

PAPER INDUSTRY MANAGEMENT ASSOCIATION
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Pulp and Paper Industry
Hourly Workforce Challenges

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Outline of Presentation:

- ◆ Review Industry Training & Education Studies
- ◆ Top Workforce Challenges Facing Pulp and Paper Manufacturers
- ◆ Workforce Skills and Knowledge Global Standard
- ◆ Improve Profitability Through People
- ◆ Paths Forward

2003 – 2004 TAPPI Research Mill/Corporate Visits:

8 companies, 13 locations, 67 people

Smurfit-Stone



Temple-Inland

Longview Fibre Company

Value-Added Products • Sustainable Forestry



Georgia-Pacific



MeadWestvaco

Training and Education Trends

TOP Challenges:

- ◆ Aging workforce – train the next generation and transfer knowledge from current workers
- ◆ Mills are much leaner – more decision making pushed out to frontline workers
 - need greater process knowledge and decision making skills
- ◆ ***Training for hourly operators and frontline supervisors***

Training and Education Trends

One Large Integrated Mill in the Southeast:

- ✦ In 2004, 3% of hourly workforce is at average retirement age (63)
- ✦ By 2009
 - 26% of total hourly workforce at retirement age, and most (~200) will need to be replaced
 - *“Retirement Tsunami”!*

2005 Survey of 18 P&P Mills in Washington and Oregon

www.lowercolumbia.edu/pulpandpaper/

Washington State University with Pulp and Paper Skills Panel and Lower Columbia College:

- ◆ 18% of hourly workers to retire by 2010
- ◆ Most of these retirees will be replaced
- ◆ Mills not currently set up to hire and train this high amount of new hires
- ◆ Most new hires will not have post-high school education or related experience

2005 Survey of 18 P&P Mills in Washington and Oregon

The Good News:

- ◆ Employment has stabilized somewhat
- ◆ More investment in new technology expected

The Bad News:

- ◆ Job applicants often fail basic aptitude tests
- ◆ Mills need greater skills and knowledge in areas of technical, "soft", process, and academics

What Does This Mean for the U.S. Pulp and Paper Industry?

- ◆ Almost 1/5 of hourly workforce set to retire over next 5 years
- ◆ About 16,600 by 2010
 - Will need to hire at least 3300 hourly workers/year
- ◆ Most new hires will not have post-high school education or relevant experience
- *Replacement of retirees will result in massive skill and knowledge loss*

How Does This Compare With Other Industries in U.S.?

“Dangerous Disconnect – Who Will Work For You?” Industry Week Magazine, July 2004:

“Millions of displaced manufacturing workers remain unemployed. Simultaneously, an increasing shortage of highly skilled production workers is threatening U.S. manufacturing.”

“The desire for workers with advanced skills is only expected to grow”

- Leo Reddy, CEO of National Coalition For Advanced Manufacturing (NACFAM)

P&P Manufacturers Will Be Competing With Other Industries for Workers!

How Does the U.S. P&P Industry Compare With Other Parts of the World?

In The United States and Canada:

- ◆ Workforce is aging – they have considerable experiential knowledge, but are nearing retirement
- ◆ Most new hires and incumbent hourly workers in U.S. have little, if any, education beyond HS

Outside of U.S. and Canada:

- ◆ Similar retirement trends in some regions
- ◆ Growing trend toward *2 and 4 year degrees* for hourly operations workers

2 Year Associate Degree or Equivalent is Today's Global Standard

Show Me The Money!

Does Greater Workforce Knowledge and Skills Really Pay Off?

According to Jaakko Pöyry Study of a Multi-national P&P Manufacturer:

- ◆ 25-30% of profit variation between pulp & paper mills ***within the same company*** can be explained by human factors
- ◆ Through people, older mills have shown they can be more competitive than newer mills
- ◆ Human Performance = f (skills/knowledge, work env't, motivation)

Case Study: Bowater, Catawba SC

INDUSTRY WEEK MAGAZINE 2005 "*BEST PLANTS*" WINNER* FOR PULP AND PAPER INDUSTRY IN NORTH AMERICA

- based on safety, start-up results, quality

Key Factors for Success:

- ◆ Get the right people...train, train, train
- ◆ Created "*Fiberline University*"
 - testing in math, reading, technology
 - Bowater provides opportunities for remedial training & education
- ◆ "Training has become one of our core values"

*www.industryweek.com

What Does All This Mean?

1. Greater knowledge and skill levels of hourly workforce are critical to create **competitive advantage for U.S. P&P manufacturers in a global marketplace.**
2. Manufacturers will struggle to find enough new hires in the next 5-8 years. **Skill and knowledge level of most will continue to fall well below today's Global Standard.**

What is the Current Path For Many Mills?

Current training approach by many mills:

- ✦ *Opportunistic* – usually on an “as needed” basis
- ✦ Usually OJT – *buddy system*...very informal
- ✦ No “standards” to aim for...where are we headed?
 - what is the target for skills and knowledge
 - how can we ensure that workers *maintain* this knowledge
- ✦ It’s “everyone man for himself”
 - Mills are re-creating the wheel each time
 - Little collaboration between mills
 - Shrinking resources
- ✦ A few “showcase” approaches (e.g. Catawba)

A New U.S. Initiative to Create a *Technologically Advanced Workforce*

Great News: npt²

- ◆ New community college network to grow 2 year pulp and paper associate degree programs; ~ 15 graduates/year
- ◆ “npt²” (www.npt2.net) is supported by NSF; currently has 6 community colleges
- ◆ npt² is expanding rapidly to produce a new *technologically advanced workforce* to fill hourly worker positions
- ◆ Industry-validated knowledge & skill standards
 - skill standards provide a “road map” for education
 - needed for future operator certification program

A New U.S. Initiative to Create a *Technologically Advanced Workforce*

- ◆ Regional-based through community colleges
- ◆ npt² network produces highest quality new hires
 - meet the Global Standard
- ◆ Investment required through clusters of mills; high ROI
- ◆ Graduates hit the ground running, and progress quickly
- ◆ TAPPI is partner in npt² to produce new resources for hourly workforce development
 - New textbook series
 - Monthly publication *Frontline Focus*
 - Continuing education

Is This Enough?

npt² is the Right Thing but...

- ✦ Each CC can produce about 15 graduates per year
- ✦ Assume ~ 20 CC's within 5+ years
 - 15 grads/yr x 20 CC's = 300 graduates/yr
- ✦ ***BUT, the industry will need ~3300 new workers/year***

What Else Can be Done to Transform the Workforce?

A New Approach

Industry Consortium to develop a comprehensive portfolio of training & education resources:

- Curriculum roadmap aligned with *new global standard*
- In-mill resources to be used by *mill training leaders*
 - ◆ Instructor guides
 - ◆ Learner guides
 - ◆ Customizable teaching materials (e.g. powerpoints)
 - ◆ Evaluation tools (e.g. written tests, OTJ demonstrations)
- Web and computer-based *self-paced* learning modules
- Instructor-led programs through training providers, industry Associations (TAPPI, PIMA), schools, etc

RESULT:

- *Rapidly Transform Workforce Knowledge and Skills*
- *Manufacturing Profitability Improves Through People*

How is This Better Than the Current Industry Approach?

- ◆ Pool resources among many stakeholders (i.e. TAPPI, Manufacturers, Schools, Providers, etc.)
- ◆ If stakeholders work together rather than alone, it can be done:
 - In alignment with new npt² knowledge & skill standards
 - With lower investment than doing it alone
 - With lower risk of development
 - Without requiring paper manufacturers to become experts in all aspects of training and education
- ◆ Leverage TAPPI 's unlimited global network of experts & practitioners to ensure credibility and reliability, plus *Recognized Education Providers*

How Will This Approach Help Pulp and Paper Manufacturers?

- ◆ **Trustworthy** curriculum aligned with npt² skill and knowledge standards – consistent with global standard
- ◆ Delivered at **lower cost** through leveraging multiple partner resources
- ◆ Provide **flexibility** for manufacturers to tailor their programs to individual learners
 - do some areas now, some later
 - all common and evolving learning methods covered: web/CBT, OJT, classroom, self-paced

SUMMARY

1. U.S. P&P manufacturing workforce skill and knowledge levels lower than global standard.
2. This limits ability of U.S. P&P companies to improve manufacturing profitability.
3. Many experienced baby boomers to retire soon, taking much knowledge with them.
4. Industry will struggle to find sufficient, qualified hourly workers during next 5 years.
5. New and existing industry initiatives can enable P&P manufacturers to rapidly transform their workforce – *collaboration will be required.*

Thank You!

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Current Curriculum Map For Providers of Hourly Worker Training & Education:

Community/Technical Colleges:

- Math, Science, Computers, Communication, Time Management
- Mechanical, Maintenance, Electrical, Instrumentation, Safety
- Introductory Pulp and Paper Manufacturing

TAPPI, Paper Universities, Other Providers

- State-of-the-Art Pulp and Paper Manufacturing Knowledge
- Introductory, Intermediate and Advanced Level
- Unit Processes, Normal Operation, Process variables, and Process/Product Interrelationships
- Critical Thinking Skills (troubleshooting, problem solving)
- Process and Product Testing Knowledge

Pulp and Paper Manufacturers and Industry Partners

- Company/Site Specific:
 - Equipment, Process and Procedural Skills and Knowledge
 - Environmental, Health & Safety
 - Process and Product Testing Knowledge
 - Doctrines (e.g. *Market-based Management, Customer 1*)