

Process performance and product quality cost savings using on-line fibre properties real time data transformation - Case Studies





Introduction

- Superior performance results require adoption of state-of-the-art measurement technologies
- Instantaneous transformation of complex data to information supports both operations and customers
- Workforce scarcity requires solutions which reduce the need for human intervention
- Significant operational costs savings opportunities



PulpEye® Technology



Sampling

- ✓ On-line from 1 or more positions
- ✓ Manual samples
- ✓ RMEye® remote manual inlet
- ✓ LabEye® lab sample collector
- ✓ RefinerEye® blowline sampling HC refiners
- ✓ ScreenEye® blowline sampling digesters

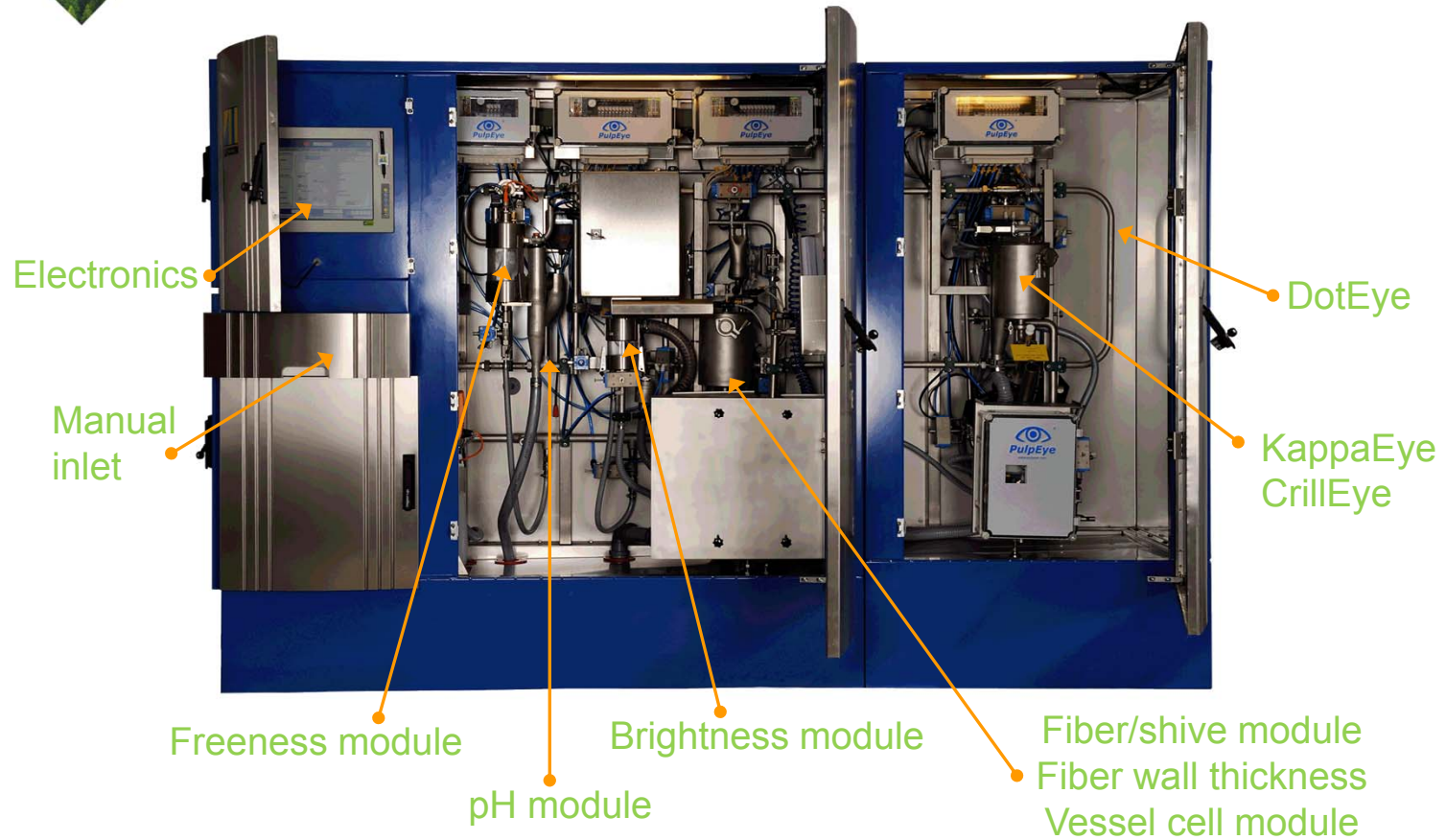
Measurements

- ✓ Dewatering (CSF/SR/MSR/EWD)
- ✓ Fiber dimensions (length, width, curl, fines, kinks, coarseness)
- ✓ Shive content (no/g, %)
- ✓ Process consistency (%)
- ✓ Brightness
- ✓ pH
- ✓ KappaEye®
- ✓ DotEye®
- ✓ CrillEye®
- ✓ FWT module
- ✓ Vessel cell module

Performance <6 min/sample (all modules, except brightness and DotEye)

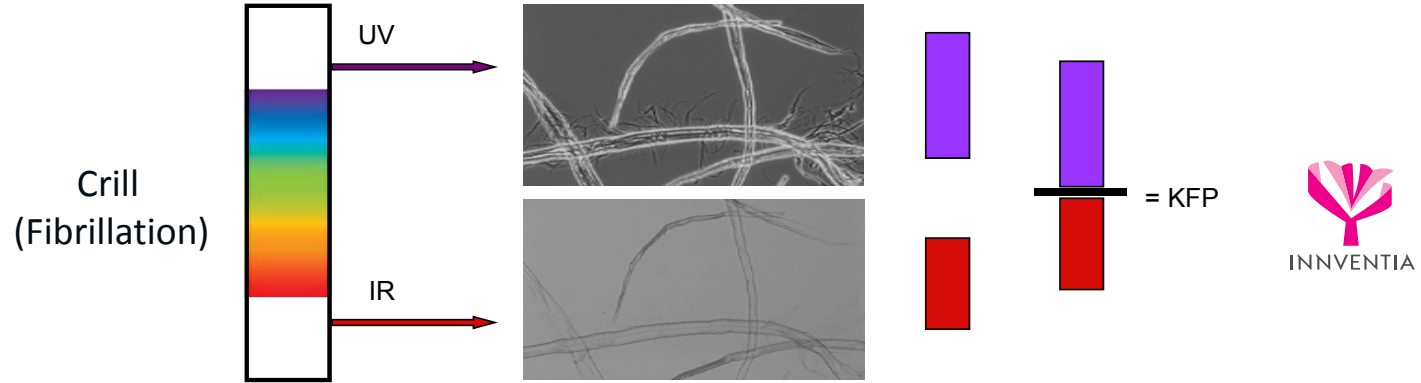


Modular system

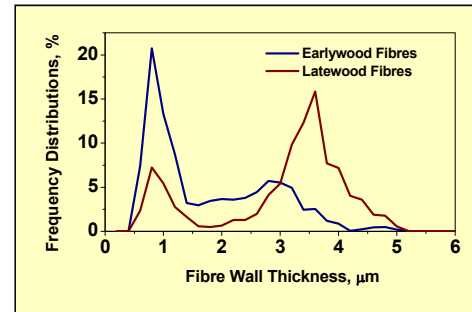
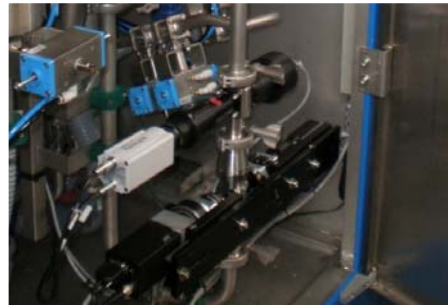




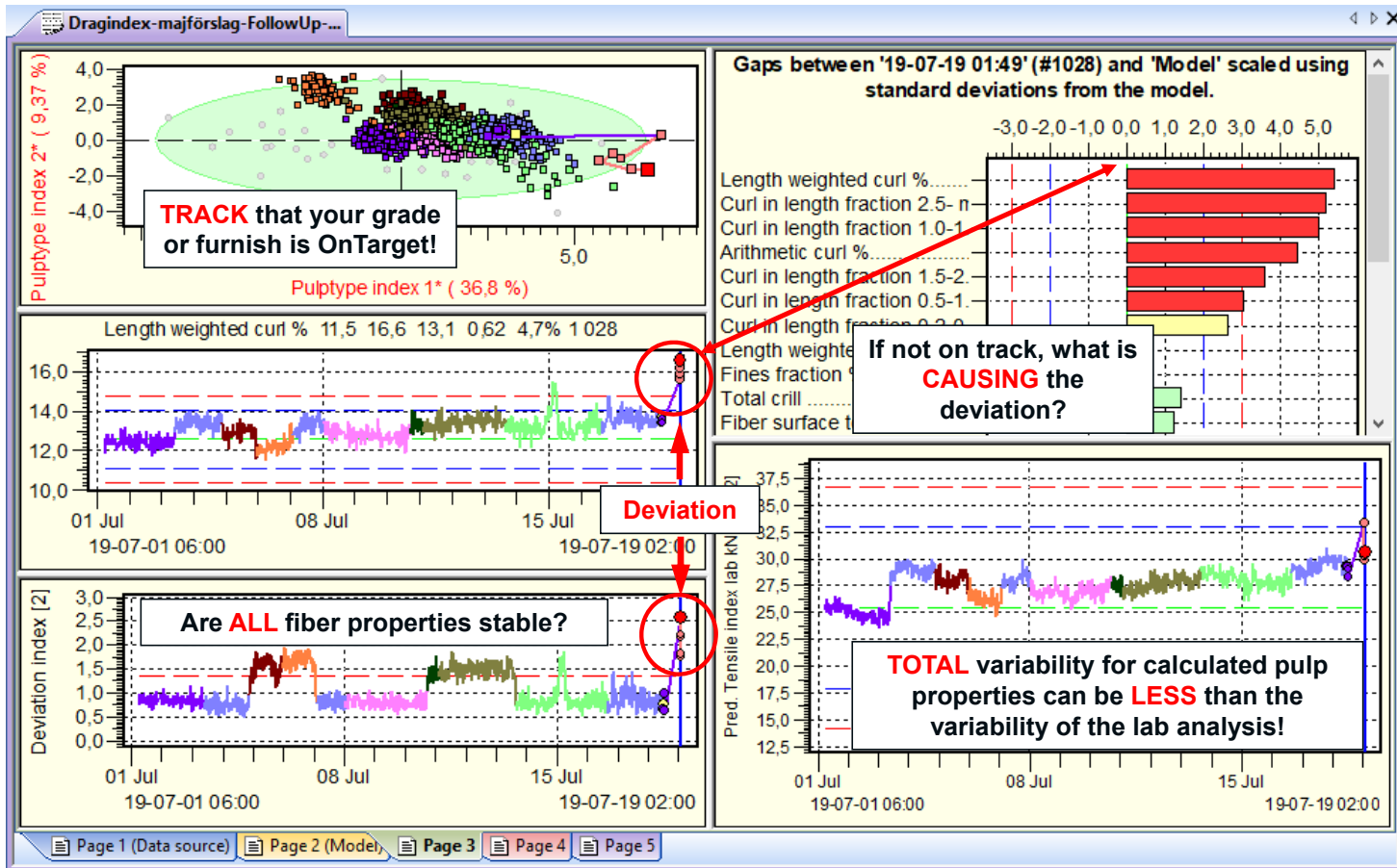
Unique measurements



Fibre Wall Thickness



ExtractEye® data transformation





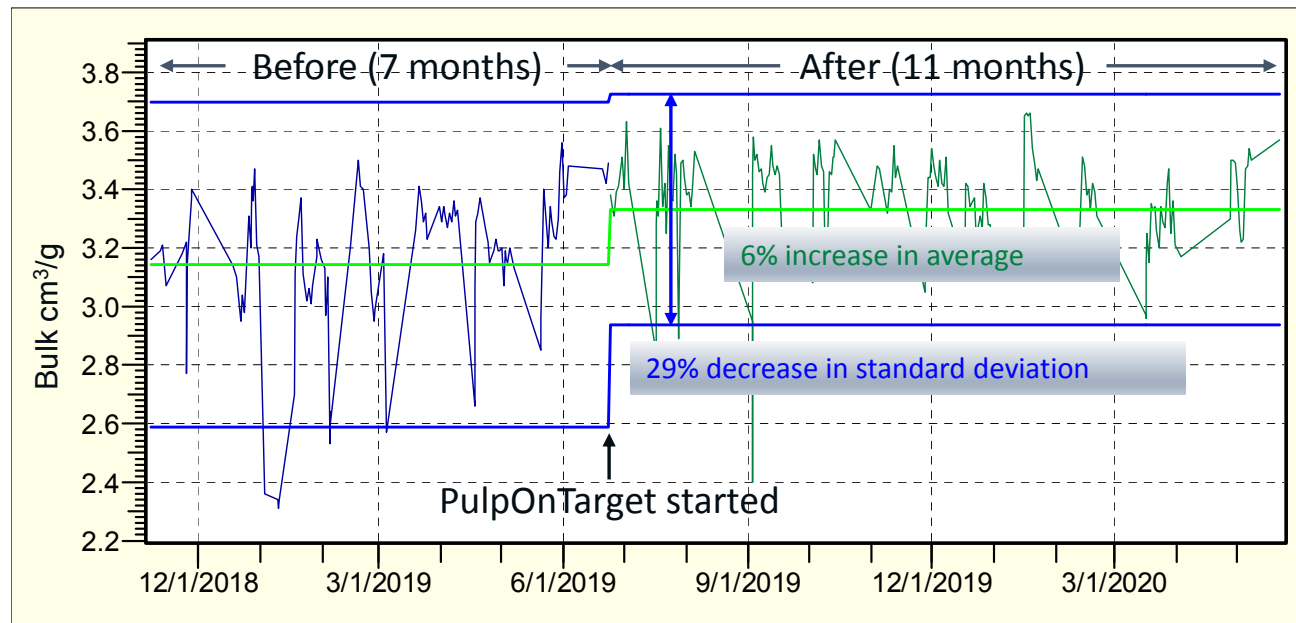
Cost Savings Opportunities

1. Improved product stability
2. Less off grade pulp
3. Stock Preparation
4. Mechanical pulping process stability
5. Reduced pulp testing/tester requirements



Less off-grade pulp

Bulk measured in lab before and after startup of PulpOnTarget.

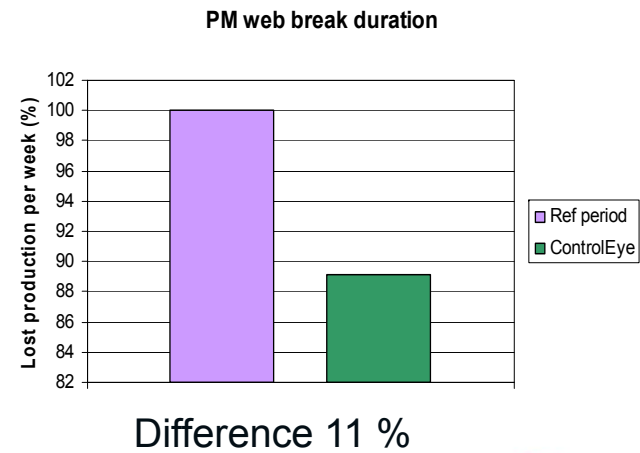
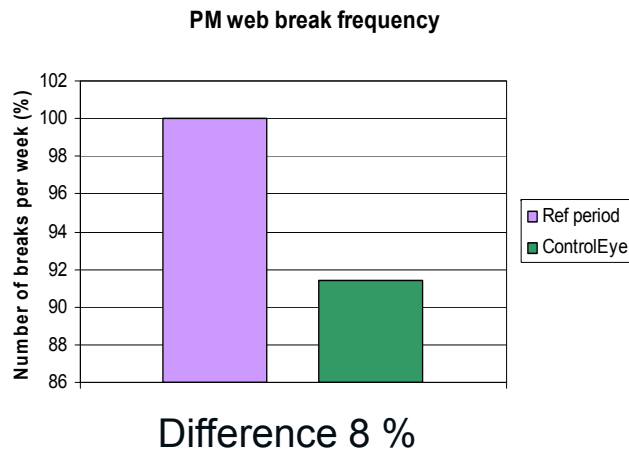




Stock Preparation Quality Savings

Based on experience from similar stock preparation applications the PulpEye and ControlEye application has obtained following savings

- Web breakage was reduced 8% compared with the reference period without control and measurement
- Production losses due to web breakage reduced 11% compared with the reference period
- Savings in energy and improved quality were also achieved





Online measurement saves 45 min/d production time



LONG FIBER
BLEACHED PULP
LINE

Arneburg, Germany
Production: 660 000 Adt/year

PulpEye unit:

ExtractEye module

ScanChip analyzer

Key benefits highlighted by client

- Online pulp quality measurement saves up to 45 minutes a day in the production
- Consistent pulp quality saves time and money
- Reliable measuring system with low maintenance costs
- Fiber strength, length and fraction on point

“PulpEye’s equipment assures constant quality, saving time simultaneously. We don’t need to wait two days for results from the lab.”

“Quality parameters are clearly seen on the PulpEye equipment. We can see when quality changes. It allows for a more efficient production, and that saves money.”

Process engineer at Zellstoff Stendal

TIME SAVED WITH PULPEYE EQUIPMENT ALLOCATED FOR PRODUCTION INCREASE



Concluding Remarks

- Stable Fiber Properties = Stable Pulp Properties.
 - But the opposite is not true.
- A pulp grade is a combination of fiber properties varying in a narrow range.
- ExtractEye[®] can track that a combination of fiber properties is stable and provide warning if unstable.
- Actual TOTAL variability in production can be less than the precision of the lab method.
- Using pulp properties calculated from fiber properties measured on-line, standard deviation for BOTH lab and calculated properties can decrease as much as 34% over a two-year period.
- The limiting factor for creating good models for pulp properties is the lab method, NOT the on-line measurement.

To learn more, please visit our booth

