CYBER SECURITY
Is your mill vulnerable to a cyber attack?

GROUNDWOOD PAPERS
Despite lackluster demand, pricing remains steady and producers may be pushing for more
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As the forest products industry has evolved over the past few decades, so has the need for increased advocacy support and expanded focus on technology research opportunities. Today, the industry has the benefit of two organizations whose complementary missions helps move the needle on many issues.

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Cyber Crime

By John O’Brien, Managing Editor
jobrien@paperage.com

Do you consider pulp and paper mills to be prime targets for cyber criminals and hackers? Maybe they’re not as desirable a target in as much as government facilities or financial institutions, but mills, corporate headquarters and R&D facilities all present real targets for hackers or can fall victim to their own people who unknowingly download a malicious program.

“A hacker may act from a desire for money, power, casual sabotage or revenge. But whatever drives them, cyber security breaches have the potential to create havoc,” says Patrik Boo, a cyber security expert who works for ABB (see story on pg. 18).

Boo points out that paper mills are especially vulnerable to cyber attack and the results can be catastrophic. “Even minor incidents can bring production to a halt — sometimes for days. Expenses can mount, including costs for bringing in specialists to handle the problems. Your data can be lost, and this can be segmented or further removed from the rest of the IT system,” says Berman.

Boo also warns that cyber crime is fast becoming a money-making scheme for hackers. “One of the most devastating ways a cyber criminal can hurt a mill is by hacking into the control system and stealing production data. Before mill personnel even notice the breach, the hackers will have sold that data to competitors.”

So what do you do? How do you know if your mill(s) or other facilities are safe?

Seth Berman, executive managing director and UK head of Stroz Friedberg, a digital forensics and investigating firm, says that a security audit is a good start in the process of evaluating the security of a facility’s systems.

“While there is no foolproof way to prevent an attack, it is certainly possible for organizations to build greater resilience. This process typically starts with an audit of the IT and physical security system which, like a financial audit, ought to be carried out by an outside team without a stake in the existing IT infrastructure.

“The audit team looks to understand the company’s threat profile and any vulnerabilities in its security systems. In addition to ensuring that firewalls and other security measures are up to industry standard, a thorough security assessment will also identify where sensitive data is stored and whether this can be segmented or further removed from the rest of the IT system,” says Berman.

I did a lot of digging on the Internet to try to find an instance where a pulp and/or paper mill had reported a breach in its systems. But couldn’t find one, although that’s not surprising. No one, whether it’s a mill, a utilities company or a government agency, wants to admit or publicize the fact that its systems were hacked.

Something to think about: “Cyber crime is one of the greatest business and technology threats of the digital age,” says Berman. “As adversaries become increasingly sophisticated and resourceful, the failure to prepare is simply no longer an option. The financial, governance and reputational risks continue to grow, urgently requiring a greater focus on vigilance and preparedness.”
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Cascades’ Greenpac Mill LLC (Greenpac) manufactured its first roll of lightweight linerboard on July 15 at its new containerboard mill in Niagara Falls, New York.

Greenpac is a corporation created by Cascades in partnership with the Caisse de dépôt et placement du Québec, Jamestown Container and Containerboard Partners.

From the beginning of the project in 2011, the construction of the mill was under the guidance of Norampac, a division of Cascades. Norampac is also responsible for the management of Greenpac’s operations.

Greenpac produces a lightweight linerboard made of 100% recycled fiber on a 328-inch paper machine (8.33 meters) supplied by Metso. The new machine has an annual production capacity of 540,000 short tons.

“The start-up of this new mill is a proud moment for Cascades. Equipped with the most advanced technology, this machine will enable us to better meet the needs of our customers,” said Marc-André Dépin, President and CEO of Norampac.

“After two years of intensive construction activity, we are anxious for the opportunity to finally be able to demonstrate the possibilities of the quality products that we will be able to offer,” he added.

Currently the mill is in the ramp-up phase in which it will gradually increase its production until it reaches maximum production capacity.

KapStone’s Longview Mill Eclipses One Million Safe Hours Worked

KapStone Kraft Paper Corporation’s mill in Longview, Washington recently eclipsed one million safe hours worked and now has its sights set on surpassing the two million safe hours worked milestone.

It was the second time in as many years that the mill surpassed one million safe hours worked. The mill exceeded the one million safe hours worked milestone for the second time on Aug. 14, 2013.

Mill Manager Paul Duncan credits the mill’s employees and evolving safety culture with the achievement. “Even with all we’ve accomplished, we know that we are only as safe as our next decision. This is why, as we go forward, we will continue to hold safety as a core value and a prerequisite for work.”

About 1,028 people work in KapStone’s Longview mill.

KapStone noted that the mill is the only U.S. producer of high-performance extensible multiwall sold into global markets, and is a leading manufacturer of high quality containerboard and specialty kraft papers.

The Longview mill, which operates five paper machines, has capacity to produce 1.6 million tons/year of pulp and 1.3 million tons/year of kraft paper and containerboard.

Georgia-Pacific Completes $1.5 Billion Acquisition of Buckeye Technologies

Georgia-Pacific LLC and Buckeye Technologies on August 23 completed the previously announced acquisition of Buckeye by Georgia-Pacific.

Under the merger agreement, all outstanding shares of Buckeye Technologies’ common stock were converted into the right to receive $37.50 per share, net to the holder in cash, without interest, subject to any withholding of taxes required by applicable law.

The deal was valued at approximately $1.5 billion, including debt.

As a result of the merger, Georgia-Pacific acquired all of the outstanding stock of Buckeye Technologies, including ownership of its five manufacturing facilities, global sales offices and headquarters. Employees of Buckeye Technologies (approximately 1,200) are now employees of Georgia-Pacific as Buckeye becomes a wholly owned subsidiary.

Jim Hannan, CEO and president of Georgia-Pacific, said, “We are very pleased to welcome the talented Buckeye employees to our company. They, along with Buckeye Technologies’ assets, innovation capabilities, advanced technologies, and specialty fibers and nonwovens businesses, provide a significant platform for continued growth and success for our cellulose and consumer products businesses.”
International Paper to Permanently Close Courtland, AL Mill

International Paper said that it will permanently close its Courtland, Alabama mill which is part of the company’s Printing and Communications Papers Business.

About 1,100 employees will be impacted by the closure. IP said the mill will shut down in stages with a full closure expected to be complete by the end of the first quarter of 2014.

The mill closure will reduce IP’s North American uncoated and coated freesheet paper production capacity by 950,000 tons, of which 765,000 is uncoated freesheet.

“These decisions are especially difficult because of the impact to long-serving and hard-working employees, their families and the surrounding communities,” said International Paper Chairman and CEO, John Faraci. “This decision to permanently close capacity is primarily being driven by demand decline for uncoated freesheet paper products in the United States.”

The Courtland Mill produces papers for forms, envelopes, labels, copiers, printers and magazines.

IP said it will work closely with union officials concerning benefits and other assistance programs for impacted hourly employees. Salaried employees impacted by these machine shutdowns will be eligible for severance packages and outplacement assistance consistent with company policy.

“We explored numerous business and re-purposing options for the Courtland Mill, but concluded that permanently closing the mill best positions the business for the future,” said Printing and Communications Papers Senior Vice-President Tim Nicholls.

International Paper’s Printing and Communications Papers Business will consist of four paper mills focused on uncoated freesheet, bristols and specialty papers markets:

- Two uncoated freesheet paper mills - Eastover, South Carolina and Riverdale, Alabama.
- Two specialty paper mills - Georgetown, South Carolina and Ticonderoga, New York.

The company’s fluff pulp business is not impacted by this announcement.

RockTenn’s Jim Rubright to Retire, Steve Voorhees to Become CEO

RockTenn announced that Jim Rubright will retire as chief executive officer and a director on Oct. 31. Steve Voorhees, chief operating officer of RockTenn, will become chief executive officer upon Rubright’s retirement.

Voorhees joined RockTenn as chief financial officer in 2000 and became chief financial officer and chief administrative officer in 2008, and president and chief operating officer in January 2013.

RockTenn also announced that Ward Dickson joined RockTenn in September as executive vice president and chief financial officer with responsibility for finance, information technology and procurement. Previously Dickson served as senior vice president of finance for the global sales and service organization of Cisco Systems.

Stephen Felker, RockTenn’s lead independent director and soon-to-be board chairman stated, “RockTenn will lose a remarkable CEO with Jim Rubright’s retirement from the company. Under Jim’s leadership, RockTenn has grown to become a highly respected leader in the paper and forest products industry. RockTenn’s share price has increased more than eight fold and with dividends earned a compound annual return of 18.6 percent — for 14 years.”

Rubright noted that moving forward RockTenn has a good team in place. “I’m glad to be able to leave RockTenn with a strong and talented leadership team. Steve Voorhees has been instrumental in developing and executing our process improvement and acquisition strategies since he joined RockTenn in 2000 and is a great choice to lead our company.

“We are also pleased to have Ward Dickson join our team, bringing his proven leadership talent and extensive experience in finance, sales and service,” Rubright added.

Felker will become chairman of the board of the company for a two-year term commencing with Rubright’s retirement from the company. Felker is the former chairman and chief executive officer of Avondale, Inc. and has served on RockTenn’s board of directors since 2001.
SOUTH AMERICA

Empresas CMPC to Close Newsprint Mill in Chile

Empresas CMPC’s has decided to close its Papeles Río Vergara newsprint mill located in Nacimiento, Chile, on November 30, 2013.

CMPC said that its decision was based on increasing electricity rates, which have resulted in higher production costs.

CMPC explained that over the past 10 years, the mill operated under an electricity supply contract with more affordable pricing. But the contract is due to expire soon and despite its best efforts, CMPC has been unable to obtain a new supply contract with prices that would allow the mill to continue profitable operations.

“We did not want to close the mill and have searched for options to keep Papeles Río Vergara in operation.”
— Hernán Rodríguez, CEO, Empresas CMPC

In addition, due to the rising costs of electricity in the past few years, newsprint production at the mill has gradually been reduced. In 2012, production was 130,000 tons, compared with an average of 200,000 tons from 2000-2011, the company said.

Production capacity in 2013 has been 60,000 tons, CMPC added.

“This was a sad and difficult decision for CMPC. We did not want to close the mill and have searched for options to keep Papeles Río Vergara in operation. Unfortunately, the economic reality of higher electricity prices made this impossible,” said Hernán Rodríguez, CEO of Empresas CMPC.

“The company will make every effort to accommodate the mill’s workforce. The 202 workers will be offered a retirement plan with corresponding indemnification program, as well as initiatives to reallocate workers into other subsidiaries of CMPC, and a special bonus for workers who remain with the company until November 30, 2013,” Rodríguez added.

The Papeles Río Vergara mill has been producing newsprint since 1957.

All other CMPC businesses, which are substantially less power-intensive, will continue to operate normally.

The Company is moving forward with investments in cogeneration in electric and thermal energy, which will produce approximately 82% of the energy required for CMPC’s Chilean operations in 2013.

MEXICO

Hexacomb Opens New Manufacturing Plant in Central Mexico

Hexacomb, a Boise company, has opened a new manufacturing facility in central Mexico.

The facility, located in the state of Querétaro, will be manufacturing Hexacomb’s full line of paper-based honeycomb protective packaging products, including sheets, runners, edge and corner protectors.

“Due to the sizeable demand in Mexico for Hexacomb products, we have added a second manufacturing facility there,” explained Scott Daniel, President of Hexacomb.

Hexacomb has been supplying its customers in central Mexico from its Monterrey facility, which is located in the northeastern part of the country.

The additional Hexacomb honeycomb production output will address growing demand from multiple market segments including automotive, glass, spinning mills, appliances and food/beverage, the company noted.

EUROPE

Rottneros Mill in Sweden to Continue Producing Groundwood Pulp

Rottneros said that recent product and process developments at its Rottneros pulp mill in Sweden have gained success in the market, which has in turn boosted demand for its pulp. As a result, Rottneros will continue to produce groundwood pulp at the mill, reversing a plan announced in May of 2012 to close the groundwood pulp line at the mill.

In a press statement, Rottneros said, “Customers are realizing the added value of the new pulp products developed at Rottneros Mill. One particularly successful area has been the development of pulp used for paperboard types based on both recycled and fresh (virgin) fibres.”

The decision to continue producing groundwood pulp also saved about 30 jobs.

Rottneros Mill produces two grades of mechanical pulp, groundwood and CTMP pulp. The mill has a production capacity of approximately 170,000 tonnes. In 2012, the mill produced 121,600 tonnes.
EUROPE

Paper Recycling Rate in Europe Reaches 71.7% in 2012

The European Recovered Paper Council (ERPC) recently announced an impressive 71.7% paper recycling rate for Europe. In their annual monitoring report, the ERPC revealed that current paper consumption in Europe has dropped by 13% to the level of 1998, but the recycled amount of paper is 1.5 times higher than in 1998.

According to the ERPC, in Europe paper fiber is recycled 3.5 times per year, while worldwide the average is 2.4 times.

The report also illustrates that the number of European countries with a recycling rate below 60% has decreased, whereas there are an established 13 countries where paper recycling rates exceed 70%. To increase paper recycling especially in Central Europe, several ERPC members are partners in EU funded projects working to improve collection systems in that region.

RUSSIA

Russian Regulators OK Deal for Bank of Moscow to Acquire Segezha Pulp and Paper Mill

Russia’s competition authorities have cleared a deal for the Bank of Moscow to acquire the remaining 49.99% stake in Segezha Pulp and Paper Mill (SPPM) — Russia’s largest producer of kraft paper and paper sacks.

The acquisition will give the bank 100% control of SPPM.

SPPM is managed by the Investlesprom holding, one of Russia’s largest forest industry companies.

SPPM has an installed capacity of 400,000 tpy of sulphate pulp and 330,000 tpy of sack kraft paper and kraftliner. In 2012, paper production was about 242,400 tons while pulp output amounted to 255,000 tons.

Paper2014 to be held at the New York Palace Hotel, March 23-25

The American Forest & Paper Association (AF&PA) and NPTA Alliance announced that Paper2014 will be held at the New York Palace Hotel, March 23-25, 2014.

Paper2014 is the premier annual paper industry business convention, providing leading executives from across the industry with engaging sessions and unparalleled networking opportunities.

The New York Palace, located on Madison Avenue, is newly renovated and will provide a stunning venue for networking in addition to being convenient to Midtown Manhattan restaurants and attractions.

Paper2014 and the New York Palace offers:

• Single location for meetings and programming that will maximize networking opportunities
• New for 2014! – Larger Tower Corner suite option is more than twice the size as previous hotels for entertaining up to 50 people.
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Paper2014 is hosted by the American Forest & Paper Association and NPTA.
Coldwater Group Acquires BladePro

Coldwater Group announced that it has acquired BladePro of Rock Hill, South Carolina and will continue to operate the Rock Hill facility.

BladePro is a manufacturer of doctor blades to the paper industry.

BladePro’s president, Joe Christopher, has joined Coldwater as manager of all doctor blade business from Coldwater’s U.S. operations.

“We are very pleased to have Joe and BladePro join Coldwater. Joe’s customer-oriented service philosophy fits very well with our culture,” said David Withers, President of Coldwater Group.

“This acquisition builds on our R&E Kirwin Ltd. acquisition last year in the UK, as we continue to build the most reliable one-stop source for paper machine consumables to the global paper industry,” Withers added.

Joe Christopher commented, “Coldwater is a good fit for us. We operate very similar service driven manufacturing businesses with the flexibility to meet our customer’s needs. We plan to keep doing what we’ve been doing, but now have more resources to expand our business.”
REPORT

China Has Become World’s Largest Importer of Hardwood Chips

Growing demand for paper in China has not only forced the country to import large volumes of pulp to supply the country’s paper machines, but also resulted in investments in new pulp production within China, according to Wood Resource Quarterly (WRQ).

Because of a lack of competitively priced wood fiber in China, the two pulp companies with the largest pulp mills in the country, Asia Pacific Resources International Ltd (APRIL) and Asia Pulp and Paper (APP), are procuring much of their wood fiber needs from out-of-country sources. As a consequence, importation of wood chips to China has surged the past few years. In just five years, the import value for wood chips has increased from $180 million in 2008 to $1.3 billion in 2012, and this year the estimated import value could be close to $1.5 billion dollars.

It has only been a matter of time before China became the largest importer of hardwood chips in the world. In the second quarter of 2013, China surpassed Japan with the record importation of almost 2.4 million m^3^ of chips, WRQ reported.

Although there have been sporadic shipments of chips from Latin America, Malaysia and South Africa during 2012 and 2013, there are really only four countries that have been supplying China with wood fiber the past few years. Those countries are Australia, Indonesia, Thailand and Vietnam, with Vietnam accounting for over half of the total import volume.

Another interesting development is that the average cost of imported wood chips has declined by almost six percent from the second quarter of 2012 to the same period in 2013. The biggest price decline has been in Australian chips, which have fallen over 11% in one year. Because of this price drop, in the 2Q/13, Australia exported its highest quarterly volume to China since 2010, WRQ noted.

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Reported by Wood Resource Quarterly (WRQ)
Catalyst Paper has named Joe Nemeth as President and Chief Executive Officer, effective October 1. Nemeth is an experienced pulp and paper industry executive with some 30 years of background, most recently serving as President and CEO of Canfor Pulp. He holds an MBA from the University of Western Ontario and a Bachelor of Forestry from the University of British Columbia.

Finch Paper announced that Rob Ferragina has joined the company as National Sales Director. Ferragina has over fifteen years of industry experience in the Metro New York area, most recently with Mohawk as Regional Sales Manager, Northeast. Ferragina has also represented Fox River and Fraser in his career.

Glatfelter said that Brian E. Janki has joined the company as Vice President & General Manager of its Specialty Papers Business Unit. Janki comes to Glatfelter having most recently served as Vice President & General Manager, Rigid Industrial Packaging & Services for Greif.

Hexacomb announced that Darlene Kober has joined the company as Director of Global Marketing and Strategy. Most recently Kober served as director, global marketing for Baxter Healthcare.

Ilim Group has appointed Vladimir Tuzov as Vice-President, Strategy and Product Management. Tuzov formerly served as Leader for Strategy and Business Development functions for Honeywell.

Kruger Products L.P. has named Rob Latter as Corporate Vice President, Away From Home (AFH) Division and Strategic Planning. Latter joined Kruger Inc. in 1997 as Sales Manager for the Kruger Packaging Division. In 2001, Latter took on the position of Vice President, AFH Division. He remained in this role before returning to the Packaging business as Vice President in 2007.

Twin Rivers Paper Company has named Kenneth Winterhalter as its new President. He took over the position on August 26. Winterhalter most recently served as President and CEO of National Envelope, and prior to that served as President of Sales for Unisource Worldwide.

AkzoNobel named David Allen as the company’s new Head of Integrated Supply Chain, effective October 1. Allen joins AkzoNobel from China National Bluestar Group, where he has held the post of Chief Operating Officer since 2009.

Coldwater Group said that Doug Wall has joined the company as Vice President of Sales and Marketing. Wall brings with him over 30 years of experience in the pulp and paper industry, most recently serving the past 17 years in key management positions for Voith Paper Fabric & Roll Systems, North America.

Precision Roll Grinders has named Alan Seiter as Account Manager for PRG’s southeast territory, supporting the Carrollton, Georgia facility. Seiter served 24 years with Resolute Forest Products (formerly AbitibiBowater), where he worked in operations and technical sales, most recently serving as Technical Superintendent.

The American Forest & Paper Association (AF&PA) has selected Stewart Holm as chief scientist. Holm will be responsible for managing AF&PA’s scientific research and identifying research opportunities across the forest products industry.
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Despite a generally poor market for printing and writing grades as measured by standard key indicators such demand and shipment data during the first half of the year, 2013 hasn’t been that bad of a year so far in some ways. Pricing has held fairly steady over most of the last 12 months, except for some modest price slippage during the second quarter, and producers announced price increases on many grades and some appear to have a decent chance of going through. In turn, producers have been able to turn a modest profit in recent quarters, although results are far from stellar.

However, year-to-date data continue to demonstrate that overall North American demand for printing and writing grades, and for coated and uncoated groundwood papers specifically, remains lackluster. For the 7 months through July 2013, North American demand was off 2.3% vs. the prior year level at 12.9 million tons, with shipments slipping even more, down 3.4% to 11.3 million tons, according to the Pulp and Paper Products Council (PPPC). The data for July, the most recent available, actually look pretty good compared to prior year and prior month levels, as shipments were up 2% over July 2012 and demand was up nearly 3%.

On an individual grade basis the weakest demand over the seven-month January to July period was posted by coated mechanical papers, which registered a 3.9% drop vs. the prior year at 2.1 million tons. Shipments plummeted by 6.4% and imports rose nearly 18% as offshore mills increased market share. Uncoated mechanical grades fared better, with demand off just 0.7% through July at 2.4 million tons and with shipments of 2.2 million tons essentially unchanged compared to the prior year level. However, the surge in SC demand, which was up almost 9%, masked significant decline in other uncoated groundwood specialty papers. Demand for standard and lightweight papers were down by 9% and 15%, respectively during the first half. First half data were even worse when comparing to last year as overall demand was down 5.1% through June 2013 vs. the prior year, shipments were off almost 11% and imports were up by a double digit amount.

Inventories are also on the rise, with the total up 1.2% vs. June, although that is typical for this time of year. Operating rates also reflect generally weak conditions, with the overall rate at 91% year to date. Operating rates in July were actually better than in some recent months but are still poor, particularly given capacity withdrawals in grades such as LWC.

U.S. printing and writing paper shipment data also reflected similar declines across the board, with total shipments down by 6.1% through the first half of 2013, according to AF&PA data, at 8.1 million tons. The largest decline was posted for coated mechanical grades followed by uncoated free sheet. Coated free sheet shipments over the same six-month period are running about flat with last year, while coated mechanical is down 13% and uncoated groundwood off by 14%.

**Groundwood Papers a Mixed Bag of Good and Bad as Demand Continues to Slip**

While overall groundwood paper tonnage has continued to contract during the first half of 2013 the results vary widely by individual grade. Demand for segments such as SCA grades is solid but market conditions for other grades range from sluggish to poor. The overall outlook depends on whether demand picks up this fall and tightens demand for grades such as LWC. Pricing has remained largely steady in recent quarters and some of the summer price increases appear to have a chance.

By Harold M. Cody
While the decline in demand continues to grind on, the rate of decline has eased at least so far in 2013. By comparison, North American printing and writing paper demand last year fell by 6.3% to 22.7 million tons and shipments declined by 7% to finish the year at 20.2 million tons. The decrease varied by grade although all major grade segments posted declines. Coated free sheet demand fell 3% to 4.7 million tons as shipments dropped 4% to 3.8 million tons. Imports rose a modest 1.2% to 967,000 tons. Demand in the largest segment, uncoated free sheet, plummeted 4.7% compared to 2011 to 8.8 million tons. Uncoated mechanical demand slipped 16%.

**Mills Pushing to Raise Prices, But Chances of Success Vary**

Despite the mixed bag in terms of conditions as measured by supply and demand and the fact that some markets remain weak, producers began to get serious about improving the bottom line. A whole range of price increases were announced in early summer by mills seeking to increase publication paper prices to offset higher costs. It began in early May when announcements were made for price increases on all three major grades — SC, LWC, and coated free sheet — targeted for July 1. Prices for SC grades were targeted to go up $50/ton on both high-end SC-A grades as well as SC-B products. An increase of $40/ton was also announced on LWC grades and about $30 per ton for CFS grades.

However, market conditions that would support an increase in price vary widely by grade. SC markets are reported to be much tighter than competitive grades such as LWC, as SCA demand was running strong in early 2013 — up double digit amounts over prior year levels in the first quarter. As noted in last years’ column, SC grades have been gaining market share at the expense of LWC as publishers downgrade quality in order to trim costs, particularly in products such as news magazines and supermarket flyers. It’s reported for example that magazines using SC grades this year include *Entertainment Weekly* and *Fortune*. Similarly, SC-B supplies are reported to be somewhat tight due to some producers chasing after SCA tonnage on SCB machines. Therefore, the likelihood of a successful increase on uncoated groundwood SC grades appears to be reasonably good. The recent restart of SC capacity in North America had been viewed as possibly undermining the market but it has apparently been easily absorbed.

In contrast, on the surface the market for LWC seems to lack the fundamentals to support any significant or lasting increase. Operating rates for coated groundwood mills have been weakening and were only 84% in May despite a significant reduction in capacity via the shutdown of machines at mills in Sartell and Catawba. As noted they improved to 91% in July. Despite the poor fundamentals many groundwood coated mills appear to remain optimistic about the price increase, and are assuming a surge in business for the fall printing season.

Other uncoated groundwood grades are also contributing to the overall contraction in demand, including a steady loss in tonnage for machine finish grades and lightweight papers, although these are smaller segments from a tonnage standpoint. The driving force behind weakness in the lightweight papers sector is obviously the steady loss in demand by traditional telephone directories as they rapidly lose advertising dollars to other media as consumers switch to online sources for yellow pages data. It’s reported by various published sources that directory paper demand has fallen at double digit rates annually over the last few years, and overall demand last year fell to a little under 400,000 tons. In contrast, directory paper demand was just over one million tons before the economic collapse in the late 2000s.

In addition, the rapidly deteriorating state of printed newspapers, which is resulting in a quick and large loss in newsprint use, with North America demand down 10% year to date, is also impacting the market for groundwood grades. Newsprint mills are looking to push tonnage into non-newspaper markets, effectively resulting in an oversupply of machine finish grades for low end printing paper markets. This is being tempered somewhat by the solid demand for North American newsprint in Asia as a result of major capacity shuts in Europe. Exports are up 8.6% through July.

While there are some bright spots in groundwood paper markets, and from some standpoints things may not be all that bad, fundamental underlying demand for graphic papers continues to decline as advertising dollars targeted at traditional print media lose ground to online products. For example, consumer magazine advertising pages were off 4.9% through June 2013 compared to the prior year according to Magazine Publishers of America data. Ad pages for news magazines plummeted even further falling by nearly 20% over the same period. Thus the push to trim costs by downgrading paper quality. There has been some good news, as retail inserts volume and catalogs posted better numbers recently.

Looking forward into this fall and on into 2014, there may be some leveling out of the surge in SC demand if SC prices rise and LWC prices don’t, and this could have the somewhat odd result of benefitting LWC mills by allowing them to gain back some lost market share. If the fall printing season brings a much anticipated boost to demand, the chances of SC price increases sticking appear good according to most observers. The biggest question seems to be whether the weak market for LWC grades can improve enough to support an increase. At this point it appears dicey if full LWC year demand continues to fall at a 5% to 6% rate.

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Russia’s President Vladimir Putin in April announced plans to invest 400 billion rubles (approx. $13 billion) to finance priority projects in the country’s forestry industry to make the sector attractive for investment and address its long-term problems.

“We must also make forestry attractive for investment. We plan to invest over 400 billion rubles in 118 projects in the sector which have received priority status,” Putin said.

Putin noted that Russia currently lacks a policy of effective forest regeneration and use, and there is currently no organized responsibility for cutting rights. The current negative situation in the industry is due to decentralization, corruption, illegal logging and the lack of a legal framework for the industry.

“The forest also needs to be rescued from illegal felling, which has increased by 66 percent in the past five years and the amount of this felling remains colossal,” Putin explained.

Mr. Putin has looked hard at his country’s natural resources like oil, gas, precious minerals and forest industries, and has decided that they are strategic assets which must serve the national interest.

Last year I quoted Brian McDonald of the Ilim Group who said that between the years 2004 - 2015 the industry will need an investment of $12.5 billion. In a 2006 forecast, RAO Bumprom estimated the annual increase in consumption for Russia to 2015 would be 3.7-4.5% for market pulp, 5-6% for paper, and up to 8% for board.

Official Russian statistics in 2011 imply that the output of forest products is about $14 billion, of which $8 billion is exported. Current Russian production is hard to confirm but I’ve trawled through the data for the first quarter of this year released by Rosstat (Russian Federal State Statistics Service) and this is what I found: pulp production down 9.1%; paper down 9.5%; but board is up 4.3%.

So what is happening?
The example of Solombales pulp mill near Archangel may be a guide. In September last year it announced a $420 million investment for a new sulfate unbleached pulp line with a capacity of 400,000 tpy (current capacity is 240,000 tpy). The company has about 10% of the world market for this grade and 80% of the new capacity will be exported. In May of this year production was stopped and the mill was ‘suspended.’ The official statement said, “The reason for the suspension was the financial and economic difficulties of the mill. Market conditions were unfavorable and equipment had deteriorated.”

But some mills are optimistic, most of it unjustified. Kondopozhsky pulp and paper mill in Karelia (border-
ing Finland) claimed it would reach its design capacity this month, but details of its capacity were not given. Its CEO, Dimitry Turkevych, said it would reach a break-even point by the end of this year and “...completely stabilize the company.” But as I write this commentary, the mill operates at only 50% of its capacity and last year lost $45 million. Its total debt to the banks is unknown but is rumored to be stratospheric. It is a three-machine newsprint mill which has about 40% of the Russian market.

Another Russian mill, Segheza Pulp and Paper Mill, which is Russia’s largest producer of kraft paper and paper sacks, is now owned 100% by the Bank of Moscow.

But the big numbers are still out there. The privately-owned Sveza group of companies, owned by billionaire Alexei Mordashev, plans to invest $2 billion in building a paper mill in the Vologda region. Sveza group is a steelmaker and the new mill will be ”...the largest paper mill in Europe,” according to its PR. This will be part of a ”...larger timber cluster in the region.”

**Bright spot**

However, not all is in doubt within Russia’s pulp, paper and forest industry. The last issue of this journal (July/August 2013, p.12) reported on the Ilim Group’s $800 million pulp fiberline project at its Bratsk pulp and containerboard mill, which included a new 720,000 tpy bleached softwood market pulp production line. Ilim, by the way, is a 50/50 joint venture with International Paper.

“This is an important and long-awaited event. This industry has not seen such large investments over a long time, and this is a remarkable milestone for the entire industry,” said Dmitry Medvedev, Prime Minister of Russia. “The Big Bratsk project is a good example of well-coordinated efforts of business community and regional and federal authorities.”

IP’s Chairman and President John Faraci added, “I believe that Ilim Group is a spectacular and unique example of a joint venture in this industry. It sets an example of how two international companies may come together and collaborate.”

President Putin hit the nail on the head when he said Russia needs to make its forest products sector attractive to investment, and he may want to consider Ilim Group as a blueprint for success.

In fact, if Mr. Putin needs help with just a few of his 118 projects, he could always give Zakhar Smushkin and John Faraci a call. ■

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A Rise in Cyber Attacks Endangers Mills

By Patrik Boo

From hacker gangs stealing millions of credit card numbers from major retailers, to cyber thieves siphoning large amounts of money from business bank accounts, to militants using malware to destroy defense contractors’ data, cyber criminals are increasingly breaching the computer systems of businesses, government agencies, news organizations and individuals.

A June 2013 report by 41st Parameter, a global firm that makes device recognition and intelligence solutions, notes that cyber crime is on the rise and data breaches are now inevitable even for large companies. These attacks include mega-scale consumer data breaches, elaborate fraud schemes, espionage and malicious attacks with political and vengeful motivations. As a result, businesses are now losing billions of dollars every year due to cyber threats.

A hacker may act from a desire for money, power, casual sabotage or revenge. But whatever drives them, cyber security breaches have the potential to create havoc.

An example of how ruinous a cyber attack can be occurred in 2012 when hackers let loose “Shamoon”, a devastating computer virus, at Saudi Aramco, Saudi Arabia’s state-owned company and the world’s largest oil producer. Shamoon wiped out the hard drives of 30,000 of Saudi Aramco’s corporate computers.

You may picture a hacker as a computer expert, but they don’t have to be. People with the intent to do harm but not
the knowledge or resources, can easily locate the information they need online. They can find code on the Internet that they can decompile and use to cause destruction.

Paper mills are especially vulnerable to cyber attack. Even minor incidents can bring production to a halt — sometimes for days. Expenses can mount, including costs for bringing in specialists to handle the problems.

Your data can be lost, your system may be damaged and even your people and equipment can be harmed. It may be weeks before your mill is operating smoothly again. In a worst case scenario, your control system can be wiped out, and you may even be put out of business.

**AN INTRUDER; OR AN INSIDE JOB**

Although an individual or a small group of hackers may be behind a cyber attack, your mill is more likely than ever to be breached by a sophisticated crime syndicate with tentacles in many countries. According to the 41st Parameter report, a whole underground economy has grown around cyber crime because it can be a very profitable business.

Attacker might be physically located thousands of miles away from your mill. But a cyber threat can also be located right on your own mill floor. Although outside hackers are usually linked with cyber security issues, they are responsible for only a quarter of all security breaches. All of the other threats to a business are caused by their own personnel.

Your own people can be making mistakes such as bringing in outside software or USB enabled peripherals that carry malware.

Even if your mill has strong defenses against outside threats, your risk is still considerable if you haven’t created safeguards against the problems created by insiders who knowingly or unknowingly create damage.

**MULTIPLE VULNERABILITIES**

For many mills, the first step toward cyber security is to isolate their control systems from Internet connections. Usually mills try to create air gaps — physical gaps between the control network and the Internet. Mill personnel often believe once the air gaps are in place, the control systems will be sealed off and protected from the dangers of Internet viruses or hacking.

However, as promising as the theory might be, air gaps do not make mills safe. Cyber experts know that nothing, not even air gaps, can keep your control system completely isolated.

A US Congressional hearing held May 25, 2011 was highlighted by the testimony of Sean McGurk, who was then Director of the Department of Homeland Security’s Control System Security Department. “In our experience in conducting hundreds of vulnerability assessments in the private sector, in no case have we ever found the operations network, the SCADA system or energy management system separated from the enterprise network. On average, we see 11 direct connections between those networks.”

Unfortunately there are too many pathways into a mill’s control system to ever make it 100 percent secured. Whether it’s a misconfigured firewall, an insecure modem, infected USB keys or PLC Logic — or even human intervention — there are many channels into your control network, and these channels can open your system to an attack.

The most effective way to reduce your system’s vulnerability is to focus your security efforts broadly. By securing your server network and the nodes that connect to it, and training your employees, you are in a stronger position to protect your system.
CYBER CRIMINALS TARGET MILLS

Paper mills present tempting targets to hackers. Cyber criminals are realizing there is money to be made by hacking into mills and stealing their resources and trade secrets.

If your control system is of value to you, it is of value to someone else. Most mills have made significant investments in their control systems, and their personnel have spent much time and effort purchasing software and then customizing it. So protecting your system is of critical importance.

Paper industry competition is aggressive and fierce. To be profitable, mills have to keep their production at high levels, their operation running smoothly and their product quality high. A ruthless hacker with the right skills and resources can disrupt all three.

One of the most devastating ways a cyber criminal can hurt a mill is by hacking into the control system and stealing production data. Before mill personnel even notice the breach, the hackers will have sold that data to competitors. For the right price, hackers can make production changes so subtle that an operator may not catch them until it’s too late. The mill will only realize they have been attacked when a customer rejects their paper, saying it doesn’t meet their specifications.

Hackers will also use extortion to get their way. Vicious cyber criminals will blackmail mills by threatening to invade their systems, destroy their data or restrict their system access unless their demands are met. They may release ransomware, an especially nasty form of malware designed to extort money. After the attackers prove they can disrupt your production, they will try to force your mill to make preventive payments.

A STRATEGY TO PROTECT YOUR MILL

No system can be made 100 percent secure, but the danger of poor cyber security makes it essential for papermakers to develop a good working plan to minimize their mill’s risks and protect their control system.

If your mill develops effective security policies and enforces them, you will be in a much better position to reduce risks. Fortunately, there are several strategies that are not difficult or expensive for a mill to implement.

An easy way to increase cyber safety is to use your computer system’s existing security features. Security settings are obtainable from the control system supplier and easy to configure.

Because so many security issues can be traced to employee carelessness, creating a solid security policy for your personnel and educating them to adhere to it is critical. With ongoing awareness classes, your workers can learn what to watch out for and why specific security policies are needed.

INCREASING YOUR PROTECTION

ABB has used its extensive experience in the pulp and paper industry to develop its Cyber Security Fingerprint service, which helps mills defend their operations against cyber attacks. ABB drew on its deep understanding of what it takes to secure a mill’s control systems to design the Cyber Security Fingerprint.

ABB specialists rely on several layers of defense to protect control systems against potential security threats. Fingerprint also uses a multi-layer approach to increase a mill’s protection — the Fingerprint service collects data from over 100 critical points in the system and conducts in-depth interviews with key plant personnel.

A propriety software-based analysis tool analyzes the Fingerprint’s findings and compares them with industry standards and best practices. ABB runs the data and then calculates Key Performance Indicators in procedures and protocols; security policies and computer settings.

Next, ABB specialists develop a report centered around an extensive view of the mill’s control system cyber security status. The report highlights both strengths and weaknesses. Importantly, it provides recommendations and an action plan for reducing cyber vulnerabilities.

Using the report as a foundation, ABB’s cyber security experts help mills develop a sustainable security strategy of the specific measures needed for their mill. The papermaker
ABB examines three key components of a plant’s control system to determine key performance indicators.

For example, ABB provided a plant based in the Middle East with a Fingerprint to analyze its cyber security measures and pinpoint any gaps that could make its control systems vulnerable.

ABB’s Cyber Security Fingerprint found that even though the plant already had stringent security measures in place, there were still ways that security should be tightened. Importantly, outdated and unnecessary software needed to be updated or removed. The depth of ABB’s report convinced company owners to act on ABB’s findings. The result: a more comprehensive view of the plant’s safety status, better risk mitigation against cyber attacks and tighter control system security.

**CYBER SECURITY PLANS FOR EVERY MILL**

For years ABB has worked on cyber security issues with papermakers who produce everything from tissue to board. ABB specialists have developed plans to meet many different situations and needs.

Often a large corporation will ask one of their mills to tighten their cyber security, but the mill manager may not know how to begin. Since the Fingerprint can be used as a blueprint and starting place, it is perfect for those mills just starting to implement security measures. If a mill has a plan that’s already working, ABB can help them find any elements that may be missing or that may need to be updated.

ABB’s cyber security experts can be called in to help mills solve specific cyber security issues such as detecting and removing viruses. For example, a paper mill asked ABB to find out why their control system was not working as it should. ABB engineers found that a virus was causing standard Microsoft Windows security functions to shut down key computer functions. ABB’s cyber security experts performed anti-virus scans, discovered the compromised areas and removed the problematic components. The issues caused by the virus were eliminated, and the mill’s control system went back to performing smoothly.

Implementing a cyber security strategy is always a good idea. You can use internal resources to develop it or you can work with a supplier like ABB. The important thing is that you have it in place.

The plan you decide on does not have to be complex or expensive to be effective. Even low tech methods like using your system’s existing security measures will lower your risk. But however you proceed, it is crucial to stay vigilant and be aware of ever-increasing cyber threats and the many new ways hackers are breaching mill systems.

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Caught on Camera

Improving papermaking and coating efficiency with web inspection cameras.

By Kari K. Hilden

aper breaks and various defects are an efficiency robbing reality on all types of paper machines, coaters and downstream converting operations. Eliminating breaks and paper defects has become more and more important with the increasing speed and operating complexities of today’s paper, board and tissue machines. Papertech’s TotalVision™ now offers papermakers a single high speed, camera-based platform allowing all types of defects (holes, slime, oil, etc.) at the reel to be seamlessly analyzed to their root cause right to the wet-end. This eliminates operator guesswork and rapidly allows breaks and defects to be eliminated.

The system is based on fully digital high speed and high resolution cameras from the winder to the wet-end that are combined into a single web inspection and web monitoring platform, with a single user interface, able to automatically pinpoint and analyze all types of process disturbances. It uses the latest GigE-Vision® based digital cameras, GigE digital video transmission and intuitive digital image processing software to see at high machine speeds the event and find its origin. The cameras continuously monitor, in real-time, all of the critical locations from the wet-end to the dry-end of the paper machine, resulting in total 100% sheet analysis.

In addition to this, many important innovations have been made to ensure cameras are able to survive and provide good image quality without operator involvement. For example, EverClean now makes it possible to have cameras stay clean indefinitely even in the dirtiest applications. This, combined with powerful papermaking designed lighting, ensures good image quality is achieved ensuring the overall system maintains its performance month after month.

These systems have now been proven on all types of paper machines, coaters, tissue machines and in various converting operations. The single platform camera solution provides a truly powerful and easy to use troubleshooting and papermaking optimization tool that has been shown to yield a less than six-month payback.

INTRODUCTION

Break or event recording cameras have now been used on all types of paper, board and tissue machines for over a decade. During this time, camera, lighting and computer technology to capture and analyze all types of events causing runnability issues has evolved at a rapid pace fuelled by the need of papermakers to more extensively analyze their runnability issues.

Break or event recording camera systems, which are now commonly called Web Monitoring Systems (WMS), have become a standard means of solving and eliminating even the most difficult paper machine runnability issues. It is estimated that there are now over 1400 WMS systems around the world, with Europe and North America representing around 80% of the installed base.

Over the last five years some 100 to 125 WMS systems have been sold each year and are now being used in over 30 countries. The highest saturation of WMS systems is in Northern Europe, which resulted from initial development of this technology beginning there in the mid-90s together with the demand to operate machines at highest possible efficiency and production levels.

WMS systems have over the last decade become more intuitive allowing operators to quickly and efficiently find the root cause, or origin, of their break-causing defect or other quality issue. The cameras have become “smart” with full image recognition capabilities allowing them to see and alarm some example events captured by high speed cameras that are going to cause, or have caused, a break. Most commonly problems occur in the forming and press section and in many cases are originating from poor trimming on the wire.
for any change in the sheet. In other words, WMS cameras are now functioning the same way as web inspection systems (WIS) located at the reel. This, together with better image quality and more images per second, has allowed all types of machines, including small ones, to justify the investment of automated camera-based web monitoring technology.

**MUST HAVE FEATURES**

Today’s WMS systems are able to provide a paper machine or converting line with a host of powerful features that will allow the root cause of the efficiency robbing issue to be solved. When considering a camera system, the following should be the "must have" list of capabilities:

1. **Digital cameras.** High sensitivity, uncompressed high resolution, high image speed, noise free, and ability to “plug and play” accept different cameras including color.
2. **No weak links.** Cameras that stay clean even in the dirtiest locations, effective and efficient lighting, robust mounting, cabling that minimizes noise, industrial class computers and reliable software.
3. **Operator friendly.** Intuitive, complete and easy to operate software allowing operators to rapidly find the root cause of the break or defect problem.
4. **Instant download.** All event data can be immediately analyzed before re-threading, and breaks can be stored seconds apart without any loss of video information.
5. **Long video history.** Sheet wet-end to dry-end transport time plus 2 minutes typical with the ability to extend to several hours for solving defect related problems.
6. **Non-proprietary.** All system components including computers should be off-the-shelf, mill maintainable, allowing for easy upgrading and low cost ongoing maintenance.
7. **Full web inspection integration.** Using the same WMS cameras, the system has to have the capability also performing detailed web inspection defect detection complete with reel map display and classification of defects into various papermaking categories. This reel to wet-end single platform integration provides a powerful platform to allow rapid dry-end defect to its root cause detection right to the wet-end complete with defect image transfer capabilities and accurate same piece of paper synchronization.
8. **Mill-wide information system (MIS) integration.** Provides event summary statistics, highlights problem areas, automatic tracking of downtime, etc., and today is typically performed most effectively using OPC data linking.

**RESULTS**

Breaks are typically classified as coming from either known or unknown sources. Breaks coming from known sources can usually be eliminated, but it is for the unknown breaks that a WMS system is needed. Also, it should be noted that experience has proven that many believed to be known sources of breaks have actually been found with cameras to be originating from another source, i.e. they actually were unknown.

A further WMS result is that preventive measures can be taken prior to a break occurring. This can be achieved with automatic triggering of cameras as soon as they see a change in the sheet from a normal condition. Essentially all WMS cameras today perform in the same way as web inspection cameras and can be set-up to trigger on all types of changes in the sheet and surrounding conditions. Such break preventive examples are problems occurring on trim squirts, felts, sheet flutter, sheet tension, vibration and various condensation and operator error.

A further noteworthy WMS development is the opportunity to fully integrate web inspection (WIS) with it. For many years, many WMS systems were set-up to receive a trigger signal from the WIS allowing same piece of paper synchronization of the hole or defect right to the wet-end cameras. Now these two systems are fully integrated allowing two-way communication between the two systems into what can be called a single platform camera solution.

**RESULT EXAMPLES**

As noted earlier, WMS systems have demonstrated the ability to eliminate unknown breaks and to provide a significant reduction in breaks — typically 50% to 80%. The following are a few examples.

**Newsprint and fine papers.** Fast running newsprint and fine paper machines generally experience breaks in the wet-end as well as at size press, coater and other complex location. Generally 10 to 20 cameras are required to see all critical locations.
Papermaking efficiency

This sequence shows how a hole detected at the reel calender (image 9, bottom right) can be same piece of paper synchronized with the WMS system all the way to the forming section where it is found to be slime (image 1, top left). Of note is that this is a very long coated board machine that has 30 cameras to cover all of the critical locations, but this does not limit the ability of the cameras to automatically identify to the operator the root cause, or origin, of the problem.

A west coast Canada newsprint producer installed an 8-camera WMS system integrated with the web inspection system (WIS) and within the month of the installation was able to dramatically reduce the lost time hours.

**Pulp.** Pulp machines operating at slow speeds generally have significantly fewer breaks than paper machines. In general, the higher the percentage of shorter hardwood fiber pulp, the more breaks. Typically, pulp machines experience 4 to 8 breaks per month. However, when breaks occur it can take from an hour to several hours until production can continue due to the time it takes to clean the floatation dryer, etc.

A Canadian pulp producer installed an 8-camera system on their 1500 t/day pulp machine, positioning cameras on the wire, press, and inside the first dryer section. In the year preceding the WMS installation, the machine had 80 breaks, or 6 to 7 per month. In the year after the camera system was installed, the number of breaks dropped to 12 (one per month) — an 85% reduction.

**Board.** Board machines range from fast-running linerboard and corrugating medium production lines with fairly uncomplicated sheet runs, to machines producing heavy coated board operating at slow speed with a complicated and long paper run. The number of cameras can therefore range from 12 to over 30 in order to satisfy all possible event locations.

An example result to demonstrate that even small linerboard machines can justify a WMS system is a machine in Austria with a web width of 2150 mm (85”), operating at 800 m/min and producing 325 tons/day. This machine was break-limited meaning they had to slow down the machine to reduce the number of breaks.

The mill decided to install a large 16-camera system that included web inspection cameras integrated to the WMS. This allowed for complete machine visibility in all of the critical locations. Shortly after start-up, the papermakers were able to find out that a large percentage of their breaks were the result of trimming issues on the wire. They then purchased the latest trimming technology, were able to dramatically eliminate breaks and, most importantly, were able to speed up the machine. Ultimately they were able to speed up between 8 - 10%, while experiencing 15% less breaks.

**Tissue.** Tissue is one of the more recent applications for WMS cameras (together with WIS) in not only the tissue machine but more importantly in the complex converting lines. Tissue machines can have many breaks (over 20 per day), but most of them last no more than five minutes. These breaks can be identified with 4 to 6 cameras making the investment affordable and payback rapid.

On the tissue converting side, the applications are diversified and require extensive WMS system customization to provide the needed visibility into small, complex locations. Much work has now been accomplished in this area in the last couple of years. With over 30 successful converting installations it is expected that WMS applications will become standard practice for all types of tissue and towel converters to ensure the required high operating efficiencies.

**CONCLUSION**

Web monitoring systems have been found to be effective in eliminating breaks and defects on all types of paper machines and converting operations from tissue to pulp. Current WMS technology has developed to a point where effective and reliable event capturing is possible. Cameras are smart and perform continuous web inspection and are fully integrated with all types of web inspection systems. The ideal WMS + WIS system is one that uses the same cameras, same processors, and a single operating platform, which simplifies the installation, makes maintenance easier and offers the users the fastest and easiest way to achieve results.

With typical payback of an installed system less than six months, it is expected that in the next five years the use of WMS technology will continue to grow, allowing papermakers to further improve their machine efficiency, production and product quality.

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The ‘Resource’ Quandary

While there is lingering debate about the severity, or not, of the so-called ‘skills shortage’ there can be no doubt that productivity is improving in the pulp and paper industry in North America. But why is that?

By John Yolton

Three years ago I wrote an article about the productivity of maintenance workers in the US paper industry. That article went on to explain that part of the productivity increase was due to the behavior change to ‘work smarter’.

**WORKING SMARTER**

Examples of working smarter included:

- Almost universal acceptance of asset condition monitoring by both maintenance and operations.
- Substitution of automation for labor intensive work.
- Widespread implementation of CMMS/EAM systems to provide asset management information.
- Insistence by some mills, on precision maintenance classes in their technical training programs.

Of course that doesn’t explain the removal of millions of tonnes of capacity from the USA’s papermaking industry. The simple fact remains that less efficient capacity has been shut down as demand in certain paper grades deteriorates, one might even say ‘evaporates’.

**IMPACT OF DIGITAL AGE**

Access to digital information and the inexpensive technology to display that information has devastated the newsprint industry in North America, especially Canada whose mainstay paper product has been newsprint.

As these least efficient paper machines shutdown, the remaining more efficient machines — using less workers per tonne because the operating machines are faster and wider — cannot help but increase the productivity, e.g., output per worker, but at the same time demand for skilled technical workers decreases. There are just less ‘skilled’ positions available than in the past.

**GLOBAL PRODUCTIVITY IN THE PAPER INDUSTRY**

Finland has led the world in productivity in the global pulp and paper community and they have traditionally done this by continuously updating their equipment technology, e.g., replacing old, slow, narrow paper machines with new, wider,
faster machines generally requiring less people to operate and maintain due to improving automation and reliability.

This strategy works quite well when the demand for product is strong and growing. However, Europe is undergoing a reversal of demand for certain grades, primarily ‘communications’ grades, especially newsprint. This decreasing demand, even with the best, most efficient equipment, means fewer jobs for ‘skilled’ workers will be available.

It is likely that Finland, Sweden and other paper producing countries in Europe will experience erosion of demand for skilled resources in their papermaking industry, very much like that impacting US and Canada recently.

**SKILLS SHORTAGE**

Some argue there is no skills shortage. Their argument is based upon the time-honored concept of supply and demand, e.g., as demand increases so does the corresponding cost to satisfy the demand.

If there is a ‘skills’ shortage, the argument goes; there should be an equivalent increase in the monetary compensation for such skills. Those people with skills in demand in a so-called ‘skills shortage’ should expect to have their compensation adjusted accordingly, yet there is no evidence of this basic economic concept in the North American paper industry.

Unlike the ‘oil sands’ patch of western Canada, also home to many pulp and paper mills, labor wages for ‘skilled’ workers in the North American paper industry has not ballooned to previously unimagined rates. In fact, except for those specific locales competing for resources with other high growth industries, the wages have barely moved in the paper industry.

**ROOT CAUSE**

So what is causing this increase in productivity without an apparent corresponding demand for ‘skilled’ workers as their numbers decrease?

Perhaps the answer is still in the ‘work smarter’ category. A metric used universally across all industries seeks to compare sites’ reliability activities to best practice regardless of their age. The idea behind the metric is that as equipment ages, those operating and maintaining that aging equipment learn from experience and adjust their activities accordingly, hopefully in a positive trend, e.g., less failure. That metric is Maintenance Cost per Replacement Asset Value (RAV), aka Estimated Replacement Value (ERV).

This ‘learning’ process is the basis for adjusting asset care strategies, e.g., learning that this behavior, and/or defined process, and/or the tools used are inadequate in the goal of eliminating lost time. Generally, because of the inadequacy, additional resources, both labor and materials, are required thus adding to the cost of doing business.

**IMPROVEMENT STRATEGY**

Suppose you could learn from this experience and adjust your strategies for the assets you are responsible for operating and maintaining?

The process of developing the right work, at the right time, for the right reasons is typically called Reliability Centered Maintenance (RCM).

Through the learnings of others and your own internal experience, specific tasks are developed for various ‘stakeholders’ of the equipment you operate, from the most critical to the least adding value to your business goals. This plan clearly defines the work to be done at pre-determined intervals by specified skilled workers.

So, could it be, in addition to all the other obvious reasons for ‘productivity’ improvement in the paper industry, that defining the most efficient and effective reliability response to asset care is also a factor? Yes, state-of-the-art technology improves productivity and yes, eliminating inefficient assets improves productivity, but both require
improvement strategies for reliability going forward for sustainable, low cost performance.

BEST PRACTICE
SKF has been engaged in formally assessing the industry on a global basis since 2003. Three hundred pulp and paper sites have been surveyed to date. The process compares each site to a specific set of metrics based upon best practice in reliability. The individual results are grouped into four separate categories, such as: Firefighting, Maintaining, Optimizing and Innovating which are defined as ‘maturity’ stages.

As learning occurs from experience, the intent is that the organization will progress towards the next level of best practice, progressing say from ‘firefighting’ to ‘maintaining’, doing so through the attempted adoption of known best practice.

As it turns out, as a result of the SKF Client Needs Analysis process, this attempt to get better can be measured and supporting data available can be quantified.

For example, the top 3% of those mills examined, compared to the rest of the mills, indicates a significant effort on behalf of the top 3% to ‘learn’ and adjust from their experiences in not only ‘corrective’ actions but also their ‘preventive and predictive’ programs. Additionally the top 3% have used a defined technical procedure, such as RCM, to determine maintenance strategies and, further, have applied discipline to their root cause analysis program thereby eliminating recurring failures.

In some cases, pulp and paper mills, through the effort of defining maintenance strategies, have identified the workload demand (worker hours) for asset care and adjusted their resource levels accordingly, thus producing better productivity.

OTHER THOUGHTS
Another reason for improved productivity expressed in a recent report is the level of employee engagement. The report suggests that highly engaged employees produce more than less engaged or worse disengaged employees. While a somewhat abstract concept and definitely with a cultural or behavioral aspect, engaged employees display a higher performance level.

There is yet another school of thought that says by training all employees, new and seasoned, in the use of modern technologies, methodologies and driven by changing reliability strategies, better productivity will result, for example, the contribution from so-called precision maintenance techniques. Imagine the avoidance of downtime that has resulted from improved mounting and dismounting of bearings on paper machine rolls, or from better alignment of equipment, or the improved life cycle resulting from excellent lubrication practices. Well trained employees perform better.

Of course anyone that has been in the industry for any length of time will recognize that some ‘downsizing’ occurred that did indeed reduce a company’s fixed costs by eliminating ‘employee’ positions, thus increasing productivity (tonnes per employee). But these sites never really did eliminate the need for work to be performed on operating assets and thus were forced to hired outside contractors (variable costs) to perform the required continuing work.

CONCLUSION
While there is lingering debate about the severity, or not, of the so-called ‘skills shortage’ there can be no doubt that productivity is improving in the pulp and paper industry in North America.

Whether that improving productivity was created by:
- the effects of ‘rationalization’ of capacity to meet declining demand,
- improved actionable information,
- adoption of best reliability practices,
- actively engaging and/or
- properly training employees . . .

…or all of the above, there remains the possibility that less and less ‘skilled’ workers will be required to produce the output to meet demand for pulp and paper products.

What strategy, or combination of strategies, make sense to you?

John Yolton has entered his 49th year of employment in the pulp and paper industry. He is currently Maintenance Strategy Consultant with SKF’s Global P&P Segment and can be reached at: john.yolton@skf.com
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AF&PA and Agenda 2020 Collaborate to Transform the Forest Products Industry

By Donna Harman, AF&PA President & CEO and Ron Brown, Agenda 2020 President & Executive Director

As the forest products industry has evolved over the past few decades, so has the need for increased advocacy support and expanded focus on technology research opportunities. Today, our industry has the benefit of two organizations whose complementary missions help move the needle on many issues: the American Forest & Paper Association (AF&PA) and the Agenda 2020 Technology Alliance.

In 1994, AF&PA worked with the U.S. Department of Energy (DOE) to form what has become an indispensable industry partnership in Agenda 2020. An international alliance of companies, research institutions, and government partners promoting collaborative research and development projects, Agenda 2020 establishes the industry’s technology research priorities and advances the technology agenda by attracting government funds for breakthrough technology research for the forest products industry. It seeks to attract a larger share of available government research dollars for our nationally important industry.

In 2011, Agenda 2020 became an independent organization to advance industry-related, pre-competitive technology programs. Agenda 2020’s focus on industry transformation through innovation by collaborating on research in manufacturing processes complements AF&PA’s public and marketplace policy advocacy mission.

The Roadmap
As one of its primary mission elements, Agenda 2020 developed the Forest Products Industry Technology Roadmap with the DOE, the Institute of Paper Science and Technology at Georgia Tech, and AF&PA. Development of this roadmap incorporated the contributions of more than 100 industry experts from around the world who participated in two workshops: one to identify the critical issue areas and one to define the industry’s research and development (R&D) needs. By synthesizing and prioritizing the issues that industry representatives have designated as most crucial, the roadmap invites the research community to engage in research, development and demonstration programs that provide the foundation for deployment of new technology-driven solutions.

Agenda 2020’s work, guided by the roadmap, focuses on four platform areas:

- **Sustainable Manufacturing** - addresses new approaches for reducing water and energy demands and emissions of greenhouse gases that will make the industry’s production processes more sustainable and efficient.
- **Value from Biomass** - encourages new methods of getting value from wood, including biomass-to-energy, biorefineries integrated with pulp mills, and high-value chemicals.
- **Novel Materials** - promotes the development of knowledge and techniques that can enable companies to develop new products and innovative features in existing products.
- **Sustainable Forest Productivity** - drives programs that assure forests will sustainably supply ample wood to meet the future demands for traditional paper and wood products as well as new demands for use in biofuels, energy, and bioproducts.

In September, Agenda 2020 also launched five industry-led teams to promote advanced manufacturing techniques with high potential to reduce energy and water demands in pulping and papermaking; transform the way wood is converted to fiber; and enable companies to more easily develop markets and uses for cellulosic nanomaterials. Each team is tasked with delivering specific research plans in less than one year.

**Strategic Alliance Ensures Success**
AF&PA advocates in support of public and marketplace policies to advance the sustainability and competitiveness of paper and wood products manufacturers. Fact-based advocacy, grounded in solid policy research, helps AF&PA members achieve their policy goals. AF&PA works with the U.S. Environmental Protection Agency, the administration, Congress, states, and other stakeholders to advocate for public policies that promote sustainable manufacturing in a cost-effective manner for the industry.

Whereas AF&PA is the recognized voice of the U.S. industry on policy and regulatory matters, Agenda 2020 develops the industry’s technology research agenda and collaborates with universities, government agencies, suppliers and a broad cross-section of paper and wood products manufacturers to ensure that future technologies meet changing business needs. Agenda 2020’s partnership with the research community is particularly important for the forest products industry because sustainable manufacturing of paper, pulp, and wood-based products requires a broad range of technology solutions.

AF&PA and Agenda 2020 collaborate and exchange information on objectives, efforts, initiatives and current issues on an ongoing basis. Staffs of both organizations participate actively in committees, work groups, and informal task teams for mutual benefit. AF&PA’s advocacy on policy topics such as renewable energy, carbon neutrality of woody biomass, energy and water use, and wood supply frequently takes into account Agenda 2020’s objectives, keeping the industry aligned.

Together, Agenda 2020 and AF&PA advance the technology and policy interests of the forest products industry to ensure continued, long-term growth and global competitiveness.
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