

## State of **THE** Industry **16<sup>th</sup> Annual TAPPI/PIMA Student Summit**

January 19-21, 2013

## Thanks to our Sponsors & Interviewers:

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**Domtar Paper Co. LLC**

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**International Paper**

**Kapstone**

**Metso Paper USA Inc.**

**MWV**

**NewPage**

**NCSU**

**OMNOVA Solutions Foundation**

**Rayonier**

**RockTenn Company**

**Sappi Fine Papers**

**Voith**

## Schools in The House:

Grenoble-Pagora

IPST

Miami of Ohio

NC State

SUNY

Maine

Minnesota

Western Michigan

UW Stevens Point

Christian Brothers University

Florida

Georgia Tech

University Of Washington

Auburn University

## Agenda

- Who Are We
  - Just Imagine
  - Quality of Life
- What's the Future Hold
  - Paper Grades
  - The New Industry
  - Employment
- Graduate Placement Rates





Warren Memorial Library (S.D. Warren),  
Item No. SDW.005.43.1  
<http://www.warren.lib.me.us/Peopleatwork.html>



Humor me for a few moments  
Close your eyes  
Review in your mind's eye  
How your day started off from the moment you  
woke up and prepared to start your day.. All  
the little details, Wait For It.....

Now Imagine all you did this morning...without  
Paper.

And BTW did you have a need for tissue so far  
today?  
If not....wait for it.....



## *A Truly Green US Industry?????? Now*

It would look something like this:

- Generates 65% of it's own energy
- Recycles 66.8% of every product that it makes
- Reached a 91.2% recovery rate of OCC
- Employs more people than the US auto industry
- Each job drives 4-5 additional jobs across the country
- Replants it's raw materials to the extent that there are more trees in the US than in 1900
- The main feedstock for energy is biomass which is carbon neutral and renewable (*Our products and raw materials sequester Carbon!*)
- A safety record improvement over the past 10 years that is one of the best if not the best of all industries
- Air emissions reduced, depending on the product, by 27-63% (10years)
- Fossil Fuel usage has been cut by 26% over the past 20 years





## *A Truly Green US Industry **of the Future***

It would look something like this:

- In addition to all the attributes of the previous slide it would add the following
- By 2020 it would increase its recovery rate for recycling to 70%
- Increase energy efficiencies by 10%
- Reduce greenhouse gas emissions by an additional 15%
- Expand forest certification programs
- Reduce its injury incident rate by 25%
- Increase opportunities to reduce fresh water consumption
- More electronics will be shipped in paper based packaging

**First of all we are not declining, we are a mature industry that is tapering off and at the same time reinventing ourselves..... and we need smart capable professionals to help.**

- We do get a Uneducated Bad Rap:
- The history of the candle....*
- The Devil went down to Georgia....*
- Old Farmer and his mule....*



*I am not scared, I am actually very excited about our future!*

## **Mature and Tapering Off:**

Newsprint

Magazine

Circulars

Inserts

Printing & Writing

Copy Paper

## **Flourishing:**

Packaging

Linerboard 3 new mills-Niagara, Falls, Louisiana & Ontario

Tissue & Towel 2 new mills in the US and many rebuilt machines

Kraft bags

Specialty Papers

Pulp

Nonwovens

***The world is constantly watching our global industry and telling an incorrect story. It is up to us to educate the world.***

## Pulp & Paper US & CN 2008-2012

### **Mill Closures 70**

Grades; 65% P&W, 11% Paperboard, 24% Pulp & Other

### **Paper Machines Idled/Shutdown 128**

Grades; 89 were P&W, 39 mixed

### **New Machines/Rebuilds/Grade Conversions 33**

Grades; Paperboard, Linerboard, Graphic, Specialty, Pulp/Dissolving-Fluff  
Pulp

## TISSUE

### **Mill Closures 3**

### **Machine Shutdowns 6**

### **New Mills 5**

### **New Machines 22**

**2012**

**1990**

Operating Mills in the U.S. = 370

Operating Mills in the U.S. = 510

Operating Mills in Canada = 105

Operating Mills in Canada = 220

Total =

Total = **730**

**475**

Operating PM's in the U.S. = 830

Operating PM's in the U.S. = 1,270

Operating PM's in Canada = 227

Operating PM's in Canada = 550

Total = **1,057**

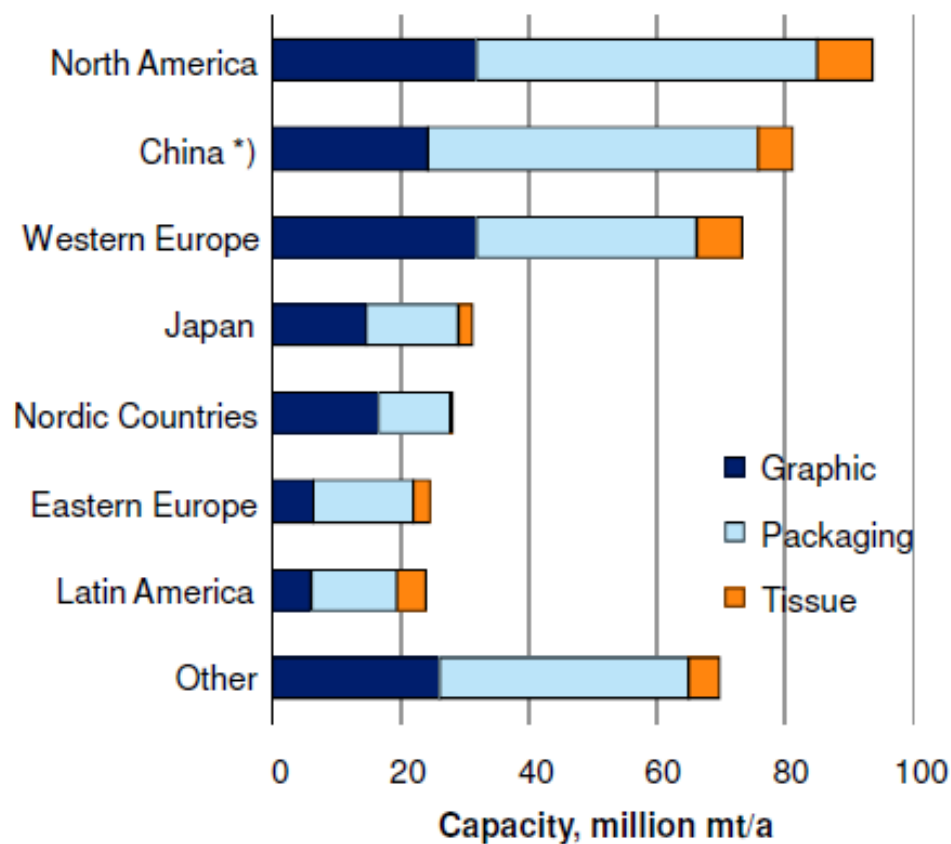
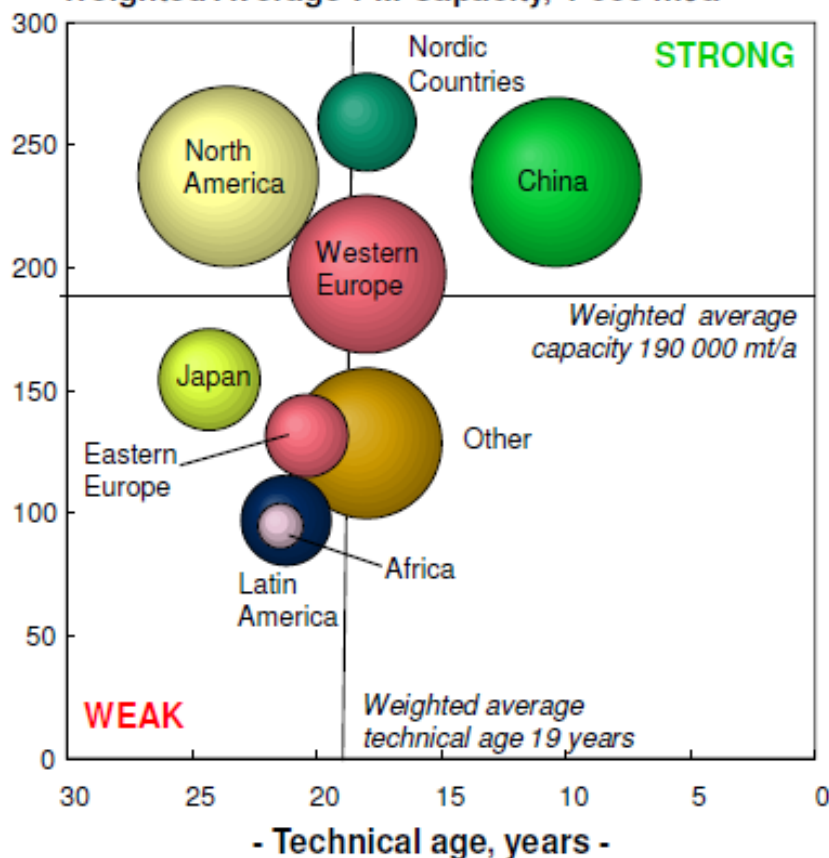
Total = **1,820**

# GLOBAL PAPER INDUSTRY ASSET QUALITY COMPARISON 2011<sup>^</sup>

North America has been and will continue to be a major contributor to the Global Paper Industry. While decline in Graphic Paper is expected to continue, repurposing assets and growth in other grades will offset much of this loss.

Weighted Average PM Capacity, 1 000 mt/a

Total Capacity by Region 2011



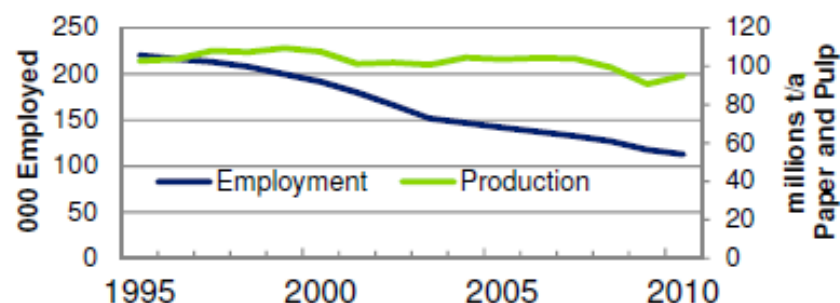
<sup>^</sup> Pöyry World Paper Markets

<sup>\*)</sup> China data include identified, industrial scale machines only

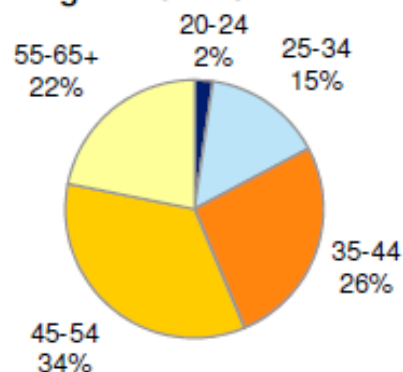
# HISTORICAL AND CURRENT PERSONNEL IMPLICATIONS

While Rationalization, Globalization, Consolidation, and changing product demands have resulted in a smaller US industry staffing wise, the industry today is much more efficient; however, a large proportion of professionals are nearing retirement.

Historical US Mill Employment and Production\*^



2011 Age Distribution of US Mills\*



- The US industry has been gradually transforming and strengthening itself due to changes in domestic and global product demand while the competitive landscape continues to evolve with new innovations and investments.

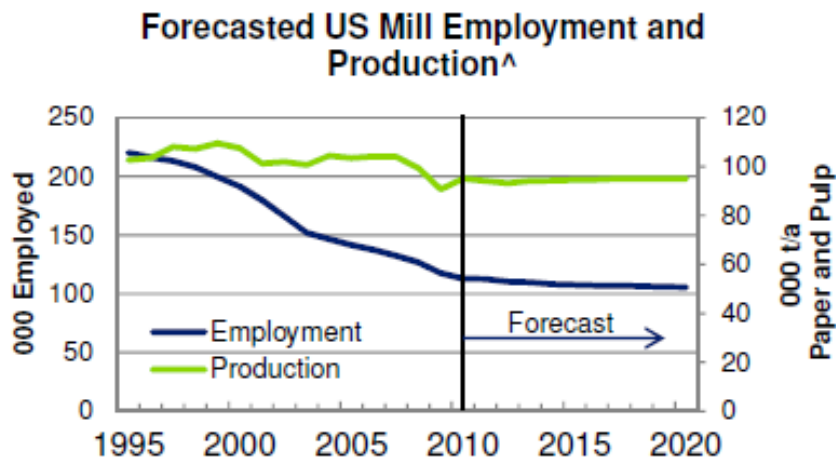
- Economic conditions and decline in printing and writing grades have had a large impact in production decline, but growing demand for packaging and tissue has mitigated much of this.
- Several US companies have merged or been acquired to manage evolving market dynamics strengthening industry.
  - This has resulted in less efficient machines being retired so capital can then be focused on more modern production platforms .
- As seen in the historical statistics, this has resulted in a significantly leaner, more efficient work force (180% improvement over timeframe) with only a small decline in domestic production.

\*US Bureau of Labor Statistics ^ Pöyry Estimates



# FUTURE PERSONNEL IMPLICATIONS

As the industry realigns itself to support future domestic and global demand, US production prospects appear stable, yet the workforce will have to be continually developed to support the future and remain competitive.



- From the historic personnel decline and renewal of the asset base, there is now a smaller pool of talent to draw from to continue operations.
  - Over 20% of current industry employees are or will be nearing retirement, affecting roughly 3000 people in leadership positions.
  - More competitive renewed asset base also needs to be supported to ensure return on investment.
- A continued decline in printing and writing paper demand will offset overall production increases for other grades in the US; however, affected assets offer opportunity to be repurposed for other commodity or specialty production.
- Several new investments are forecasted in growing packaging and tissue grades at current and new facilities taking advantage of the latest technology and operating principles employed in the global industry.

<sup>^</sup> Pöry Estimates

## Our products are not simply Pulp & Paper:

- New Paradigm shift; co-products are our future:
- Chemicals
- Bio Fuels
- Nano Cellulose Technology
- Lignin derived chemicals
- Stewards of the timber lands (really?)\*
- Protectors of the forests (really?)\*

*\*The USDA spends ½ of it's annual budget each year dealing with Forest fires. Brazil does not have this issue.*

***The world is constantly watching our global industry and telling an incorrect story. It is up to us to educate the world.***



## 2012 TAPPI INTERNATIONAL CONFERENCE ON



### Nanotechnology for Renewable Materials

June 4 - 7, 2012 • Hyatt Regency Montréal  
Montréal, Québec, CANADA • [www.tappinano.org](http://www.tappinano.org)



The mission of the International Nanotechnology Division is to serve as the leading global forum for the community of individuals, organizations and institutions seeking to collectively advance the responsible and sustainable production and use of renewable nanomaterials.

Division seeks to:

- Advance research, development and deployment of renewable nanomaterials to help meet the material needs of people and society;
- Share and disseminate knowledge and information on the responsible production, use, and disposal of renewable nanomaterials.
- Advance the science and technology for renewable nanomaterials through Standards and its membership in ISO TC-229 on Nanotechnology.

• [www.tappinano.org](http://www.tappinano.org) and [www.rethinktrees.org](http://www.rethinktrees.org)

- Countries with ongoing research projects focusing on nanocellulose materials
  - Australia, Austria, Brazil, Canada, China, Finland, France, Germany, Israel, Japan, Norway, Sweden, Switzerland
- Countries where samples of cellulose nanomaterials are available
  - Canada, Finland, Israel
- Countries where commercial microfibrillated cellulose is available:
  - Finland, Germany, Japan, Norway, USA

- **UWSP-100% for 37**
- **NCS-100% for 58 years**
- **SUNY ESF-100% oldest Pulp & Paper Program 1920**
- **AUBURN-100%**
- **Washington-100%**
- **GA. TECH-100%**
- **Western Michigan-100%**
- **IPST-100%**
- **Maine-90%**
- **Miami-100% for 56 years**
- **Minnesota-70%**
- **CBU-100%**
- **Michigan State-100%**
- **WSU-100%**

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Global Estimated Average Number of graduated Paper Engineers per year  
M.Sc. & B.Sc. Levels from 2005-2010  
Total per year = 2626

- Australia & New Zealand - 4
- Brazil - 28
- China -1,294
- Canada – 37
- Europe – 517
- Japan – 68
- Russia - 559
- South Africa – 24
- Thailand - 26
- USA – 69

27% of all engineers in the USA reached retirement age in 2010.

- Job needs in the US over the next 5 years
- Climbing the corporate ladder in record time
- Can you say shortage of skilled workers?

**Two Top Agenda Items in corporate offices today:**

- 1. Safety**
- 2. Filling positions with qualified people.**

*Dave Patterson, Verso CEO comments to me in September 2012. "In an effort to address the employment needs in their mills, they recently started a co-op program with local high school students. (I haven't heard anything like this in 25 years) The good ones are offered jobs upon graduation from High School and offered assistance if they want to future their education."*

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This is a great industry and will continue to be long after your retirement.



From school to a long career



It's all about who you know.



**WE LOVE OUR VOLUNTEERS!**

Thank you for your service – every day, every week, every year.

There are two types of people:

1. **TAPPI members.**
2. **Those who should be.**

**Thanks for your time!**

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*Warren Shoemaker of Cobalt Technologies joined TAPPI and rang the President's Membership Bell*