



MINNESOTA DEPARTMENT OF
LABOR & INDUSTRY

MINNESOTA PIPELINE PROJECT

PRIVATE INVESTMENT, PUBLIC EDUCATION LABOR AND INDUSTRY EXPERIENCE



**ADVANCED
MANUFACTURING**



AGRICULTURE



**HEALTH CARE
SERVICES**



**INFORMATION
TECHNOLOGY**

Industry Councils Year End Results Meetings
June 2015



Agenda

1. **Welcome and Introductions**
2. **MN PIPELINE Updates**
3. **Introduction of New Legislation**
4. **MN PIPELINE Project Discussion and Feedback**
5. **Next Steps and Closing**



Minnesota PIPELINE Project

Private Investment, Public Education, Labor and Industry Experience

State agencies to work with recognized industry experts, representative employers, higher education institutions, and labor representatives to define competency standards for occupations in:

- advanced manufacturing
- agriculture
- health care services
- information technology



PIPELINE Project Objectives

- **Develop and enhance Minnesota skilled workforce**
- **Participation from industry leaders**
- **Expand dual – training and registered apprenticeship in Minnesota**





Dual-training and Registered Apprenticeship

Dual-training:		Registered Apprenticeship:
Dual-trainee is an employee of participating employer		Registered Apprentice is an employee of sponsoring employer
Competency Standards	Work Process	Work process: 2,000 hours or equivalent of structured OJT
	Related Instruction	Related technical instruction: 144 hours each year or equivalent
		Safety training: 50 hours
		Progressive wage schedule
		State issued completion certificate



PIPELINE Project Plan

Component #1

Convene *Industry Councils* for four industries:

- Advanced Manufacturing
- Agriculture
- Healthcare Services
- Information Technology

Component #2

Develop *competency standards* for up to four occupations in each industry.

Component #3

Progress report and implementation of industry council *recommendations*.





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Minnesota PIPELINE Project

Component #1

Convene *Industry Councils* for four industries



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Industry Councils

249 participants in Industry Councils

- **95 employers and industry association representatives**
- **46 education representatives**
- **21 labor and labor/education representatives**
- **87 government, legislative and other**





Industry Councils Overview



Understanding requirements of the industry	Gathering information	Feedback and next steps	Reporting outcomes
<p data-bbox="384 695 789 846">Identify current and future industry workforce needs.</p> <p data-bbox="384 922 684 1073">Discuss current state of each industry.</p>	<p data-bbox="814 695 1125 906">Select at least three occupations for each industry.</p> <p data-bbox="814 982 1131 1247">Identify experts to assist with occupational competency validation.</p>	<p data-bbox="1199 695 1530 906">Explore dual-training/ apprenticeship delivery models.</p> <p data-bbox="1199 982 1549 1247">Receive feedback to implement dual-training/ apprenticeship in each industry.</p>	<p data-bbox="1608 695 1982 1019">2015 Progress Report to the Minnesota State Legislature submitted January 2015.</p>



Advanced Manufacturing in Minnesota

More than 300,000 manufacturing jobs statewide in 2013. Currently 30 companies sponsoring apprentices with a combined 182 active apprenticeships in place.

75 people participated in the Advanced Manufacturing Industry Council meetings.

- **27 from industry and industry associations**
- **14 education representatives**
- **Seven labor and labor education representatives**
- **27 government, legislative and other representatives.**



Industry Council identified occupations

Advanced Manufacturing

- **CNC Operator/Machinist**
- **Maintenance and Repair Worker**
- **Mechatronics Technician**
- **Metal Fabricators: welders, cutters, solderers, brazers**



Health Care Services in Minnesota

With more than 445,000 jobs at more than 14,000 organizations, Health Care and Social Assistance is the largest employing industry in Minnesota. Currently Health Support Specialist Registered Apprenticeship program has 87 registered apprentices through eight employer sponsors.

57 people participated in the Information Technology Industry Council meetings.

- 19 Members of industry or industry associations
- 11 education representatives
- Six labor and labor/education representatives
- 21 government, legislative and other.





Industry Council identified occupations

Health Care Services

- Health Information Technician
- Health Support Specialist (current registered apprenticeship program)
- Psychiatric Technician/Mental Health Technician
- Medical Scribe – special project





Information Technology in Minnesota

Information Technology (IT) has grown in importance in the state of Minnesota, providing more than 88,600 jobs. IT occupations are projected to gain more than 8,000 new jobs through 2022.

65 people participated in the Information Technology Industry Council meetings

- **30 Members of industry or industry associations**
- **12 education representatives**
- **Four labor and labor/education representatives**
- **19 government, legislative and other**





Industry Council identified occupations

Information Technology

- **Security Analyst**
- **Web Developer**
- **Software Developer**
- **Service Desk/Front Line Support or
Computer User Support Specialist**





Minnesota PIPELINE Project

Component #2

Develop *competency standards*



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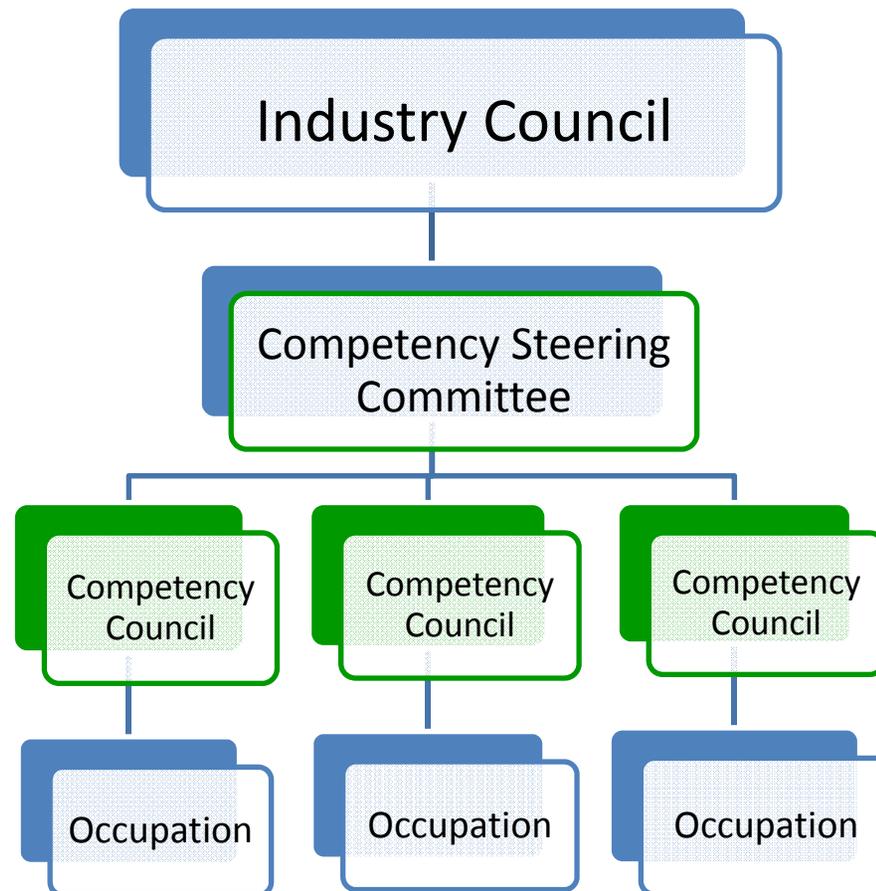


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Competency Development Approach



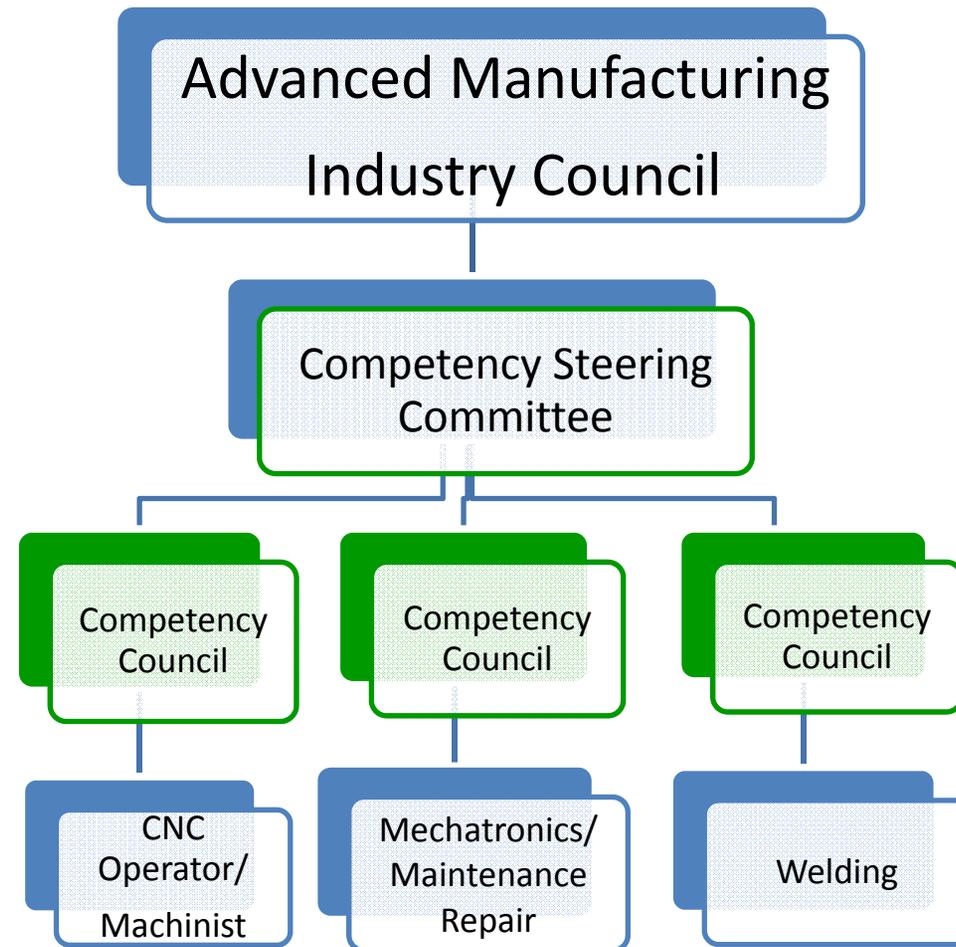


Competency Council Overview

Understanding requirements of the industry	Gathering information	Feedback and next steps	Reporting outcomes
<p>Convene Industry Planning Teams to provide guidance with validation processes in their industry.</p> <p>Identify occupational SMEs.</p> <p>Help prioritize occupational competency work.</p>	<p>Research occupations identified in Industry Councils by using educational programs, current apprenticeship programs in US and international, and US DOL competency model.</p>	<p>Utilize occupational experts in competency councils: employers, related instruction providers and labor representative.</p> <p>Identify and validate competencies through facilitated discussions, and electronic forms.</p>	<p>PIPELINE Competencies and findings will be posted on DLI MN PIPELINE Project website June 30, 2015.</p>

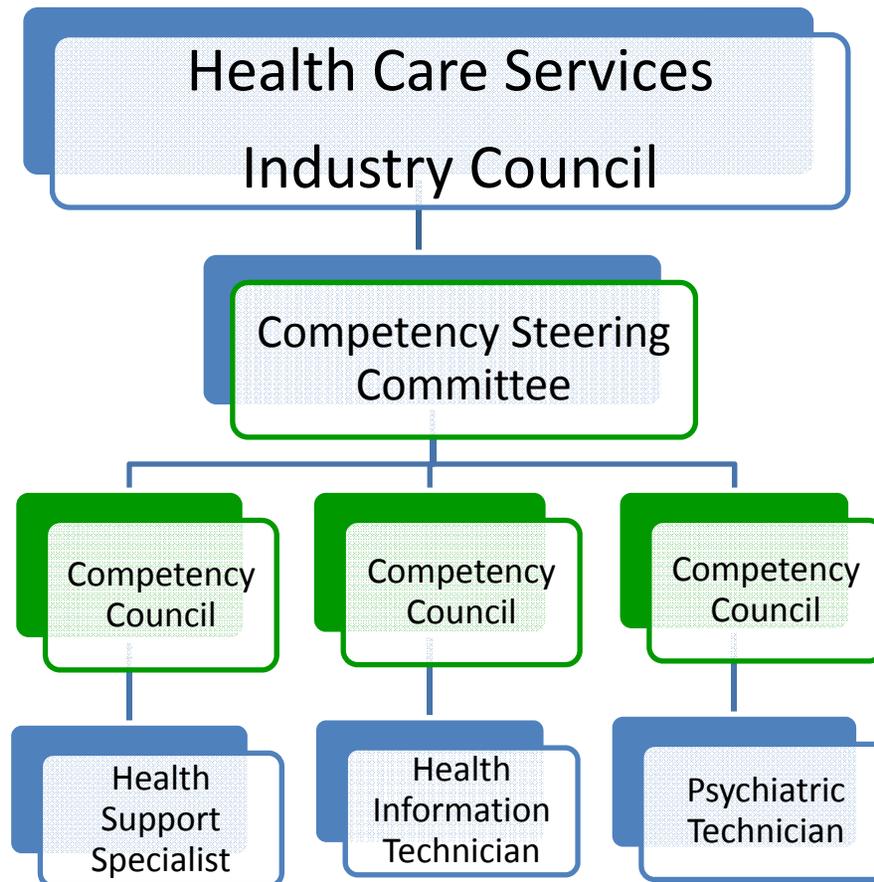


Advanced Manufacturing Competency Development Approach





Health Care Services Competency Development Approach



*Medical Scribe – special project



Information Technology Services Competency Development Approach

Information Technology
Industry Council

Competency Steering
Committee

Competency
Council

Competency
Council

Competency
Council

Web and
Software
Developer

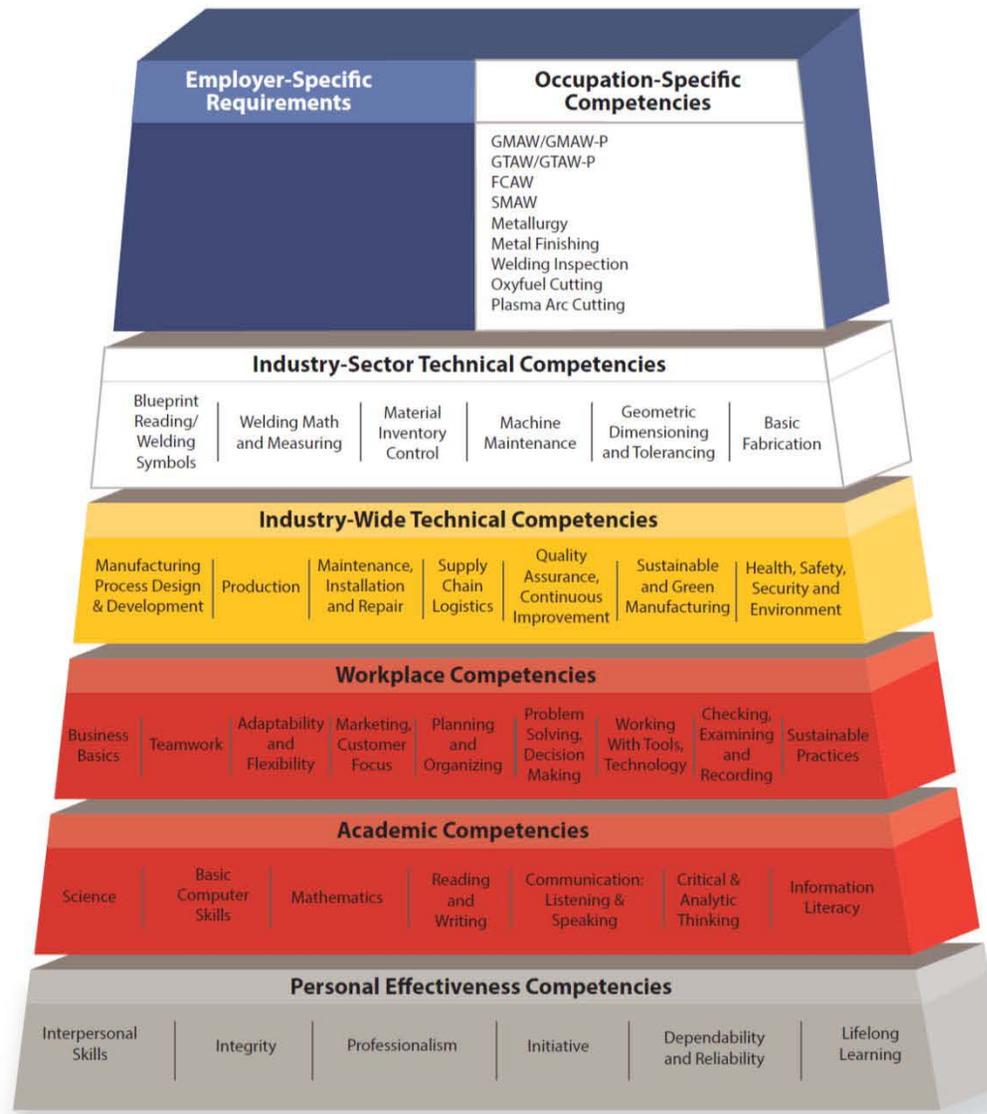
Security Analyst

Service
Desk/Front Line
Support



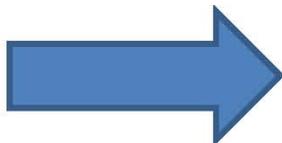


Occupation: Welders, Cutters, Solderers and Brazers





Occupation: Health Support Specialist



Employer Requirements	Occupation-Specific Competencies
	Dementia Care Person Centered Care Range of Motion Splint or Brace Assistance Dining Services Housekeeping and Laundry Services Dressing and Grooming Bathing and Hygiene Procedures Eating and Swallowing Procedures Amputation and Prosthesis Care

Industry-Sector Technical Competencies							
State Regulation for Adult Health	Environmental Services Dress Code	CPR and First Aid	Patient Transfer and Bed Mobility	Food Safety Preparation	Understand MSDS	Central Supply Store Room Usage and Access	Infection Control Procedures

Industry-Wide Technical Competencies					
Health Industry Fundamentals	Healthcare Delivery	Health Information	Health Industry Ethics	Laws and Regulations	Safety Systems

Workplace Competencies							
Teamwork	Customer Focus	Planning and Organizing	Problem Solving and Decision Making	Working with Tools and Technology	Scheduling and Coordinating	Checking, Examining and Recording	Workplace Fundamentals

Academic Competencies						
Reading and Writing	Mathematics	Science and Technology	Communication: Listening and Speaking	Critical and Analytic Thinking	Basic Computer Skills	Information Literacy

Personal Effectiveness Competencies									
Interpersonal Skills	Integrity	Professionalism	Initiative	Dependability and Reliability	Adaptability and Flexibility	Lifelong Learning	Compassion & Empathy	Cultural Competency	

Based on: Health: Allied Health Competency Model Employment and Training Administration, United States Department of Labor, December 2011.



Occupation: Web Developer - Front End



Employer-Specific Requirements	Occupation-Specific Competencies	
	Unit & Integration Testing	Continuous Integration
	Coordinates Software Installation	Translating Technical Docs into Actionable Work
	Server Automation Tools	Store, Retrieve & Manipulate Data for Analysis of System Capabilities and Requirements
	Software Testing (On the Job)	Customer Consultation re: System Design & Maintenance
	Learn and Implement Design Patterns	Design, Develop & Modify Software Systems – Hands-On
	Bug Fixing/De-Bugging	Defensive Programming
	Quality Assurance	Understanding Developments Role in Cross-functional Teams
	Integrated Development Environment	
	Monitor Equipment Functioning	
	Collaborate w/ Systems Analysts, Engineers, Programmers to Design Systems	

Industry-Sector Technical Competencies										
Bash Shell Scripting	Software Analysis & Design	Service Orientated Architectures	Computer/ Human Interaction	Object Orientated Programming	Data Structures & Algorithms	Unified Modeling Language	Waterfall & Agile Software Dev. Life Cycle	HTML, CSS, Java Script Basics		
Basic Knowledge of Accessibility	Software Testing	Programming Databases	Logic	Version Control	Operating Systems	Knowledge of Encryption	Client/Server Architecture			

Industry-Wide Technical Competencies							
Principles of Information Technology	Databases and Applications	Networks, Telecom, Wireless & Mobility	Software Development and Management	User and Customer Support	Digital Media and Visualization	Compliance	Risk Mgmt, Security and Information Assurance

Workplace Competencies					
Business Fundamentals	Teamwork	Innovative Thinking	Planning and Organizing	Problem Solving and Decision Making	Working With Tools and Technology

Academic Competencies						
Reading	Writing	Mathematics	Science	Communication	Critical and Analytic Thinking	Fundamental IT User Skills

Personal Effectiveness Competencies						
Interpersonal Skills and Teamwork	Integrity	Professionalism	Initiative	Dependability and Reliability	Adaptability and Flexibility	Lifelong Learning



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Component #3

Industry recommendations



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MINNESOTA DEPARTMENT OF
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2015 Progress Report to the Minnesota Legislature



<http://www.dli.mn.gov/pipeline.asp>



PIPELINE Project Recommendations

1. Complete occupational competency standards for all occupations identified through the PIPELINE Project.
2. Build industry Competency Councils for each targeted industry to develop competency standards for additional occupations in each industry.
3. Establish dual-training committees for a PIPELINE project identified occupation in each targeted industry.
4. Develop templates and implementation tools for new dual-training programs for all occupations identified through the PIPELINE project



PIPELINE Project Recommendations

5. Create and execute a plan for dual-training outreach, exposure, and awareness.
6. Align dual- training delivery system to other workforce initiatives.
7. Develop research and analysis tools to determine dual-training system costs and benefits.
8. Explore providing financial support to make dual-training programs viable and sustainable for employers and employees.





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Introduction of **PIPELINE Project** 2015 – 2017 by **Senator Bonoff**



PIPELINE Project Discussion and Feedback

Discussion and Provide large group:

- **Recommendations on implementing related instructions and OJT dual training programs in IT industry through PIPELINE II grants.**



**Organizational
Models**

Single- employer

Multiple-
employers

Employer
Associations

Delivery Models

Certification or
Competency
Based

Time based

Hybrid



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**Thank you for your dedication and participation in
the PIPELINE Project 2014 - 2015!**



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