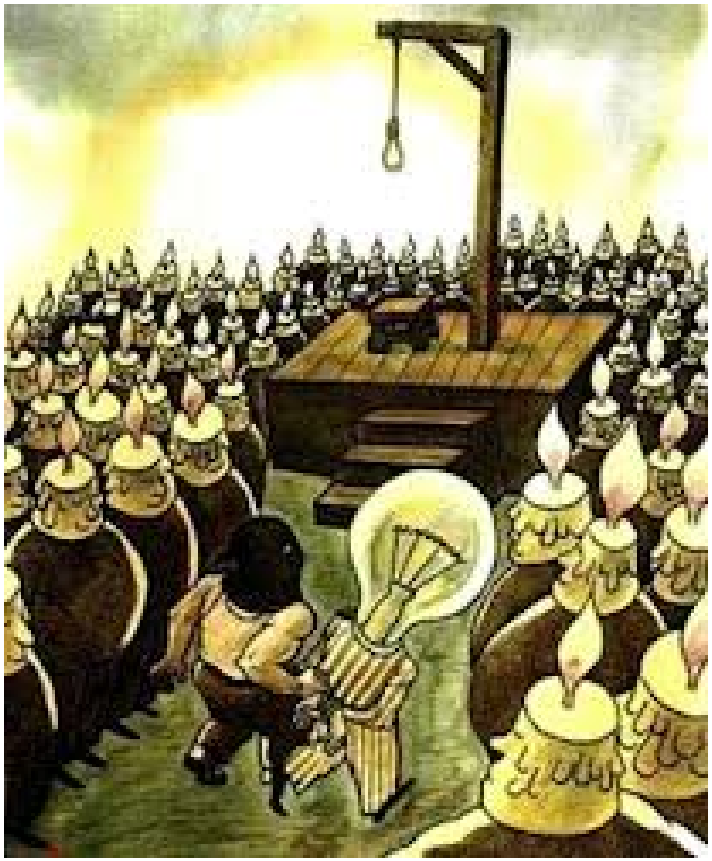
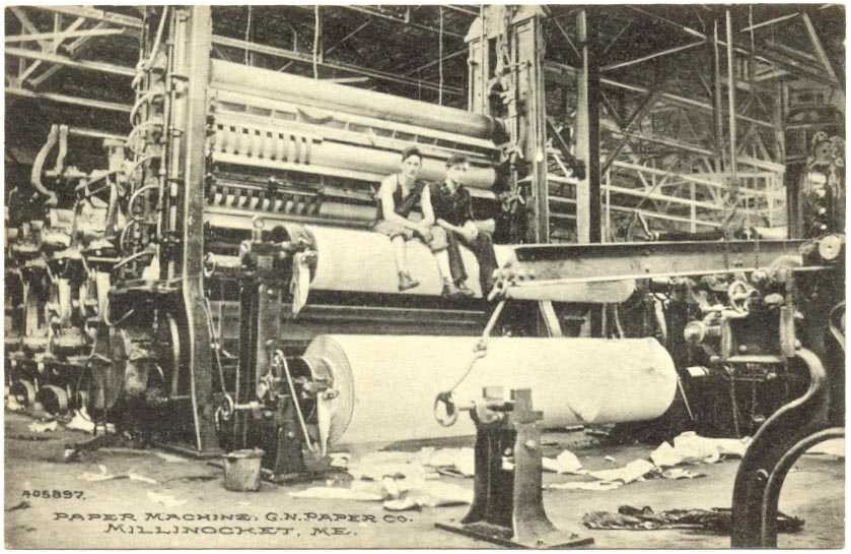
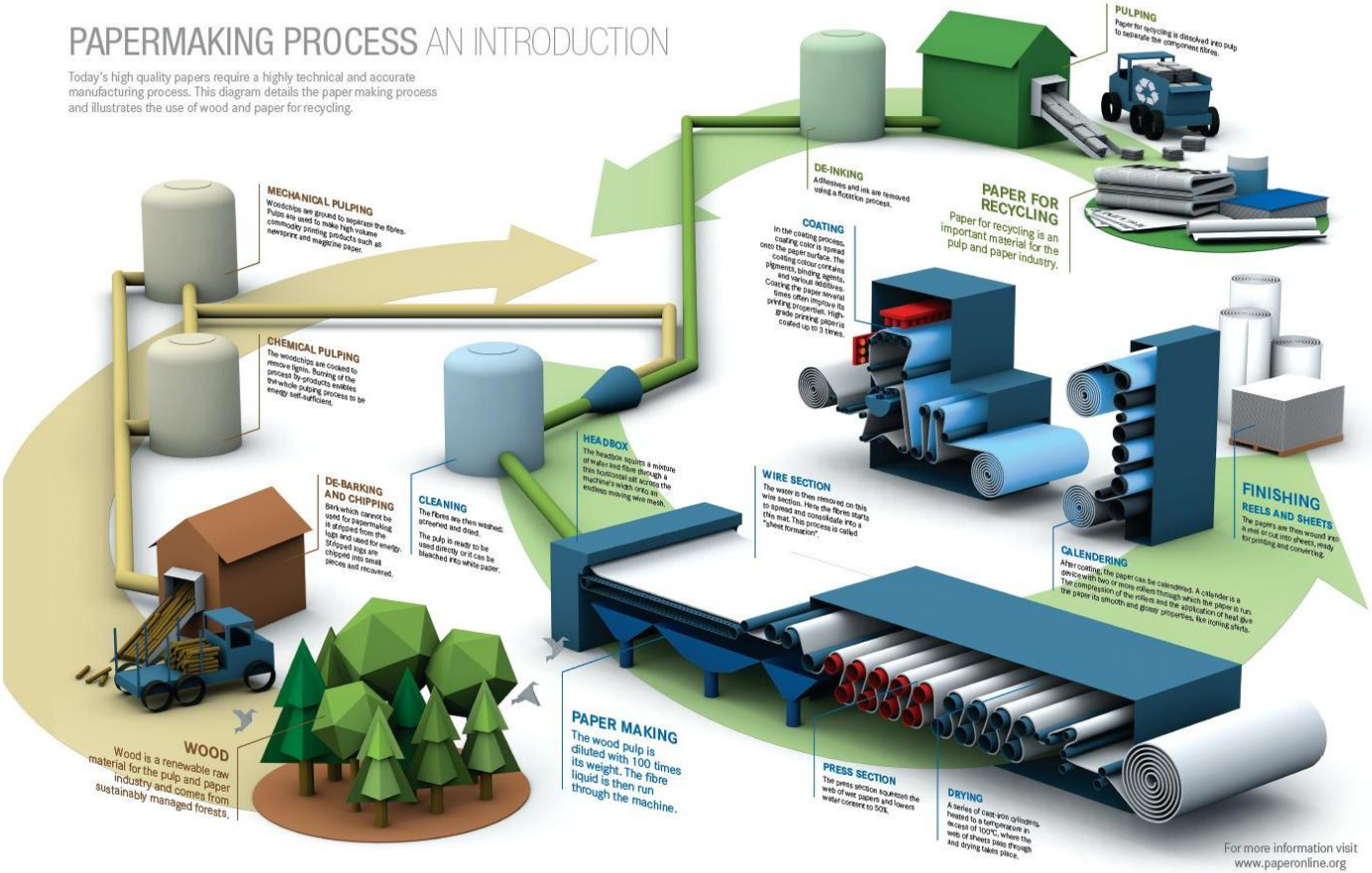
INNOVATION



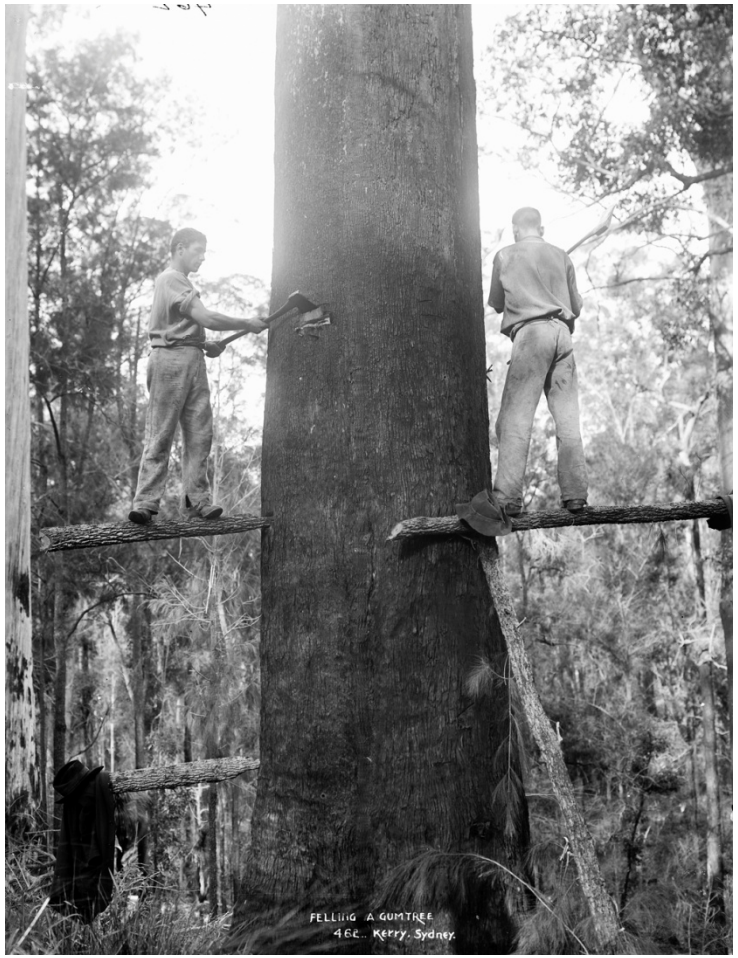
Papermaking in Maine



Papermaking Process



Harvest

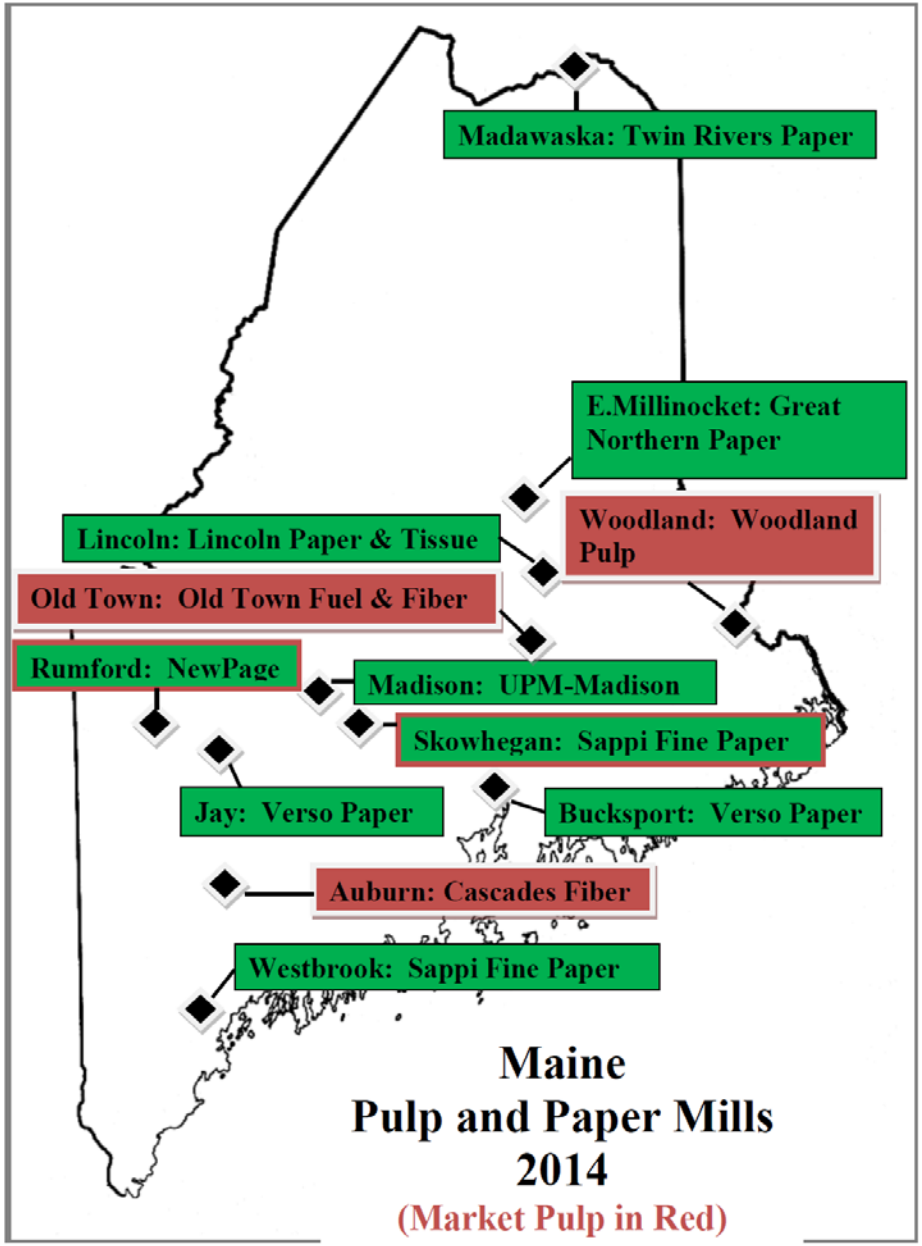


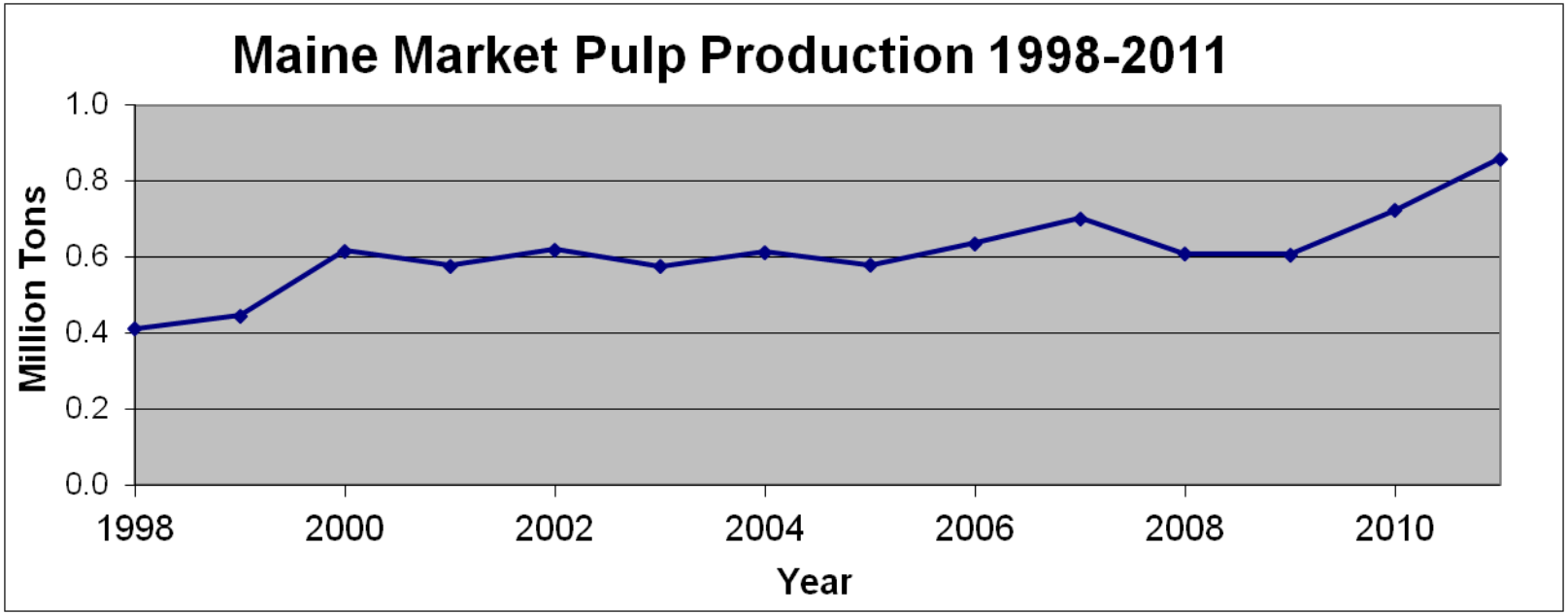
Haul

Chip

Pulp

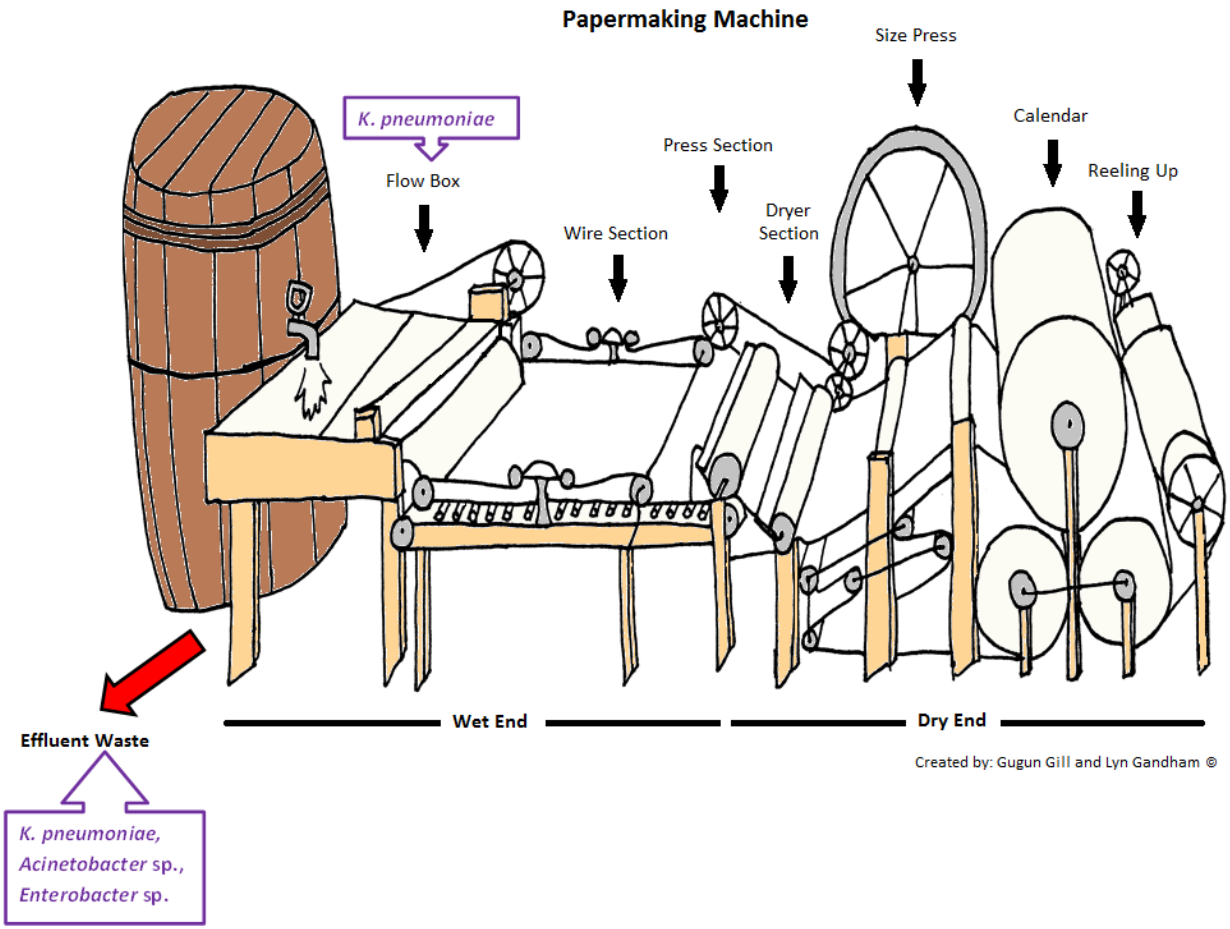
Market Pulp


Madawaska: Twin Rivers Paper
E.Millinocket: Great Northern Paper
Woodland: Woodland Pulp
Lincoln: Lincoln Paper & Tissue
Old Town: Old Town Fuel & Fiber
Rumford: NewPage
Madison: UPM-Madison
Skowhegan: Sappi Fine Paper
Jay: Verso Paper
Bucksport: Verso Paper
Auburn: Cascades Fiber
Westbrook: Sappi Fine Paper
Maine
Pulp and Paper Mills
2014
(Market Pulp in Red)

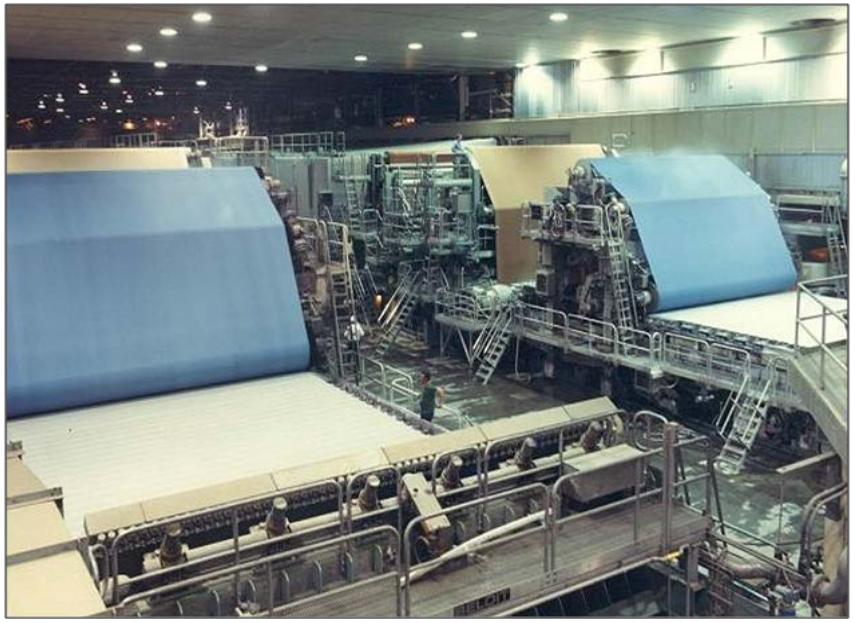

Maine Market Pulp Production 1998-2011
Million Tons
1.0
0.8
0.6
0.4
0.2
0.0
1998
2000
2002
2004
2006
2008
2010
Year

Biofuels and Biochemicals

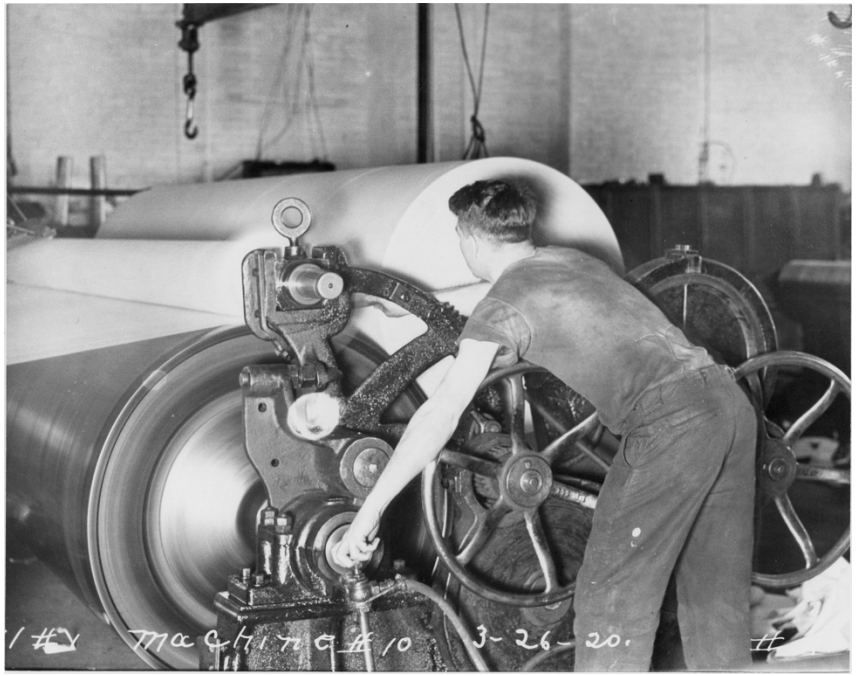
Papermaking



Wet End



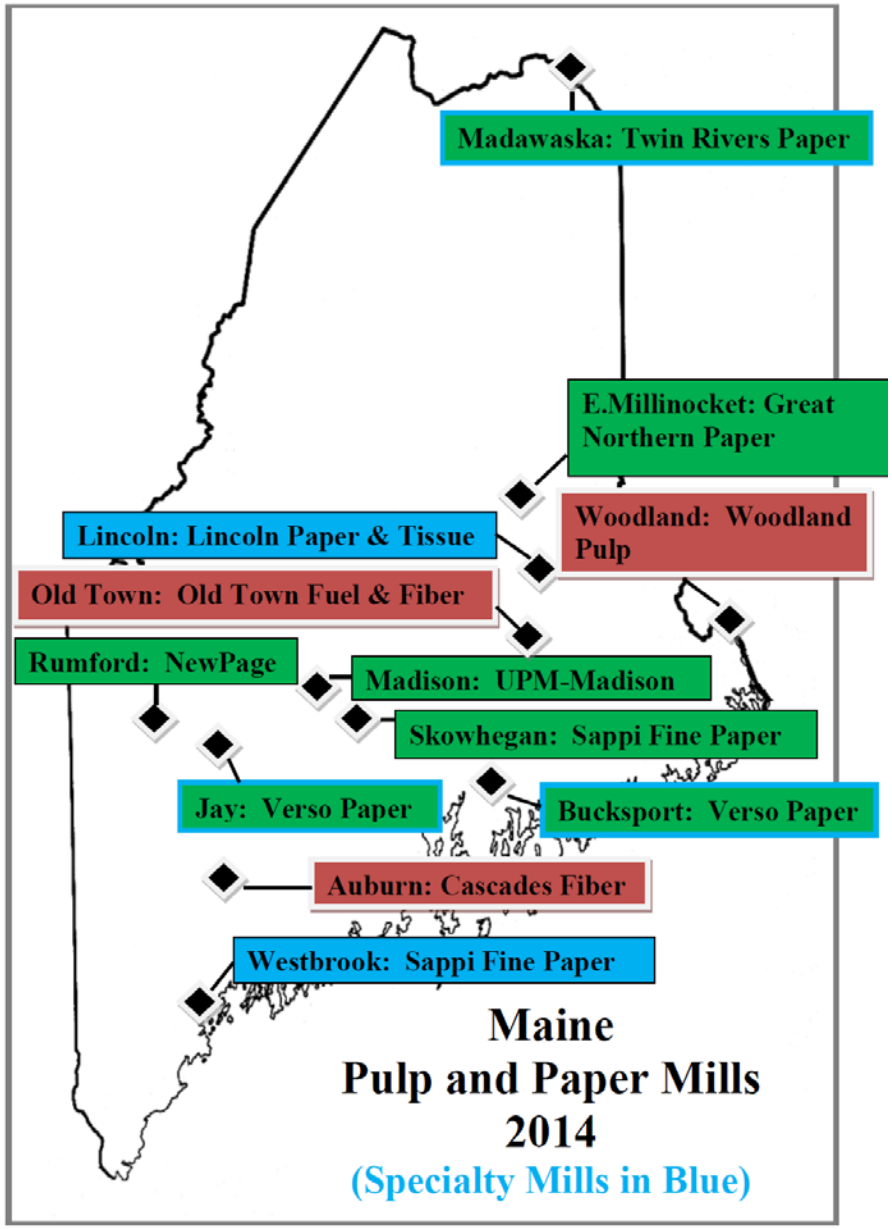
Dry End



Rolls

Specialty Products

Dark Chocolate *Milano*®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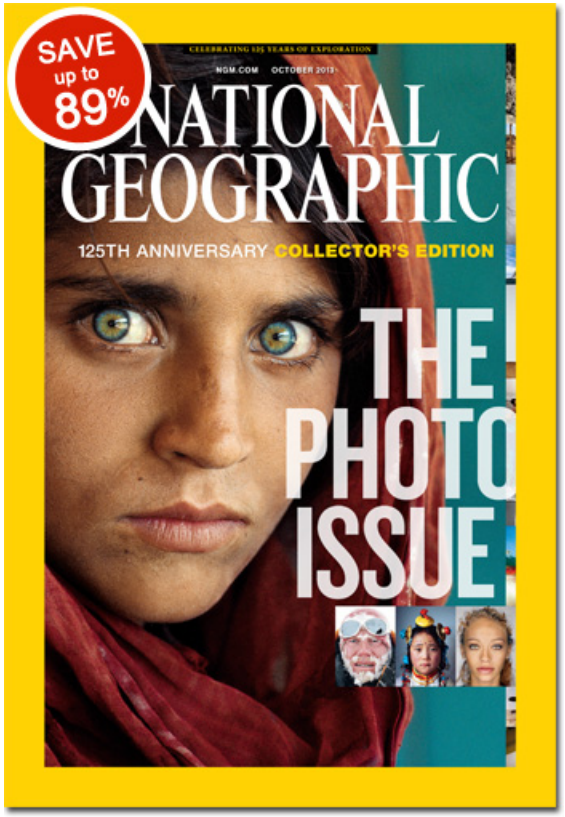
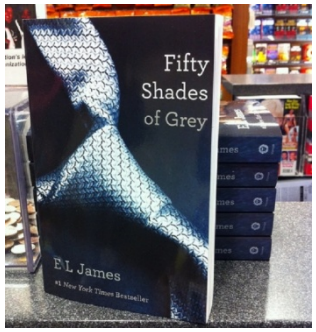
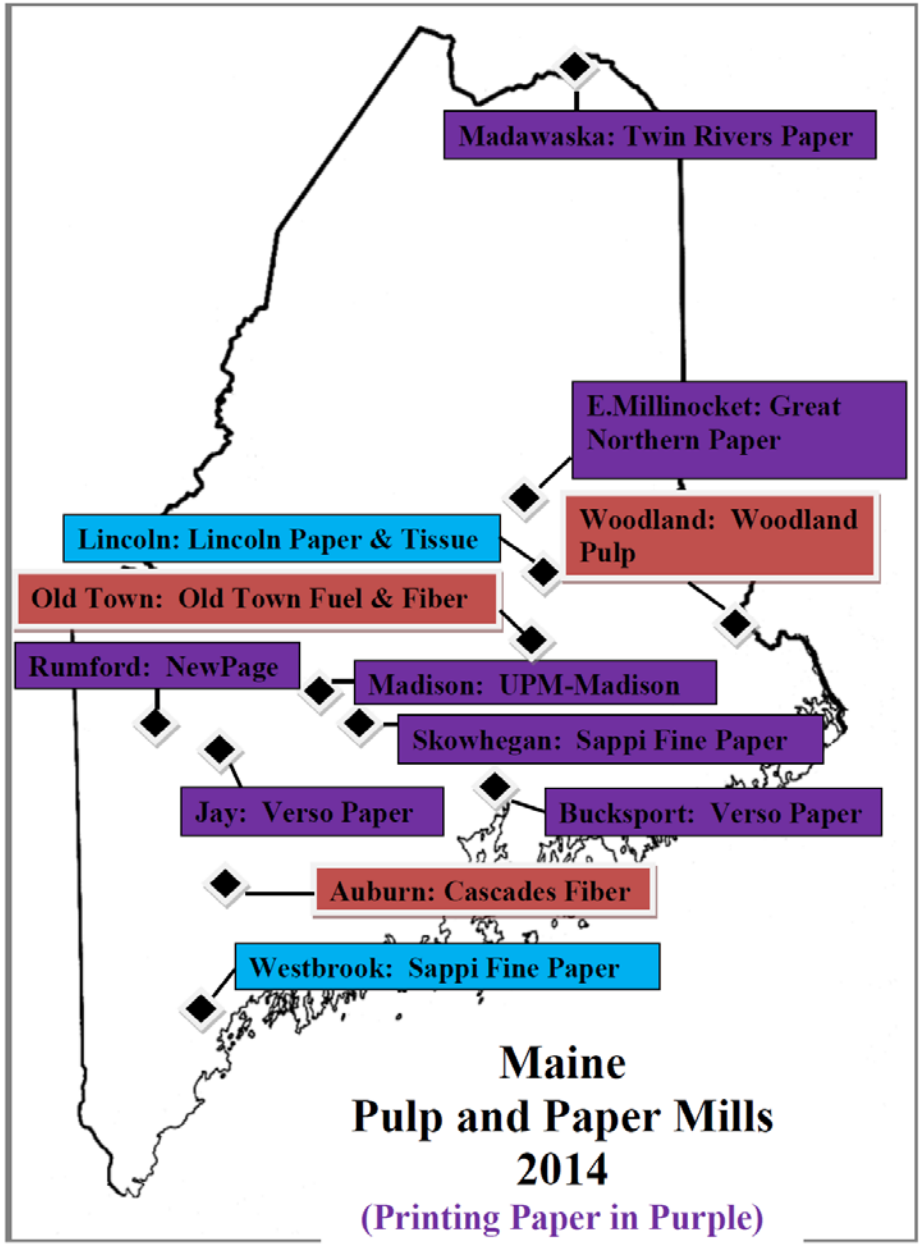
Bucksport: Verso Paper
Auburn: Cascades Fiber
Westbrook: Sappi Fine Paper
Maine
Pulp and Paper Mills
2014
(Specialty Mills in Blue)

Printing Papers



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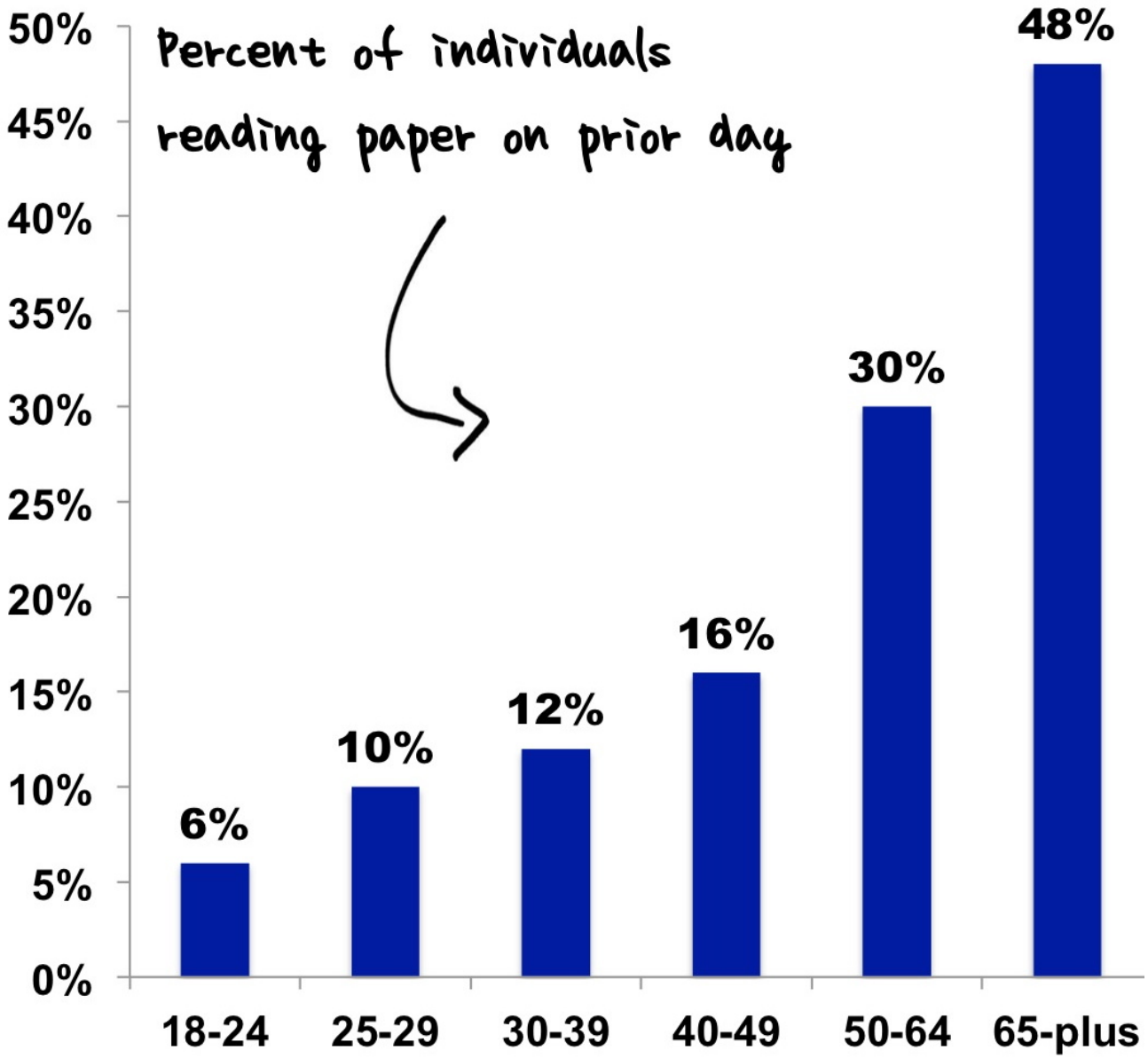
Auburn: Cascades Fiber
Westbrook: Sappi Fine Paper
Maine
Pulp and Paper Mills
2014
(Printing Paper in Purple)

Digital Competition

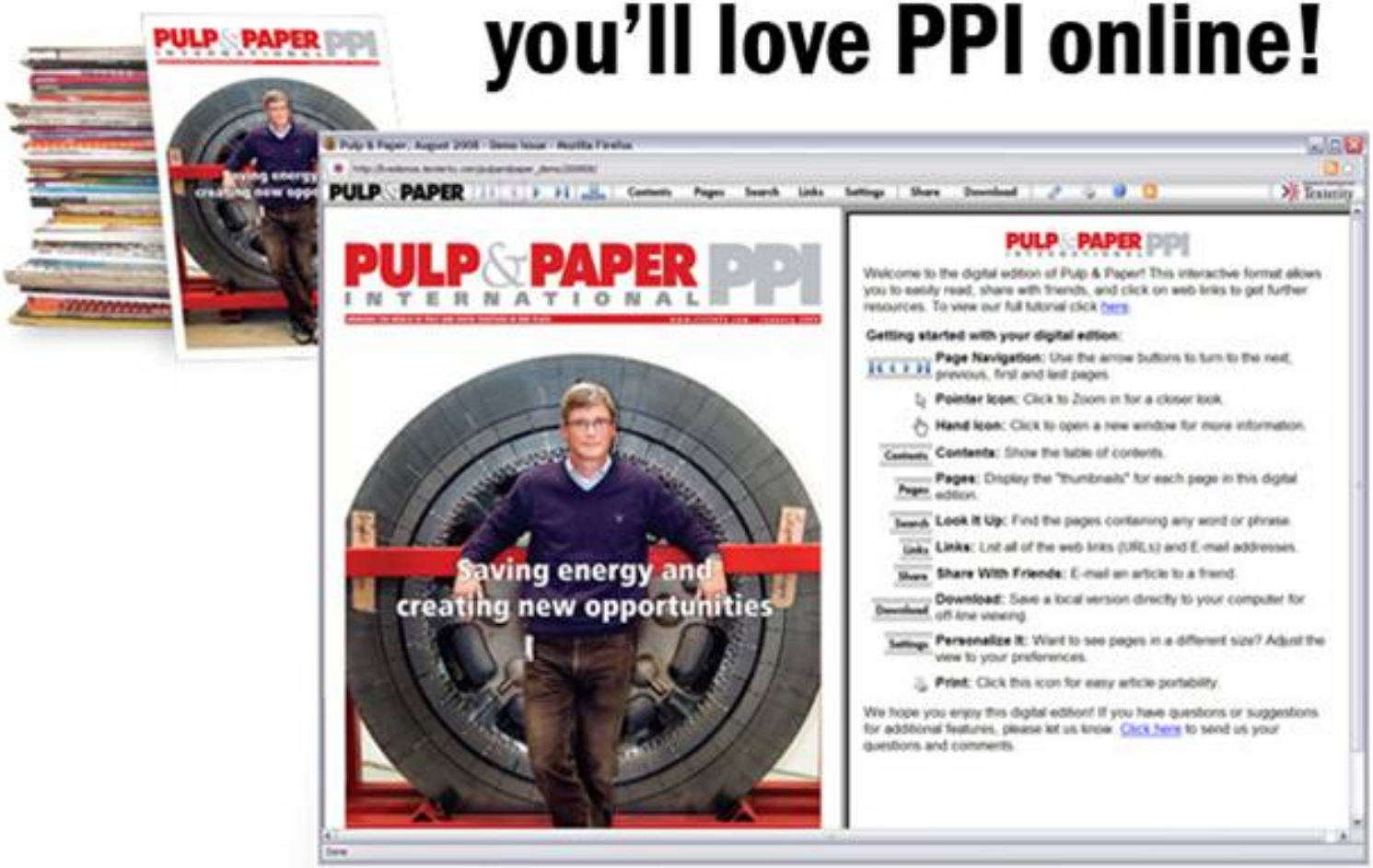
Newspaper readership by age



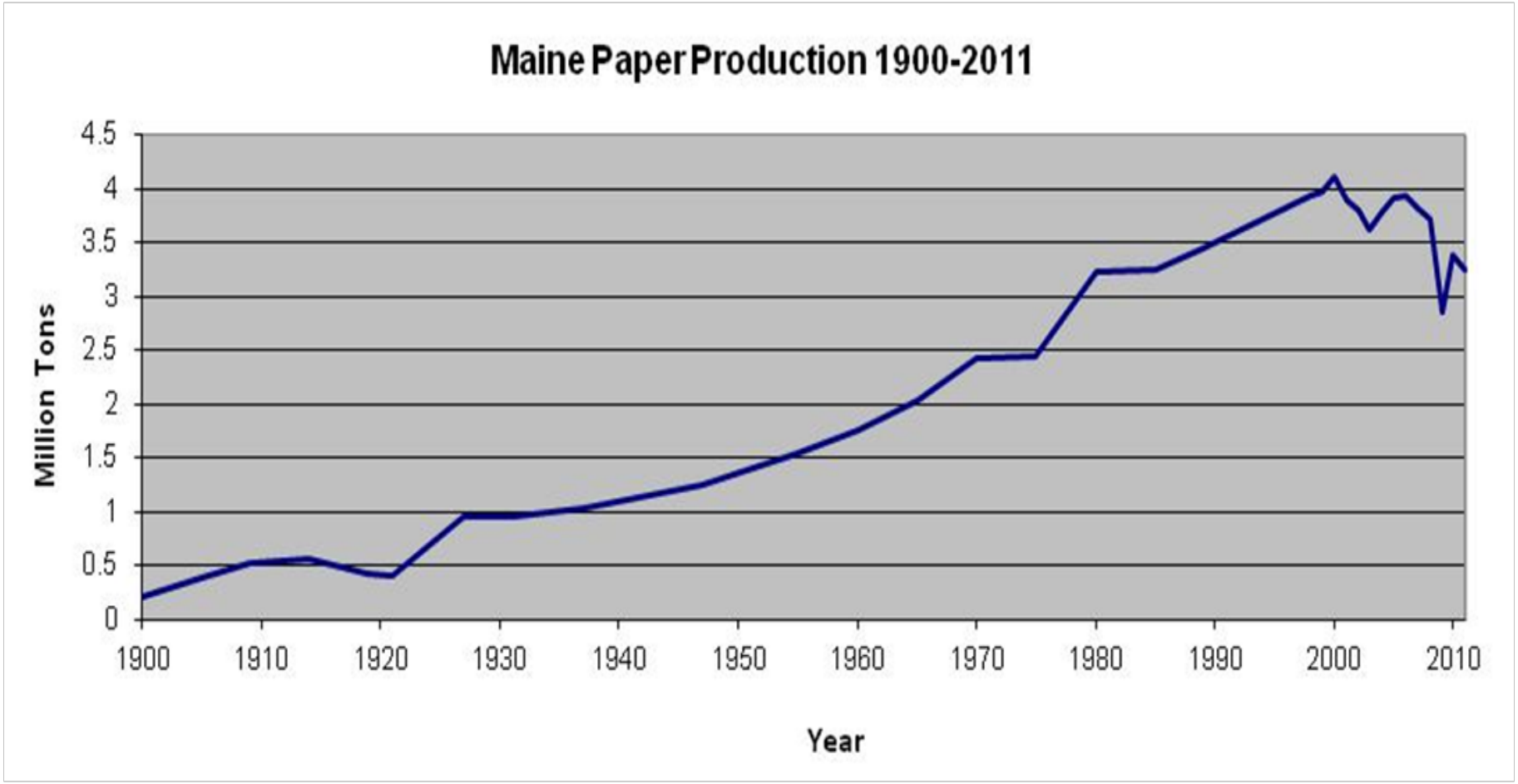
Source: Pew Research Center

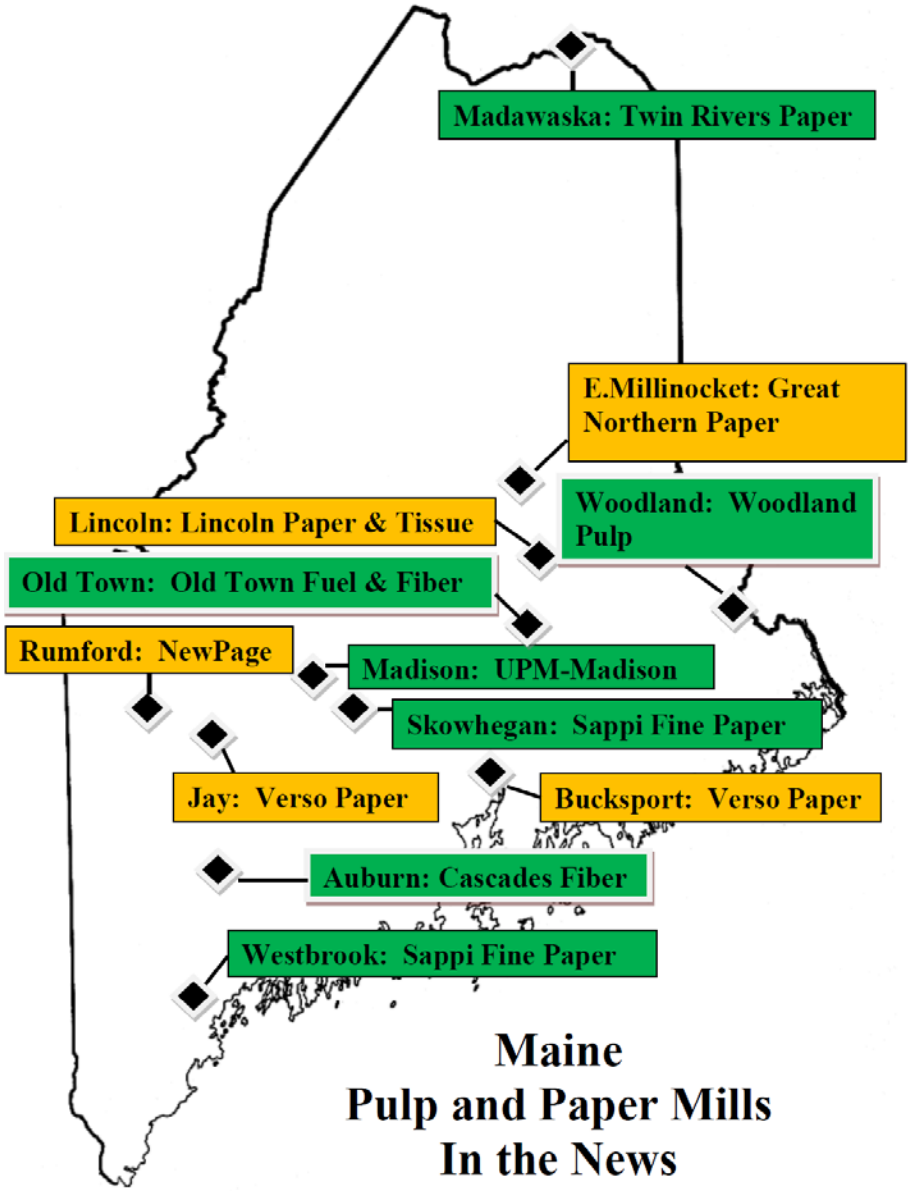
If you like Pulp & Paper In print...

you'll love PPI online!



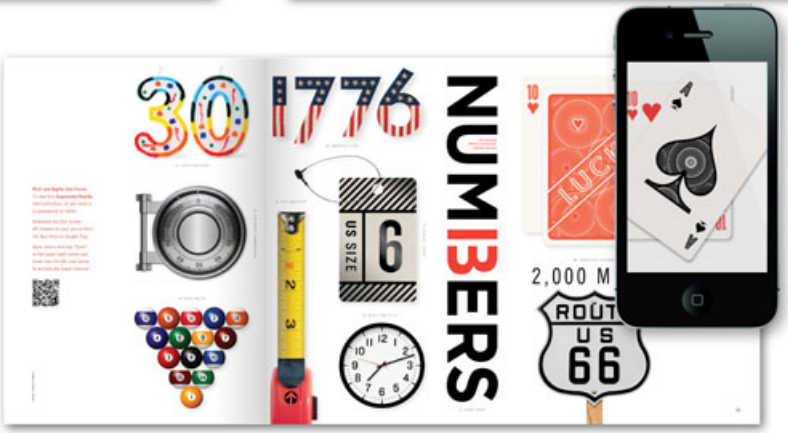
Foreign Competition


Maine Paper Production 1900-2011
Million Tons
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Year



Maine
Pulp and Paper Mills
In the News

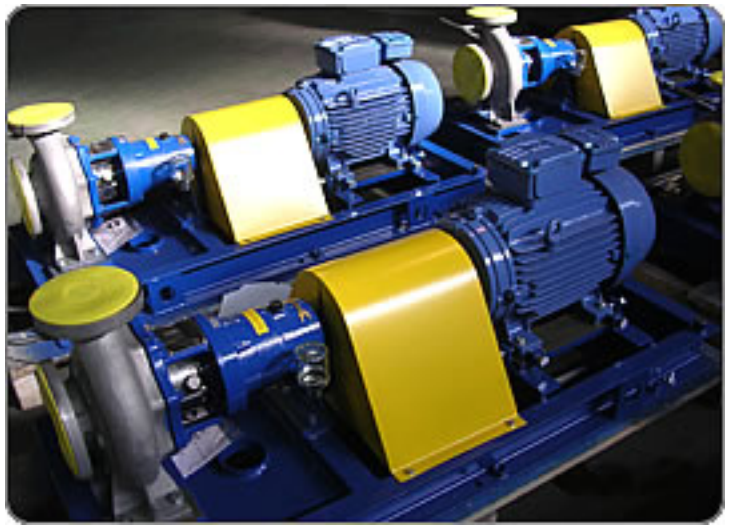
Sappi Print Innovations



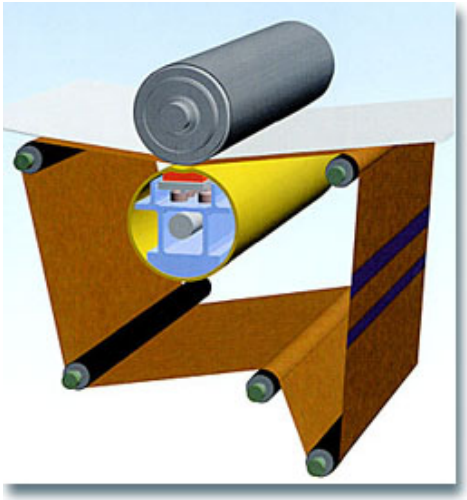
Innovations in Energy

Process Changes

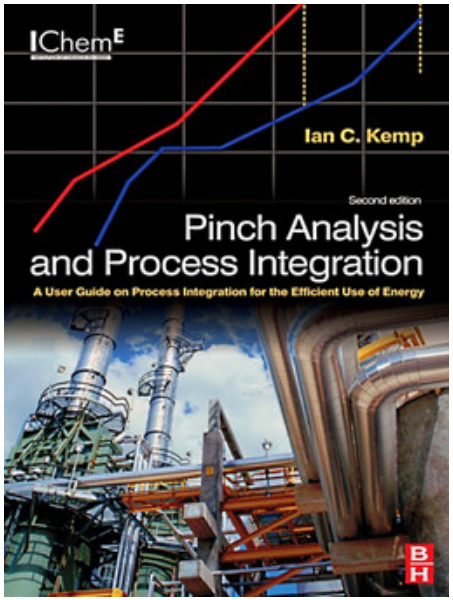
- Variable Speed Motors—slow pump speed to match need
  - AC to DC
  - New Technology
  - Efficiency Maine



- Modify shoe press to increase dryness and reduce drying cost



Heat Recovery



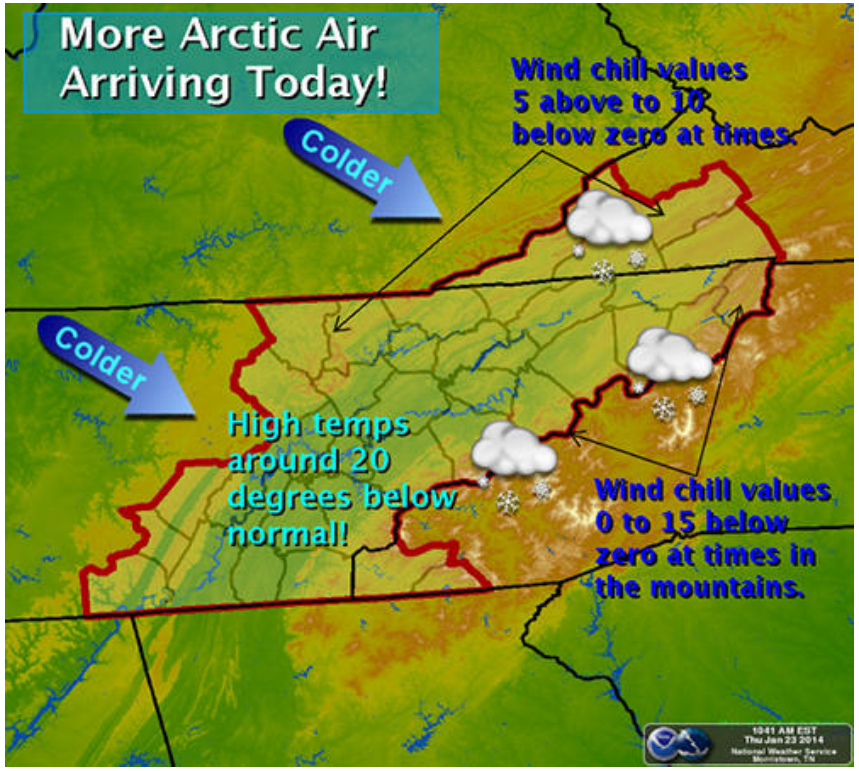
- Pinch Studies—Methodical way to get heat & use where most needed
- CHP—combine electricity generation with use of waste steam for heating
- Heat Pumps—pull heat from wastewater, use in steam production
- Reuse Wet End Hot Water

Reduce Fuel Costs

- Fuel Conversion
  - Biomass
  - Wastewater sludge
  - Tire Derived Fuel
  - Natural Gas
- Arbitrage (Fuel Switching)
  - Biomass/Purchased Electricity
  - Natural Gas/Oil

Demand Response

- Reduce Load During Peak Demand
- Take Down Entire Mill, One Machine, or One Process
- Sell Power to Grid or be Compensated by ISO-New England



LD 1792: Great Northern Paper

- Cate Street: Selling electricity necessary to keep East Millinocket mill viable
- Bill requires Brookfield to transfer demand response revenues to GNP (Cate Street) if no reduction in labor force or paper production.