

Advanced Analytics with Seeq and PI System

From the Seeq Team:
Jon Peterson, VP Customers

Agenda

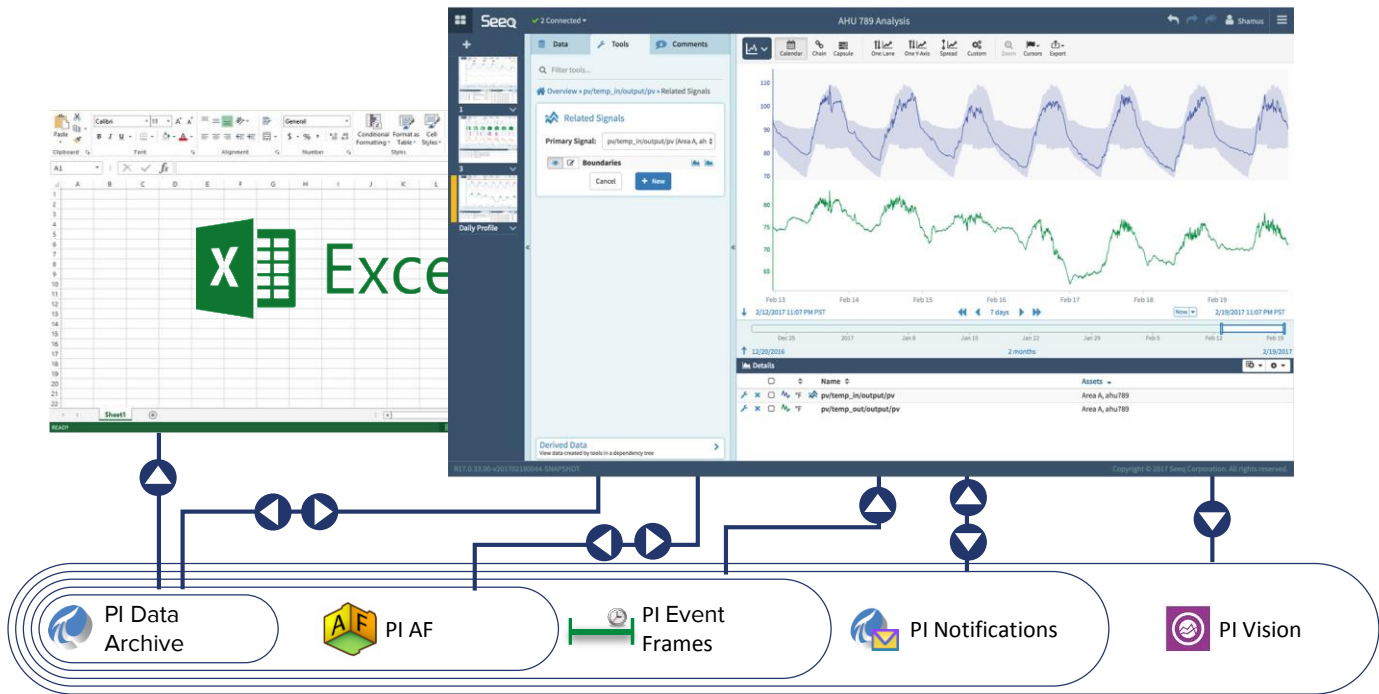
- Seeq Intro
- Working with the PI System
- Use Case 1: Heat Exchanger Fouling
- Demo 1
- Use Case 2: Water Hammer
- Demo 2

Seeq

- Founded May 2013
- Funding:
 - Altira Group
 - Second Avenue Partners
 - next47
 - And various angels
- About 40 employees
- 100+ companies

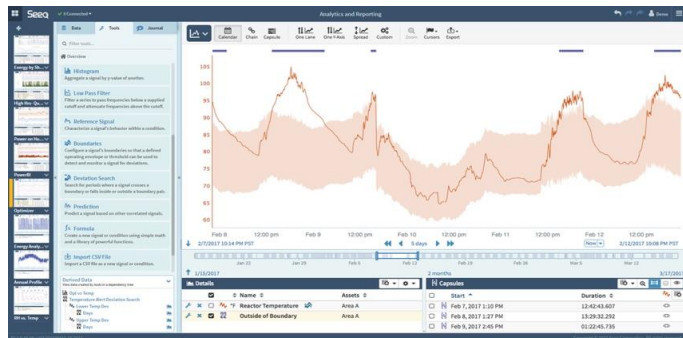


OSIsoft and Seeq

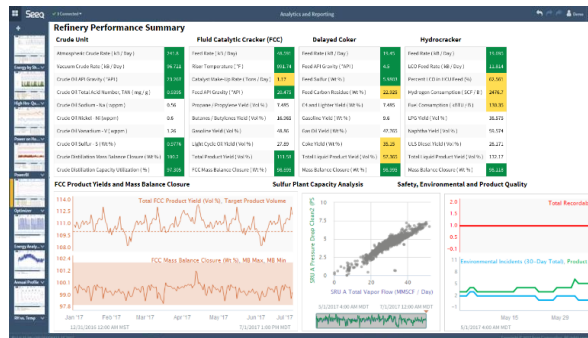


Seeq Architecture

Seeq Workbench



Seeq Organizer



Seeq Server



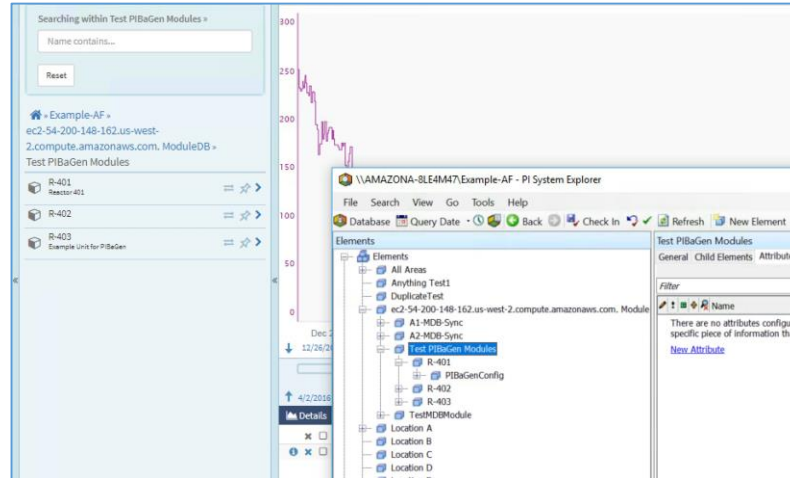
Server | Cluster | Cloud

1 or Many | 10M+ tags

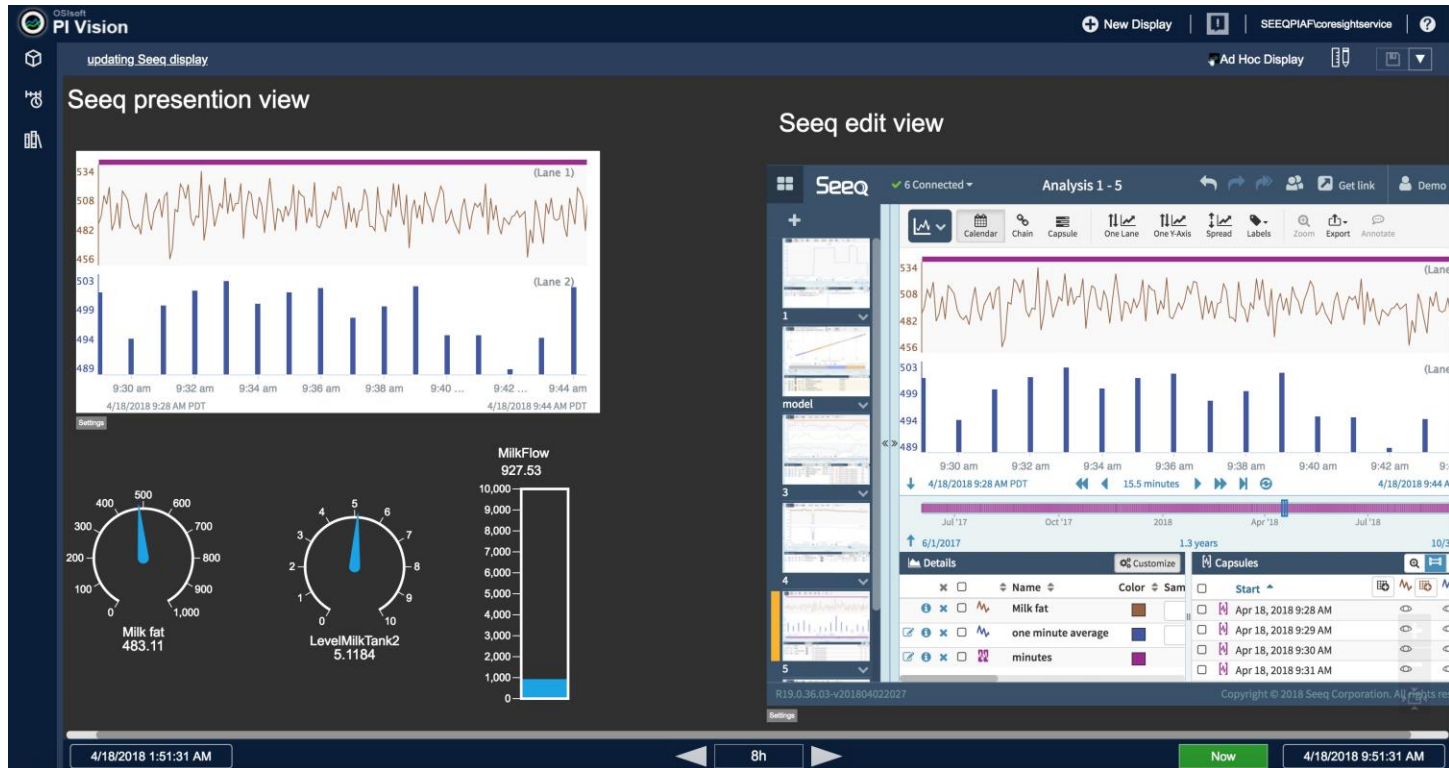
Data Stays in PI

Asset Framework

- Yes✓
- Seeq supports Asset Framework in analytics and UI
- Asset Framework Data Reference allows access Seeq from PI



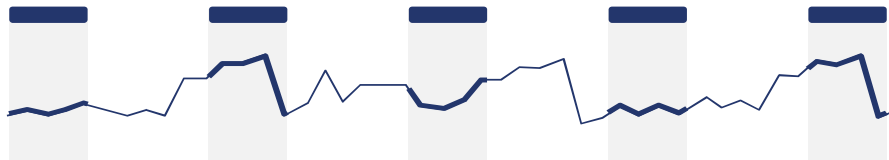
PI Vision



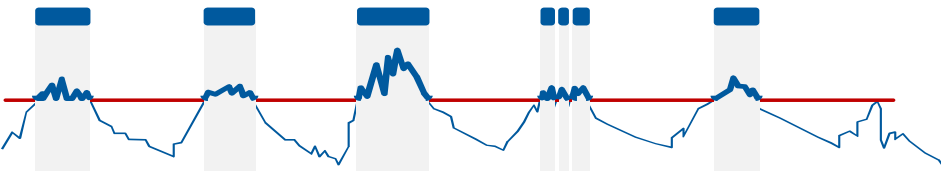
Event Frames

“Conditions” define when a state exists, and each instance of the condition is called an Event Frame, in Seeq a Capsule

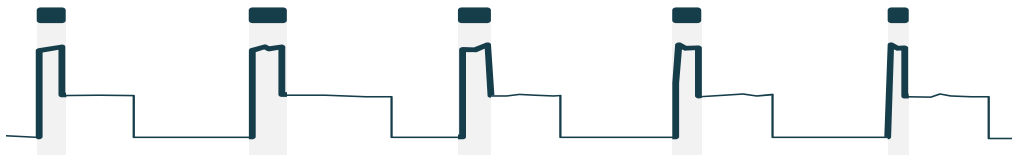
Define by
Time



Define by
Limit

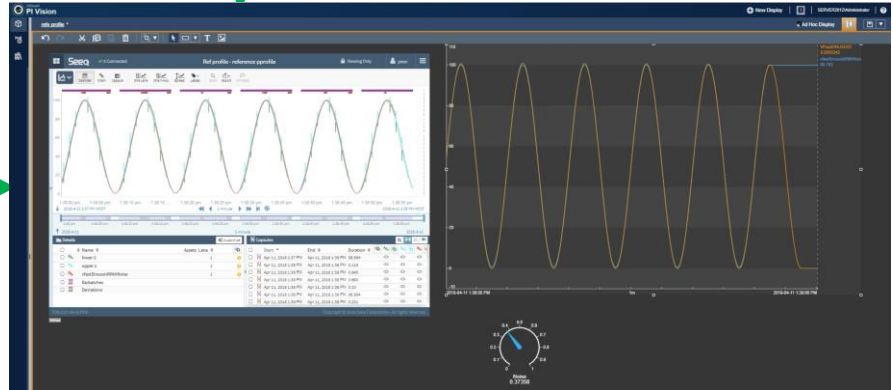
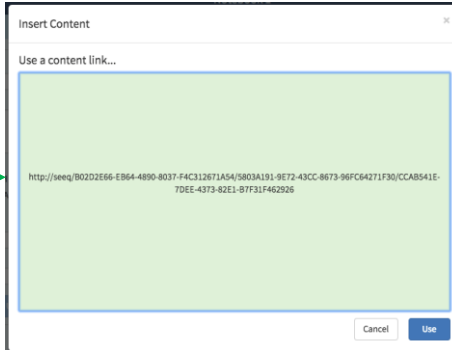
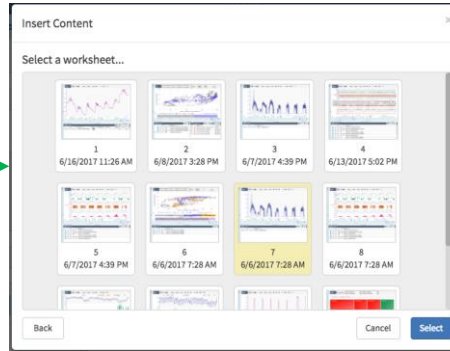
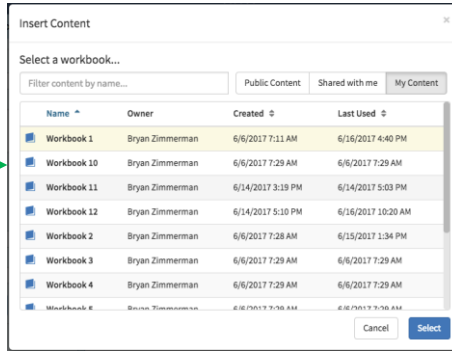
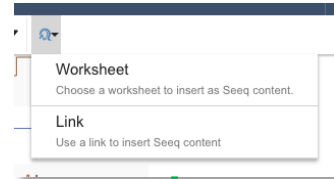


Define by
Pattern



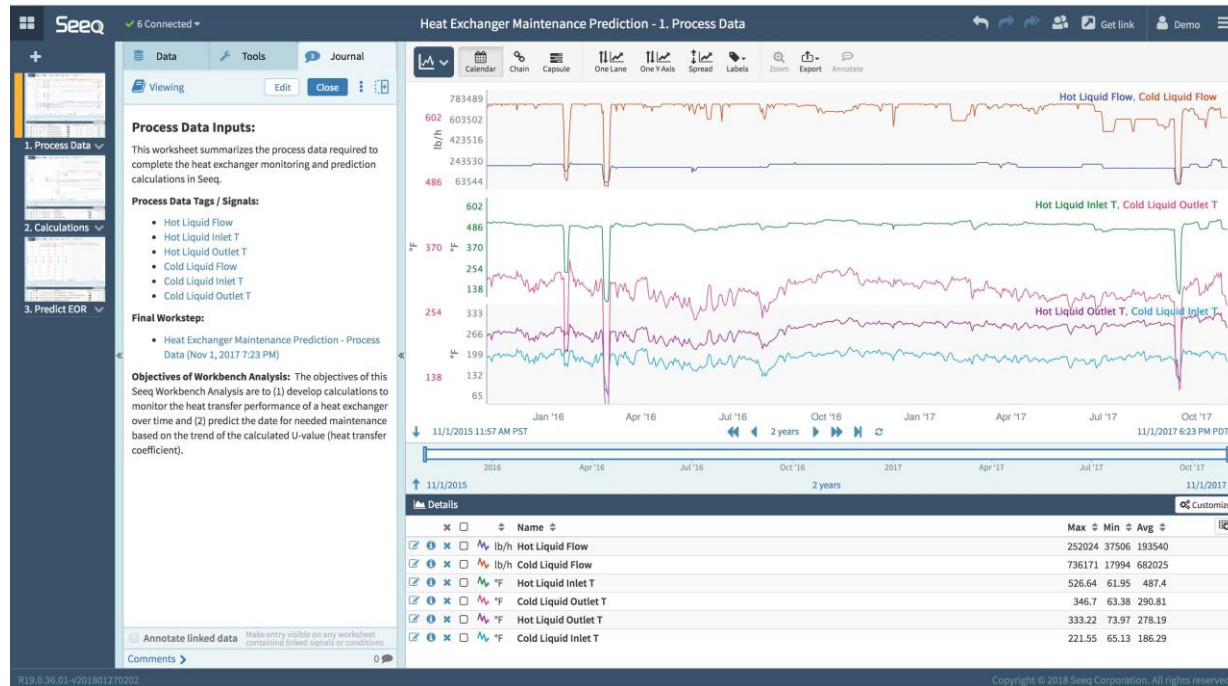
Analytics aren't Enough: Publish and Collaborate

Insert new content



PI Vision

Heat Exchanger Fouling

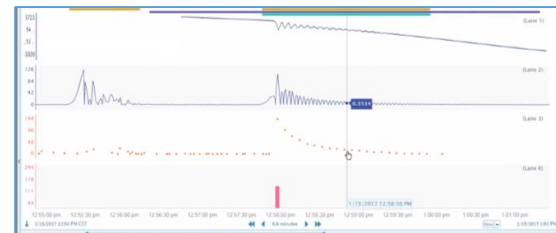


Demonstration

O&G Asset Reliability



Increase productivity of upstream assets and exceed environment and safety requirements.



CHALLENGE

Oil collection ESD causes pipe hammer which leads to more reliability issues

- Trip results in rapid valve closure and water hammer
- Improve system design to avoid water hammer

SOLUTION

Leverage value search to identify events. Use capsules and event frames to identify

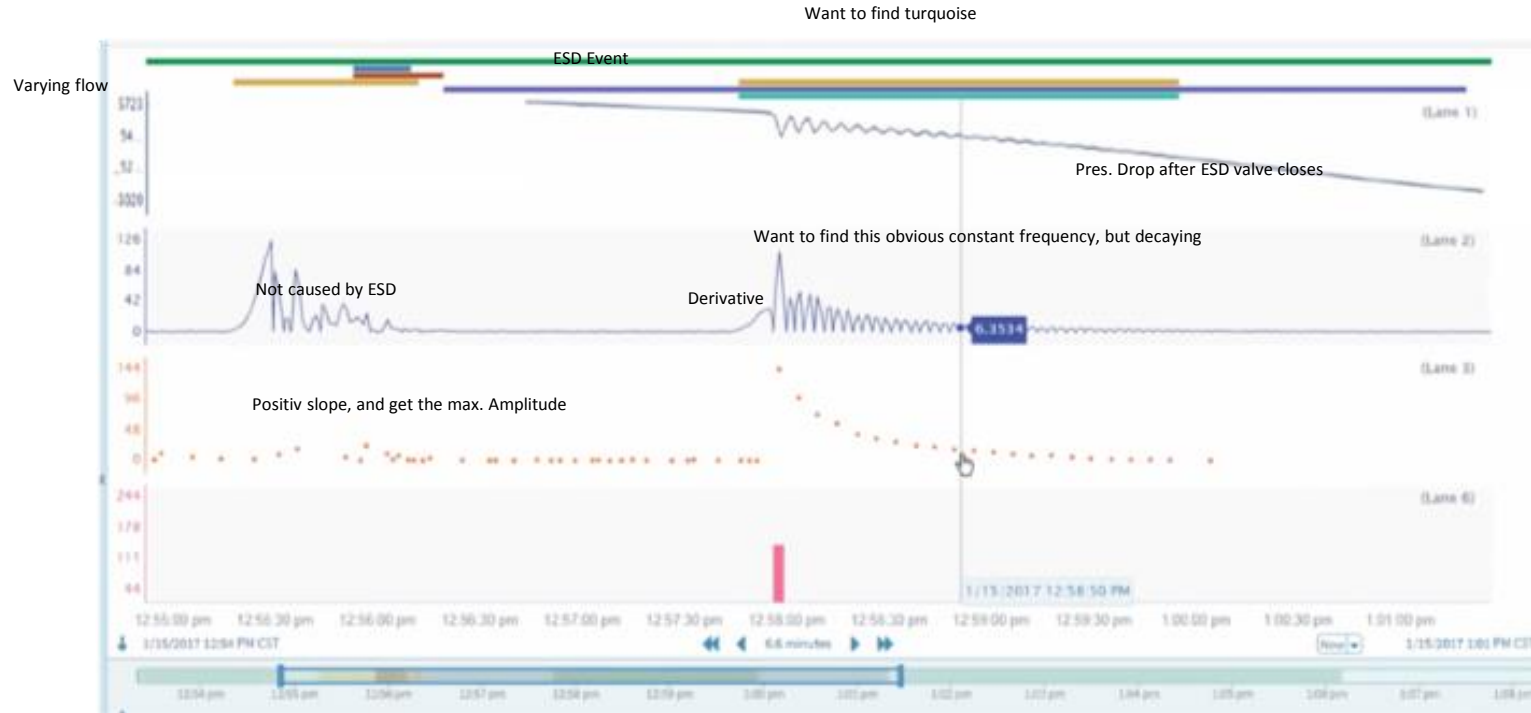
- Quantify water hammer duration, amplitude, and decay.
- Correlate with ESD events
- Replicate across assets defined in AF
- Monitor improvements over time & document

RESULTS

Focusing on engineering solution results in long term improvements

- Reduced production loss, savings of ~\$2M/year
- Less engineering time per event
- ESD “detection” is important and will be used to address other issues

ESD/Water Hammer



Demonstration

Questions

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

State your **name & company**



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Merci

谢谢

Спасибо

Danke

Gracias

Thank You

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ありがとう

Grazie

Obrigado

Optional: Click to add a takeaway you
wish the audience to leave with.

Presentation Template Brief

- A Style Tips and Best Practices document accompanies this template.
- This template was developed for presenters to insert their company template between the introduction slide and summary slide.
- One of the slides suggests topics to consider including in your presentation. **Feel free to adapt it for your work.**
- Please delete these instruction slides once you build your presentation.

Slides and videos
must be in
16:9
aspect ratio

Conference Theme & Keywords



Framing slides for you to
insert into your deck

Recommended Flow of Topics in Agenda


- About Your Company
- Business Challenge
- Applications and Use Case / How the PI System was Applied
- Implementation Details
- How Individual Product Capabilities Solved Your Business Challenge
- Results Obtained and Business Impact
- Other suggested talks/labs/booths/events at the UC
- Conclusion

Example Summary Slide


Leveraging the PI System in Water Loss Control

HALIFAX
Operators and planners often relied on estimates rather than real data to do their job

COMPANY AND GOAL
Halifax manages water and wastewater for 325,000 people, and wanted to **find and reduce leaks** in real-time and to reduce main breaks



CHALLENGE	SOLUTION	RESULTS
<p>Non-interoperable systems and fractured information sharing prevented running analytics</p> <ul style="list-style-type: none">1-2 bullets with extra details: geography, new regulations, information silos, delays in data collection, etc.	<p>District Metered Areas and water distribution system data connected to a PI System in real time, notifying operators of potential leaks and breaks</p> <p>"We can see the turbidity and chlorine levels at the plant – and also out in the distribution system. That is a beautiful thing"</p>	<p>Save \$600,000 / year reducing leaks and reducing average main breaks by 50% in certain areas</p> <ul style="list-style-type: none">Able to detect & address big leak of 700 gallons per minute running for 9 hours.Change the company's Infrastructure Leakage Index (ILI) from 9 to 2.5.

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Summary Slide Template is located on the next slide or by creating a new slide and selecting the “Summary Slide” layout (See end of slide deck for examples)

Summary Slide - click to add title

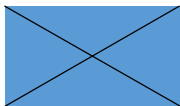
 Company and Goal:

Click to add a picture or photo representing this project or company. Resize the image to fit the bounds of this space.

CHALLENGE	SOLUTION	RESULTS
<p>25 words or less: what was the main challenge you were trying to address or overcome?</p> <ul style="list-style-type: none">1-2 bullets with extra details: geography, new regulations, information silos, delays in data collection, etc.	<p>25 words or less: how did your project overcome the challenge(s)?</p> <ul style="list-style-type: none">1-3 bullets with extra details, such as what PI System tools were used, the scale of the project, who was involved, analytics deployed, etc.	<p>25 words or less: What benefits were achieved/measured?</p> <ul style="list-style-type: none">2-3 bullets with extra details, such as quantitative measures in \$\$\$, %, etc. of ROI, Metrics, Time, People, Goals and Initiatives achieved

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CHALLENGE



SOLUTION



RESULTS

- **Speaker's Name**

- email@company.com

- Speaker's Title

- Company Name

- **Speaker's Name**

- email@company.com

- Speaker's Title

- Company Name

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Grazie

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Leveraging the PI System in Water Loss Control

HALIFAX

Operators and planners often relied on estimates rather than real data to do their job

COMPANY AND GOAL

Halifax manages water and wastewater for 325,000 people, and wanted to **find and reduce leaks** in real-time and to reduce main breaks



CHALLENGE

Non-interoperable systems and fractured information sharing prevented running analytics

SOLUTION

District Metered Areas and water distribution system data connected to a PI System in real-time, notifying operations of potential leaks and breaks

“We can see the turbidities and chlorine levels at the plant – and also out in the distribution system. That is a beautiful thing”

RESULTS

Save \$600,000 / year reducing leaks and reducing average main breaks by 50% in certain areas

- Able to detect & address big leak of 700 gallons per minute running for 9 hours.
- Change the company's Infrastructure Leakage Index (ILI) from 9 to 2.5.

Typical Presentation – Order of slides

Best PI World Talk

John Smith, InfoTaq Corp, Service Engineer

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Your Slides Here

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
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Leveraging the PI System in Water Loss Control

HALIFAX
WATER & SEWER
 DIVISION
 2015, 2016 & 2017
 WATER LOSS
 REPORT

COURTNEY AND GOAL
 Courtney manages water and wastewater for 325,000 people, and wanted to **find and reduce leaks** in real-time and to reduce main breaks.



CHALLENGE

Non-invasive systems and structured information sharing prevented running and fixing leaks.

SOLUTION


Dedicated trained users and use of a proven PI system to find and fix leaks in real-time.


Use of a PI system to find and fix leaks in real-time and also use in the distribution system. This is a beautiful thing!

RESULTS

Save \$600,000/year reducing leaks and reducing average main breaks by 50% in a 10-year period.

- Use to detect & address dry tap and 4700 gallons per minute running for 3 hours.
- Change the company's Infrastructure Leakage Index (ILI) from 3.0 to 0.5





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
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- Speaker's Name
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Questions

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