy that addresses multiple issues. The alliance concept is not a grant-funded program that will carry out a relatively narrow task; fund providers must see their resources in part as an investment in developing an organization with long-term impact and multiple activities.

**5. Issue a Request for Proposals for program development and operation.**

Unless the CICP decides to operate the alliance itself (a possibility that seems outside the mission of the Partnership) a key question is what entity will start, develop, and administer the alliance.

Approaches to creating the alliance through a new organization or an existing organization each carry some risk of encountering difficulties or concerns from various constituencies. Creating a new organization may run the risk of increasing the perception of heightened competition among organizations, i.e. a new organization will compete for existing resources and market share. On the other hand, starting an alliance within an existing organization may send the wrong message to potential customers, i.e. that this is more of what has already happened with a new name.

The design of the alliance calls for leadership by industry and support by key partners in education and government. It is critical for the steering committee, defined above, to develop that leadership. The depth of industry participation and support for creation of an alliance will to a large degree determine the organizational format of the alliance's creation. For example, a strong business leadership group may develop a consensus that the most appropriate path to an alliance is to create a new organization from whole cloth that will carry out the vision developed by business. Or, alternatively, such leadership may feel it is best to work within an existing organization or group of organizations. The successes of the models we have reviewed are all based on the strong buy-in, participation and support of industry and the manufacturing workforce. The organizational form of the alliance should serve that goal; the research team believes it is the responsibility (and opportunity) of the steering committee to define the most appropriate form for the organization in Central Indiana.

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During the research for our recommendations, the research team found no single organization in the region uniquely suited (or ready) to carry out formation and operation of such an alliance. Given the very nature of the CICIP initiative that fostered this research, it is not surprising that no organization stands out as a natural choice to house the alliance. If there were, it might already have formed such an alliance. The alliance seeks to fill a gap in workforce education—to fill almost an absence of organization—which our research has identified as the problem. But at the same time the strength of the organized resources in the region (in both the private sector and public sectors) suggest that sufficient organizational resources are present to creatively approach a new organizational form for the alliance. It is beyond the scope of the present project to develop a concrete approach among existing organizations but our preliminary discussions showed a high level of thoughtful interest from several organizations.

The research team believes that the best strategy for creating the alliance is to issue a request for proposals so that organizations may come forward and make proposals as to how they would fulfill requirements. Specificity in the request for proposals will demonstrate two very important points. The first point is that the manufacturing community is making a positive statement of what it (i.e. the steering committee and CICIP) wants. In many settings, educators and providers have stated that they are not clear and do not hear a consistent voice from employers. A well-articulated vision in the form of a request for proposals will offer a powerful statement to the educational and training sectors. Secondly, a request for proposals should outline in as much detail as possible the specifications and expectations of the model program. The detailed specifications in the request for proposals is an important strategic element; the goal is not to elicit new creative strategies for a general problem reflecting some other organization's view of the issues, but to determine how proposers will meet very specific criteria for setting up and operating the alliance.

Key questions in the request for proposals include the following. How will the proposers:

- develop and guarantee leadership by industry?
- determine industry and workforce needs?
- draw together various service providers in coordinated curricula?
- implement a roster of services as outlined in the alliance business plan?
- design an effective marketing plan and web site?

The business plan for the alliance provides a good template for the specification of requirements in the request for proposals; however, it does not address some critical issues. The plan assumes strong industry involvement—in leadership and usage—but does not specify how this is to be developed or maintained over time. Implicit in the plan is the expectation that good performance will generate involvement and strong usage by the target markets of companies and the workforce. Without a strong plan and management structure *designed* to promote this it is the research team's belief that it will not happen spontaneously.

In summary, the research team believes a formal request for proposals that is very specific on vision, goals, focus and expected outcomes will allow organizations to creatively show how they will meet the requirements and will fully inform proposers of the methodology that the alliance will employ.

