

# Solving Business Initiatives with the PI System

Ken Startz, Systems Engineer

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# Business Impacts: Delivering Value at Enterprise Scale

Safety &  
Security

Energy  
Utilization

Process  
Efficiency

Asset  
Health

Quality

Regulatory  
Performance



Reduced 5  
unplanned  
shutdowns  
in a year

Reduced  
facilities  
energy  
costs by  
over \$2M

Over  
\$2.8M in  
savings  
from event  
prevention

Prevented  
unit failure,  
avoided an  
expense of  
up to \$2M

Recovered  
640M liters  
of treated  
water

\$300k in  
savings  
Water  
temperature  
permit  
compliance



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# Business Impacts: Delivering Value at Enterprise Scale

Safety &  
Security

Energy  
Utilization

Process  
Efficiency

Asset  
Health

Quality

Regulatory  
Performance

What do these look like in the PI System?

Reduced 5  
unplanned  
shutdowns  
in a year

Reduced  
facilities  
energy  
costs by  
over \$2M

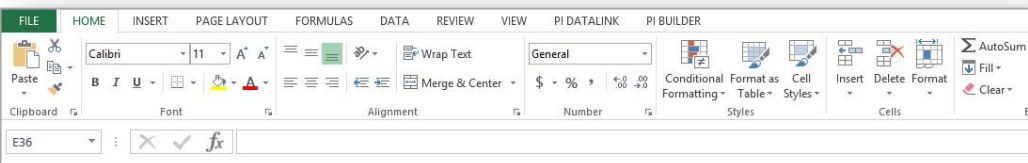
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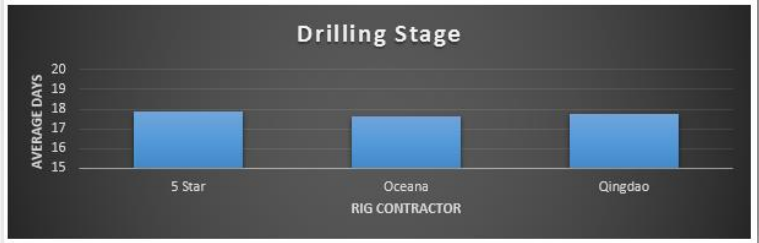
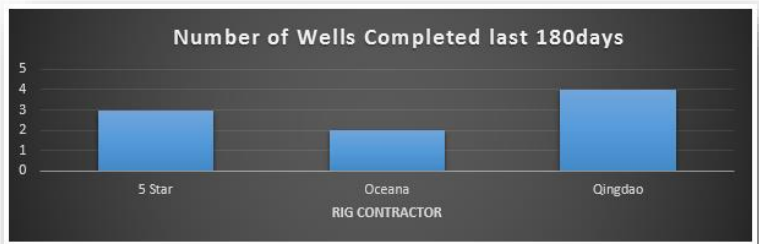
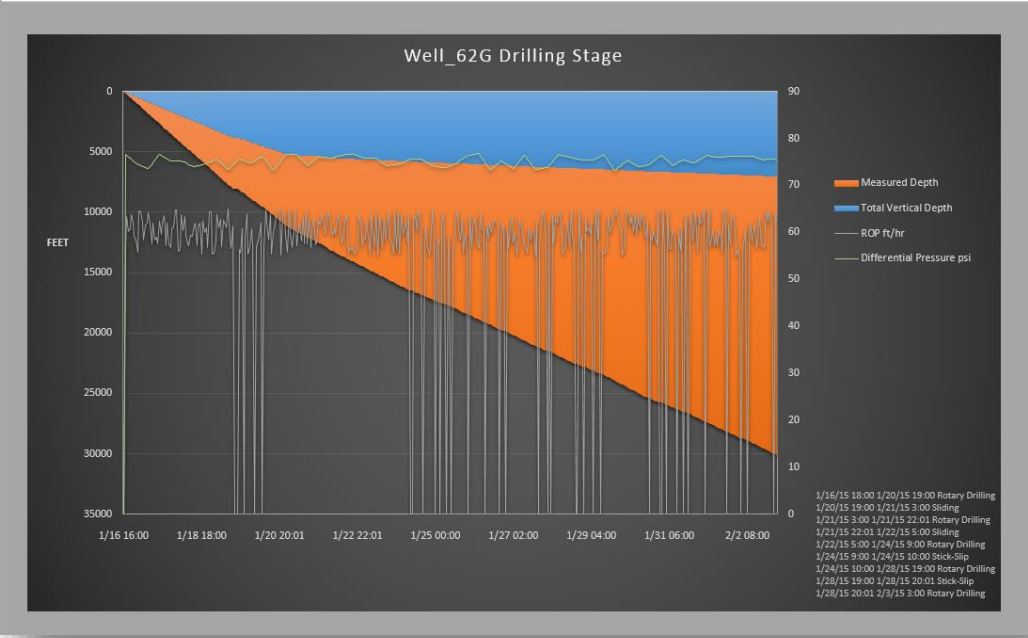




# Well drilling and completion

Available as an example kit

- Track drilling progress
- Identify which contractor is best...or worst.



# 5 steps to plan a successful implementation

Where you want to be

Start small.

Focus on value.

Develop a plan.

Where you are



# Power of planning: From simple notes to real impact

## Red-Eye Flight from OSISoft 2014 UC...

1. Typical Network
2. Proliferation
3. Notifications
4. Data Cleaning
5. Misconceptions
6. More...More... More



OSISoft. USERS CONFERENCE 2015

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Rick Smith, Manufacturing Process Information Mgr.  
International Paper

- Reliable production estimates
- 35% reduction in energy usage
- Simplified reporting: Days → minutes

# Imagine

What do I want?

Performance improvement, Reduced energy use

*Detect anomalies*

*Reduce reaction time*

*Increase efficiency*

*Simplify reporting*

*Reduce energy usage*



# Focus

Where is the easiest or biggest ROI opportunity?

Problematic equipment, High-value process

*Detect anomalies*

Transformer voltage variation

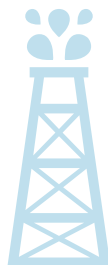


*Reduce reaction time*

Shorten vacuum phase



*Increase efficiency*



Improve rig drilling

*Simplify reporting*

Monthly EPA spreadsheet



*Reduce energy usage*

Boilers





*Increase efficiency: Improve rig drilling*

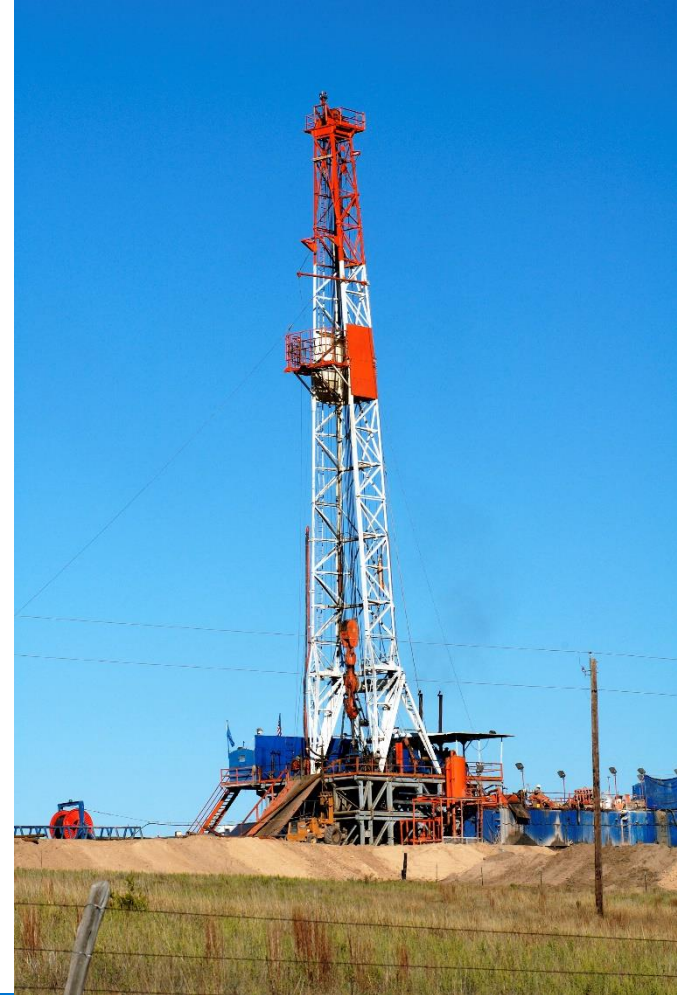
Imagine

Focus

Elements



*Rig 18*



*Increase efficiency: Improve rig drilling*

Imagine

Focus

Elements



Rig 18



*“What does that asset look like?”*

*“What tags do I have?”*

DC.SJ.PUE **TI-102** DC.Zero **DY-108**  
DC.SJ.C1.Z3.R3.PDU1.PF GE01\_A\_DT

AF\_NOISE PI-115 DM-  
05:BW.R

AC09.Power

80-5.Net Volume  
GE01\_A\_DT

FI-151 0\_ENG\_AUX\_STS

TI-178 asset1\_output Active  
Meters GE01\_A\_DT aso **DY-101**  
02:F101.C

DC.Srv01R Pump-125.SP

FT9001

02F102.1HRAVG  
BGT001 PI-111

45-2.Net Volume

FIC-144 02F100 fasttag BH9001

GE04\_Status  
02:F101.C  
**TIC-181**

FI-111  
FI-101 80-13.Net  
Volume

GE05\_Energy **C1:14AT5**  
AC03.Air Flow FeedBin.Cmt  
Downhole Pressure

**B737 FG117** DC.TimeLoad  
D-110.Pressure.PV  
GE04\_DT QI-121 GE03\_V\_WIN

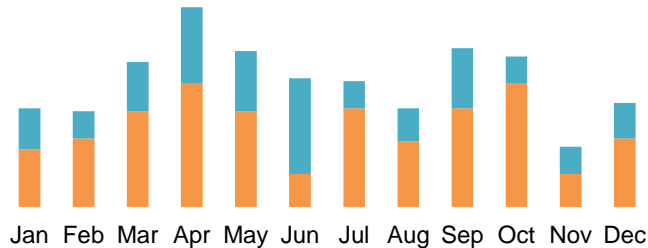
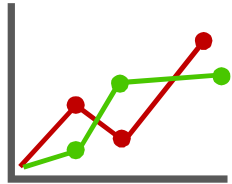
**DC.Rk07R** DC.Srv06R

# What do I want for my initiative?

## Pro-tip

Specify the final visualization, then **reverse engineer** needed data.

---



$$[E_f] = \frac{[E_0] - [ES](1 + \frac{[I_f]}{K_I})}{(1 + \frac{[I_f]}{K_I})}$$

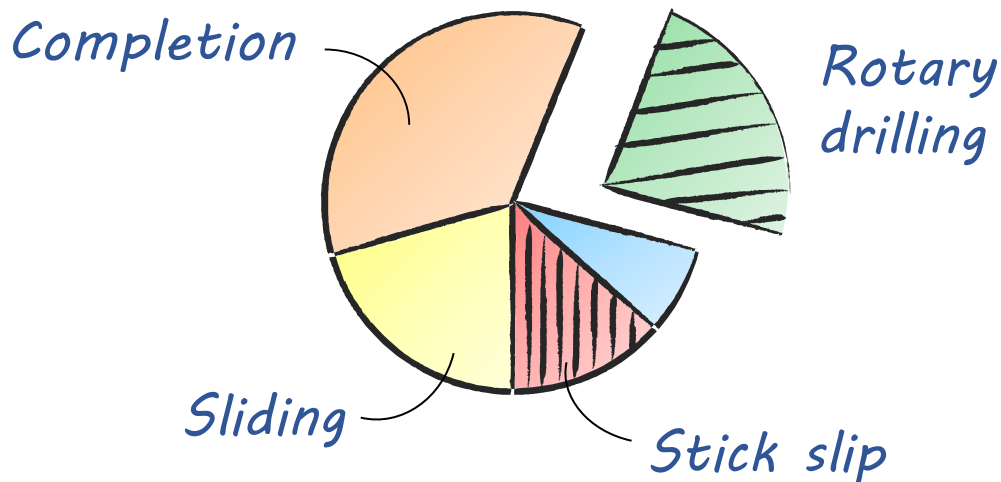


# Specify

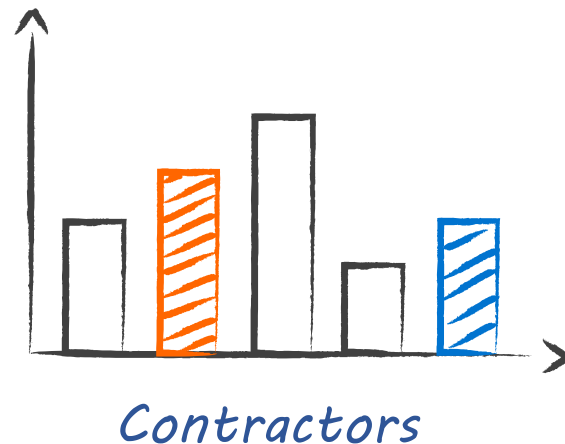
What information do I want to see, and how?

Specific readings, Aggregate metrics, Trends, Reports

## Drilling phases



## Days to completion

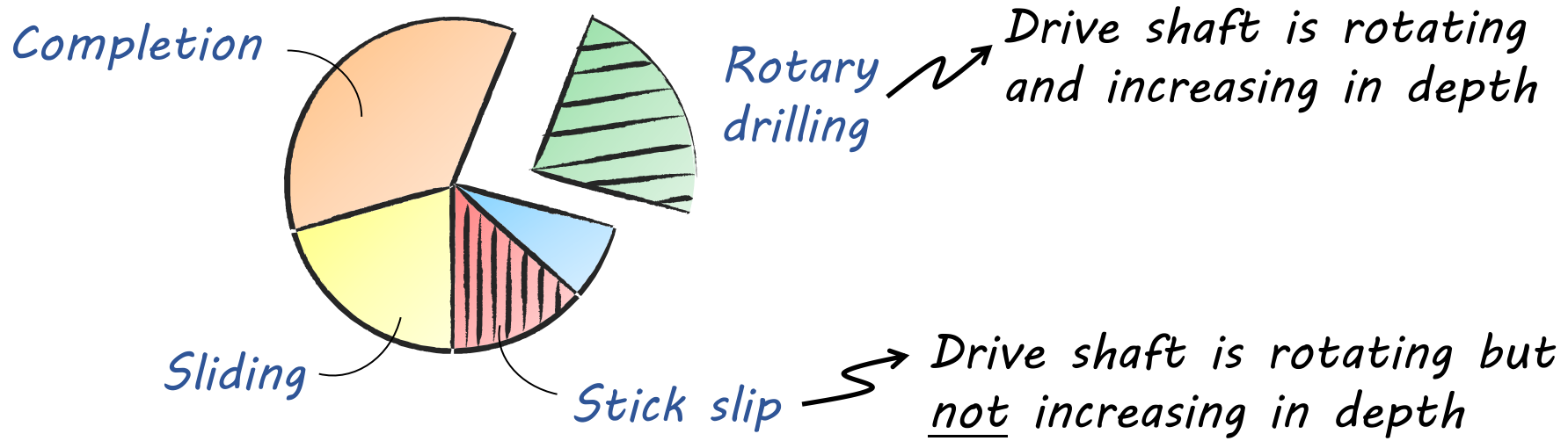


# Specify

What information do I want to see, and how?

Specific readings, Aggregate metrics, Trends, Reports

## Drilling phases



# Specify

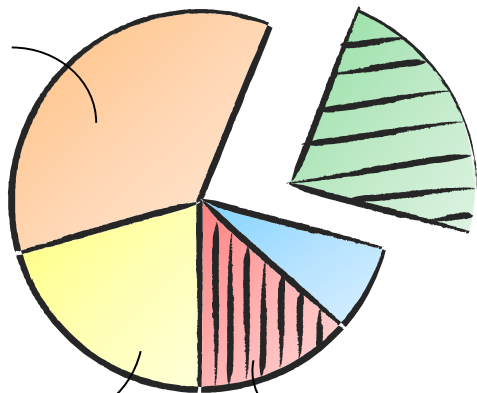
What information do I want to see, and how?

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## Drilling phases

Look for these readings

Completion



Rotary  
drilling

Drive shaft is rotating  
and increasing in depth

Sliding

Stick slip

Drive shaft is rotating but  
not increasing in depth

# Map

Where does the data come from?

Data sources, Particular assets or processes



*Drive shaft is rotating*

- *Status*
- *RPM* ←
- *Other indicators*

*Depth of drill*

- *Measured depth* ←



# Design

What should I consider when designing templates?

Making comparisons, preserving simplicity, re-use

Do I have other similar pieces of equipment that I want to compare?

Are there components that I want to compare separately?







Do I look at a tire without the truck?

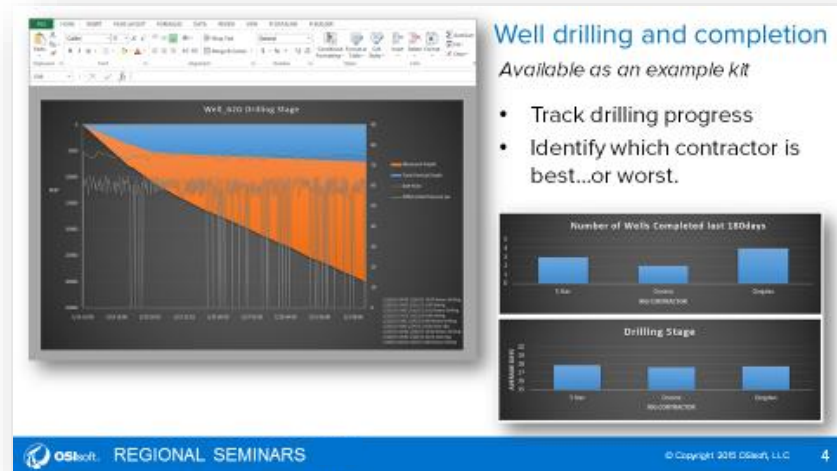
Do I look at a valve without the tank?



# Pulling it all together

4 simple attributes is all it takes for this drilling example

<u>Elements</u>	<u>Attributes</u>
 Rig 18	 Top Drive RPM
 Rig 32	 Measured Depth
	 Well Name
	 Contractor



Available for free from Tech Support website.  
Search "example kit."

# Plan your next initiative

## Imagine

What do I want?

Performance improvement, Reduced energy use

## Focus

Where is the easiest or biggest ROI opportunity?

Problematic equipment, High-value process

## Specify

What information do I want to see, and how?

Specific readings, Aggregate metrics, Trends, Reports

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Where does the data come from?

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## Design

What should I consider when designing templates?

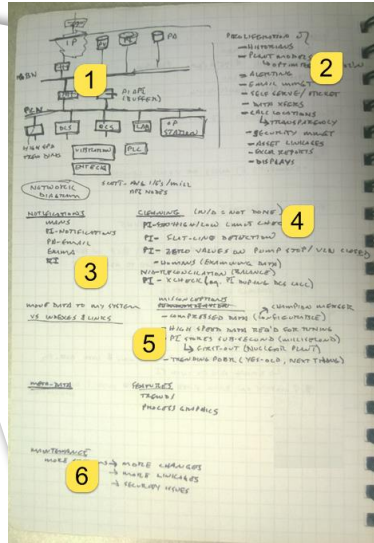
Making comparisons, preserving simplicity



# Power of planning: From simple notes to real impact

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Rick Smith, Manufacturing Process Information Mgr.  
International Paper



Where you want to be

Take this home and apply these steps

- Join us for training tomorrow
- Find us at the pods to discuss your ideas

Where you are



# Contact Information

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Systems Engineer

OSIsoft, LLC

# Questions

Please wait for the **microphone** before asking your questions



State your  
**name & company**

# Please remember to...

Complete the Survey  
for this session

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**Evaluation Form**

Name: \_\_\_\_\_ Company: \_\_\_\_\_  
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**Quality of presentations**

	Poor	Good	Excellent	N/A
1. Digital Transformation with Today's PI System – OSIsoft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. PI Coresight 2016: New Vision, New Display Editor, New Look and Feel – OSIsoft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Monitoring Health and Performance of Grid-Scale Energy Storage Systems – UniEnergy Technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Using PI Integrators to Improve the Value of your PI Data – OSIsoft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. PI Asset Framework Ties Together Enterprise OEE for Clearwater Paper – Clearwater Paper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Solving Business Initiatives with the PI System – OSIsoft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. PI Analytics and Coresight for Business Process Improvement – Arista	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Seq helps customers get even more value from their OSIsoft PI System – Seq Inc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. What's Really Going on with your Beer's Fermentation? – Deschutes Brewery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Quality of seminar**

	Poor	Good	Excellent	N/A
1. Presentation topics meeting your needs or interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Time allowed for lunch/breaks/discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Pace and time allocated to the presentations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





# Thank You



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