WORKFORCE COMPETENCIES

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HIGHLIGHTS

This report compiles competencies for three of the largest employment clusters in Northeast Indiana: Advanced Manufacturing; Transportation & Logistics, and Insurance. The foundation of the report is the set of national competency models developed by the Employment Training Administration during the last five years. The ETA work was supplemented with competency models developed regionally, and that work was supplemented with the findings from an analysis of six industry clusters by Monster.Com released in January 2011. The Monster.Com report collects competency data for the three clusters discussed in this report together with real time labor market intelligence from Northeast Indiana for the first half of 2011. The report is intended to catalogue the competencies demanded by employers in Northeast Indiana in these three critical clusters. This document is designed primarily for the use of training professionals in Northeast Indiana.

Competency models are built around nine tiers of skills, abilities, personal characteristics, and knowledge that are progressively acquired through education, training, and experience. The bottom three tiers are foundational and typically apply across all jobs and industries. The next two tiers are specific to a cluster and industry. The top three tiers of competencies are specific to occupations within the respective cluster and industry. These nine tier models form the foundation for this report.

Among the highlights of our findings in this report are the following:

- Six technical competencies underpin success in the Advanced Manufacturing cluster. The industry foundations consist of manufacturing process design, production, maintenance, installation & repair of equipment, supply chain logistics, quality assurance, sustainability & green manufacturing, and health, safety, security and environmental competencies. The only area of overlap with the other two clusters is in supply chain logistics and health and safety.

- The Advanced Manufacturing cluster in Northeast Indiana appears to exhibit a shortage of skilled workers with the requisite competencies. About a third of the job postings in this cluster in the first half of 2010 required a college degree in engineering.

- Ten occupations in Advanced Manufacturing encompass most of the job postings in Northeast Indiana. The most common occupations requiring advanced training and education are industrial engineer, production supervisor; mechanical engineer; machinist; inspector; tool and die maker; industrial machinery mechanic; industrial production management; and electronic assembler.

- The most commonly listed industry credentials among Advanced Manufacturing companies in Northeast Indiana were CAD/AutoCad; Programmable Logic Controller (PLC); Unigraphics Software; Solidworks Software, Six Sigma Black and Green Belt; ASQ

Quality Technician; Computer-Aided Three-Dimensional Interactive Applications, and ISO Auditor.

- Seven technical competencies underpin success in the Transportation and Logistics cluster. The cluster foundations consist of logistics, planning and management; warehousing & distribution; transportation operations & maintenance; technology applications; regulatory and quality assurance; customer relationship management, and health, safely and environment.

- The Transportation & Logistics cluster in Northeast Indiana appears to exhibit a shortage of skilled workers with the requisite competencies. About a third of the job postings in this cluster in the first half of 2010 required a college degree and two-thirds required a high school diploma.

- Job postings in this cluster are concentrated among a handful of occupations. Eighty-five percent of the postings consist of supervisors or truck drivers.

- The most commonly sought credentials in the T&L cluster were the Class A driver license, Hazmat endorsement, and Certified Forklift Operator.

- About 40 percent of the job postings in the T&L cluster were for individuals with supervisory experience and skills.

- Six technical competencies underpin success in the Insurance cluster. The cluster foundations are products and concepts; business operations; financial reporting; technology applications; regulations and codes; fraud prevention. The only overlap with other clusters in Northeast Indiana are in technology applications.

- The insurance cluster appears to have an ample supply of workers for the job postings in the industry.

- Academic competencies in insurance differ from those in the other two clusters. About half of the job postings in the region require a college degree; only a third are open to high school graduates.

- Most of the job postings in the Insurance cluster require competencies in computer science or information technology. The most commonly posted jobs are computer software engineer, computer analyst, computer specialist, and computer programmer.

- The range of jobs in the Insurance cluster is broader than in the other two clusters. The three occupations listed above represent 37 percent of the job postings. The remainder of postings are in insurance sales, network administration, executive secretary, supervisor, computer programmer, lawyer, and computer systems manager.

- A significant share of the job postings in Northeast Indiana in two of the clusters -- T&L and Advanced Manufacturing -- require supervisory and management skills, which are listed in Tier 9, the top tier in the Competency Model Pyramid.

- As the Occupation specific competencies differ substantially between the three clusters, specific training programs based on the three competency models are recommended. The limited overlap among the three clusters provides an obstacle to an integrated training approach.

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INTRODUCTION TO THE REPORT

This report compiles competencies for three of the largest employment clusters in Northeast Indiana: Advanced Manufacturing; Transportation & Logistics, and Insurance. The foundation of the report is the set of national competency models developed by the Employment Training Administration during the last five years. The ETA work was supplemented with competency models developed regionally. That work was supplemented with the findings from an analysis of six industry clusters by Monster.Com released in January 2011. The Monster.Com report collects competency data for the three clusters discussed in this report with real time labor market intelligence from Northeast Indiana for the first half of 2011. The report is intended to catalogue the competencies demanded by employers in Northeast Indiana in these three critical clusters.

WORKFORCE COMPETENCY MODELS

A competency is a measurable human capability required for effective performance. In the context of this study, it is the capability to use a set of related knowledge, skills, and abilities to successfully perform tasks in a defined work setting. Competency experts often refer to the elements of competency as the KSAPs: knowledge, skills, abilities, and personal characteristics, which are defined in the box below.

KSAP's of Competency Models

Knowledge is awareness, information, or understanding about facts, principles, guidelines, concepts, or processes needed to successfully perform a task. It is acquired through learning and experience. The assessment of knowledge as an element of competency should take into consideration the impact of that knowledge on individual job performance.

Skills are capacities to perform physical or mental tasks with a specified outcome, such as running a drill press.

Abilities are demonstrated knowledge or physical capability to successfully perform a task with a wide range of possible outcomes. Examples of abilities include thinking analytically, problem-solving, making projections based on current data, evaluating a software program, and synthesizing and integrating information from several sources. Abilities are more complex than skills, and are difficult and time consuming to develop.

Personal characteristics include values, attitudes, traits, and the behaviors that come from these human characteristics. They are elements of an individual's personality. They influence effective performance.

Competency models identify the knowledge, skills, and abilities necessary to successfully perform critical work functions in a cluster, specific industry, and occupation. These models enable a workforce development organization to assist businesses, educators, and workforce professionals in identifying the skills needed for success in 21st century careers. The competency approach to workforce planning focuses on the "ideal" workforce.

BUILDING BLOCKS FOR COMPETENCY MODELS

The Building Blocks for Competency Models consist of a set of nine tiers with each tier containing a set of related competencies (See Figure 1). The arrangement of the tiers in a pyramidal shape represents the increasing level of specificity and specialization of content. The first three tiers, shown in brown and red, consist of personal traits and foundational skills needed across a broad cross section of industries within a cluster, as defined by representatives of the industry. Tier 4 consists of skills that are common to all industries within a cluster, while Tier 5 consists of competencies specific to an industry within the cluster. As an example, Tier 4 competencies for the advanced manufacturing cluster cut across dozens of industries, while competencies in Tier 5 would be specific to a particular advanced manufacturing (AM) industry, such as wire or communications equipment. Tiers 6 through 9 are specific to particular occupations within an industry and cluster. Tier 9 only applies to management and supervisory jobs. Occupations within a cluster, outside of supervisor or manager, only contain competencies in Tiers 1 through 8. Tiers 1 through 4 are divided into blocks. The blocks represent competency areas, that is, the applied skills, knowledge, abilities essential to successful performance in the specific cluster. As a user moves up through the various tiers of the model, the competencies become specific to certain industries and/or occupations.

FOUNDATIONAL COMPETENCIES

At the base of the model, Tiers 1 through 3 represent competencies that provide the foundation for success in school and in the world of work. Foundational competencies are essential to a large number of occupations and industries and hence are typically universal across all clusters. Employers have identified a link between foundational competencies and job performance and have also discovered that foundational competencies are a prerequisite for workers to learn industry-specific skills. Taimerica found that most of the competencies in Tiers 1 through 3 are common in all three of the Northeast Indiana clusters discussed in this report. A more detailed explanation of competencies in Tiers 1 through 3 follows.

TIER 1 –Personal Effectiveness Competencies are essential for all life roles. Often referred to as "soft skills," personal effectiveness competencies are generally learned in the home or community and reinforced and honed at school and in the workplace. They represent personal attributes that may present some challenges to teach or assess. Examples are integrity, professionalism, initiative, dependability, and reliability.

TIER 2 – Academic Competencies are critical competencies primarily learned in a school setting. They include cognitive functions and thinking styles. Academic competencies are likely to apply to all industries and occupations. Examples of academic competencies are reading, writing, basic computer skills, and analytical thinking.

TIER 3 – Workplace Competencies represent motives and traits, as well as interpersonal and self-management styles such as teamwork, flexibility, organizing, or problem solving. They generally are applicable to a large number of occupations and industries.

INDUSTRY-RELATED COMPETENCIES

The competencies shown on Tiers 4 and 5 are referred to as Industry Competencies and are specific to an industry or industry sector. Industry-wide technical competencies cut across industry sub-sectors making it possible to create career lattices where a worker can move easily across industry sub-sectors. Rather than narrowly following a single occupational career ladder, this model supports the development of an agile workforce.

TIER 4 – Industry-Wide Technical Competencies represent the knowledge and skills that are common across sectors within a broader industry. These technical competencies build on, but are more specific than, competencies represented on lower tiers. They have been defined by company representatives from the cluster as essential to success in that cluster.

TIER 5 – Industry-Sector Technical Competencies represent a sub-set of industry technical competencies that are specific to an industry sector. They have been identified as company representatives working in an industry as essential to success in that industry.

Figure 1: Structure of Competency Models

Tiers 1-3 are foundational competencies-needed in any career or cluster
Tier 4 is cluster related competencies
Tier 5 is industry specific competencies
Tiers 6-9 are competencies specific to a particular occupation within the cluster & industry
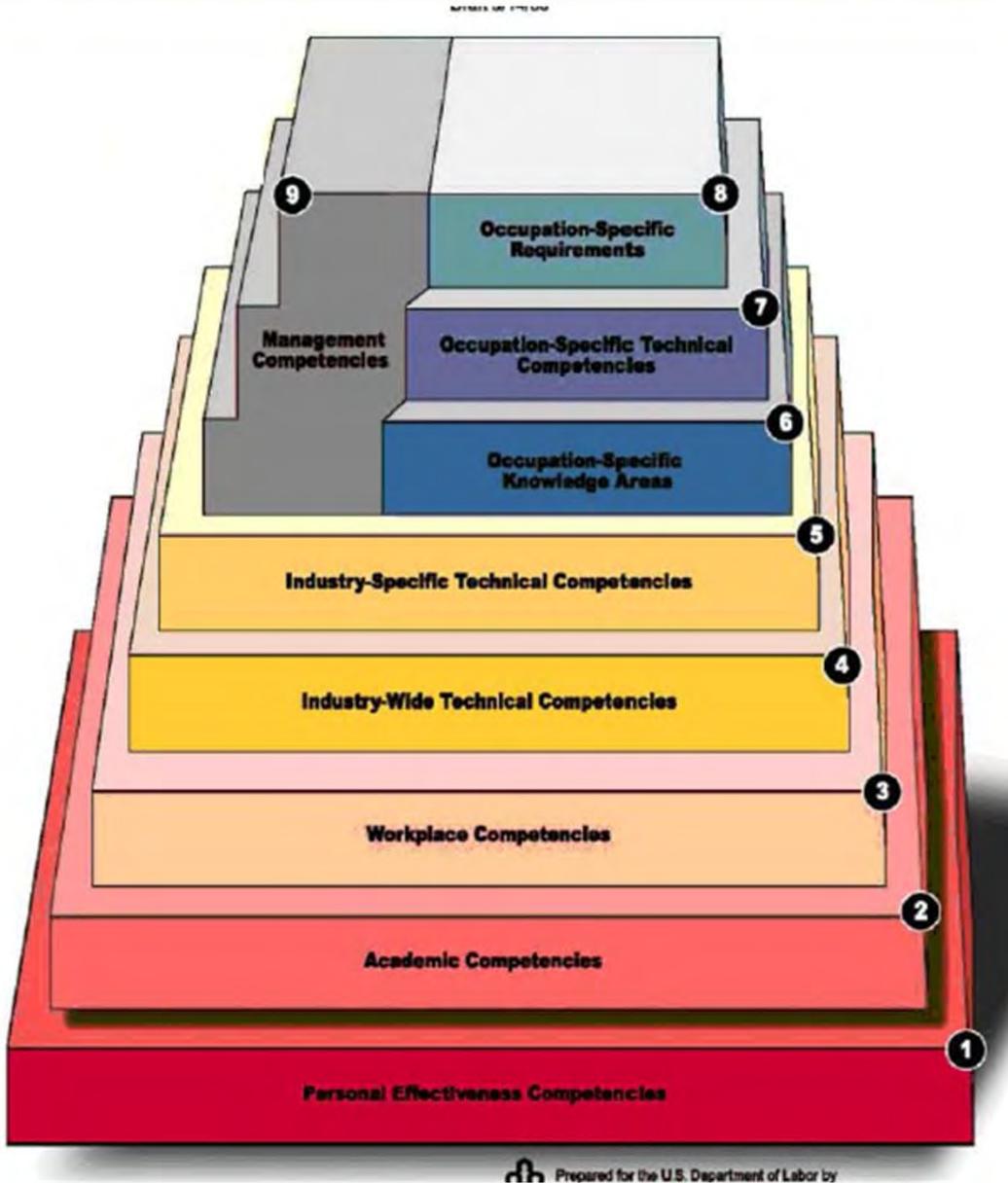
OCCUPATION-RELATED COMPETENCIES

The competencies on Tiers 6, 7, 8, and 9 are referred to as Occupational Competencies. Occupational competency models are frequently developed to define performance in a workplace, to design competency-based curriculum, or to articulate the requirements for an occupational credential such as a license or certification.

TIER 6 – Occupation-Specific Knowledge Competencies. These are the competencies needed to succeed within a particular occupation within a specific cluster and industry. Examples of Tier 6 competencies: CNC operator within the auto parts industry must have the mechanical knowledge to use and repair CNC machine tools, and must have knowledge of geometry to read blueprints and set up machines.   These competencies are typically linked to the knowledge areas contained in the Department of Labor's Occupational Information Network (O*NET) tool to allow a bridging with academic fields at the post-secondary level of education.   The broad O*Net knowledge areas are shown in the appendix to this report.

TIER 7 – Occupation-Specific Technical Competencies. These are technical competencies for specific occupations.   They can include proficiency in using various tools and technology. Example: A CNC operator within the auto-parts industry needs to have the ability to use SolidWorks CAD software and the CNC Consulting Machinists' Calculator.

TIER 8 – Occupation-Specific Requirements. Tier 8 requirements typically consist of licenses, certifications, and specialized degrees needed to succeed in an occupation.   Example: CNC operator within the auto-parts industry needs a certificate in Solidworks CAD software. Many of the Tier 8 competencies in Northeast Indiana within the advanced manufacturing, logistics, and insurance clusters were identified by Monster.Com in their analysis of the regional labor market.

TIER 9 – Management Competencies.   These are competencies needed for supervisory and management occupations.

ADVANCED MANUFACTURING

Advanced Manufacturing is an important cluster or concentration of industries in Northeast Indiana in terms of employment. Advanced Manufacturing was one of two clusters in Northeast Indiana that was assessed as lacking sufficient talent in Monster.Com's labor market assessment for the first half of 2010. In terms of competency models, the Defense, Medical Device and Food clusters fit within the realm of Advanced Manufacturing.

Completed in 2006, the Advanced Manufacturing Competency Model was the first industry competency model finalized as part of the undertaking of the Employment and Training Administration (ETA). Partners involved in developing the model are the Manufacturing Institute, the Society of Manufacturing Engineers, and NACFAM (National Council for Advanced Manufacturing). The model has been adopted among the leading trade organizations in manufacturing and therefore represents a consensus among manufacturing companies of the competencies needed to succeed in advanced manufacturing.

The Advanced Manufacturing model has served as the foundation for competency models and other resources in many manufacturing sectors, and was the basis of the development of models in several related industries, including Automation and Mechatronics.

As has been pointed out, manufacturers are experiencing difficulty finding and hiring workers with adequate skills and competencies, even at the most basic level. At this basic level, employers in general need workers with the personal effectiveness skills (soft skills) that make them employable. These are the Tier 1 in the following graph. At the next level (Tier 2), manufacturers need workers with adequate academic competencies. Like most employers, manufacturers also need their employees to have adequate workplace competencies (Tier 3). Finally, the manufacturing industry has certain technical competencies that are foundational across companies and industrial sub-sectors (Tier 4). The consensus among manufacturers is that seven technical competencies are common among advanced manufacturing companies. Each of the seven competencies are divided into a series of Critical Work Functions and Technical Content Areas which are discussed in detail in the following sections.

Competencies in Tiers 6 through 8 are occupation-specific. The occupations most in demand within each of the cluster, as identified by Monster.Com, is provided in the discussion of Tier 6 of each model. Monster.Com data is incorporated into the discussions of Tier 1-Soft Skills; Tier 2-Academic Competencies; Tier 7-Technical skills; and Tier 8-Competencies. Specific information about the demand for Tier 9-supervisory skills is discussed in each of the three competency models when supervisory skills are in demand within a cluster.

The competencies in this report for Northeast Indiana supplement those listed online in the Competency Model Clearinghouse maintained by the Employment Training Administration at:

http://www.careeronestop.org/CompetencyModel. The online site also give occupation specific credentials and more details for Tier 5 through 9 competencies.

Figure 2. Advanced Manufacturing Competency Model

Source: U.S. Department of Labor, ETA. http://www.doleta.gov/pdf/AdvncdManufactFWK.pdf
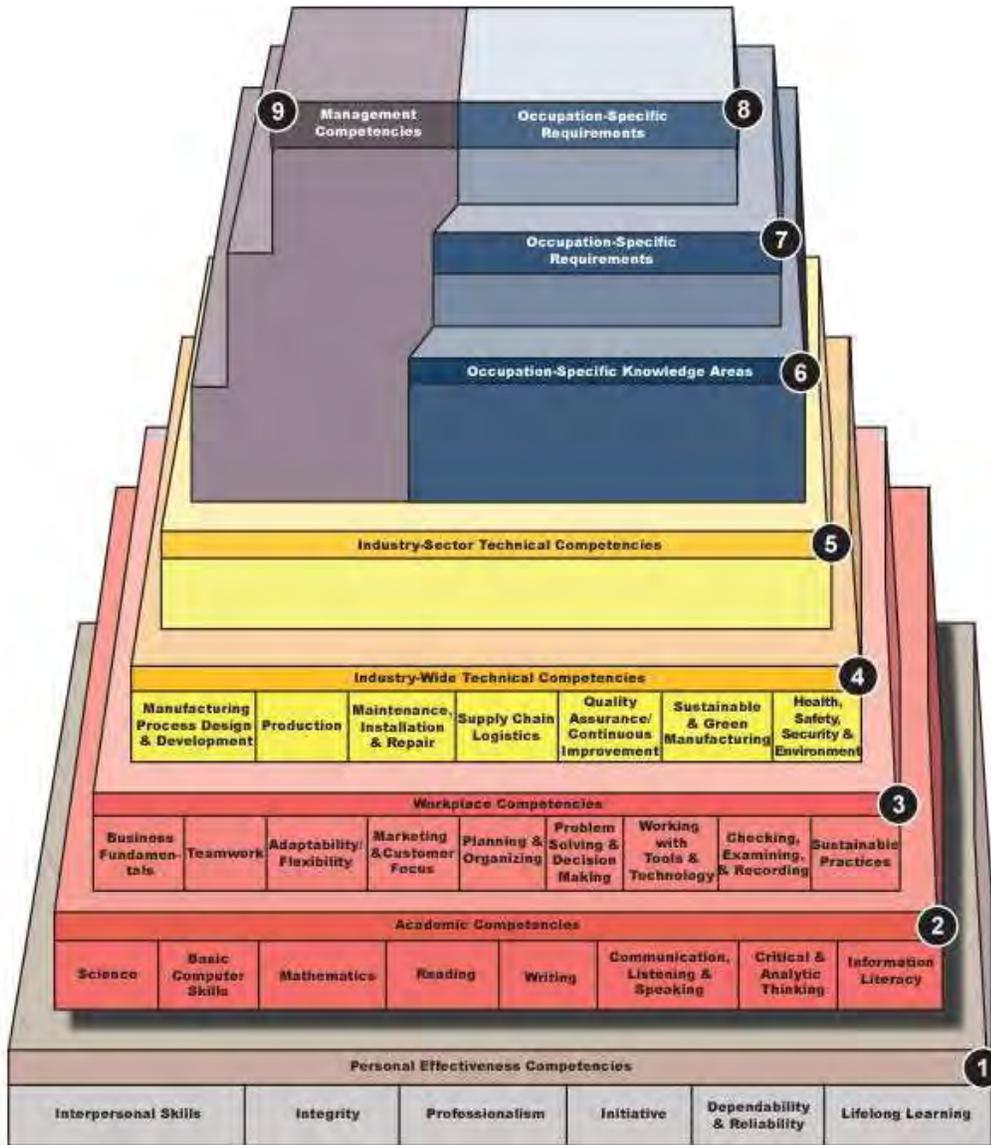
TIER 1: PERSONAL EFFECTIVENESS TRAITS IN ADVANCED MANUFACTURING

-Integrity: displaying accepted social and work behaviors

-Motivation: demonstrating a willingness to work

-Dependability and reliability: displaying responsible behaviors at work

-Willingness to learn: understanding the importance of learning new information for both current and future problem-solving and decision-making

According to Monster.Com, advanced manufacturing companies in Northeast Indiana listed six soft skills most frequently in their job postings in the first half of 2010: interpersonal skills; positive attitude; high performance culture; project leadership; independent judgment; and communication skills. These soft skills were listed in at least 15 percent of the job posting during the first half of 2010.

TIER 2: FOUNDATION ACADEMIC COMPETENCIES IN ADVANCED MANUFACTURING

The following is a list of the eight academic competencies in advanced manufacturing identified in the ETA competency model:

-Applied science: using scientific rules and methods to solve problems

-Basic computer skills: using a personal computer and related applications to convey and retrieve information

-Applied mathematics and measurement: using mathematics to solve problems

-Reading for information: understanding written sentences and paragraphs in work-related documents

-Business writing: using standard business English

-Listening to and following directions: giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times

-Locating and using information: knowing how to find information and identifying essential information

-Speaking and presentation: speaking so others can understand

Manufacturers in Northeast Indiana consider the high school diploma as the entry level academic credential for the advanced manufacturing cluster, as reported by Monster.Com. Two-thirds of the job postings in the first half of 2010 in Northeast Indiana were from high school graduates

with an additional 29 percent requiring a bachelor's degree. None specified a Master's degree. Seven percent required an Associate's degree while another 3 percent specified a vocational certification.

TIER 3: WORKPLACE COMPETENCIES IN ADVANCED MANUFACTURING

-Business fundamentals: determining how an economy functions as a whole

-Teamwork: developed capacities used to work with people to achieve goals

-Adaptability and flexibility: being open to change and to considerable variety in the workplace

-Marketing and customer focus: actively looking for ways to identify market demands and met the customer or client need

-Planning and organizing: identifying complex problems and reviewing related information to develop and evaluate options and implement solutions

-Problem-solving and decision-making: considering the relative costs and benefits of potential actions to choose the most appropriate one

-Applied technology: developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems

TIER 4: INDUSTRY-WIDE TECHNICAL COMPETENCIES – ENTRY-LEVEL

MANUFACTURING PROCESS DESIGN AND DEVELOPMENT

-Research, design, implement, and continuously improve the manufacturing process to ensure product meets customer needs.

CRITICAL WORK FUNCTIONS

-Support manufacturing process design and development

-Communicate about and respond to requirements of internal and external customers

TECHNICAL CONTENT AREAS

-Fundamentals of research and development

-Technical drawings and schematics

-CAD drawing fundamentals

-Troubleshooting processes

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-Process assessment

PRODUCTION

-Set up, operate, monitor, control, and improve manufacturing processes and schedules to meet customer requirements

CRITICAL WORK FUNCTIONS

-Manage raw materials and consumables

-Operate and control production and lab equipment

-Perform manufacturing process applications and operations

TECHNICAL CONTENT AREAS

-Production basics

-Production materials

-Precision measurement

-Manual tool and equipment operations

-Basic automated systems and control operations

-Basic manufacturing process applications and operations

MAINTENANCE, INSTALLATION, AND REPAIR

-Maintain and optimize manufacturing equipment and systems

CRITICAL WORK FUNCTIONS

-Identify, diagnose, and/or repair equipment problems

-Communicate with others to ensure maintenance and repairs meet operational needs

-Maintain hands-on knowledge of equipment operations

-Maintain equipment, tools, and workstations

TECHNICAL CONTENT AREAS

-General skills

-Basic disassembly and assembly skills

-Basic maintenance and troubleshooting skills

HEALTH AND SAFETY

-Maintain a safe, healthy work environment

CRITICAL WORK FUNCTIONS

-Follow established personal safety practices

-Ensure that equipment is being used safely

-Comply with local, state, federal, and company health, safety, and environmental regulations

-Identify unsafe conditions and take corrective actions

TECHNICAL CONTENT AREAS

-Personal safety

-Safety procedures

-Regulatory compliance

SUPPLY CHAIN LOGISTICS

-Plan and monitor the movement and storage of materials and products in coordination with suppliers, internal systems, and customers

CRITICAL WORK FUNCTIONS

-Ship and receive products and materials

TECHNICAL CONTENT AREAS

-Basics of supply-chain management

-Managing inventory

-Work flow

-Production systems

-Packaging and distributing product

QUALITY ASSURANCE AND CONTINUOUS IMPROVEMENT

-Ensure product and process meets quality system requirements as defined by customer specifications

CRITICAL WORK FUNCTIONS

-Ensure materials, processes, and final product meet quality specifications

-Support and maintain quality systems

TECHNICAL CONTENT AREAS

-Quality assurance

-Improving quality

-Inspecting for quality

-Continuous improvement

TIER 5: INDUSTRY-WIDE TECHNICAL COMPETENCIES – TECHNICIAN LEVEL

MANUFACTURING PROCESS DESIGN AND DEVELOPMENT

-Research, design, implement, and continuously improve the manufacturing process to ensure product meets customer needs

CRITICAL WORK FUNCTIONS

-Interpret and clarify customer expectations and product specifications

-Design manufacturing production and production support systems

TECHNICAL CONTENT AREAS

-Research and development

-Product realization

-Technology applications

-Troubleshooting process

PRODUCTION

Set up, operate, monitor, control, and improve manufacturing processes and schedules to meet customer requirements

CRITICAL WORK FUNCTIONS

-Develop manufacturing process plans and documentation

-Monitor manufacturing processes and systems

-Manage continuous improvement processes

TECHNICAL CONTENT AREAS

-Production planning and work flow

-Production components

-Advanced production and process operations

-Production and process monitoring

-Manufacturing management

MAINTENANCE, INSTALLATION, AND REPAIR

Maintain and optimize manufacturing equipment and systems

CRITICAL WORK FUNCTIONS

-Support the installation, customization, or upgrading of equipment

-Coordinate preventive maintenance to ensure production process runs smoothly

TECHNICAL CONTENT AREAS

-Advanced installation and repair skills

-Advanced maintenance and troubleshooting skills

-Reliability and maintainability

HEALTH AND SAFETY

Maintain a safe, healthy work environment

CRITICAL WORK FUNCTIONS

-Conduct health, safety, and/or environmental incident and hazard investigations

-Conduct preventive health, safety, and/or environmental incident and hazard inspections

-Implement continuous improvement in health, safety, and/or environmental practices

TECHNICAL CONTENT AREAS

-Incident and hazard investigations

-Additional knowledge

-Environmental protection and waste management

-Preventive health, safety, or environmental inspections

-Continuous improvement in health and safety

SUPPLY CHAIN LOGISTICS

Plan and monitor the movement and storage of materials and products in coordination with suppliers, internal systems, and customers

CRITICAL WORK FUNCTIONS

-Manage purchasing and just-in-time materials flow, shipping and receiving, packaging, and transportation

-Control inventory of materials and products

-Develop and maintain production and delivery schedules and supplier networks

TECHNICAL CONTENT AREAS

-Supply-chain management

-Automated material handling

-Resources planning

-Detailed scheduling and planning

-Executing operations

-Awareness of global impacts

QUALITY ASSURANCE AND CONTINUOUS IMPROVEMENT

Ensure product and process meets quality system requirements as defined by customer specifications

CRITICAL WORK FUNCTIONS

-Monitor production for product and process quality

-Employ audits and inspections to maintain the quality and continuous improvement process

-Correct the product and process to meet quality standards

-Suggest and/or implement continuous improvement actions

TECHNICAL CONTENT AREAS

-Probability and statistics

-Data analysis and presentation

-Statistical process control methods

-Quality assurance audits

-Corrective and preventive actions

-Benchmarking and best practice

TIER 6: OCCUPATION SPECIFIC KNOWLEDGE AREAS IN ADVANCED MANUFACTURING

Tier 6 is a further refinement of knowledge and skills needed for an occupation or group of occupations in certain industries and would be seen as further occupational training specific to certain jobs in certain industries. Therefore, they reflect the need for specialized competencies in a particular industry, such as paper, chemical, auto, etc.

According to a study by the Indianapolis Private Industry Council, twenty-four occupations were deemed to be critical to advanced manufacturing in central Indiana, including: Engineering; Math/Science; Production; Installation, Maintenance and Repair; and Transportation:

Engineering Occupations
- Industrial engineer
- Chemical engineer
- Electrical engineer
- Industrial engineering technician

Math/Science Occupations
- Life scientist

- Physical scientist
- Computer programmer

Production Occupations
- Production supervisor
- CNC programmer/operator
- Tool and die maker
- Machinist
- Inspector/tester
- Electrical assembler
- Team assembler
- Cutting, punching and press machine operator
- Molding machine operator
- Packaging and filling machine
- Welder
- Chemical process machine operator
- Model and pattern maker

Installation, Maintenance and Repair Occupations
- Industrial machinery mechanic

Transportation Occupations
- Industrial truck and tractor operator[1]

The report on advanced manufacturing from the Indianapolis PIC found that three occupations were critical in this group of industries: tool and die maker; machinist; and machine operator. These employers emphasized that versatility among these occupations is essential because of the need to frequently make, calibrate, and replace dies for short-batch production.[2]

The Northeast Indiana Labor Market Analysis completed by Monster.Com in January 2011 demonstrated that many of these same occupations are in demand nationally among Advanced Manufacturing companies. The leading occupations in Advanced Manufacturing from a job posting perspective, in rank order, were:

1. Industrial engineer
2. Supervisor of production workers
3. Mechanical engineer
4. Helpers-production workers
5. Machinist
6. Inspectors
7. Tool and die makers
8. Industrial machinery mechanics
9. Industrial production managers

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[1] Indianapolis Private Industry Council, Industry Transformation: Growth and Change in Advanced Manufacturing in Central Indiana, Spring 2006, pp. 7 & 8.

[2] Ibid, p. 8.

10. Electrical and electronic assemblers

These ten occupations accounted for 88 percent of all job postings in the cluster nationally during the first half of 2010. In Northeast Indiana, eight of the same occupations were most in demand. The exceptions were that tool and die makers and electrical assemblers were not in demand in NE Indiana while Computer-controlled machine tool operators and Printing machinery operators were in demand regionally. These are the most prevalent occupations within the cluster for which Tier 7 and Tier 8 competencies are most needed.

TIER 7: OCCUPATION SPECIFIC TECHNICAL COMPETENCIES IN ADVANCED MANUFACTURING

Tier 7 Competencies are the technical skills required for a specific occupation. These match most closely to apprenticeship and journey level credentials as well as certain specialty skills such as metalworking. Any training aimed at increasing or broadening the skills of such workers would relate to this tier.

Specific technical skills most in demand in Northeast Indiana among Advanced Manufacturing companies in the first half of 2010, as reported by Monster.com, were product development, degree in engineering, understanding of manufacturing processes, CAD/AutoCad, lean manufacturing, and Microsoft Office.

TIER 8: OCCUPATION SPECIFIC REQUIREMENTS

Tier 8 requirements are additional occupation-specific requirements needed for work in a particular occupation. An example would be holding a state license to operate a high pressure boiler.

Among the Tier 8 credentials cited most frequently by Advanced Manufacturing companies in Northeast Indiana in the first half of 2010, according to Monster.com, were CAD/AutoCAD, PLC-Programmable Logic Controller, Unigraphics software, Solidworks software, Six Sigma Black and Green belt, ASQ Quality Technician, CATIA (Computer Aided Three-Dimensional Interactive Applications), and ISO Auditor.

TIER 9: MANAGEMENT COMPETENCIES

Tier 9 Competencies are the knowledge and skills needed to be a competent manager in a specific industry or firm. Examples would be leadership and supervisory competencies.

According to a study by the Indianapolis Private Industry Council, twenty-four occupations were deemed to be critical to advanced manufacturing in central Indiana. The list includes three management occupations.

• Managerial Occupations

- Industrial production manager

- Engineering manager

Supervisors and Managers of production workers were the occupations within Advanced Manufacturing in Northeast Indiana with the third highest number of job postings during the first half of 2010. Supervisor jobs accounted for 31 percent of the job postings in the region.

ALTERNATIVE COMPETENCY MODELS IN ADVANCED MANUFACTURING

The Advanced Manufacturing Competency Model has also served as the foundation for the National Association of Manufacturers-Endorsed Manufacturing Skills Certification System and as a framework for developing and enhancing manufacturing education and training programs across the country.

NAM-ENDORSED MANUFACTURING SKILLS CERTIFICATION

The NAM-Endorsed Manufacturing Skills Certification System is built upon the framework of skills and competencies identified by manufacturers for manufacturers. The first release of the NAM system focuses on the core skills, including personal effectiveness competencies such as willingness to learn and dependability; academic competencies such as applied science and presentation skills; workplace competencies such as teamwork and applied technology; and industry-wide technical competencies such as supply chain logistics and health & safety.

To assure workers have the basic academic and general workplace skills, the NAM system is grounded on the ACT National Career Readiness Certificate. The certificate will assure manufacturers that individuals who choose to enter the workforce immediately after high school or postsecondary education have the core academic and workplace competencies for employment.

Entry-level manufacturing careers across all sectors require foundational competencies in health and safety, quality assurance and continual improvement, manufacturing process, development and design, and production and supply chain logistics. The NAM system includes: for entry-level production workers, the Manufacturing Skill Standards Council's Certified Production Technician (CPT); for metal-working, the National Institute for Metalworking Skills (NIMS) machining and metal-forming credentials; and for welding, the American Welding Society's Certified Welder credentials. Four community colleges (Shoreline in Washington, Forsythe Technical in North Carolina, Alamo in Texas, and Lorain in Ohio) were the first to begin implementation of this certification.

MANUFACTURING SKILL STANDARDS COUNCIL (MSSC) CERTIFICATION

The Manufacturing Skill Standards Council (MSSC) is an industry-led standards-based, training, assessment, and certification system focused on the core skills and knowledge needed by the

nation's production and supply chain logistics workers. The nationwide MSSC System, based upon industry-defined and federally-endorsed national standards, offers both entry-level and incumbent workers the opportunity to demonstrate that they have acquired the skills increasingly needed in the high-growth, technology-intensive jobs of the 21st century.

The MSSC offers certificate(s) and/or certification for both Production Workers (Certified Production Technician or CPT) and Front Line Workers in Supply Chain Logistics foundational-level (Certified Logistics Associate or CLA) and mid-level (Certified Logistics Technician or CLT). Currently, Ivy Tech Community College is the only authorized provider of MSSC training and certification at the post-secondary level in Indiana.

MSSC benefits to employers include:

- A pipeline of skilled workers by embedding MSSC certification training into the schools

- Decreased recruitment costs by providing job candidates with industry-recognized credentials

- Elimination of remedial training costs by providing well prepared workers

- A diagnostic tool to benchmark incumbent workers against a high-performance national standard

- Increased ROI for training by targeting it against the gaps identified by the MSSC diagnostic tool

- An aid to attracting, motivating, and retaining qualified employees.

AUTOMATION COMPETENCY MODEL

One subset of the Advanced Manufacturing Cluster are automation professionals who are engineers, technologists, technicians, and others who create and apply technologies such as robotics, electro-optics, wireless applications, and systems integration to control manufacturing and production processes. Their work supports many industries, including process and component manufacturing and packaging, transportation, utilities, oil and gas, mining, defense, and facility operations. Because of the high-tech, rapidly evolving nature of the field, automation workers need years of experience and knowledge spanning several engineering disciplines to do their jobs effectively. As a result, the profession faces a major challenge in preparing enough qualified workers to meet current and future employer demand. The Automation Federation (AF) is a not-for-profit, umbrella organization that works to promote the automation profession and develop the education and training programs that will prepare the workers of the future.

During 2008-2009, AF, ETA, and other stakeholders worked to develop the Automation Competency Model (ACM). Using the Advanced Manufacturing Competency Model as a starting

point, AF convened several meetings of subject matter experts to develop and validate the draft. It was then circulated and revised until it accurately depicted the competencies necessary for a worker to be successful in the automation industry. When the ACM was completed, it effectively became the foundation for AF's workforce development plans.

The ACM is also a resource for developing the education and training programs that will prepare these students for careers in automation. The model is a roadmap for developing articulation agreements that will allow students to take post-secondary automation courses while still in high school. In addition, AF is planning to build an automation academy, which will be a high school specialized for students pursuing automation careers.[3]

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[3] Automation Federation,
http://www.careeronestop.org/competencymodel/info_documents/AutomationCaseSummary.pdf

TRANSPORTATION AND LOGISTICS

The Transportation and Logistics competency model was developed by the Employment and Training Administration (ETA) in collaboration with an industry trade group called the Transportation, Distribution and Logistics Community of Practice.

The Transportation, Distribution, and Logistics Competency Model also consists of nine tiers. Tiers 1 through 3 contain the same Foundation Competencies found in Advanced Manufacturing, which form the foundation needed to be ready to enter the workplace, and hence are not repeated in this section of the report. The only competencies discussed here are those in Tiers 1-2 that were indentified by Monster.Com as prevalent in the job postings in this cluster in Northeast Indiana during the first half of 2010.

The competencies shown on Tiers 4 and 5 are referred to as Industry Competencies and are specific to the transportation and logistics industry cluster. The T&L competency model does not have any Tier 5 competency. All of the competencies in this cluster are cluster specific. Tiers 6 through 9 represent the specialization that occurs within specific occupations within this industry cluster.

Competencies in Tiers 6-8 are occupation specific. The occupations most in demand within each of the cluster, as identified by Monster.Com, is provided in the discussion of Tier 6 of the transportation and logistics model. Monster.Com data is incorporated into the discussions of Tier 1-Soft Skills; Tier 2-Academic Competencies; Tier 7-Technical skills; and Tier 8; Competencies. Specific information about the demand for Tier 9- supervisory skills- is discussed in each of the three competency models when supervisory skills are in demand within a cluster.

The competencies in this report for Northeast Indiana supplement those listed online in the Competency Model Clearinghouse maintained by the Employment Training Administration at: http://www.careeronestop.org/CompetencyModel. The online site also give occupation specific credentials and more details for Tier 5-9 competencies. These credentials are listed in a series of O*Net occupational profiles which can be accessed at the above website.

FIGURE 3. TRANSPORTATION, DISTRIBUTION, AND LOGISTICS COMPETENCY MODEL
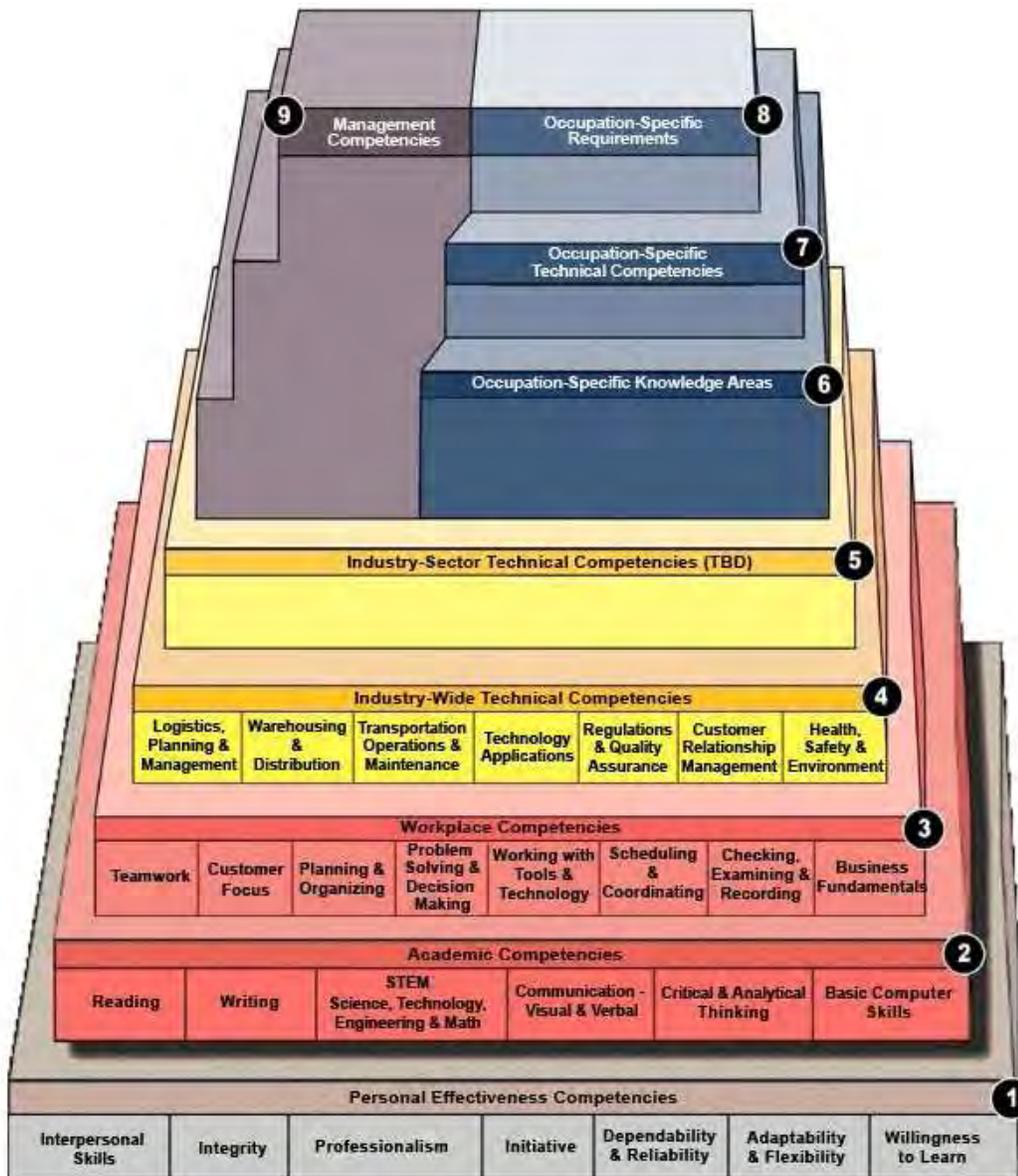
Source: U.S. Department of Labor, ETA.

TIER 1: SOFT SKILLS AND INTERPERSONAL COMPETENCIES

Soft skills listed most frequently in Northeast Indiana job postings were: Communication skills; Customer service; Continuous Improvement; and Problem solving. These skills were listed in 8 percent or more of the job postings in the region within this cluster during the first half of 2010.

They are specific to the cluster in Northeast Indiana and supplement these personal effectiveness competencies identified in the national T&L competency model. Some of the identified soft skills are a compilation of academic, workplace, and Tier 4 competencies.

TIER 2: ACADEMIC COMPETENCIES

The level of academic preparation listed most frequently in Northeast Indiana job postings were High School diploma (67%); Bachelor's degree (22%); and Master's degree (11%). None of the job posting specified an Associate's degree or vocational certificate.

TIER 4: INDUSTRY-WIDE TECHNICAL COMPETENCIES

LOGISTICS PLANNING & MANAGEMENT

The planning, management, and control of the efficient and effective physical distribution of materials, products, and people to meet customer's requirements.

CRITICAL WORK FUNCTIONS

-Relates the multidimensional impact of transportation on the economy, public systems, national and local infrastructure, and the environment

-Understands and evaluates the transportation systems' political, regulatory, and legal issues

-Describes and assesses the strengths and weaknesses of the major modes of international transportation

-Applies systems analysis to the elements, relationships, and functions in the supply chain

-Develops plans including routes and schedules for transporting people and goods

-Adjusts transportation and distribution plans in response to changing conditions

-Implements security measures to minimize loss

-Ensures that cargo arrives at the right location, on time, and in the safest, most economical manner

-Maintains information on the movement of people/goods according to planned routes and schedules

TECHNICAL CONTENT AREAS

-Planning

-Forecasting

-Contracting

-Risk factors

-Scheduling and monitoring

-Security

-Documentation

-Routes and Schedules

-Local Delivery

-Long-Distance

-Special Handling

-Hazardous Materials

WAREHOUSING & DISTRIBUTION

Activities related to the operation of transportation and distribution facilities including ports, terminals, and warehouses.

CRITICAL WORK FUNCTIONS

-Describes warehousing as part of the total supply-chain process

-Processes incoming products including unloading, receiving, checking, marking/identification and transporting to storage pick-up areas, work stations, or outbound staging areas and storing products for order-picking

-Process outbound shipments including order-picking, sorting and checking; packaging, sealing, weighing, and manifesting; and loading and load balancing and shipping

-Completes shipping papers and other appropriate labels and documentation

-Recognizes and identifies proper marking, labeling, and placarding

-Ships products on time and in the most cost-effective manner

-Tracks, sorts, labels, and load cargo accurately and safely

-Traces lost shipments and maintains loss and damage claim records

TECHNICAL CONTENT AREAS

-Warehouse Operations

-Shipping and receiving

-Packaging

-Product stacking requirements

-Security and loss prevention systems

-Warehouse records and documentation

-Automated material handling systems

-Distribution and information systems

-Bar-coding, racking, labeling, and cross-docking

-Supply Chain Logistics

-Supply chain elements

-Inventory management

-Customs and export control

-Logistics outsourcing

TRANSPORTATION OPERATIONS & MAINTENANCE

Activities related to the movement of people, materials, and products by road, air, rail, and water.

CRITICAL WORK FUNCTIONS

-Explains the role of transportation in the economy, the demand for transportation, and the role of government in regulating the industry

-Drives or operates transportation equipment

-Maintains and repairs transportation equipment

-Dispatches or coordinates schedules of transportation equipment

-Implements transportation plans and schedules

-Demonstrates understanding of activities related to dispatching, routing, and tracking transportation vehicles

-Recognizes universal signs and symbols such as colors, flags, stakes to function safely in the workplace

-Signals and observes directions or warnings to and from coworkers

-Examines vehicles to detect malfunctions, damage, or maintenance needed

-Updates maintenance records and logs according to company policies and procedures and government regulations

TECHNICAL CONTENT AREAS

-Modes of Transportation

    -Air Transportation - transportation of passengers and/or cargo using aircraft, such as airplanes and helicopters

    -Rail Transportation - transportation of passengers and/or cargo using railroad rolling stock

    -Water Transportation-transportation of passengers and cargo using watercraft, such as ships, barges, and boats

    -Truck Transportation-over-the-road transportation of cargo using motor vehicles, such as trucks and tractor trailers

        -General freight transportation - handles a wide variety of general commodities, generally palletized, and transported in a container or van trailer
        Specialized freight transportation - transportation of cargo that require specialized equipment due to inherent characteristics (size, weight, shape)

    -Public transportation infrastructure (e.g., highways, airports, train terminals, ports, commercial space launching facilities, inter-modal facilities)

    -Intermodal Transportation - transportation of passengers or freight using multiple modes of transportation

-Operation

-Traffic flow: hubs, facilities, staging areas

-Transportation routes and schedules

    -Dispatch

    -Signaling

    -Scheduling

-Tracking

-Maintenance

-Equipment operation

-Equipment/machinery maintenance services

-Maintenance plans and schedules

-Maintenance logs

TECHNOLOGY APPLICATIONS

Maintaining awareness of technological advances and applying appropriate technology to transportation, distribution, and logistics processes.

CRITICAL WORK FUNCTIONS

-Stays informed of technological advances that impact TDL activities

-Awareness of the benefits associated with implementing new technologies

-Application or use of various technologies that impact TDL activities

TECHNICAL CONTENT AREAS

-Information Systems

-Geographic Information Systems (GIS)

-Electronic Data Interchange (EDI)

-Global Logistics Systems (GLS)

-Intelligent Transportation Systems (ITS)

-Advanced Traveler Information Systems (ATIS)

-Transportation Management Systems (TMS)

-Warehouse Management Systems (WMS)

-Vehicle Monitoring Systems (VMS)

-Technology

-Radio Frequency Identification (RFID)

-AutoID Technologies

-Materials handling technologies (e.g., voice-directed order picking technology)

REGULATIONS & QUALITY ASSURANCE

Compliance with relevant local, state, federal, and international laws and regulations that impact the transportation, distribution, and logistics industry. Application of industry standards to ensure quality service.

CRITICAL WORK FUNCTIONS

-Understands the roles and functions of government agencies (e.g., Federal Aviation Administration) in regulating and supporting TDL organizations

-Complies with local, state, federal, and international laws

-Maintains logs and other required documents

-Monitors processes to ensure they are effective

-Inspects facilities or equipment for regulatory compliance

-Ensures materials and processes meet quality specifications

-Ensures equipment is operating to prescribed standards

-Raises and reports quality issues in a timely manner

-Suggests and/or implements continuous improvement actions such as business process reengineering and performance improvement strategies

TECHNICAL CONTENT AREAS

-Standards

    -International Organization for Standardization (ISO) standards

    -Tariff and trade regulations

    -Labeling regulations

    -Environmental regulations

    -OSHA regulations

    -Quality Assurance

-Total Quality Management (TQM)

    -Enterprise Lean

    -Six Sigma methodology

CUSTOMER RELATIONSHIP MANAGEMENT

Marketing/selling transportation services and providing customer service to consumers of transportation services.

CRITICAL WORK FUNCTIONS

-Follows plans to meet sales goals with existing products and services

-Sells logistics and transportation products and services

-Determines customer needs and requirements

-Processes customer orders and purchases

-Greets customers, guests, visitors, or passengers in a professional manner

-Provides ongoing customer service to both internal and external customers

-Responds to customer problems, complaints, and questions

-Tracks status of customer orders/purchases, transportation arrangements, and schedules

TECHNICAL CONTENT AREAS

-Sales & Marketing Operations

    -Economic/market trends

    -Competition

    -Transportation, distribution, and logistics products and services

    -Sales/marketing plans

    -Sales/order documentation

-Customer Service

    -Internal and external customers

    -Company policies and procedures

-Confidentiality

-Handling questions, problems, complaints

-Educating the customer

-Customer satisfaction and commitment to product or service

HEALTH, SAFETY, & ENVIRONMENT

Assessing and managing risks associated with safety and environmental issues.

CRITICAL WORK FUNCTIONS

-Understands and follows relevant safety rules, regulations, and laws

 -Follows organizational policies and procedures to maintain a safe work area

 -Identifies and describes workplace hazards

 -Wears personal protective equipment (PPE) as appropriate

 -Follows emergency procedures

 -Completes safety training on pertinent equipment and applies safe operating procedures

 -Correctly identifies hazardous materials and substances

 -Handles/transports hazardous materials in accordance with government regulations and health standards

 -Reports health, safety, and environmental problems

 -Maintains documentation of compliance with health, safety, and environmental management systems

-Stays up-to-date on environmentally-friendly trends in the industry

-Practices sustainability by using processes that are non-polluting, conserving of energy and natural resources, economically efficient, and safe for workers, communities, and consumers

-Follows organizational procedures to reduce emissions, increase energy efficiency, and reduce the organization's carbon footprint

TECHNICAL CONTENT AREAS

-Rules and Regulations

-OSHA regulations

-HAZMAT regulations

-Personal Protective Equipment

-Health, safety, and environmental risks

-Environmental Concerns

-Hazardous Materials

-Green issues impacting TDL industry: Greenhouse gas emissions, Energy efficiency, Carbon footprint, Fuel-saving technologies, Air/water quality

-Safety Procedures

-Protective Gear

-Safety Practices

-Workplace Hazards

-Emergency Preparedness

-Investigations and Audits

-Documentation

TIER 6: OCCUPATIONAL SPECIFIC COMPETENCIES

The vast majority of job postings in both the national and Northeast Indiana T&L cluster were for truck drivers and supervisors. Four occupations associated with these two category comprise 85 percent of the job postings nationally and 95 percent of the job postings in Northeast Indiana. Other occupations that appeared in Northeast Indiana in the first half of 2010 were:

• Cargo and freight agents

• Shipping, receiving and traffic clerks

The hard skills listed most commonly in these job postings were Class A Commercial Driver's License and Hazmat Endorsement.

TIER 7: TECHNICAL SPECIFIC COMPETENCIES

Specific technical competencies identified by Monster.Com from job postings in the T&L cluster include forklift operation, operations management, customer service, and typing. These skills

were listed in at least 1.5 percent of the overall job postings in this cluster during the first half of 2010.

TIER 8: OCCUPATION SPECIFIC CREDENTIALS

The most commonly referenced credential in this cluster, according to Monster.Com, was for Class A Commercial Driver's License, referenced in 23 percent of the job postings in Northeast Indiana during the first half of 2010. Hazmat Endorsement and High School Diploma were the next most referenced credential, at around 10 percent of the job postings. Another commonly cited credential was for Certified Forklift Operator.

TIER 9: MANAGEMENT COMPETENCIES

Management credentials and experience were competencies listed in 39 percent of the job postings analyzed by Monster.Com. Supervisory skills are an important competency for T&L companies in Northeast Indiana.

THE INSURANCE INDUSTRY

The Employment and Training Administration collaborated with the Financial Services Roundtable to develop a competency model for the financial services industry. The insurance cluster in Northeast Indiana represents a subset of the financial services sector with its specific industry specific competencies in Tiers 5-9. The competencies in Tiers 1-3 are similar to those in Advanced Manufacturing and Transportation-Logistics, discussed in an earlier section of this report. The six competencies in Tier 4 outlined in the Financial Services Competency model, discussed in the following section of this report, are applicable to the Insurance sector.

The competencies shown on Tiers 4 and 5 are referred to as Industry Competencies and are specific to the financial services cluster.   The Insurance industry does not have any specific Tier 5 competencies. All of the competencies in this cluster are cluster specific. Tiers 6 through 9 represent the specialization that occurs within specific occupations within this industry cluster.

Competencies in Tiers 6-8 are occupation specific. The occupations most in demand within the cluster, as identified by Monster.Com, is provided in the discussion of Tier 6 of the insurance model.   Monster.Com data is incorporated into the discussions of Tier 1-Soft Skills; Tier 2-Academic Competencies; Tier 7-Technical skills; and Tier 8; Competencies. Specific information about the demand for Tier 9- supervisory skills- is discussed in each of the three competency models when supervisory skills are in demand within a cluster.

The competencies in this report for Northeast Indiana supplement those listed online in the Competency Model Clearinghouse maintained by the Employment Training Administration at: http://www.careeronestop.org/CompetencyModel. The online site also give occupation specific credentials and more details for Tier 5-9 competencies. These credentials are listed in a series of O*Net occupational profiles which can be accessed at the above website.

FIGURE 4. FINANCIAL SERVICES COMPETENCY MODEL
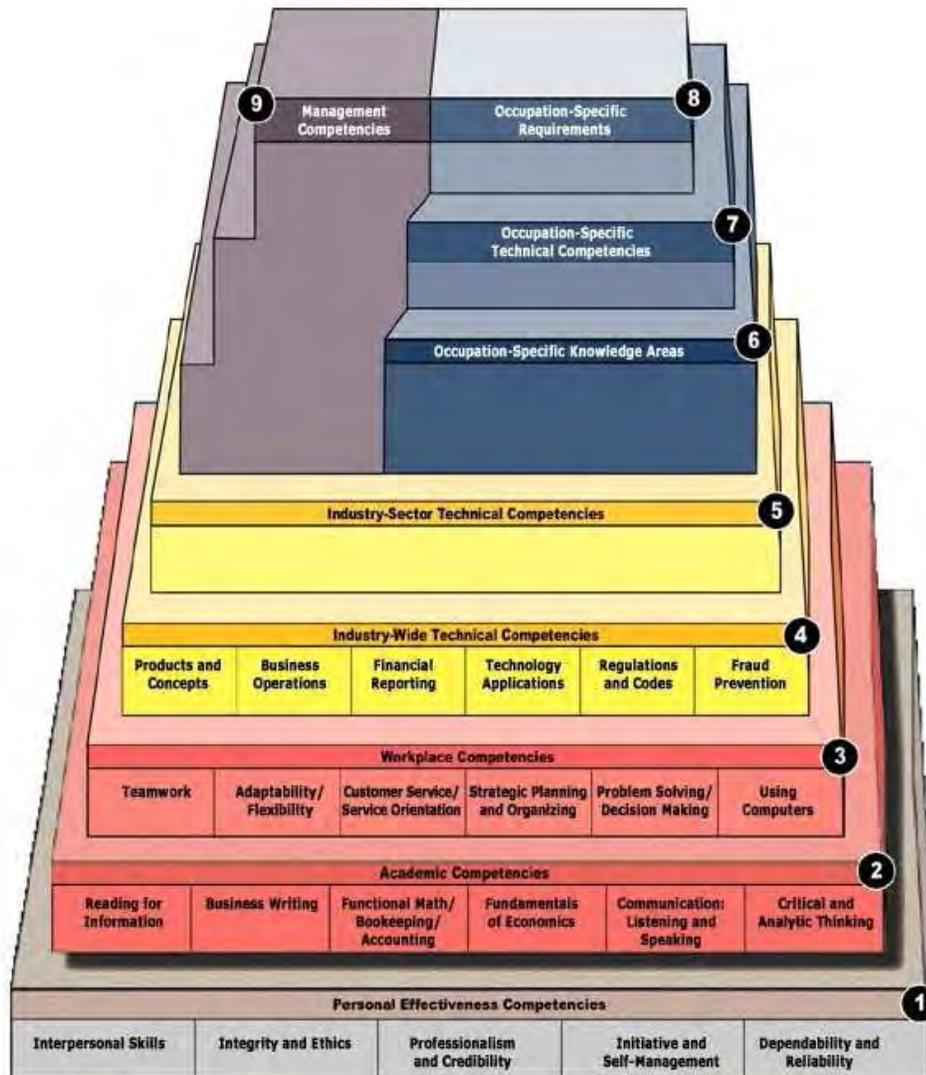
Source: U.S. Department of Labor, ETA.

TIER 1: PERSONAL EFFECTIVENESS COMPETENCIES

The soft skills listed most frequently in job postings in Northeast Indiana during the first half of 2010, according to Monster.Com, were communications skills, customer service skill, and problem solving skills. Communications skills were listed in over 23 percent of the job postings while customer service and problem solving were listed in more than 10 percent of total job postings.

TIER 2: ACADEMIC COMPETENCIES

The level of academic preparation in the insurance cluster is much higher than in the other clusters in Northeast Indiana. Nearly half of job postings during the first half of 2010 required a Bachelor's degree, another 17 percent required some college or an Associate's degree while only 35 percent listed a high school diploma. Vocational certification was listed in as an academic credential in just 3 percent of the job postings.

TIER 4: INDUSTRY-WIDE TECHNICAL COMPETENCIES

PRODUCTS AND CONCEPTS

Knowledge of the products and concepts relating to the financial services industry, including financial instruments, financial management, insurance principles, and cash and capital principles.

CRITICAL WORK FUNCTIONS

- Examine characteristics to distinguish between stocks, bonds, and commodities.

- Examine characteristics to distinguish between insurance and annuity products.

- Develop procedures to create a financial plan.

- Analyze tax structures and consequences to assist in business decision-making.

- Examine characteristics to explain underwriting functions.

TECHNICAL CONTENT AREAS

- Financial Instruments

    -Understands the available financial instruments and risk associated with each instrument;

    -Recognizes appropriate situations for each instrument;

    -Understands basic differences and similarities between debt-based, equity based, and foreign exchange instruments;

    -Recognizes appropriate investment opportunities associated with each instrument.

    -Financial instruments include: Securities (Stocks, Bonds, T-bills), Other cash (Loans, Certificates of Deposit), Exchange traded derivatives (Futures, Options), Over-the-counter derivatives (Swaps, Caps, Exotic Instruments)

- Financial Management

  -Demonstrates an awareness of the available analytical functions associated within the financial services industry;

  -Understands the basic concepts associated with financial analysis, credit analysis, debt management, risk management, valuation strategies, investment profitability, and underwriting.

- Insurance Principles

  -Understands the principles of insurance and insurance contracts;

  -Demonstrates a knowledge of the different types of insurance (e.g., life, health, property, liability) and the associated risk covered by the insurance.

- Cash and Capital Principles

  -Understands the nature of cash, the United States monetary system, and the time value of money;

  -Recognizes the risk, return, and opportunity costs associated with capital

BUSINESS OPERATIONS

Performs activities associated with transaction management and understands the business operations performed by organizations within the financial services industry.

CRITICAL WORK FUNCTIONS

- Exercise appropriate techniques to gather client information.

- Examine client's money management patterns to determine a client's financial situation.

- Describe procedures necessary to execute financial transactions.

- Use financial information to manage client records.

TECHNICAL CONTENT AREAS

- Transaction Management

  -Demonstrates the ability to process financial transactions without error.

  -Resolves cash discrepancies, and maintains accurate records of transactions.

  -Understands the principles of confidentiality as they relate to transaction management.

- Financial Organizations

  -Understands the roles and activities provided by organizations within the financial services industry, including banks, investment banking, mortgage banking, insurance companies, and stock brokerages.

FINANCIAL REPORTING

Knowledge of the documents associated with measuring a business financial information.

CRITICAL WORK FUNCTIONS

- Review client financial information to develop a client's account statement.

- Analyze and interpret financial data to produce accurate reports.

- Compile business transaction data to report financial information.

TECHNICAL CONTENT AREAS

- Financial Statements

  -Demonstrates the ability to prepare and interpret balance sheets, income statements, cash flow statements, and statements of retained earnings.

  -Adheres to record keeping requirements associated with financial statements.

TECHNOLOGY APPLICATIONS

Knowledge of basic technology as it specifically relates to the financial services industry.

CRITICAL WORK FUNCTIONS

- Use spreadsheets and accounting software to maintain and update records.

- Use data bases and other computer management tools to manage office records.

TECHNICAL CONTENT AREAS

- Technology Applications

  -Demonstrates a proficiency in the use of financial software, including applications relating to accounting and monetary transactions;

  -Understands the appropriate digital channels for exchanging electronic transaction information;

-Recognizes appropriate techniques for storing and retrieving data.

REGULATIONS AND CODES

Knowledge of relevant regulations and codes that impact the financial services industry.

CRITICAL WORK FUNCTIONS

- Research the regulatory requirements of financial and investment planning and security sales to assure compliance with codes.

- Use federal, state, and local regulations to determine financial records management.

- Review most current state and federal regulations to apply the tax code professionally.

- Compare legal interpretations to clarify regulations.

TECHNICAL CONTENT AREAS

- Regulation and Code Compliance

  -Understands and complies with all relevant laws imposed by regulatory agencies including:

  -Federal Deposit Insurance Corporation

  -Board of Governors of the Federal Reserve System

  -Federal Trade Commission

  -Internal Revenue Service

  -National Credit Union Administration

  -U.S. Securities and Exchange Commission

  -State agencies

-Follows the financial services industry codes of practice;

-Monitors new legislation impacting the financial services industry.

FRAUD PREVENTION

Knowledge of the appropriate procedures for identifying, reporting, and preventing fraud.

CRITICAL WORK FUNCTIONS

- Analyze current laws and regulations to maintain appropriate financial practices.

- Examine accounting system elements to demonstrate good accounting practices.

TECHNICAL CONTENT AREAS

- Fraud Prevention

  -Demonstrates an awareness of the necessary steps for preventing fraud;
  -Understands the appropriate procedures for fraud investigations and internal audits as they relate to detecting and reporting of fraudulent behavior;
  -Understands the legal and ethical responsibilities as they relate to fraud

TIER 6: OCCUPATION SPECIFIC COMPETENCIES

The occupations listed most frequently in the Insurance Cluster, both nationally and in Northeast Indiana, were in computer-related fields. Thirty-seven percent of the job postings in the first half of 2010, according to Monster.Com, were for computer software engineers, analysts, or specialists. Other common occupations in the cluster were:

- Insurance sales agents

- Network and computer systems administrators

- Executive secretaries

- Supervisors

- Computer programmers

- Lawyers

- Computer and Information Systems Managers

TIER 7: OCCUPATION SPECIFIC TECHNICAL COMPETENCIES

The specific technical skills mentioned most frequently in job postings in the Insurance Cluster during the first half of 2010 were computer science and information technology skills. Specific requirements were listed as Computer Science (12% of postings), Information technology (9% of postings), Microsoft office (6% of postings) and Software development (6% of postings). The insurance industry clearly has a under-appreciated need for computer science skills in its workforce.

TIER 8: OCCUPATIONAL SPECIFIC CREDENTIALS

Most of the credentials in the insurance industry relate to general education and experience. Only three specific credentials were listed in the Insurance cluster in Northeast Indiana in the first half of 2010 and none of the credentials were listed in more than 1 percent of the job postings. The three specific credentials were: Associate of the Society of Actuaries (ASC); Personal Financial Specialist (PFS) and Chartered Life Underwriter (CLU). While these credentials are not common they are critical to the functioning of the cluster, as revealed in our insurance industry focus groups in the fall of 2010. The other specific occupational credential that insurance executives in the focus groups listed as desirable was the Bachelor's degree in Insurance. This credential is important for promotion to mid-level jobs in the insurance cluster.

CONCLUSIONS

The three competency models outlined in this report encompass about 15 percent of the job postings in Northeast Indiana during the first half of 2010. Our examination of the models suggests that the personal, academic, and workplace competencies (Tiers 1-3 in the model) are nearly identical.

The Tier 4 competencies differ significantly among the clusters. In Advanced Manufacturing, industry leaders have identified seven technical competencies. One of these competencies -- supply chain logistics -- overlaps with the Tier 4 competencies in Transportation & Logistics. One of the Tier 4 competencies in Transportation & Logistics -- Technology Applications -- overlaps with the six Tier 4 competencies in the Insurance cluster.

The academic requirements differ significantly among the three clusters. Advanced Manufacturing and Transportation and Logistics primarily require a high school diploma, although up to a third of the job postings in each of these clusters requires at least a Bachelor's degree. Insurance, by contrast, typically sets a Bachelor's degree as the minimum academic preparation for the industry. Only a third of the job postings in the insurance cluster list a high school diploma as the minimum education.

A significant share of the job postings in Northeast Indiana require supervisory and management skills, which are listed in Tier 9, the top tier in the Competency Model pyramid. This is true in both the Advanced Manufacturing and Transportation & Logistics models.

The Tier 6 or Occupation Specific Competencies listed most frequently in Northeast Indiana differ considerably among the three clusters. The most common of the skilled occupations in the three clusters in terms of absolute job postings are industrial engineer; production supervisor; mechanical engineer; machinist; tool and die maker; industrial machinery mechanics; truck driver; forklift operator; computer software engineer; computer analyst; computer Specialist; and computer programmer. Each of these occupations requires an apprenticeship, college degree in a specific field, or industry-specific credential.

As the Occupation specific competencies differ substantially between the three clusters, specific training programs based on the distinctive competency models are recommended.

APPENDIX

O*NET Knowledge Areas used to bridge academic curricula with Tier 7 and Tier 8 competencies

- Administration & Management
- Biology
- Building & Construction
- Chemistry
- Clerical
- Communications & Media
- Computers & Electronics
- Customer & Personal Services
- Design
- Economics & Accounting
- Education & Training
- Engineering & Technology
- English Language
- Fine Arts
- Food Production
- Foreign Language
- Geography
- History & Archeology
- Law & Government
- Mathematics
- Mechanical
- Medicine & Dentistry
- Personnel & Human Resources
- Philosophy & Theology
- Physics
- Production & Processing
- Psychology
- Public Safety & Security
- Sales & Marketing
- Sociology & Anthropology
- Telecommunications
- Therapy & Counseling
- Transportation