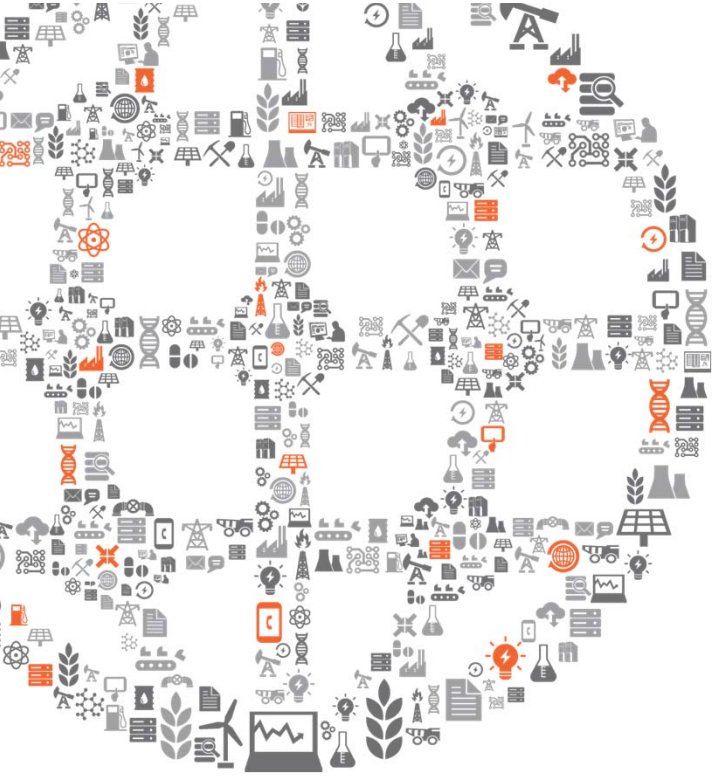

PI AF Analytics

Presented by **Michael Luo, PI Technical Consultant**

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Agenda:

- What we have done before and now
- Why AF analytics?
- Where we are heading

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The OSI Analytics Family

Present

PI Server → PI ACE → PI AF → PI AF Analytics

Performance Equation

Advanced Computing Engine

PI Asset Framework

"Templatised" Calculation

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Why PI AF Analytics?

- Configuration experience
- Simple deployment
- Data Access
- On-demand and scheduled execution
- Performance and scalability
- Schedule programmed ‘calculation’

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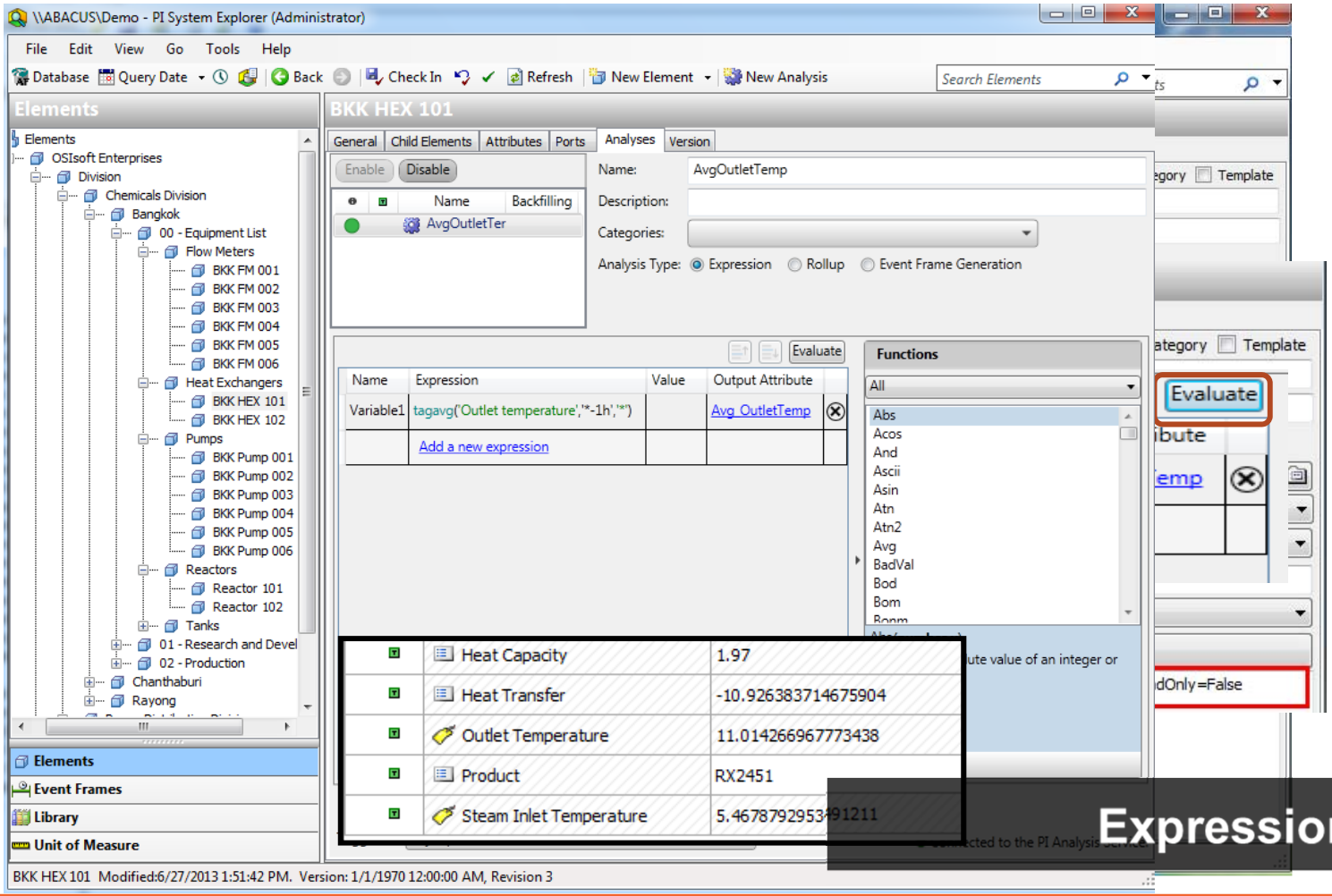

Expression Analysis

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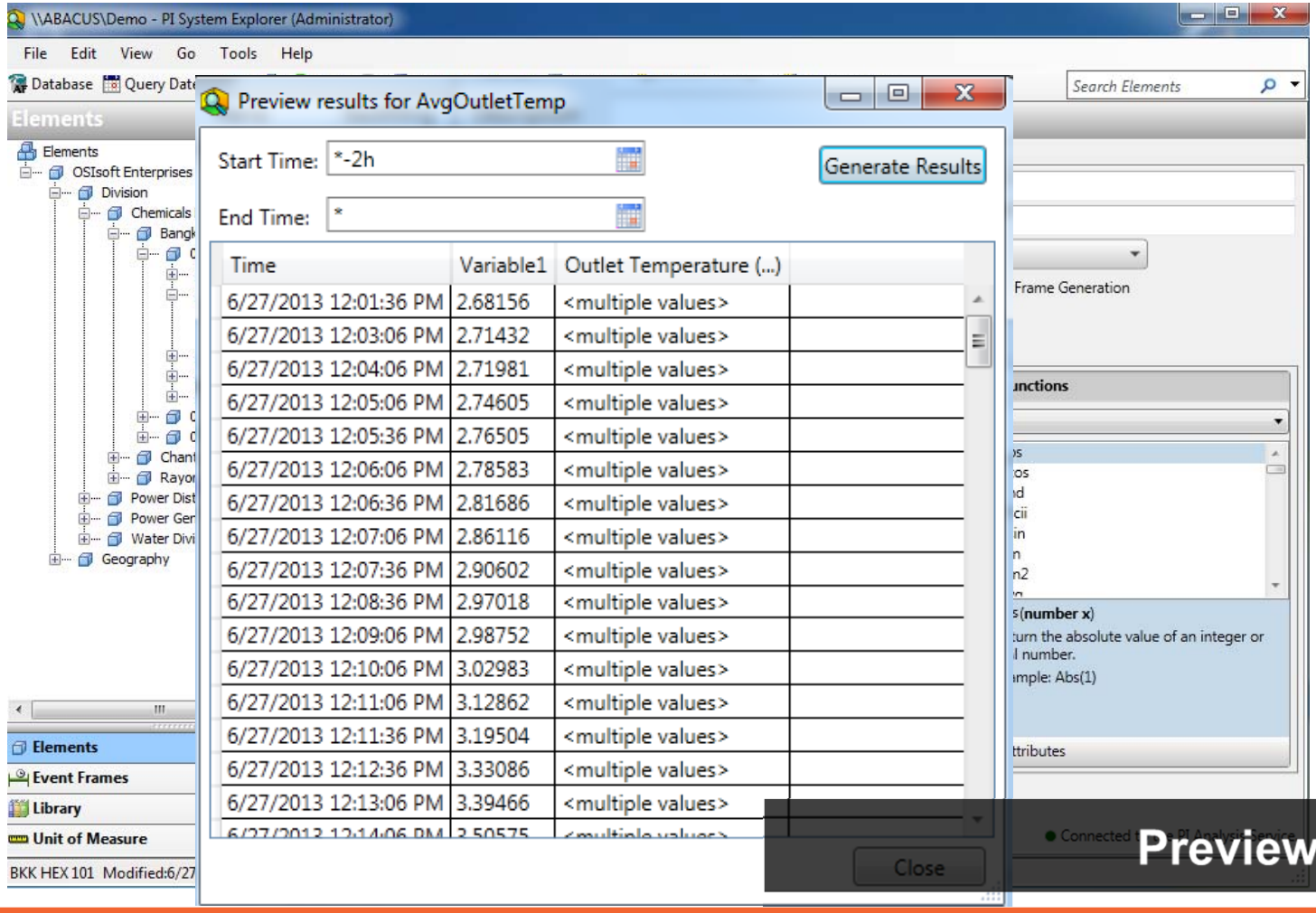

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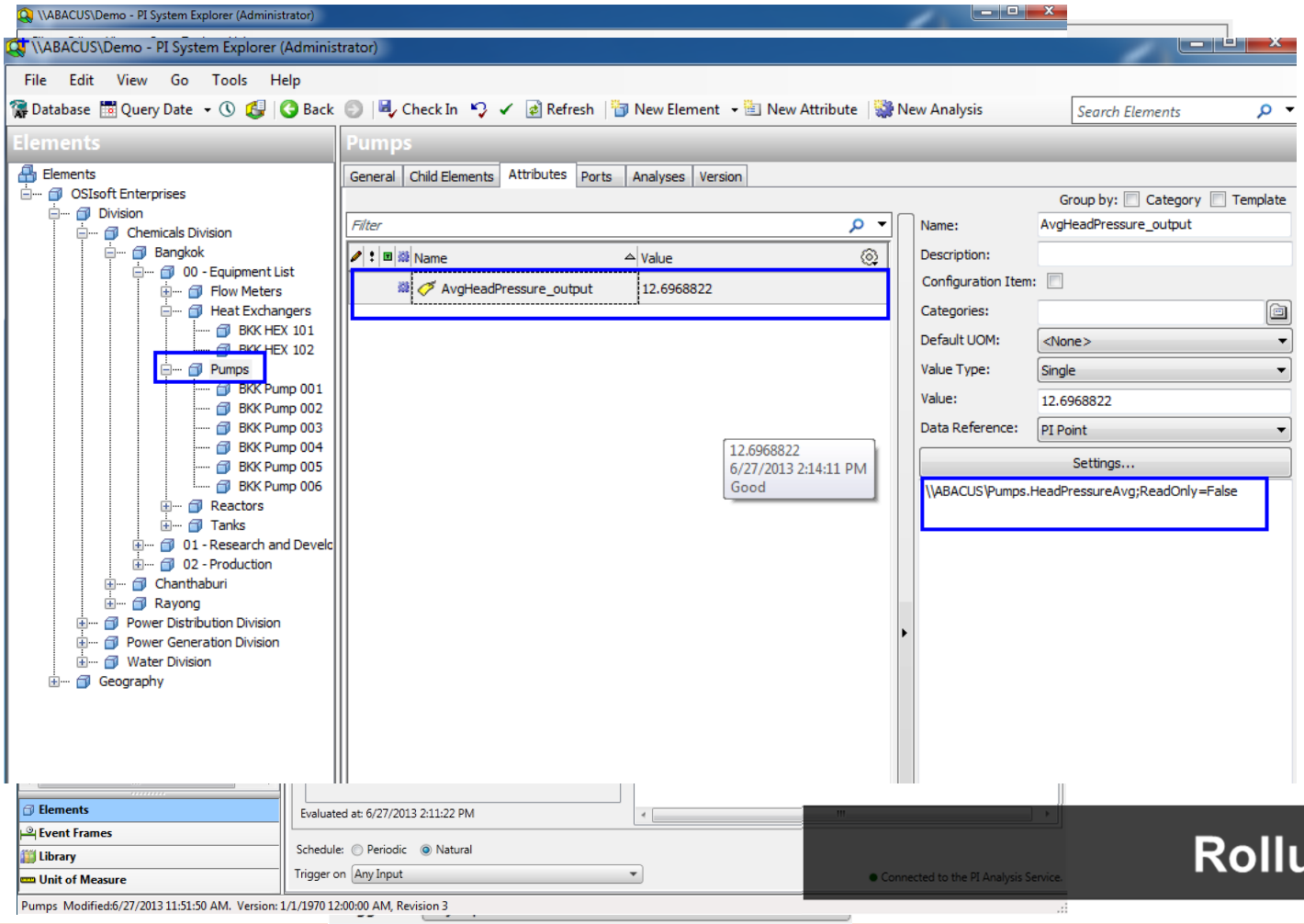

Rollup Analysis

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Event Generation in Abacus

“Abacus”

|Efficiency

|Fuel Flow Rate

|Flow Out

myEF

|Efficiency

Efficiency = (Flow Out / Fuel Flow Rate * 3.14)

myEF.Start = (Efficiency > LIMIT)

myEF.End = (Efficiency < LIMIT) AND (Fuel Flow Rate > 80)

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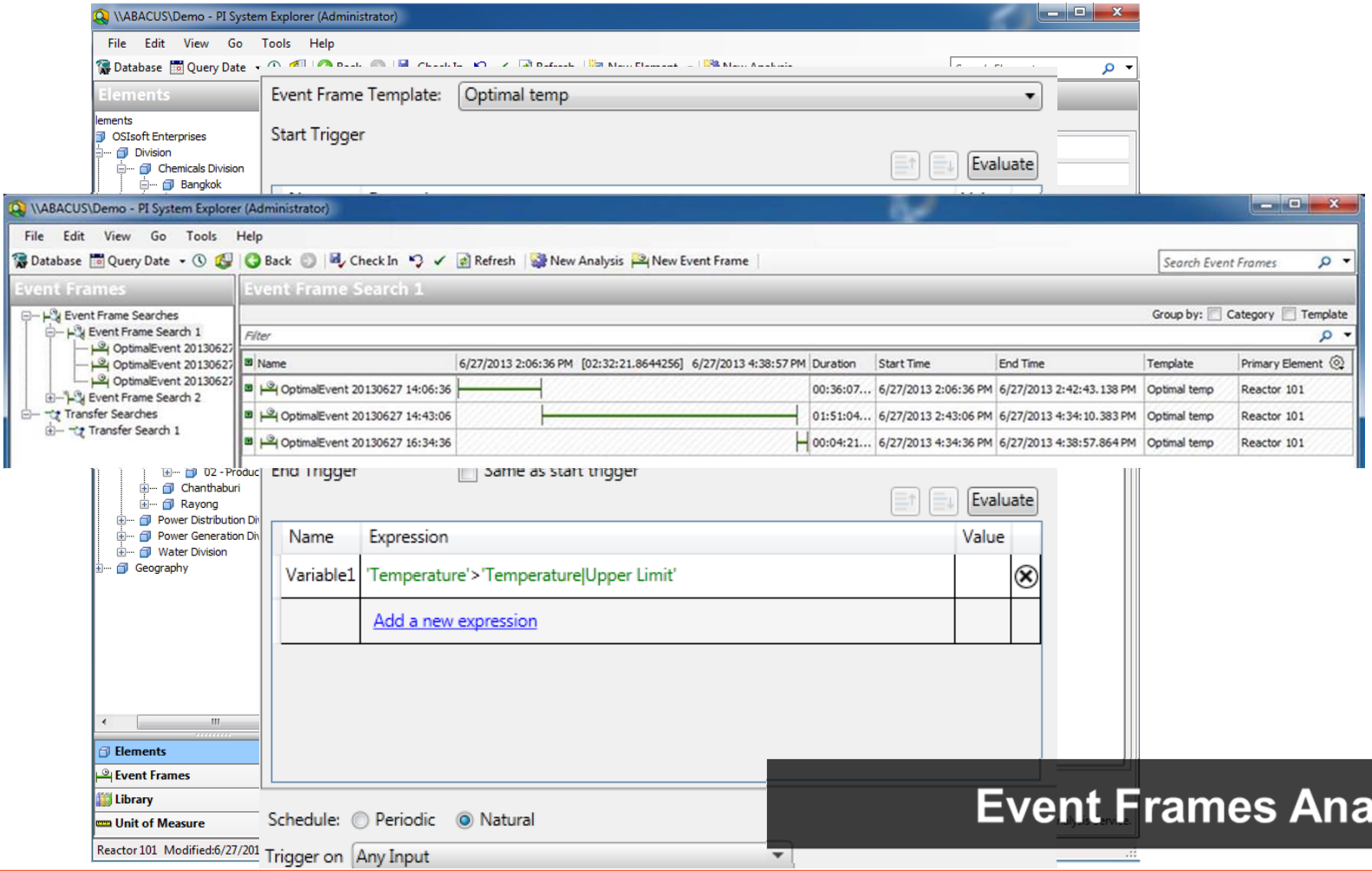

Event Frames Analysis

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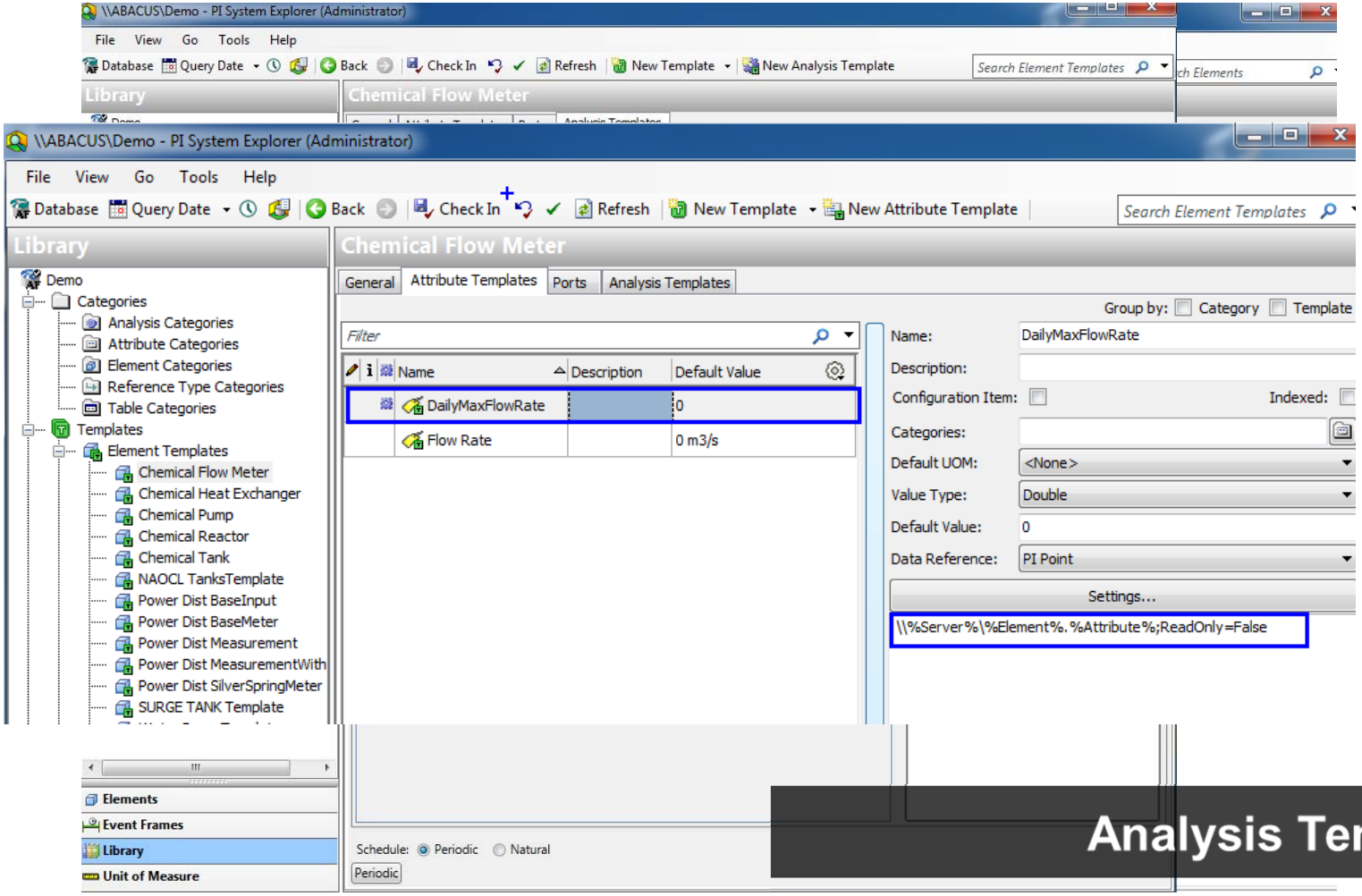

Analysis Template

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Pre-release Software

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Those features are great.....

Now what can I do with it?

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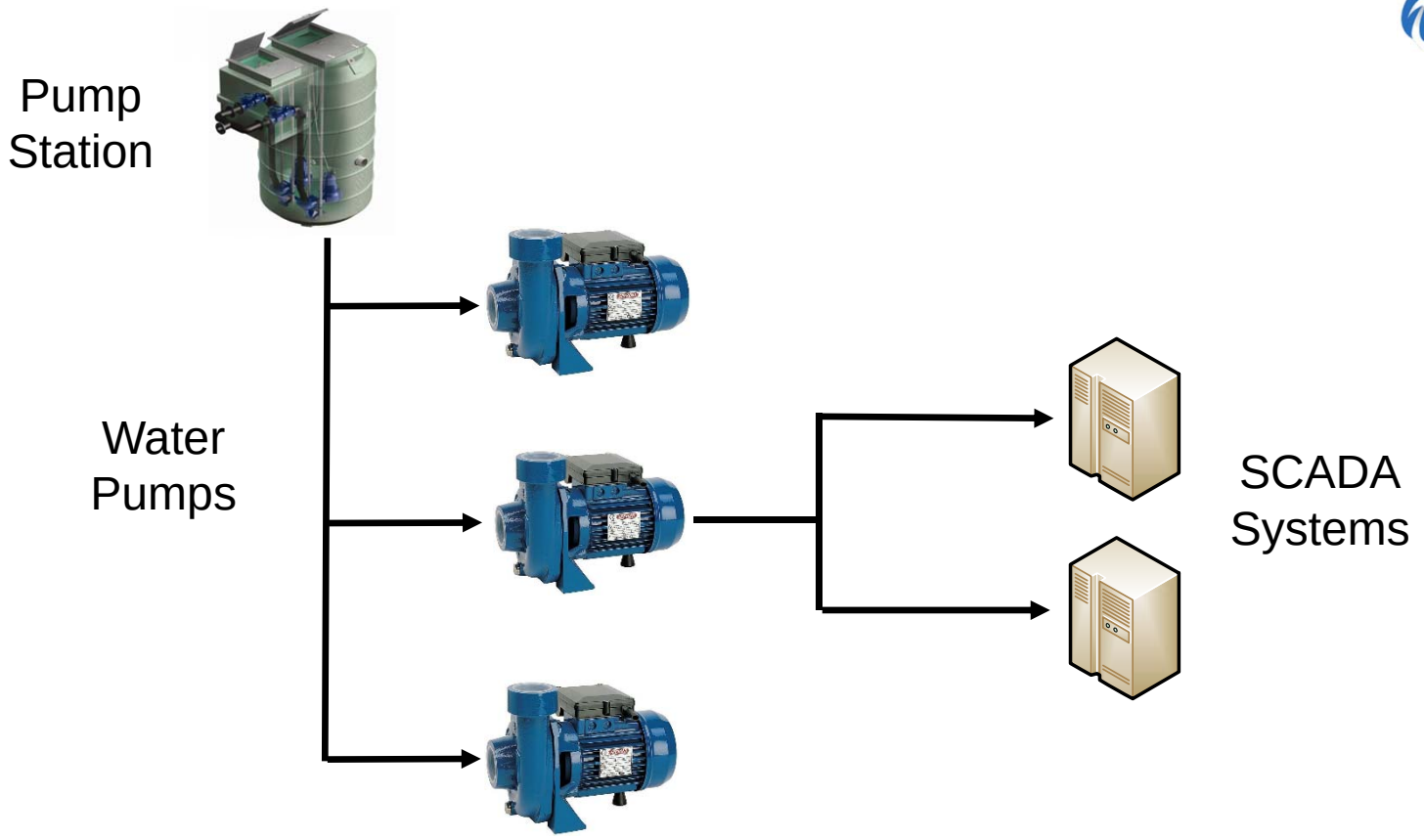

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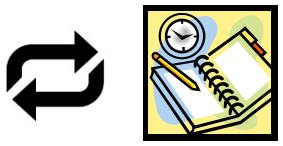
Asset Based Analytics Use Case

Pump Efficiency = AVG(B1..Bn)

Pump1

- Flow Out
- Pump Flow Rate
- Efficiency = (Flow Out / Pump Flow Rate * 3.14)



Pump Template

Or myProgrammedCalc (Flow Out, Pump Flow Rate)

Pump2

- Flow Out
- Pump Flow Rate
- Efficiency

Pump3

- Flow Out
- Pump Flow Rate
- Efficiency

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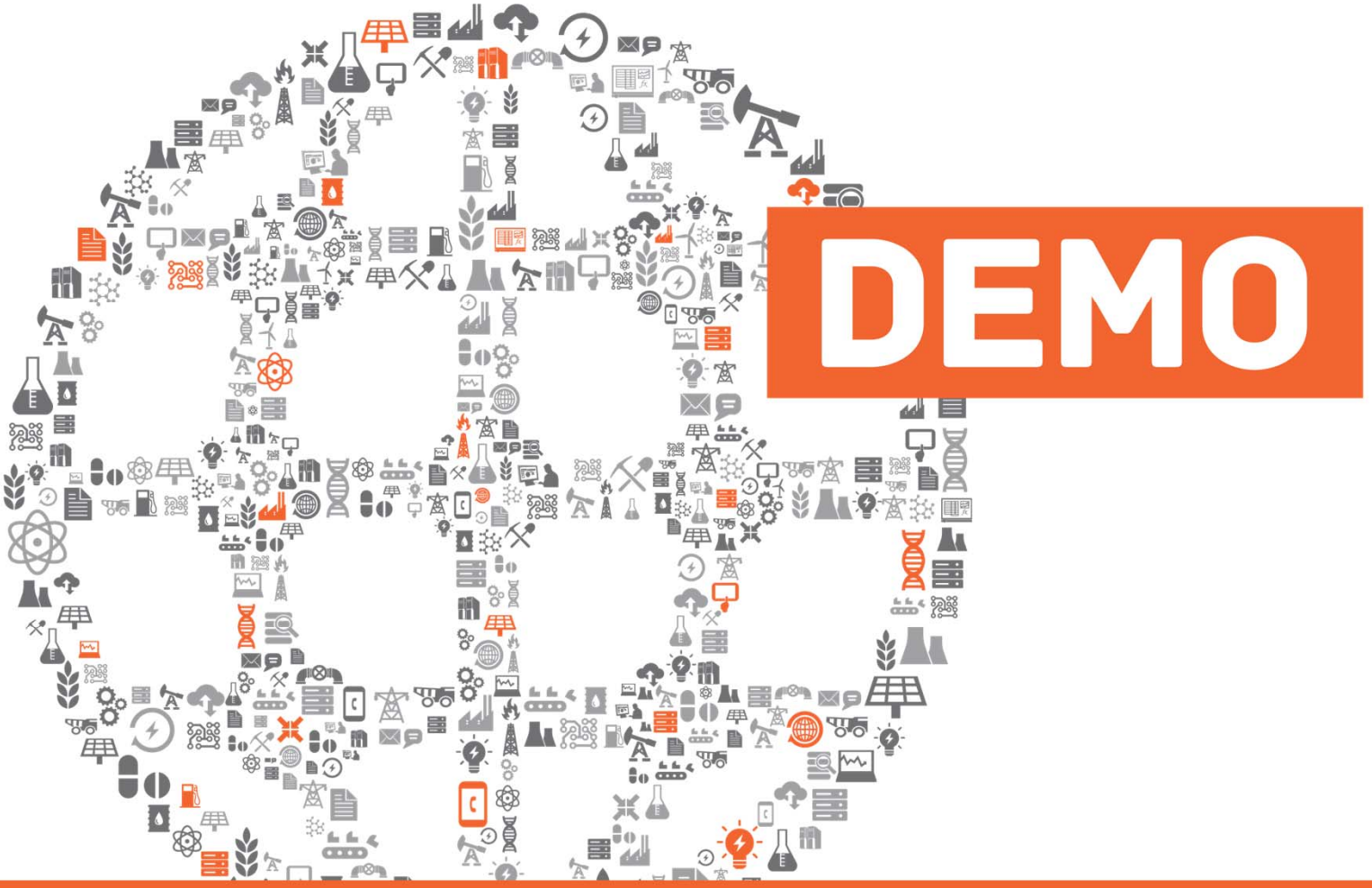

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Basic Modelling

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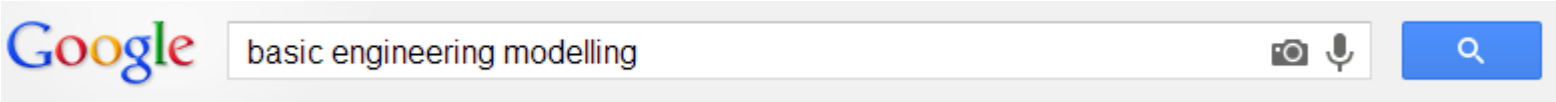

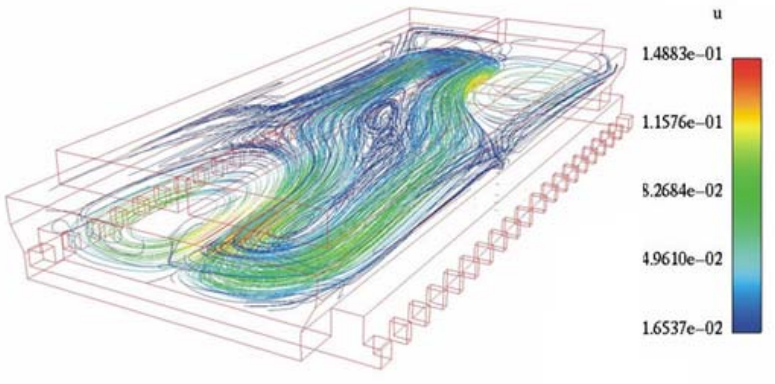

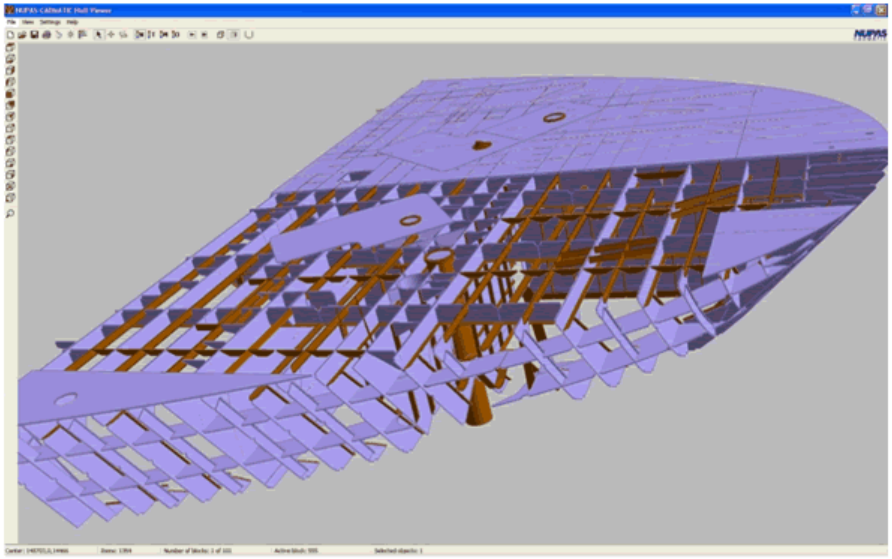

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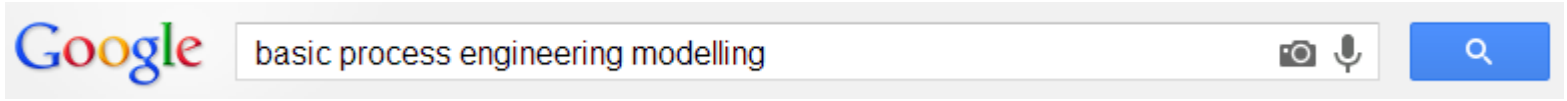

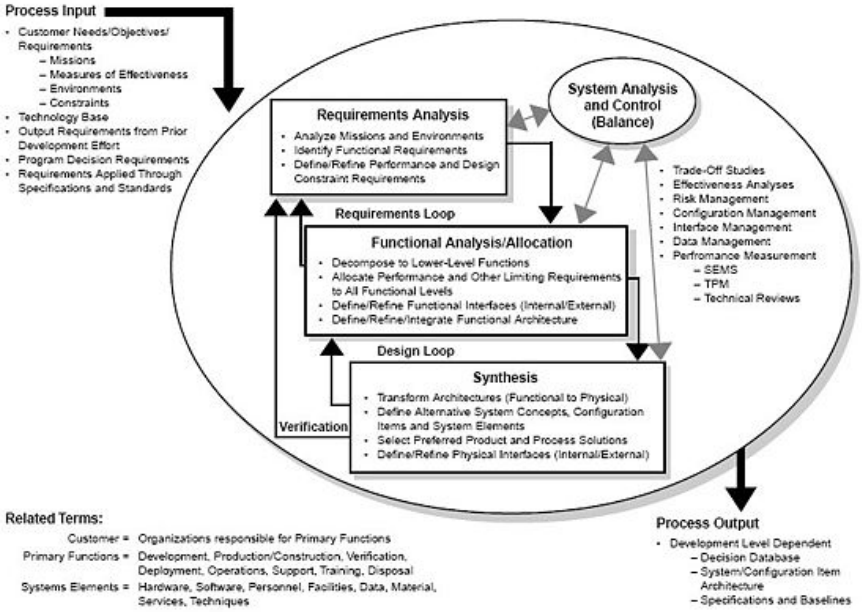

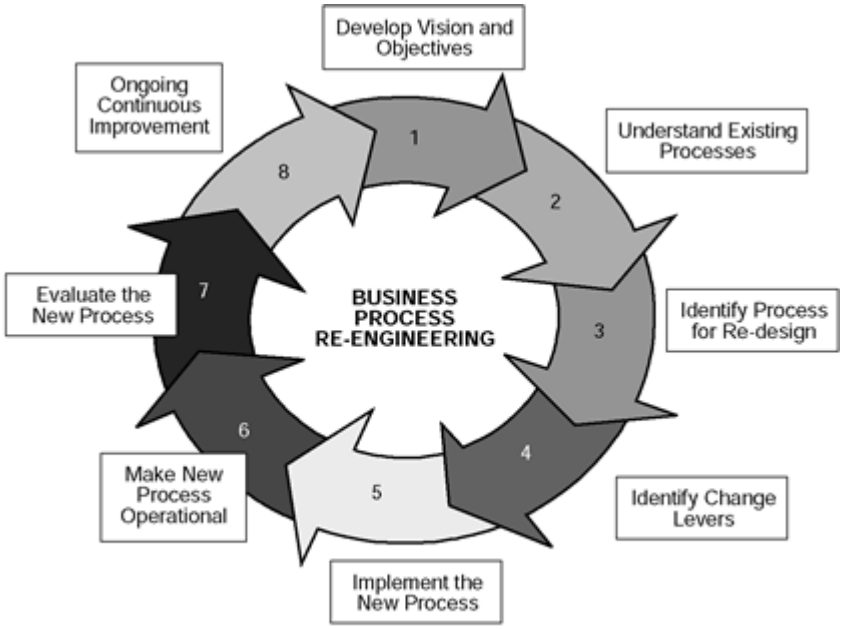

Source: Vakola *et al.* (1998)

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Basic Engineering Modelling

Formula 1

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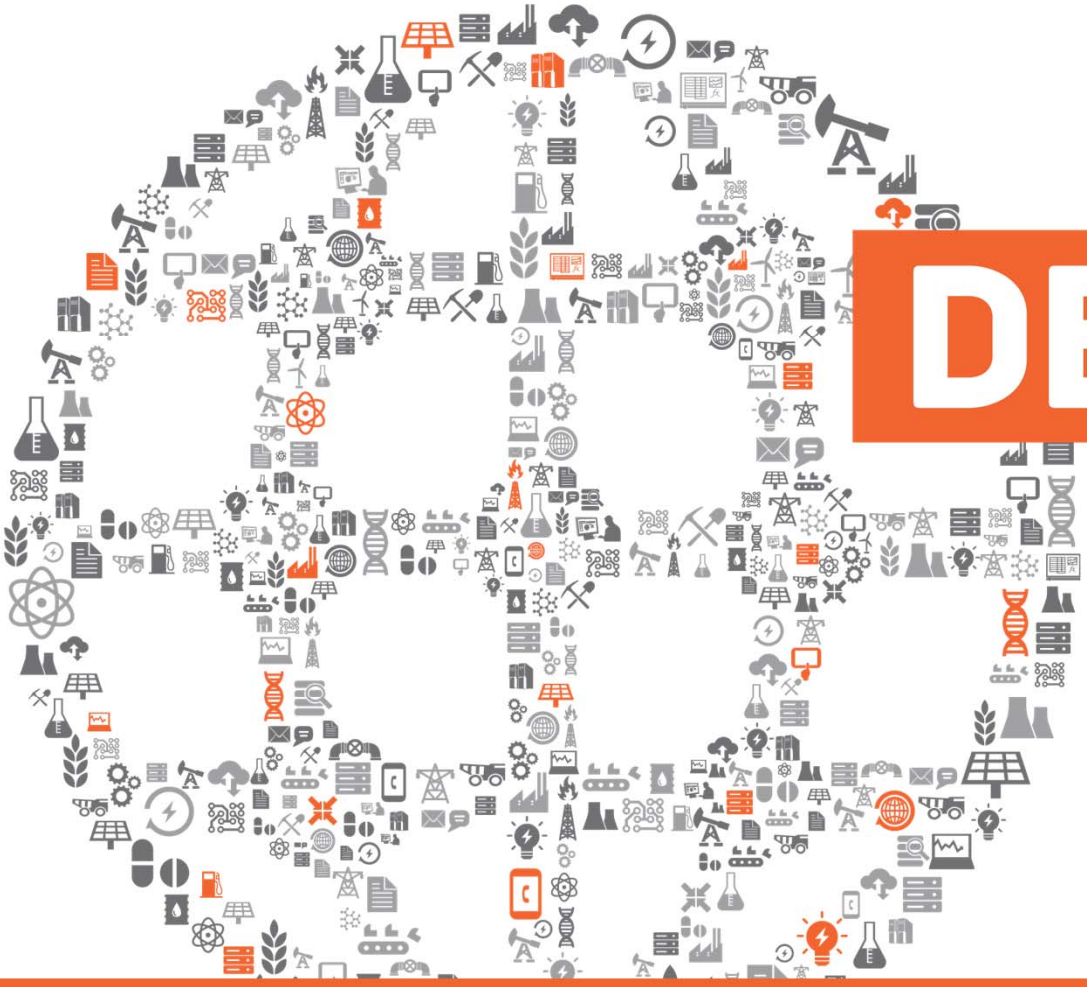

DEMO

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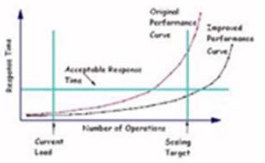
Key Benefits

- Easy!
- Performance and scalability
- Standardize/Reuse/Manageable
- Not just numbers, but also events
- Aggregate PI and 3rd party data



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2013				2014
1Q	2Q	3Q	4Q	1Q

Asset Based Analytics CTP

UC 2013 (Apr)

Asset Based Analytics Beta

EMEA UC 2013 (Sep)

Wave 1 – Configured Analytics

Goal

- Performance Equation Syntax
- On-demand or scheduled
- Event Frame output
- Aggregations

Wave 2- Enterprise and Extensibility

Goal

- Custom – programmed - calculations
- User defined functions
- Failover and load balancing

No estimated date

Last Updated: August 2013

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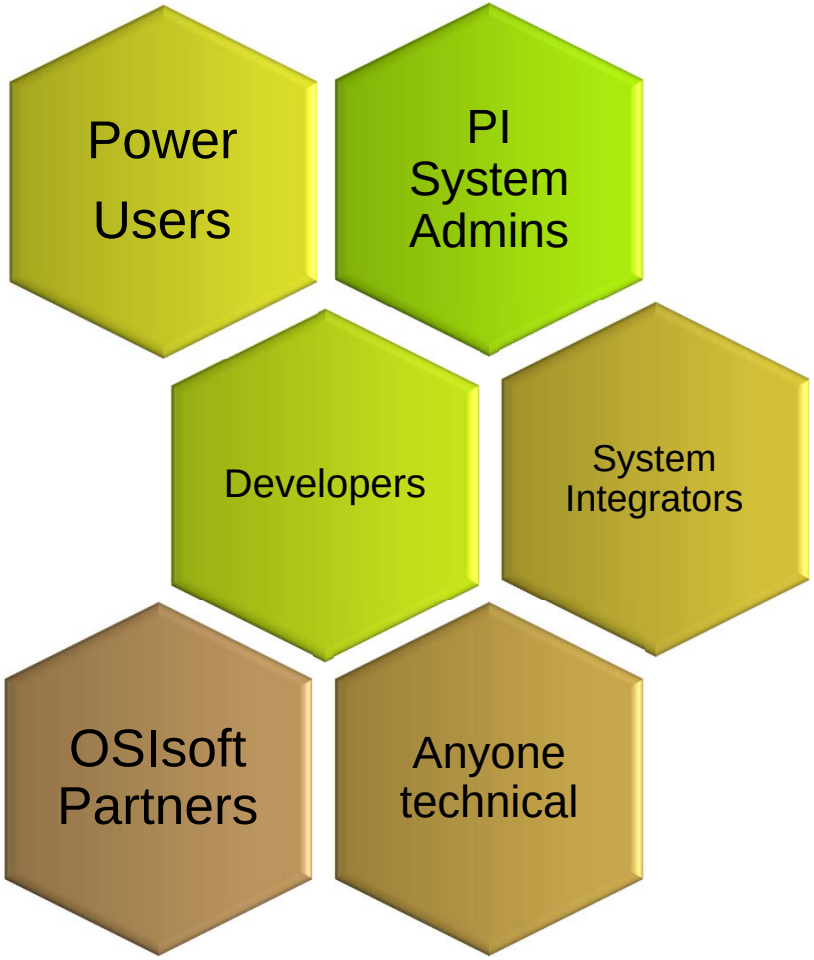
Get hands on knowledge of how to use and get value from the PI System



OSIsoft DECEMBER 3 - 6, GRAND HYATT SAN FRANCISCO

vCampus Live! 2013

WHERE PI GEEKS MEET

SAVE THE DATE

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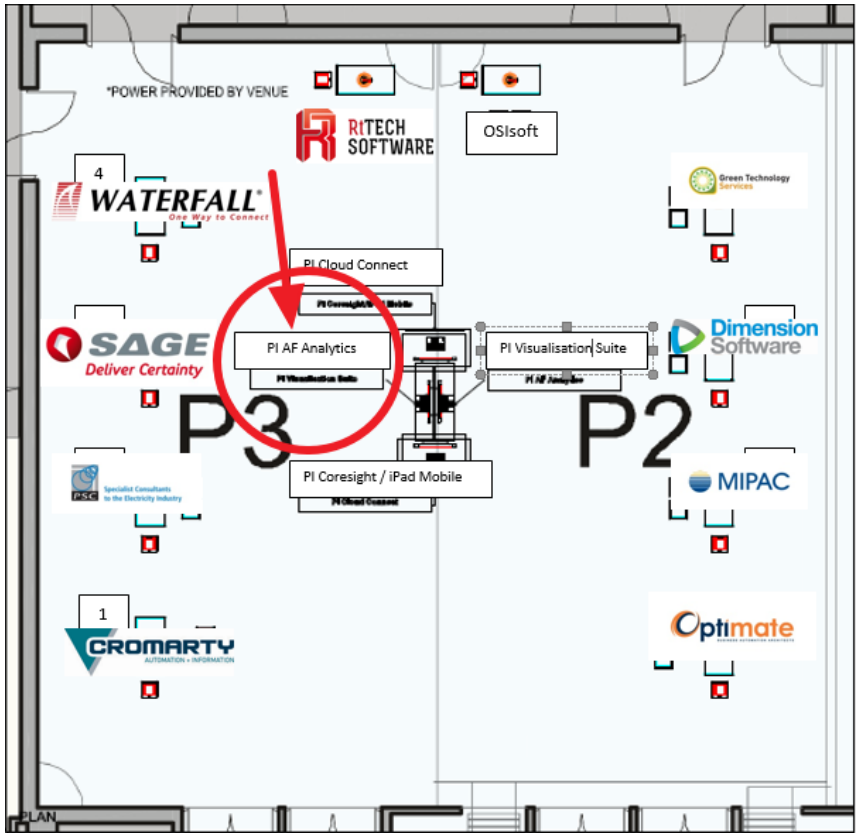
Come and see me at my booth



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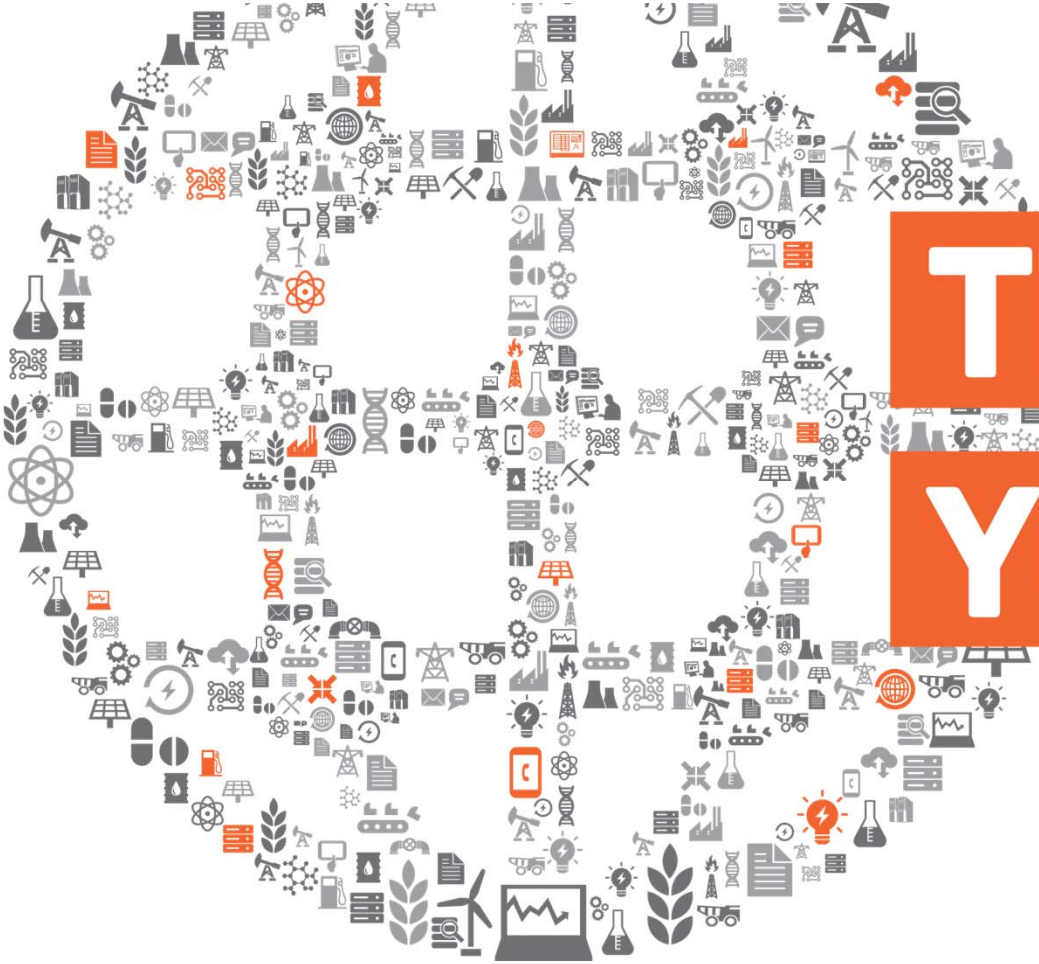

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