

Workforce Preparation Improvements



National Shipbuilding Research Program Advanced Shipbuilding Enterprise

CROSSCUT INITIATIVES PANEL

The Panel provides a public forum for discussing issues, approaches, resources and programs to meet the needs of people and organizations. The Panel supports areas of Education & Training, Organizational Change, Workforce Development.

March 31, 2006

To Shipyards, Community colleges, Skill Inventory Firms and other stakeholders
Subject: NSRP Project: Workforce Preparation Improvements

The National Shipbuilding Research Program Executive Control Board funded in December 2006, to help shipyards and community colleges better prepare new entrant workers in US shipbuilding and repair work. The industry needs more and better workers to develop competent managers, production workers and support staff who will build commercial vessels.

The goal of this project is to find and implement new technical and learning tools and their collaborating colleges to: inventory and manage workforce knowledge then identify and close skill gaps through synergistic programs or methods. A detailed plan is attached.

We would like your participation. This letter is a project introduction and request for your work with us. We hope the project will result in developing more resources for you in win-win relationships. We have funding for some coordination and demonstration projects, shipyard, and web-based skill management company participants for this project. Community colleges that support shipbuilding and repair can help provide:

- Contact persons for telephone, e-mail and possible web-based collaboration.
- Direction to your web site or other documents that describe your courses, modules and support the industry.
- Interest you may have in course sharing methods including those that can expand your training and repair, create new learning tools, or license learning tools to or from others.

Shipyards that seek improved or different services from your community colleges and for your workforce skills we are looking for:

- Contact persons for telephone, e-mail and possible web-based collaboration
- Direction to your web site or other sources that describe your workforce development requirements
- Interest you may have in developing course sharing and learning methods to and from community colleges in your area and elsewhere.

For web-based skill inventory and management firms we are looking for:

- Contact persons for telephone, e-mail and possible web-based collaboration
- Interest in adapting a portion of National Shipbuilding Research Program and Manufacturing Skill Inventory Council skill standards to your systems and helping us to demonstrate and adapt your systems in shipbuilding.

Please share this letter with colleagues and contact me for more information.

Laurence P. Gebhardt

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Chair: Laurence P. Gebhardt, SENESCO MARINE, lgebhardt@senescmarine.com
Vice Chair: Don Bewley, Tradesmen International, don.bewley@tradesmeninternational.com

Workforce Preparation Improvements

A National Shipbuilding Research Program project (www.nsrp.org). Project work is focused on tools and improved cooperation between the worlds of employment and learning shown in the figure.

Skill Standards Conceptual Framework:
Bridge between learning and employment

STEP 1: RESEARCH AND TEAM WITH WEB-BASED SKILL INVENTORY AND MANAGEMENT FIRM(S)

- Step 1 Goal: find a system(s) to house:
- shipbuilding core/basic skill inventory
 - individual's assessments to skill standards
 - skill gap closure tools catalog
 - individual and team skill management tools

STEP 2: ADAPT NSRP AND MSSC CORE SKILL STANDARDS TO THE WEB-BASED SYSTEM

- Step 2 Goal: extract representative core or entry level skill standards from NSRP & MSSC databases
- description of work required
 - knowledge, skill, ability required to do the work
 - criteria for proper completion of work
 - recommended written and/or practical assessment procedures

STEP 3: RECRUIT & SURVEY SHIPYARD-COMMUNITY COLLEGE TEAMS INTERESTED IN IMPROVING ENTRY AND INCUMBENT WORKER SKILLS.

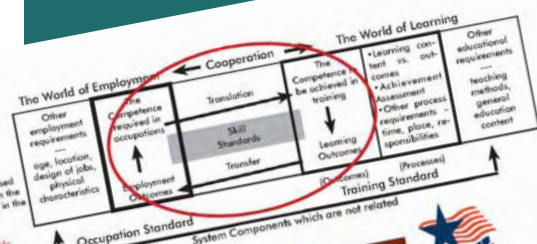
- Step 3 Goal: Identify needs and resources
- Shipyards validate basic/core skill standards
 - Shipyards share entry level expectations and reveal incumbent worker skill gaps
 - Colleges identify courses or modules that may help close skill gaps
 - Shipyards identify learning examples to make college courses more relevant
 - Colleges identify educational and learning tools to help in-company training

STEP 4: INTEGRATE NEEDS, RESOURCES AND SKILL INVENTORY & MANAGEMENT TOOLS INTO A PILOT SYSTEM THAT SERVES ONE OR MORE SHIPYARD-COLLEGE TEAMS.

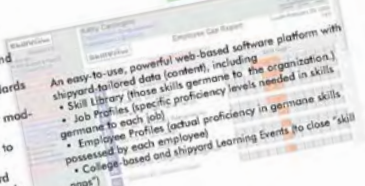
- Step 4 Goal: Design workforce preparation improvement system model using web-based enabling technology:
- Representative inventory of employees and their core skills
 - Skill assessment to NSRP or MSSC standards
 - Management visibility of skill gaps
 - Menu of community college courses or modules to close skill gaps
 - Menu of shipyard courses or modules to close skill gaps
 - Best practices for college and shipyard instructors and for structured on-the-job learning

STEP 5: DEMONSTRATION AND REFINEMENT OF MODEL AT A SHIPYARD-COLLEGE SITE.

- Step 5 Goal: Demonstrate and optimize
- Web-based and other tools for shipyard-college cooperation
 - Methods and tools to determine what shipyards and shipyard workers need to know
 - Methods and tools to assess current skill levels and determine gaps
 - Methods and tools to close skill gaps for entry-level job seekers and incumbent shipyard workers.



- Possible teams:**
- Electric Boat/ Quonset/ SENESCO - CCRI
 - NG Newport News
 - Tidewater CC
 - Alaska Ship & Drydock
 - UoA Ketchikan
 - Gulf Coast Team(s)
 - San Diego or Seattle Teams
 - Others to be identified



Workforce Preparation Improvements: web-based tools and cooperation between shipyard and colleges to identify required skills, evaluate people to identify gaps, close gaps in learning events such as classrooms, learning labs, self study, and on-the-job training.



Do You Know Where Your Kids Are?

Crosscut Initiatives Panel Research Projects 2003-2006

Larry Gebhardt, SENESCO MARINE
and
Les Hansen, Consultant

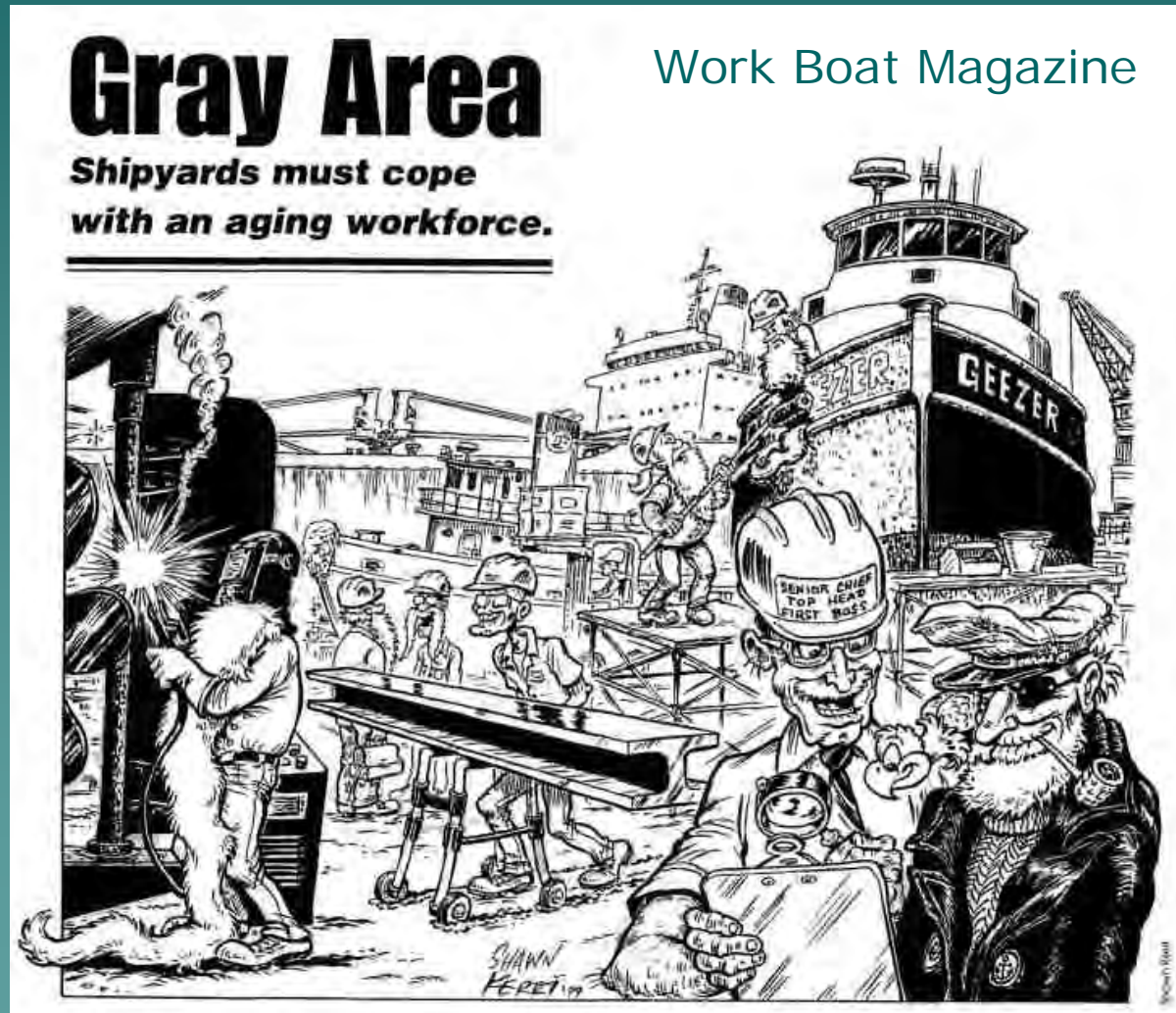
Crosscut Initiatives
Panel Project
on

Emerging Workforce Development

In 2010 ...

who will build and repair ships?

- ◆ Existing workforce?
 - aging?
 - turnover?
 - skills to operate new equipment?
 - enough workers?



In 2010 ...

who will build and repair ships?

◆ Machinery and automation?

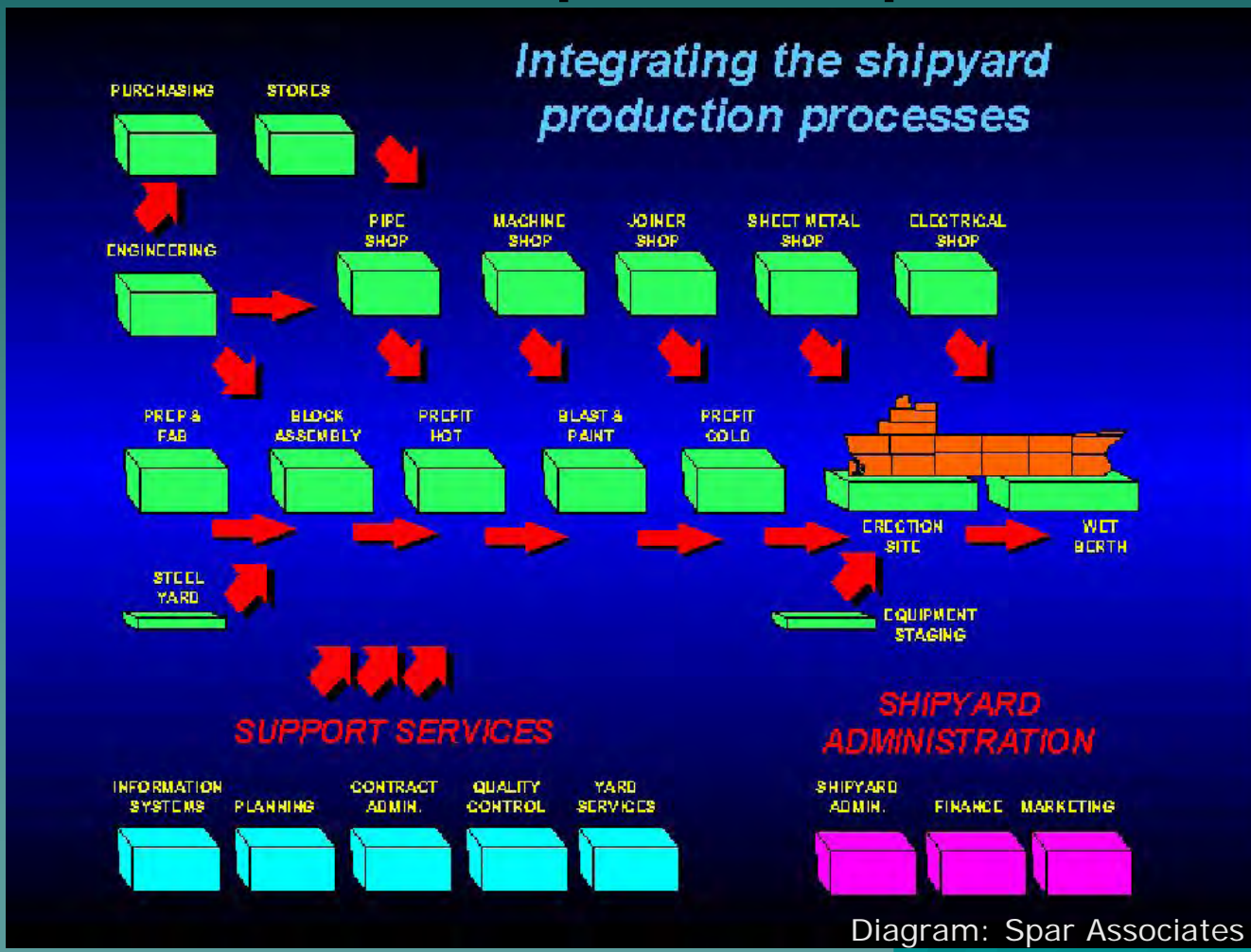


Diagram: Spar Associates

Too much complexity

In 2010 ... who will build and repair ships?

- ◆ Subcontractors?
- ◆ Contract workers from other nations?
- ◆ Shipyards in other nations?



Security, flexibility, and responsiveness

In 2010 ... who will build and repair ships?

- ◆ New workers – from school to work, job changers, immigrants, women?

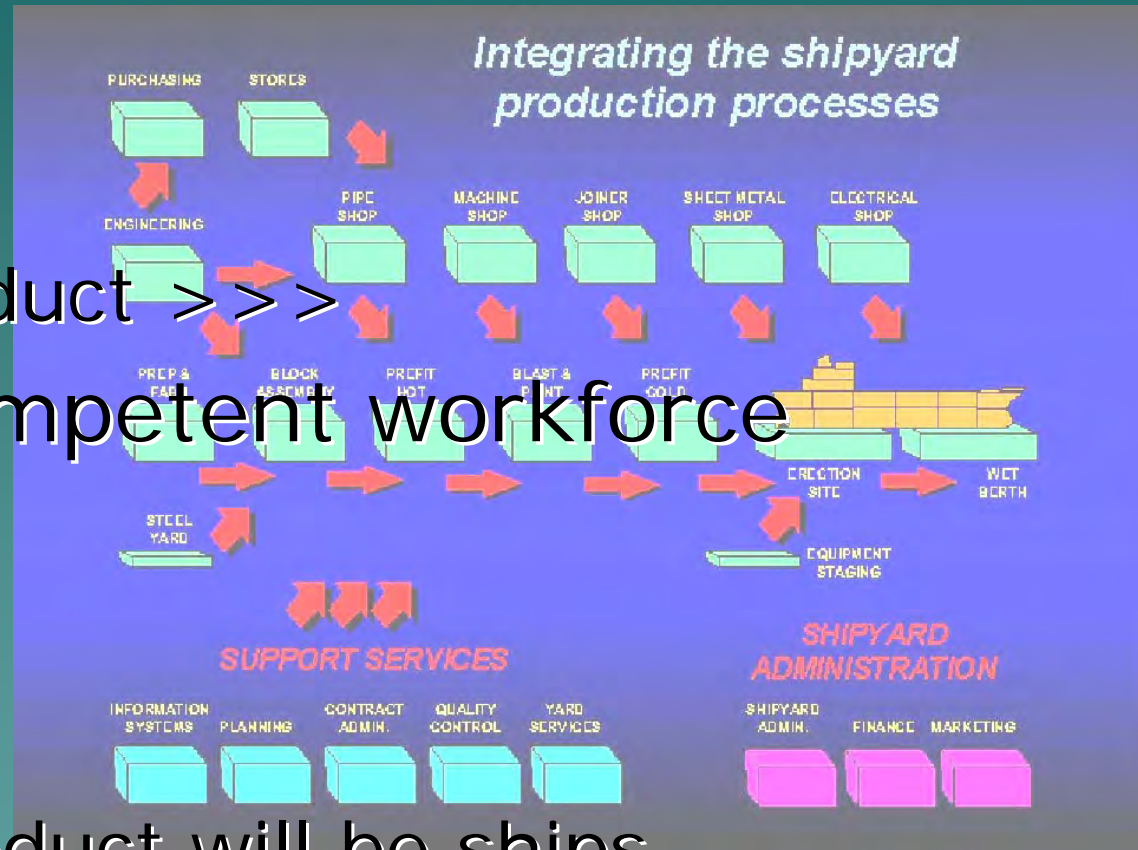


So what is the real product?

◆ Ships?

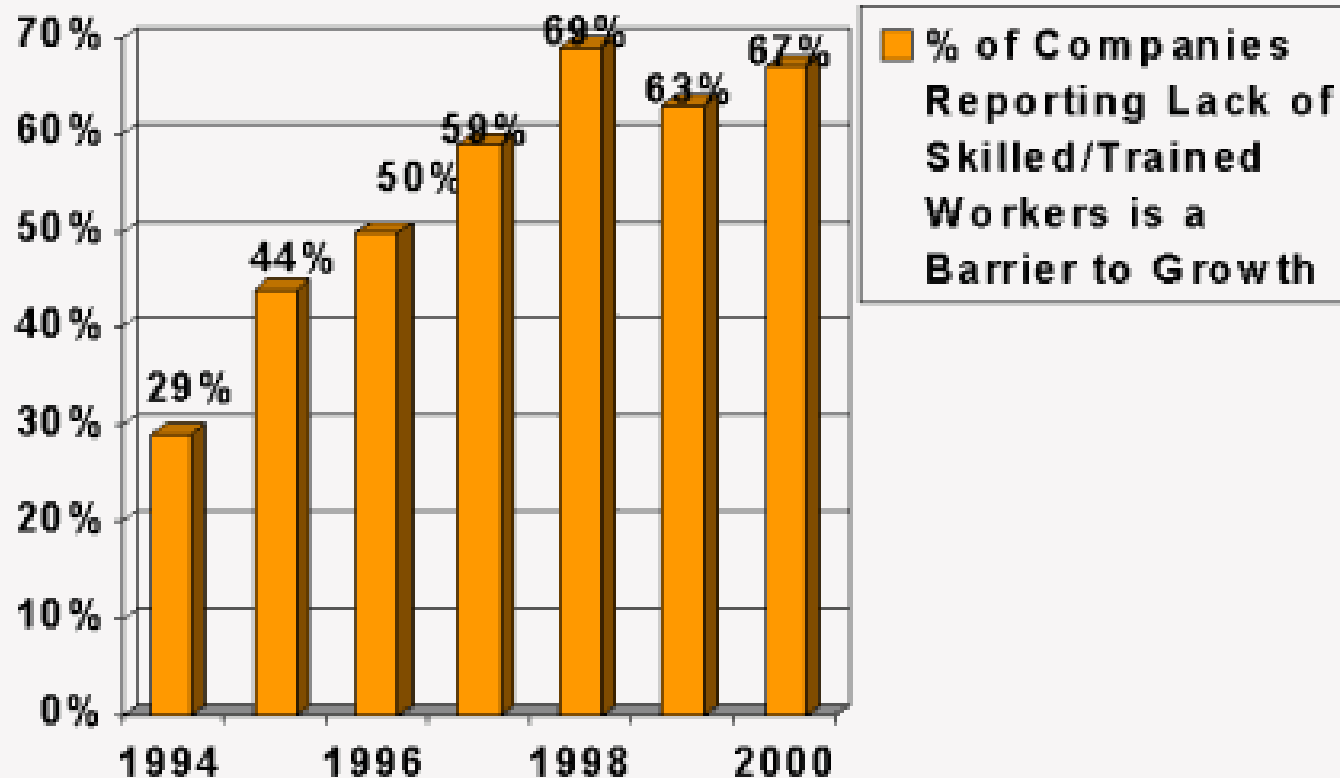
◆ Real product >>>
a competent workforce

◆ Their product will be ships





The Lack of Skilled/Trained Workers is a Barrier to Business Growth



Source: PricewaterhouseCoopers Trendsetter
Barometer Surveys

Skilled Labor Shortfall

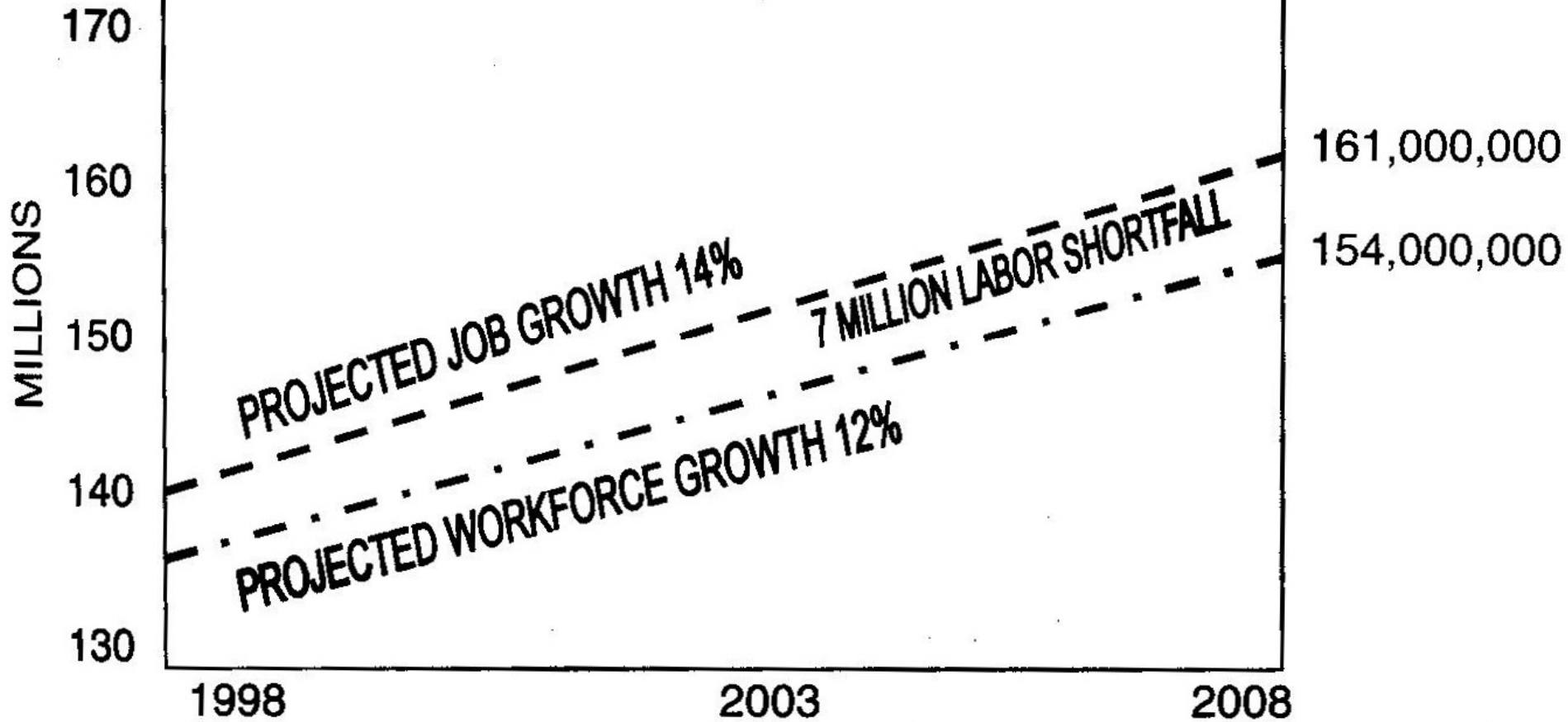
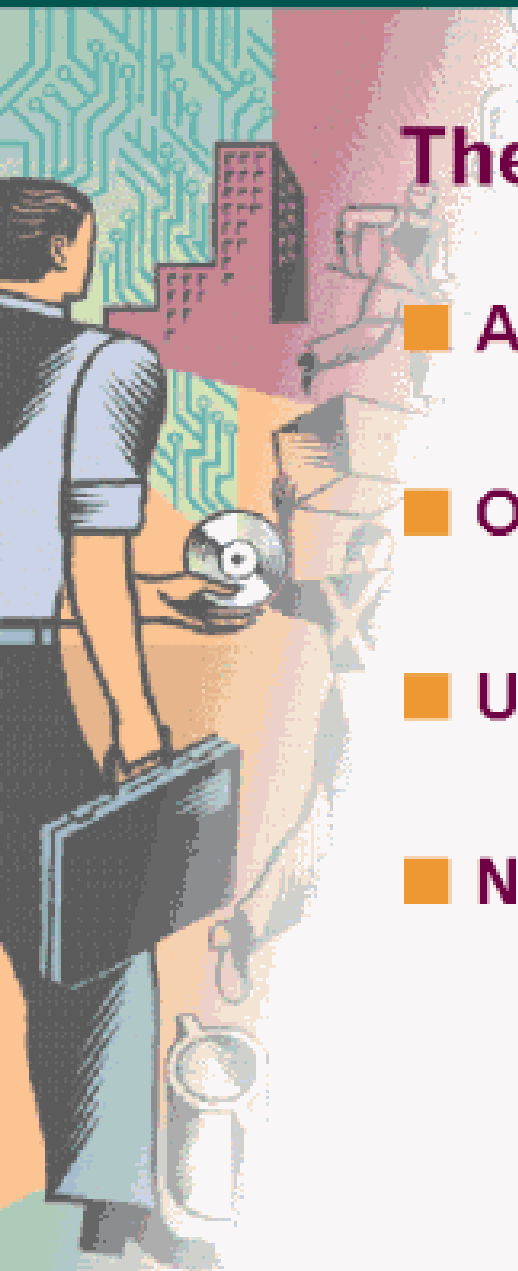


Figure 1-2. Projected job growth and workforce growth in the United States. Adapted from Branham (2001).

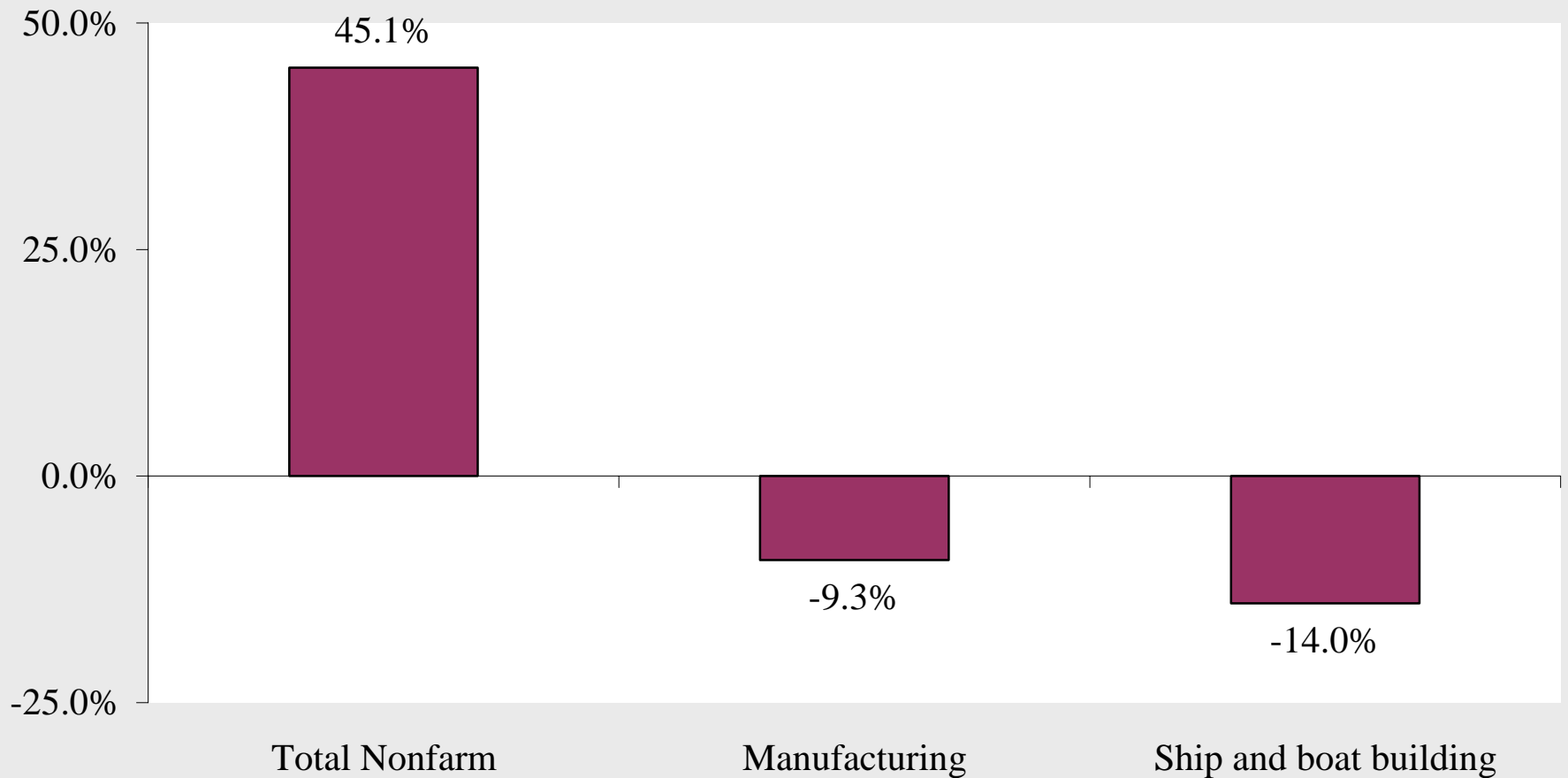


The Image of Manufacturing

- An Industry in Decline
- Old economy vs. New Economy
- Uncompetitive in the Global Markets
- Not High Tech



Percentage Change in Total Employment and Employment in the Manufacturing and Shipbuilding Industries, US, 1983-2002



The Emerging Workforce

Entry-level folks emerging from:

- **School-to-work: education system**
- **Work-to-work: job-changers**
- **Welfare or other non-work to work**
- **Immigrants seeking work**

Are US workers ready for work?

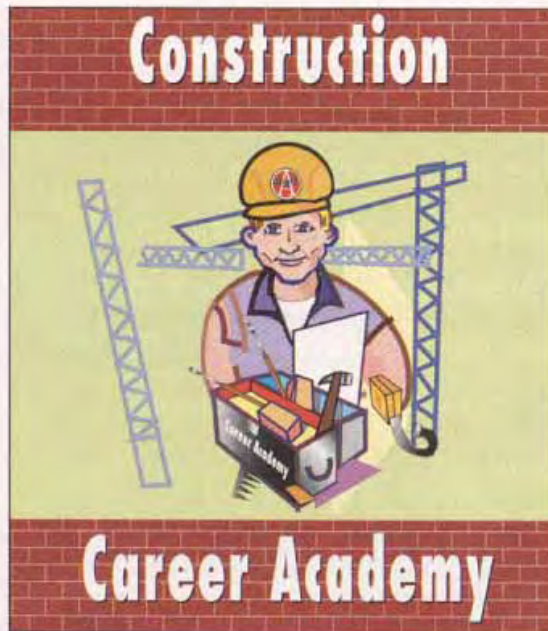


Academics, technical, attitude?

Case Study - Construction

THE CAREER ACADEMY OPTION

CAREER ACADEMIES OFFER BENEFITS OVER TRADITIONAL VOCATIONAL EDUCATION



ALSO INSIDE:

- AGC'S 85th Annual Convention in Orlando
- Leadership Development Tracks
- Presidential & Congressional Primaries & Caucuses
- AGC's Education and Research Foundation
- HR Solutions
- National Directory of AGC Chapter Education Programs

Workforce Preparation Improvement

Connect workforce competence with other standards:

- Parts, materials, and shipbuilding enterprise standards.

The standards approach is to:

- Manage needed skills – standards for contract and company requirements
- Assess and manage existing skills of new and incumbent workers
- Manage critical skill gap closure for new and incumbent workers

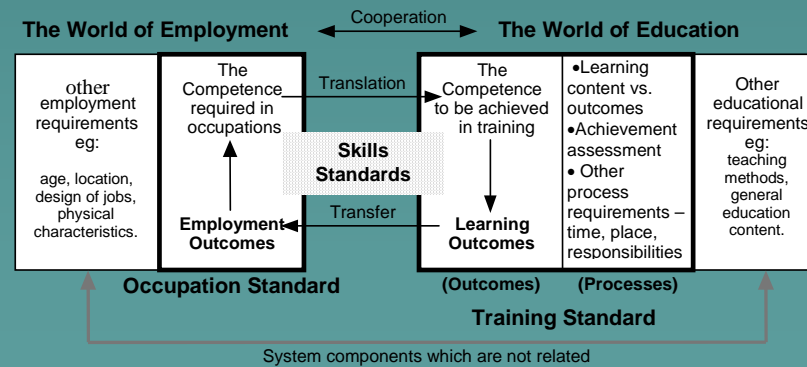
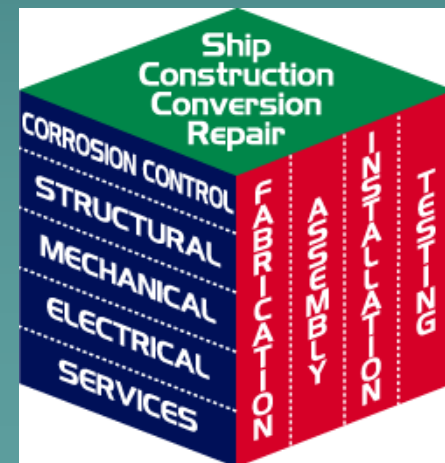


Figure 1: Skills Standards Conceptual Framework

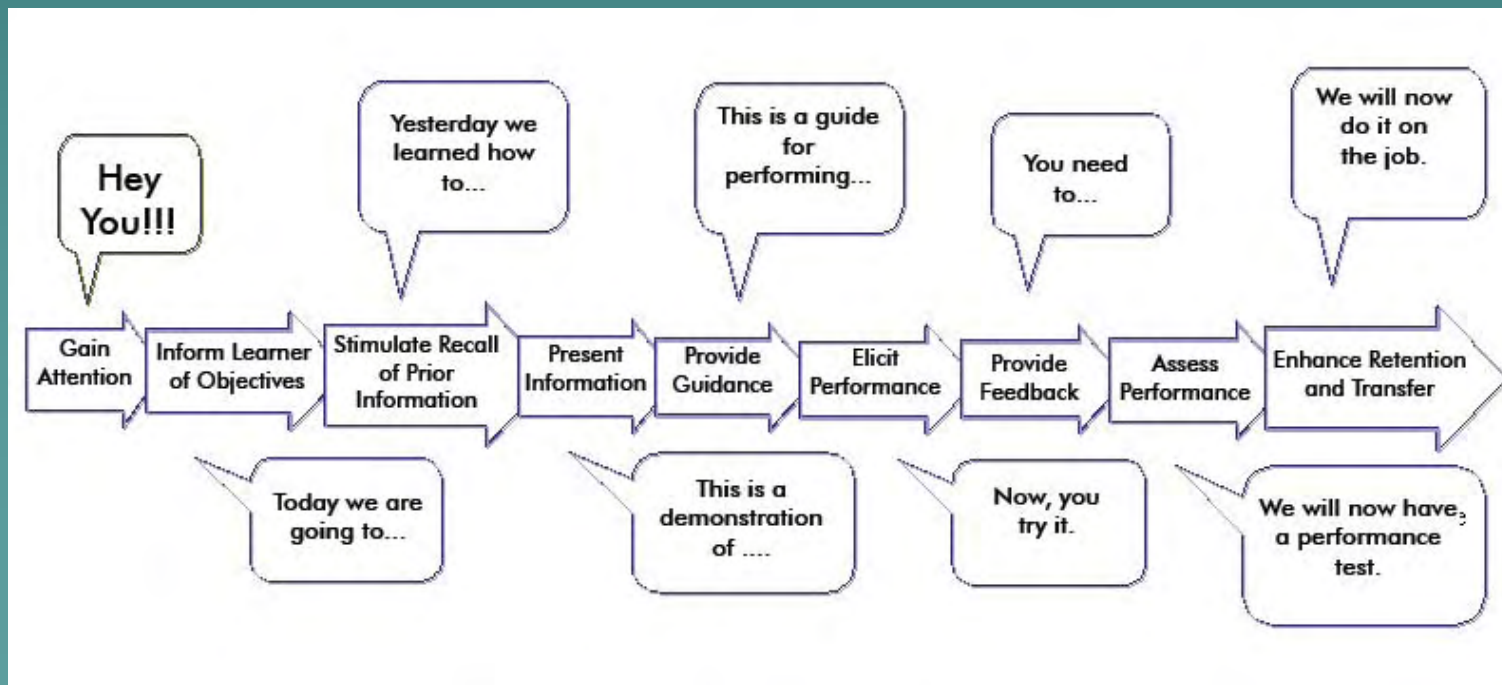
Skill Inventory & Management

- ◆ Adapt existing MSSSC and NSRP standards to easy-to-use web-based skill management system
- ◆ Access to core skill data by partners
- ◆ Customize for specific shipyard or shipyard-college settings



Strengthen Community College-Shipyard Connections

- ◆ Better shipyard entry-level preparation by community colleges
- ◆ Better structured on-the-job and classroom learning at shipyards



Demonstration

- ◆ Show effectiveness of skill management
- ◆ Show how a community college-shipyard can accelerate/improve workforce preparation and incumbent worker competence

