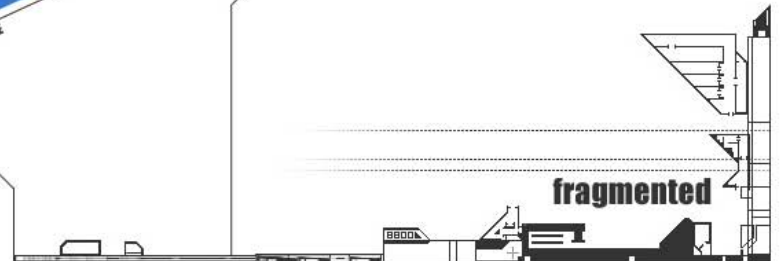




Shipbuilding and Repair: A Fragmented Industry?

Conversation around workforce training and retention



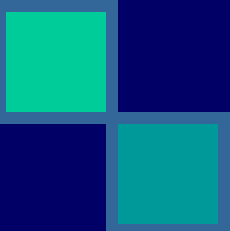
Crosscut Initiatives Panel NSRP

Larry Gebhardt, Chair

Don Bewley, Vice Chair




Shipbuilding Industry

- 
- “The shipbuilding industry is not broken, though it is not as healthy as it could and should be. The healthier we are as an industry, the better we can serve the needs of our Navy and the American people.”

- **Mike Petters**

- President, Northrop Grumman Shipbuilding
 - Before the House Armed Services Seapower and Expeditionary Forces Subcommittee
 - July 30, 2009



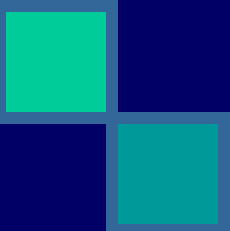

Central Questions



- Would you recommend our industry to your children?
- Are we a fragmented industry?
- Can we strengthen our commonality?



Presentation-Dialog

- 
- This is a presentation-feedback covering current gaps in professional and production labor demographics, industry needs and their supply.
 - Brainstorm about creating a more cohesive, compelling shipbuilding and repair industry to attract employees and investors while meeting customer requirements.
 - Your response will help guide Crosscut Panel activities into 2010 and beyond.
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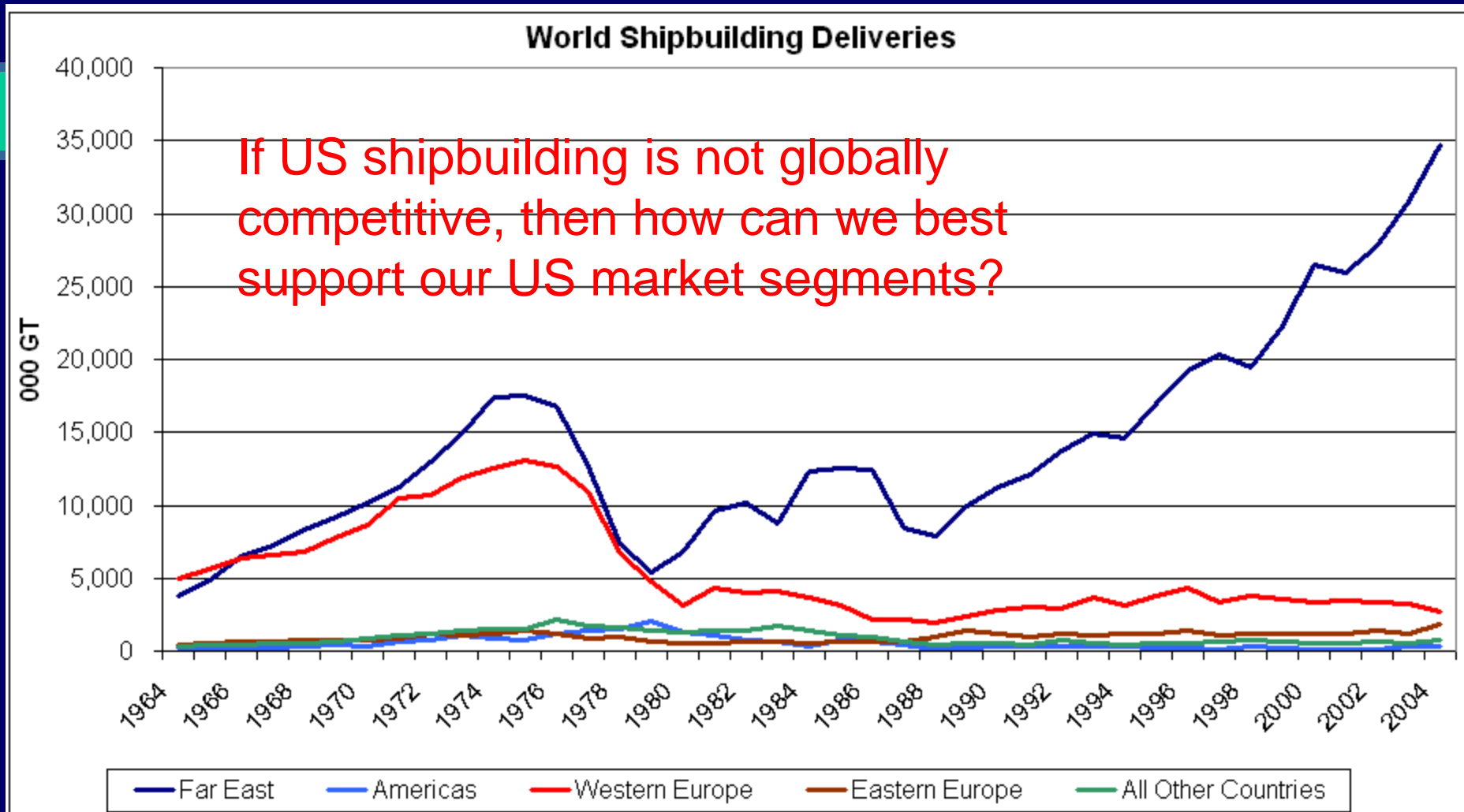
Market segments?



- Navy: 286 ships
- Army: 300 watercraft
- USCG: ___ >65 feet
- NOAA:
- Research vessels
- State Ferries
- Luxury Yachts
- Oil rig topsides & offshore supply
- Fishing
- ACOE vessels
- Jones act workboats
- Jones act ships
- Export sales
 - Patrol craft
 - Commercial
- Shipbreaking
- Non-ship products
 - Freight rail cars



(All self-propelled commercial vessels over 100 GT)
Source: Lloyd's Register's "World Fleet Statistics"



Biggest Yacht



- The biggest yacht in existence—at 548 feet—is the Eclipse, owned by Russian billionaire Roman Abramovich. It comes with a missile-detection system, two helipads, a luxury spa, swimming pool and even a submarine, which doubles as an escape pod.

What is a shipyard?

- 6 major shipbuilders
- 21 mid-sized shipbuilders
- 18 small shipbuilders with significant construction records
- 71 other small shipbuilders and boatbuilders
- 16 megayacht builders
- 18 aluminum boatbuilders



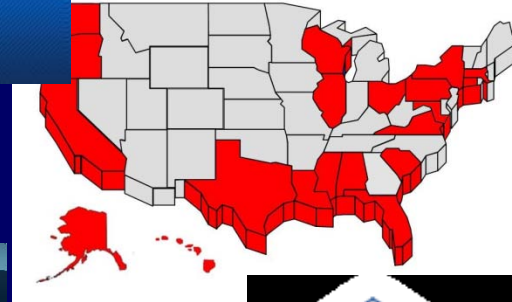
Vectorworks Marine
virtual shipyard, Titusville,
FL, composite vessels, to
70 meters

Fragmented?

Scattered geographically, two trade associations, multiple professional associations and technical organizations



States With SCA Member Shipyards



Fragmented?

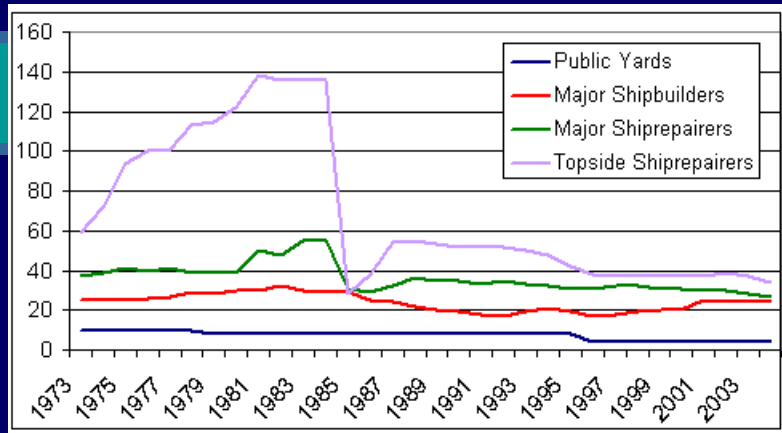


- Government agencies with ship missions
 - Department of Defense (Navy, Army)
 - Department of Homeland Security (USCG)
 - Department of Transportation (MARAD)
 - Department of Commerce (NOAA)

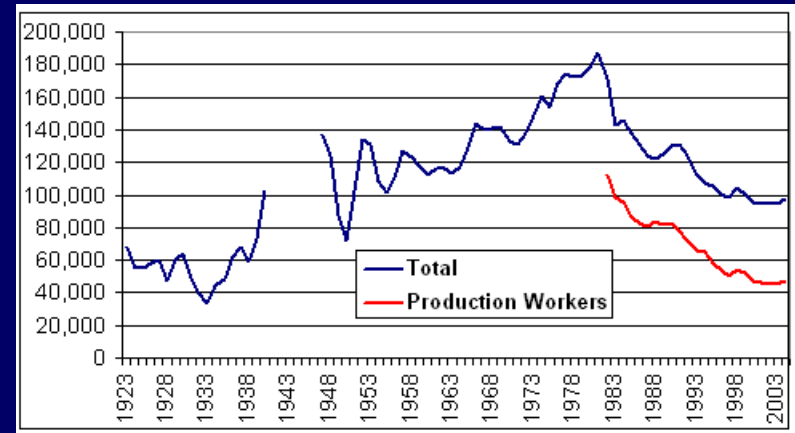
Congressional Shipbuilding Caucus



US Industry image: small, declining



About 150 shipyards



About 100,000 employees


Source: Tim Colton's shipbuilding history – data from MARAD shipyard reports (not published since 2004)



What is common to all shipyards?

- Safety
- Quality
- Productivity
- Reliability

All are people issues



Most production superintendents say: “Give me a person with good attitude. We’ll give ‘em the aptitude.”

Will you recommend our industry to your children?

- Who will design, build and repair government, commercial and luxury yacht vessels in 2020?
- What, me worry?



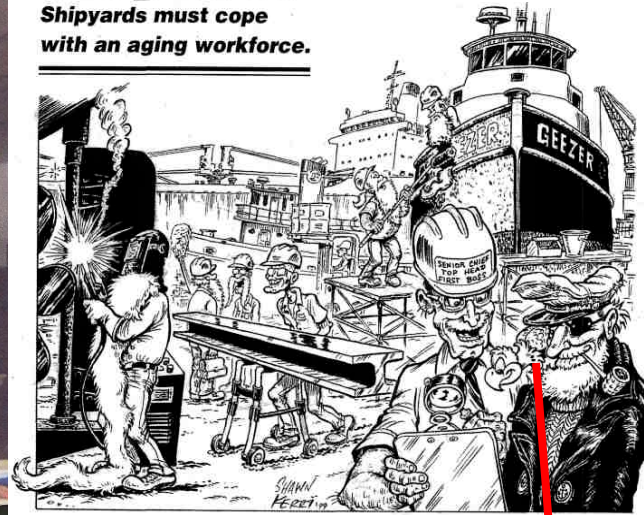
More women, immigrants,
different cultures, languages



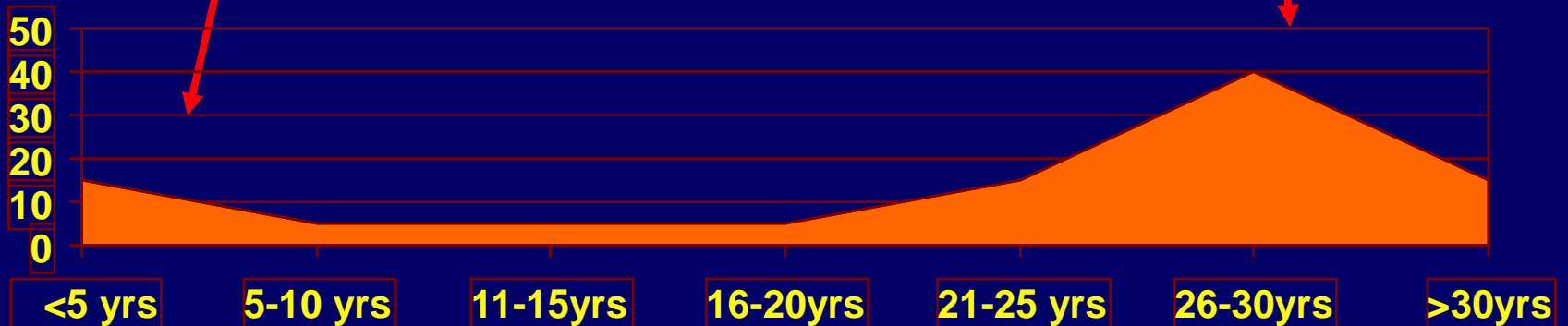
Gray Area

Shipyards must cope
with an aging workforce.

Work Boat Magazine



Percent of Workforce-Experience Distribution
green aging



Professional staffs science, technology, engineering, math (STEM)



Figure 4: Employee Demand within the Enterprise

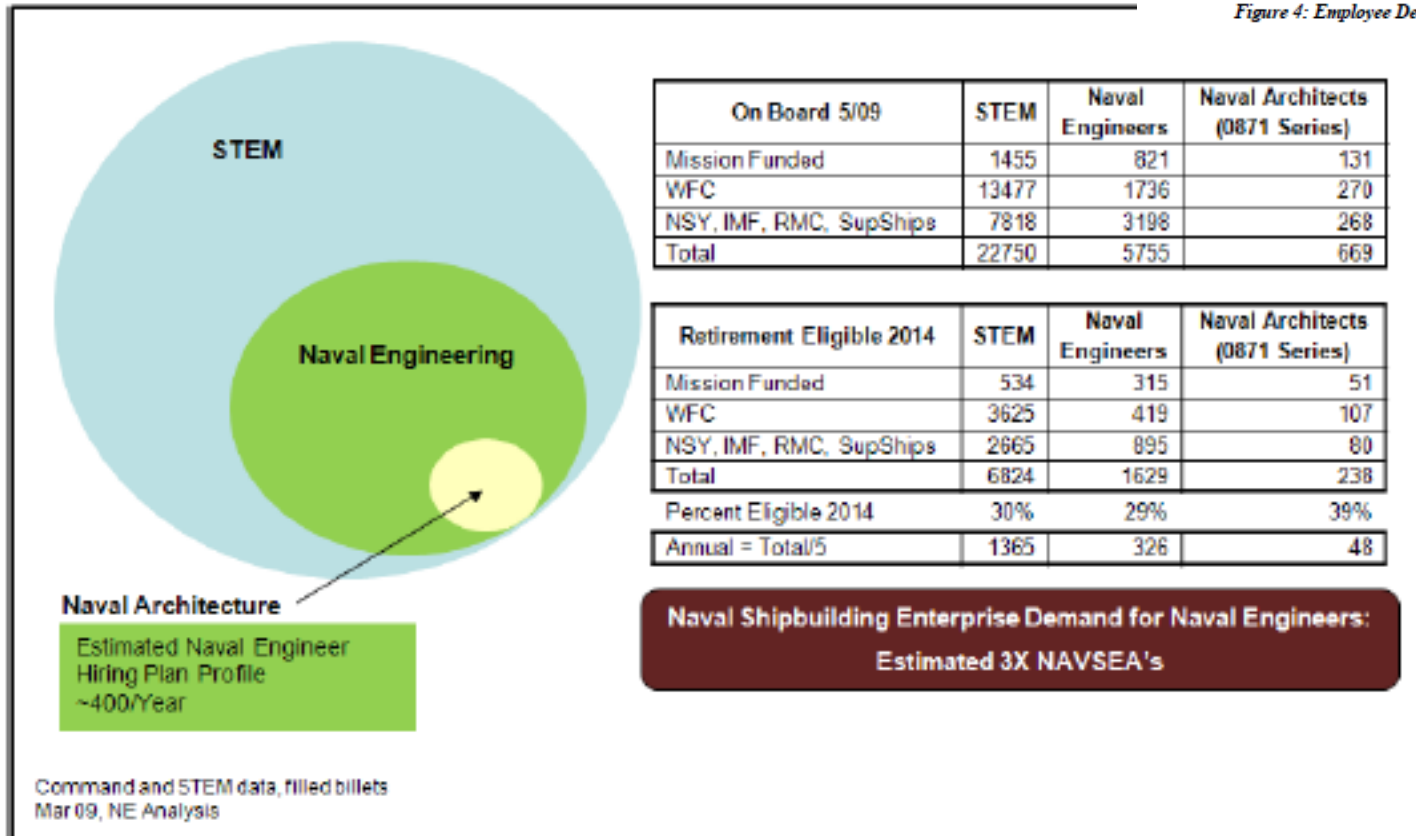


Figure 6: NAVSEA Workforce Retirement Eligibility


So What?



- If not globally competitive, and if fragmented, how can shipbuilding and repair industry best serve its major US market segments?
- Simple answer: Better collaboration



People are common in a fragmented industry

1. Industry image to recruit
 2. Common curriculum for entry-level
 - Production knowledge, skills, abilities
 - Engineering knowledge, skills, abilities
 3. Common terminology and skill standards
 4. Career path work organization - retention
 5. Job portability and flexibility
- 

Industry Image

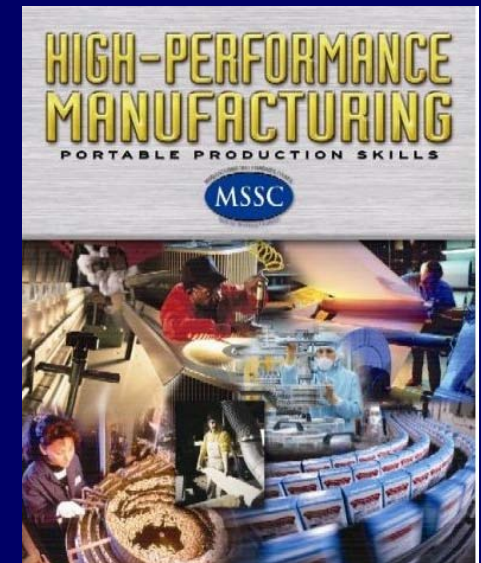
- Two parts
 - Worldview of ocean value – security and commerce
 - Realistic industry information ..
www.goships.com

A screenshot of the Goships.com website. The browser address bar shows "Go Ships - Jobs and careers in shipbu...". The website header features the Goships.com logo and the tagline "jobs and careers in US shipbuilding and repair". Navigation links include HOME, NEWS & EVENTS, PARTNERS, and ABOUT. The main content area is divided into several sections: "ABOUT SHIPS" with links for SHIPYARD CAREERS, WHERE TO FIND JOBS, HOW TO GET STARTED, SKILLS NEEDED, and FAQ; "RESOURCES" with a quote "There's no better time than today to begin your career in shipbuilding. Find out more now!" and icons for STUDENTS, EDUCATORS, PARENTS, CAREER ADVISORS, EMPLOYERS, and CAREER CHANGERS; "VIEW OUR COMMERCIALS"; "MY STORY"; and "BROWSE JOBS BY REGION" with a map of the United States highlighting four regions: ATLANTIC, GREAT LAKES & INLAND WATERWAYS, GULF COAST, and NORTHEAST. A legend indicates "Major Ports" and "Shipbuilding". The footer contains the text "Visit our video library, [click here](#)" and a navigation bar with the words "Extreme | Exciting | Challenging | Distinctive | Rewarding".

Common Curriculum

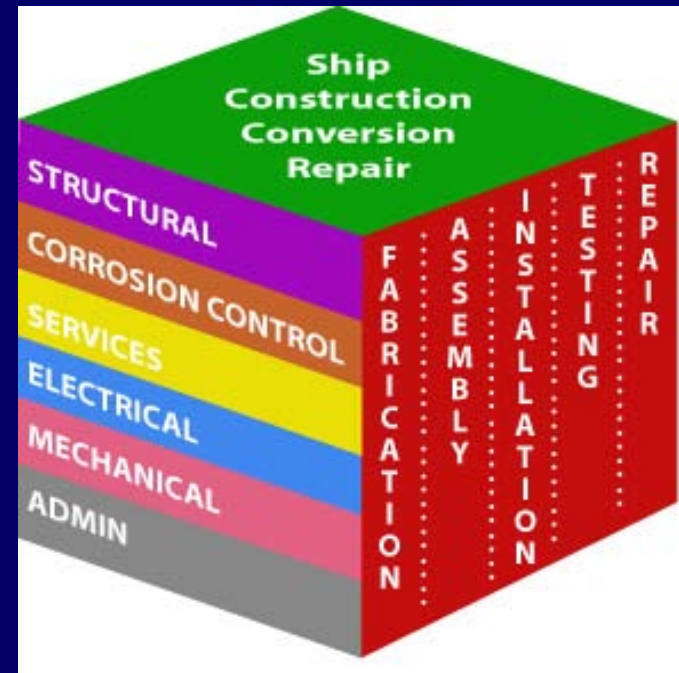
- High school or technical college
- Manufacturing oriented
- Safe & productive workplace
- Producing products
- Quality management

Goal: graduates with attitude for work
or go on to STEM curriculum



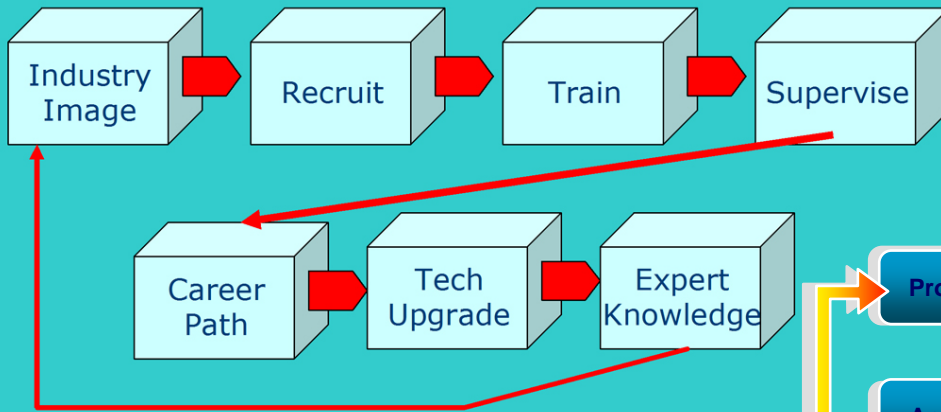
Terminology & skill standards

- Job 1 – steel hull ships
- Relational database
- Lead to 'one yard, any yard' concept for flexibility and job portability



Career path work organization

Organization Culture: quality, speed, cost delivered by competent people

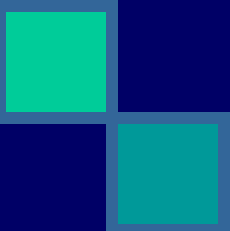



Job portability & flexibility



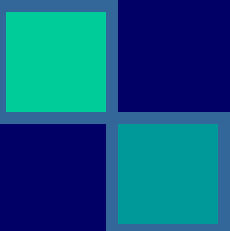



Discussion:

- 
- Are people common in a fragmented industry?
 - Industry image to recruit & retain
 - Common curriculum for entry-level
 - Production knowledge, skills, abilities
 - Engineering knowledge, skills, abilities
 - Common terminology and skill standards
 - Career path work organization - retention
 - Job portability and flexibility
- 



Contact Information

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- Dr. Larry Gebhardt, chair
 - Crosscut Initiatives Panel
 - National Shipbuilding Research Program
 - lpgebhardt@cableone.net
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Lesson Learned – gold mining



Goldcorp Today

- <http://www.youtube.com/watch?v=EQcaxH3BVI>
- 