State of the union for our OSB site

- We've done a lot over the past 30 years to improve.
 - Automation improvements
 - Modernization of equipment
 - Countless CI projects
 - Now at 115% of design capacity
 - A testimony to our people and leadership.



Improve overall Operational efficiency

- Digitization beyond instrumentation, automation, HMI, etc..
- How we work, our routines & procedures:
 - what & how we do what we do
- Better management of our assets (APM)
 - Downtime avoidance strategies
 - Improved Analytics

- Mobility plant wide
- Begin collapsing OT & IT domain
- Reduce friction of our tools
- Improve our shift cadence



Improve shift cadence



How we roll....We "TRY" to build cadence of the shift in logs



How we start our shift - reviewing logs



- Production fell short. Goal = 466k^{BDFT}, Actual = 250k
- Downtime on:
 - Core Dryers Plug @ 1:30am,1hr 20 min
 - Flakers down @ 4:15am, 2hr 40 min
- Quality was good 98.5% "A" grade, 1.5% shop
- Safety No DTZ's
- Had Environmental excursion due to data losses that is permit related. (3:16am)
- Had to take down WWTP to repack pump seal.(12:31)
- We don't know any more details hard to establish cadence based on this info

Our journey today – the cadence of the shift Steps toward being more Digitized



Dryer plugs are problematic



How we're addressing the issue



Fast downtime determination with mobile tools



Digitize the what, when, how long & why (assign cause)

Quick, cloud based subscription licenses... No capital project





Industry 4.0

Driving Operational Results Through Digitization



Problems:

Kg. 150 50 4

- Manually written
- No standards for logging - Who/What/Where/When/Why - Downtime data is mixed with Re Deyer, Too many and we clean up. mental Duling (Down 11: 20 Min) Here Four Removed Antomation Toran. Dow Ten D Alaxue Destruction Restrated During Alaxue Destruction Restrated in 1 Mand other information, and isn't Ree Jown Kensoled Obstruction / Reestreeted Selfin Ten Palacus . Deset / Reestreeted Juded Alaiem . Resch & Colled Maint. categorized on Forning Bell. No Die Sul no Data Deforts on Geo Deyre Geograd John North ed Mand

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September 3, 2016 - "Dryer was taken down due to fire"

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Colled Main

More Kocossines

January 20, 2017 - "Fire. Production stopped."

Kg / 90 57.

August 1,2018 DURDI. Co Ender Action 200 - 2000 A while TAM Product - "Dust in dryer burnt. Set off alarms."

While Sata Brek orling



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Driving Operational Results Through Digitization



Easy tracking of downtime





AVEVA Insight

People. Operations. Connected.

It is that simple.

Key Points:

- Online.wonderware.com
- Free 45 day trial



NEED TO PUBLISH YOUR DATA TO INSIGHT? GET TOOLS HERE ☆



6

AVEVA INSIGHT

Q Search for saved content, tags, or keywords.

SUGGESTED CONTENT

DASHBOARD

Content that grabs your attention

Soon, you'll see relevant and popular content here. But first, you'll need to start creating your own content in AVEVA Insight.

Check out this short video or help to learn more.

NEWS

Interesting facts about your data

Insight spends the first week or two learning about your data. After that, you'll begin seeing news stories here that highlight unusual and interesting events in your data trends.

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Equipment Sort by State Type ~ Cyclone1 RUNNING C	Dryer1 OSB Plant - Surface Dryer	OEE DATA PROPERTIES	EQUIPMENT STATE				
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4 days, 03:08:15 Debarker2 RUNNING 4 days, 03:08:10 Dryer1 DUNNING							
09:51:19 Dryer2	KPIs in the last l	hour					
RUNNING 🛛 💙 4 days, 03:08:01	Top 5 Downtime Reas (No Data)	ons by Count	Top 5 Downtime Reasons by Durati (No Data)	tion (min)	Time Summary		
Flaker1 RUNNING 05:44:42	L3					100% - Runtim	e
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Dryer2 RUNNING S 4 days, 02:22:05	KPIs in this perio	Top 5 Downtime Reasons by Durat	tion (min)	Time Summary	7.7% - Downtime
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sente. 2: 12 N Puege Core Dryer. Too MANY Flakes to Puege, More Necessia. Key Points: AN UP. UNPLANNED DT k online (D-~ Accurate data capture Inc. Data. Co- Avoid searching paper logs Equipment Failure 7 JAM, Removed Obstantions / Restanted 4/15/2019 4:12:16 am Low Temp Alpkell : Reset 02:41:33 ention Alarem. Roset & Colled Maint. 3.42 & SAFety Walk started. 3 46+ STILL NO ENVIRONMENTAL DATA. RTO'S OK but no DATA Metal Defect on Forming Belt. No Problems discovered 355A 4:01 Multi la Fia Detate on Coro Dever 4,15 r Core FINKER DOWN. Norfred MAIN-4:401 MAINT NOTIFIED US that FIRER WILL SE SOUN A WAILE TAM redict 6:55x Core Flaker Lock online. PROduction Gonl 466, Actual 250K. 18841-95,5 A GRASE, 1.5 Shop DT2:0.

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Industry 4.0

Driving Operational Results Through Digitization



Easy tracking of downtime



Analysis of where downtimes most frequently occur



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Last 30 Days

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Industry 4.0

Driving Operational Results Through Digitization



Easy tracking of downtime.







Analysis of where downtimes most frequently occur.

Solution which requires minimal maintenance.







InSource X0 Solutions:

- Installed, Configured, and Maintained by InSource
- Powered by AVEVA Insight
- Rapid deployment
- 1/5th the cost, and 5x the ROI of traditional solutions







Industry 4.0

Driving Operational Results Through Digitization



Easy tracking of downtime







Analysis of where downtimes most frequently occur





Driving Operational Results

Through Digitization

Summary – Digitize Equipment Performance off-Premise



Insight Performance

Identifies downtime accurately: when/how long/assign cause. Calculates OEE

Mobile access to analytics. Frictionless operation for each user

3 s

Pay-by-use an

No large capital project – Quick, Cloud based, Subscription model (X0)



Ownership options: License & Adoption

Full Cloud



 Full Cloud IIoT devices are direct-connected to and operated from the Cloud (any modules).

Our journey today – the cadence of the shift Steps toward being more Digitized



Determine root cause of the dryer downtime



How we're addressing the issue



Tools for fast determination of root cause anywhere, anytime (mobile)



Determine if we can predict failure by some set of rules

Quick, cloud based subscription licenses... No capital project

And yes, mobile required

- 1. Are there anomalies?
- 2. Is there a repeatable pattern?





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Driving Operational Results Through Digitization





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Make it easy to see our history





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Content -

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SUGGESTED CONTENT

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DASHBOARD

NEWS

Interesting facts about your data

Insight spends the first week or two learning about your data. After that, you'll begin seeing news stories here that highlight unusual and interesting events in your data trends.

 Content that grabs your attention
 Key Points:

 Soon, you'll see relevant and popular content here. But first, you'll need to start creating yo Seatric hevelogent partial match on tagname

 Check out this short video or help to lear more.
 or description

















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SUGGESTED CONTENT (1)	2D (1)
Dryer1-AirflowInOut	
50,000 -	
40,000	

Making a new chart with 3 Tags:

- Air flow out of the Dryer
- Speed of Green Bin adding wood to Dryer
- Moisture of the wood being added

NEWS

Interesting facts about your data

Content -

Insight spends the first week or two learning about your data. After that, you'll begin seeing news stories here that highlight unusual and interesting events in your data trends.

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Driving Operational Results Through Digitization



Make it easy to see our history



Build Dashboards





Q Search for saved content, tags, or keywords.





Troubleshooting Dashboard



Key Point:

- Dashboards can be customized.

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Driving Operational Results Through Digitization



Make it easy to see our history



Build Dashboards





<mark>Mobile Access</mark>

Key Point:

 Charts built online are available in app



Key Point:

 Allows for familiar Pinch and Zoom experience

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Key Point:

- Comments can be added to the data

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Troubleshooting Dashboard 🔺



Key Point:

 Comments can then be seen in app and online



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Driving Operational Results Through Digitization



Make it easy to see our history



Build Dashboards

3

Mobile Access





Industry 4.0

Driving Operational Results Through Digitization

Summary – Digitize Process history off Premise



Insight History

Helps identifying root cause through cloudbased process history & machine learning



3

Cloud-based means Mobile access. Low initial investment, quick install, no infrastructure

Dashboards & views are User customizable without programming (less friction)





Ownership options: License & Adoption