FITNIR
The Next Generation of Process Analyzers

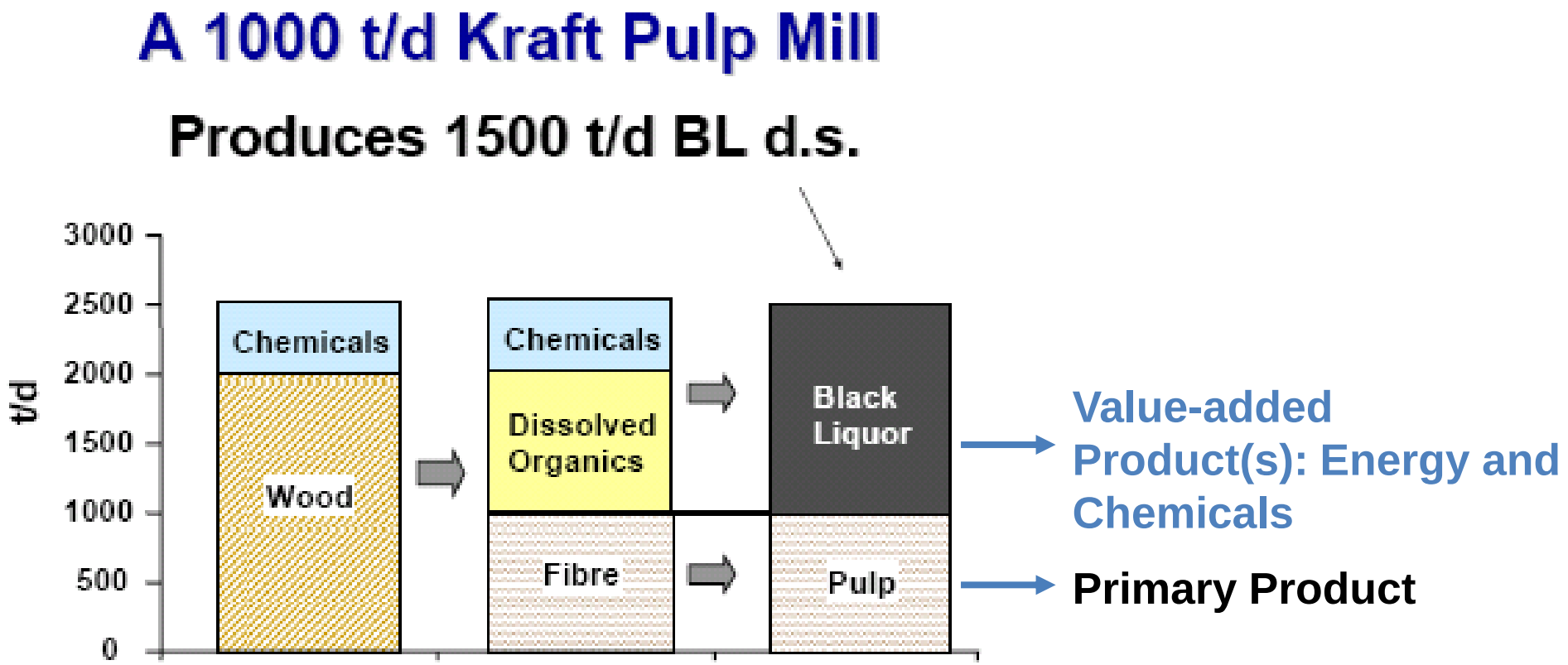
EXPOCORMA

FITNIR's Next Generation Process Analyzers for Kraft Mill Optimization

Thanh Trung – FITNIR Analyzers Inc.

2020-11-04

Kraft Mill: Importance of Chemical Measurements

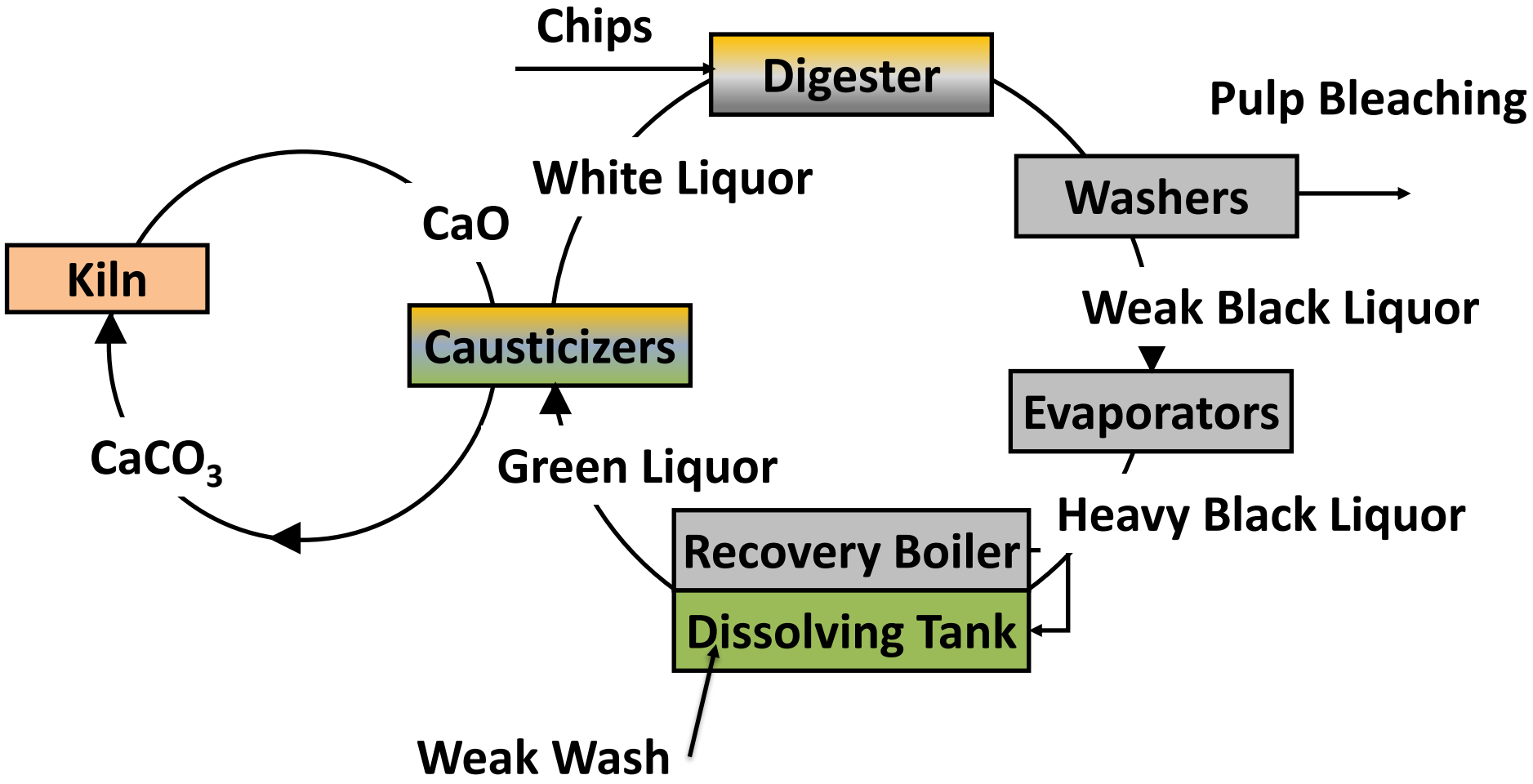


Courtesy of H. Tran

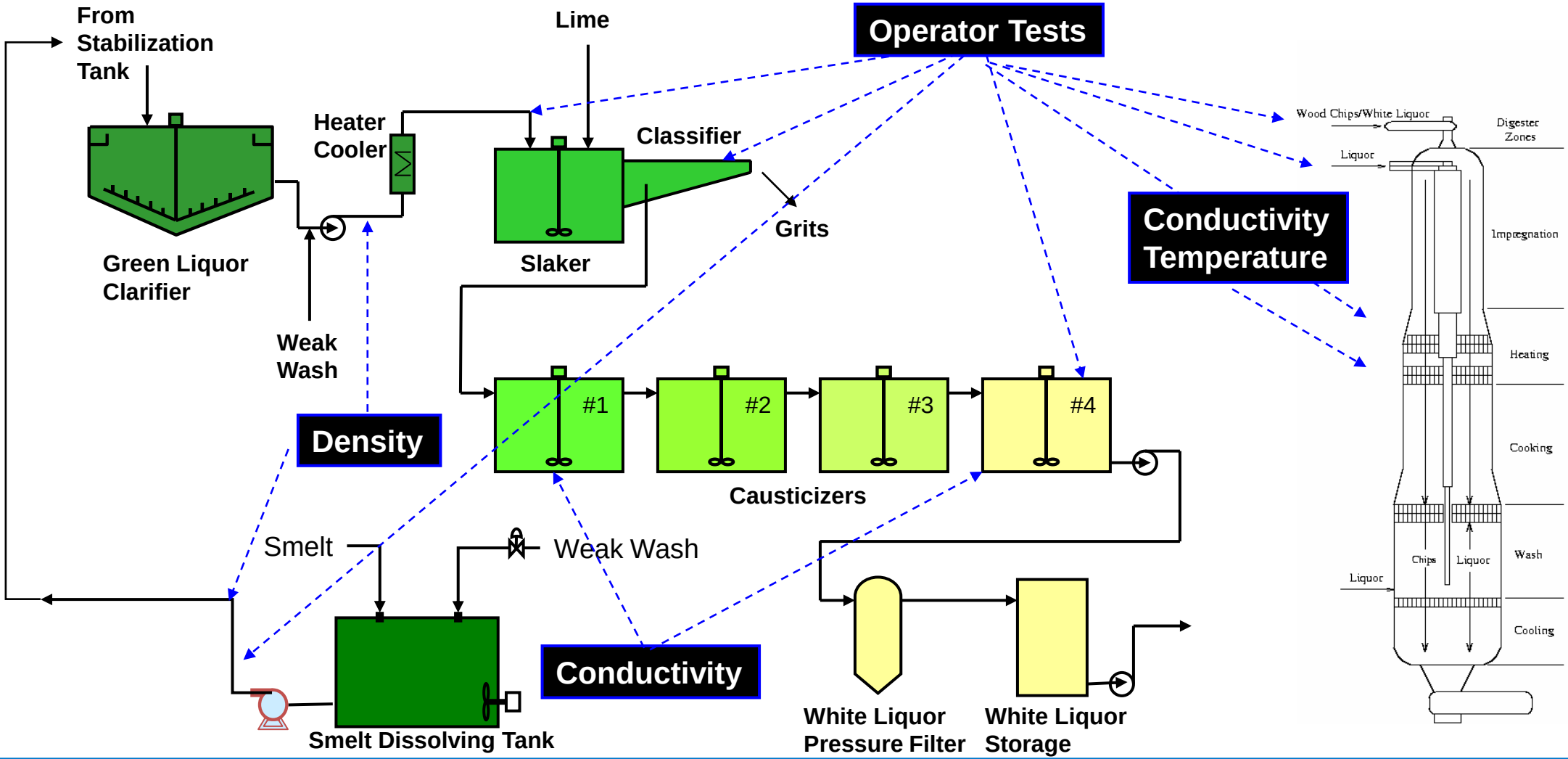
Needs of Mills: Variable Cost Reduction

- **Five main components to variable costs:**
  - Fiber
  - Chemicals
  - Energy
  - Labour
  - Maintenance/Material
- **Need to reduce internal costs to become more competitive**
  - Continuous unit operational improvements
  - Improve operations and profits

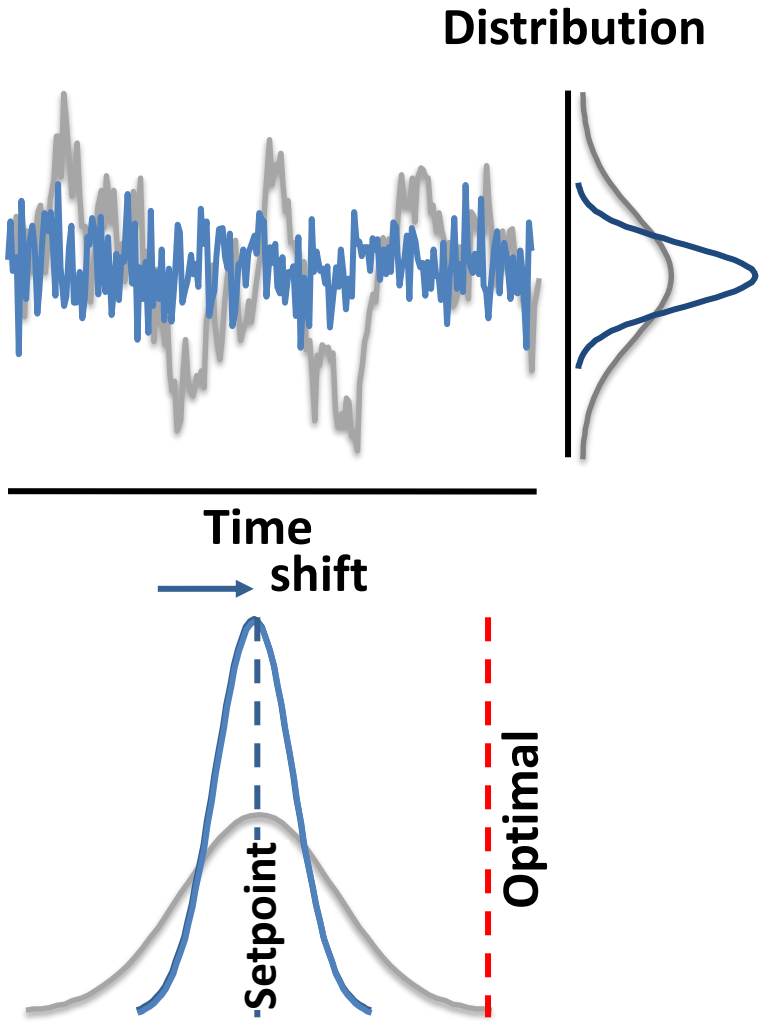
Unit Areas of Focus to Improve Efficiency



Conventional Tests Lacking Specificity/Accuracy



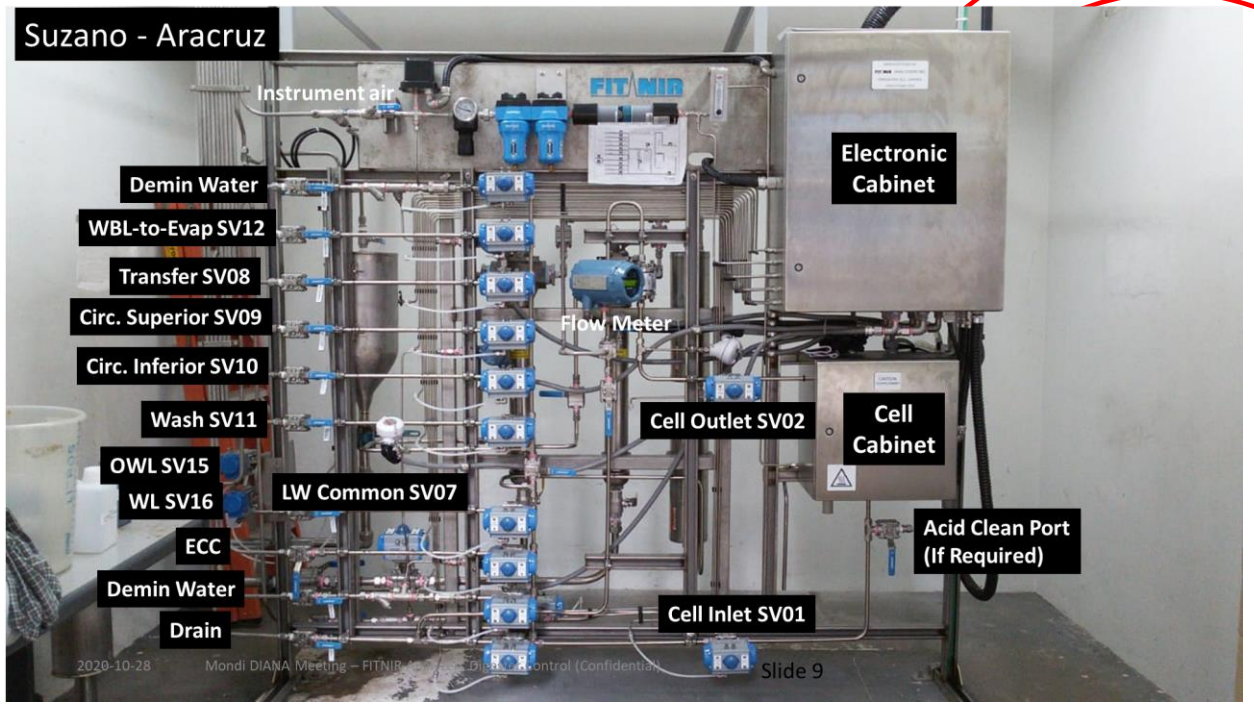
Process Control and Optimization



- **Use measurements to "optimize" the operation (terms of costs strategies)**
  - Reduce variability
  - Run closer to constraints
  - Improved product quality and uniformity
  - Reduced usage of chemical, energy and raw materials
  - Increased productivity
- **Require new technologies, sensors and control:**
  - **Beyond traditional techniques**

Advanced Molecular Spectroscopy

Fibre optic cables 300m



Field Sampling Station (FSS)

Spectrometer (SRS)

- **Spectrometer**
  - Measures molecular absorption
  - Optical system with NIR fiberoptics
  - Accommodate upto 8 sample stations
- **Sampling station**
  - Located process area
  - Multiple streams capability (6)
- **Self flushing after each analysis**
- **Self zeroing hourly**

OKI Pulp and Paper, Indonesia: Recaust Installation

FSS-1

SRS-1

SRS-2

FSS-6

FSS-2

FSS-3

FSS-4

FSS-5

FITNIR Applications with Document Savings

50% to 60% Reduction in Process variability

Recovery Boiler: Energy and Chemical Savings

$500K to $1.2M/yr.

Recausticizing: Energy and Chemical Savings

$500K to $1.2M/yr.

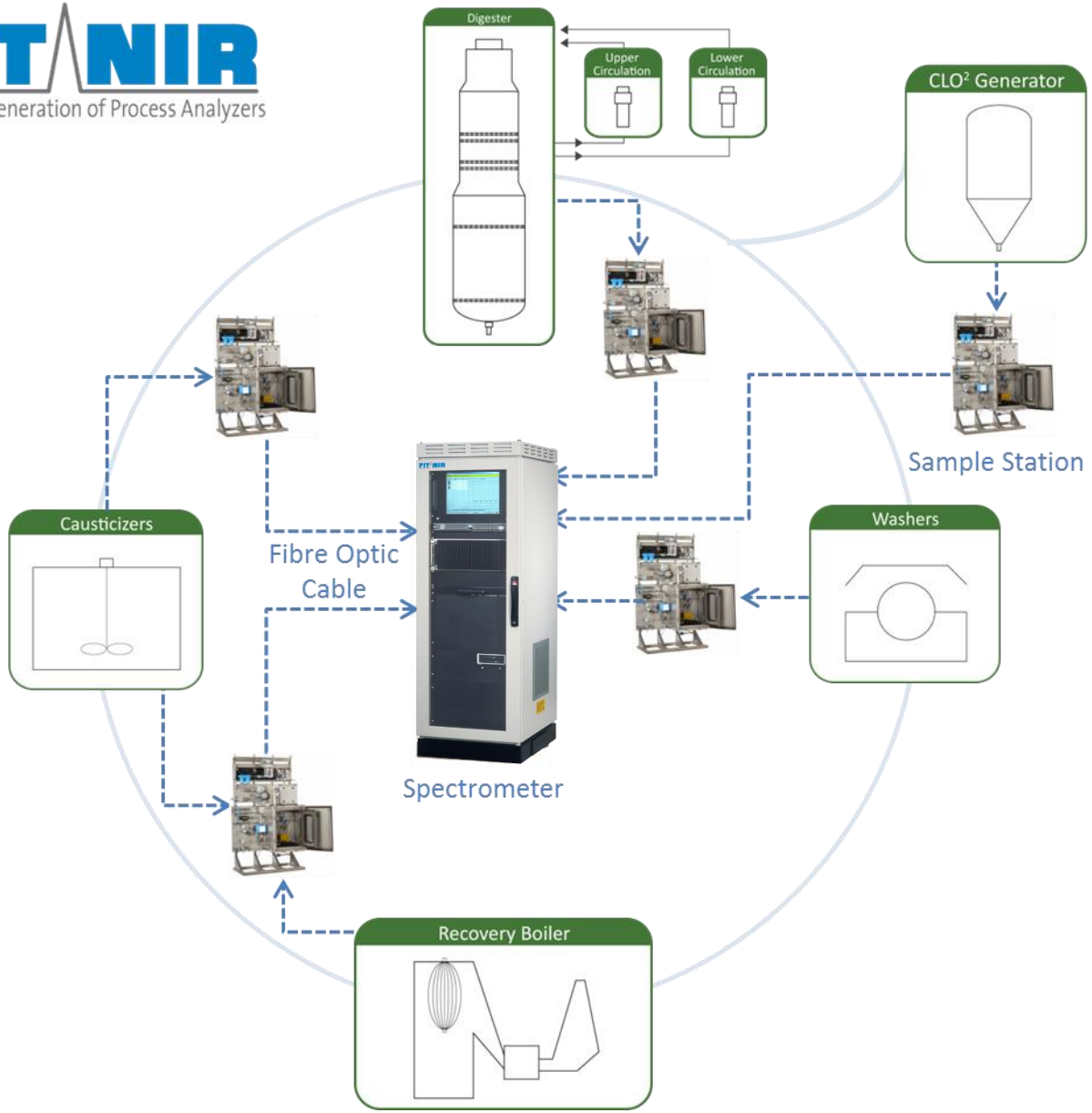
Digester: Improved kappa and Production Rate

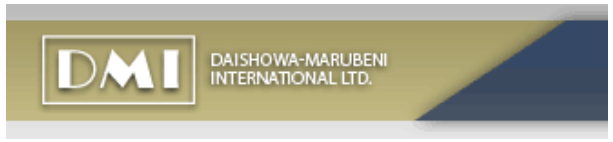
$4.5M/yr.

ClO2 Gen.: Improved Efficiency

$500K to $1.1M/yr

FIT NIR
The Next Generation of Process Analyzers




DMI
DAISHOWA-MARUBENI
INTERNATIONAL LTD.


GP
Georgia-Pacific


CLEARWATER
PAPER


resolute
Forest Products


cenovus
ENERGY


SÖDRA


ZELLSTOFF
CELGAR


Domtar


MACKENZIE
PULP MILL
CORPORATION


APP


suzano


GP
Cellulose
growing smarter™


oki pulp & paper
pulp and paper products


HARMAC
PACIFIC


BOISE


VERSO


SÖDRA


PCA
PACKAGING CORPORATION OF AMERICA


Tembec


TEXO
Consulting & Controls


Fibria


INNVENTIA


Weyerhaeuser


IRVING
IRVING PULP & PAPER, LIMITED


West Fraser


CANFOR


WestRock


Catalyst


PAPER
EXCELLENCE


FPInnovations


INTERNATIONAL PAPER


BILLERUDKORSNÄS

FITNIR

The Next Generation of Process Analyzers

www.fitnir.com

Thanh Trung

C. 604-817-8982

W. 604-221-2230

thanh.trung@fitnir.com

FITNIR