

OSIsoft®

SEMINÁRIO REGIONAL

L A T A M S O U T H





Business Intelligence with the PI System

Presented by

Brandon Perry
OSIsoft



Part 0: What is business intelligence?

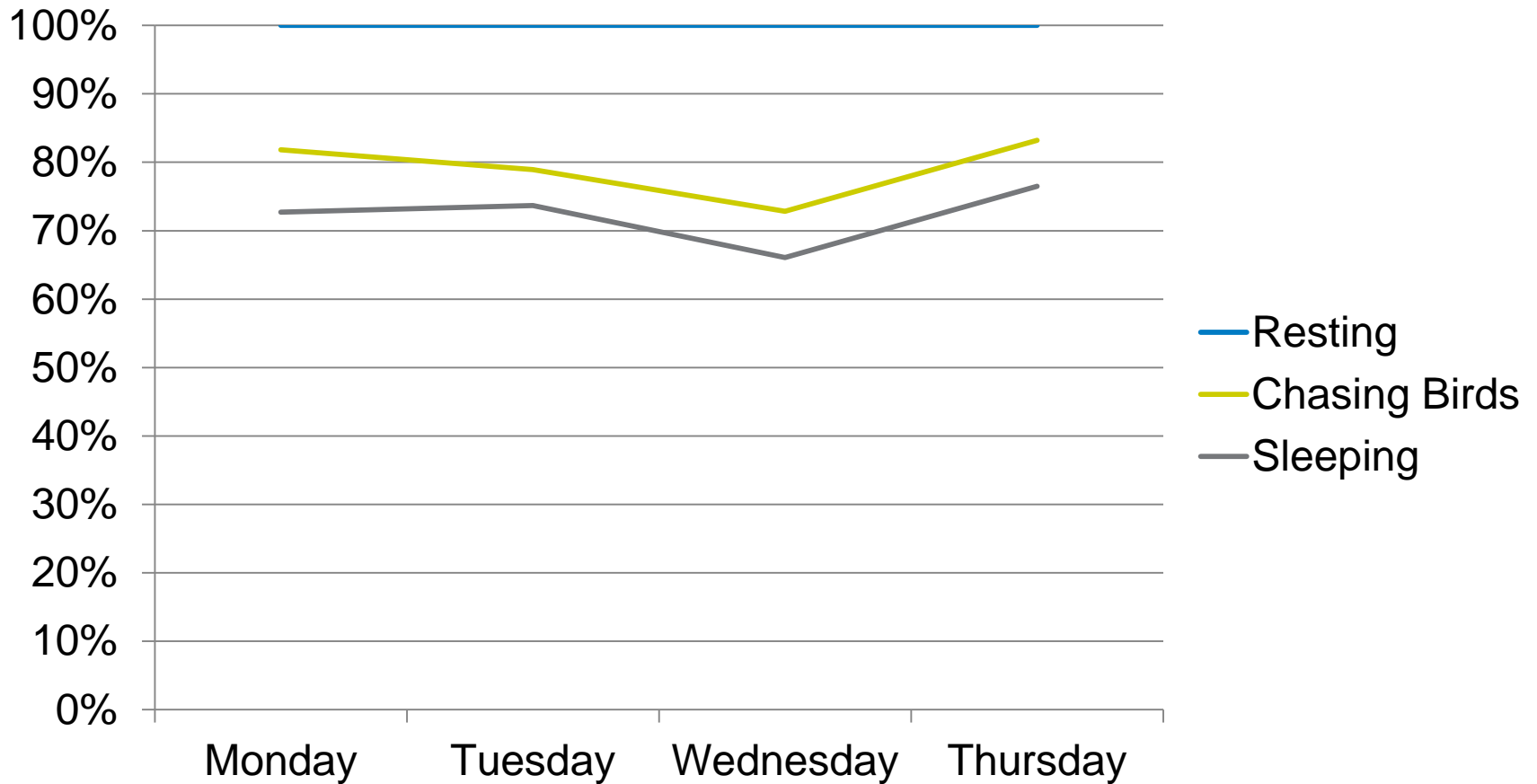


Photos8.com

Why did this happen?

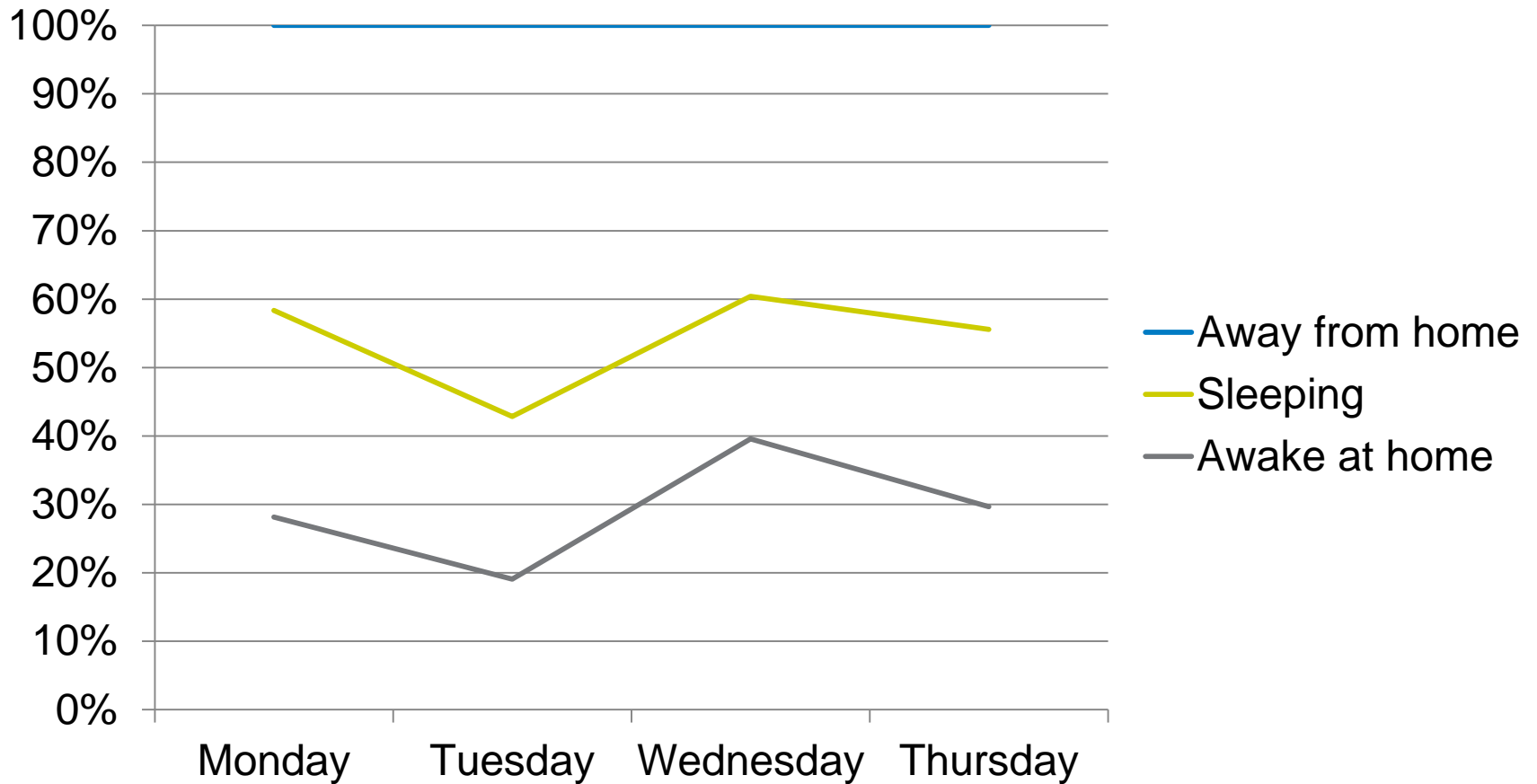
Cause: retribution?

Daily Cat Time



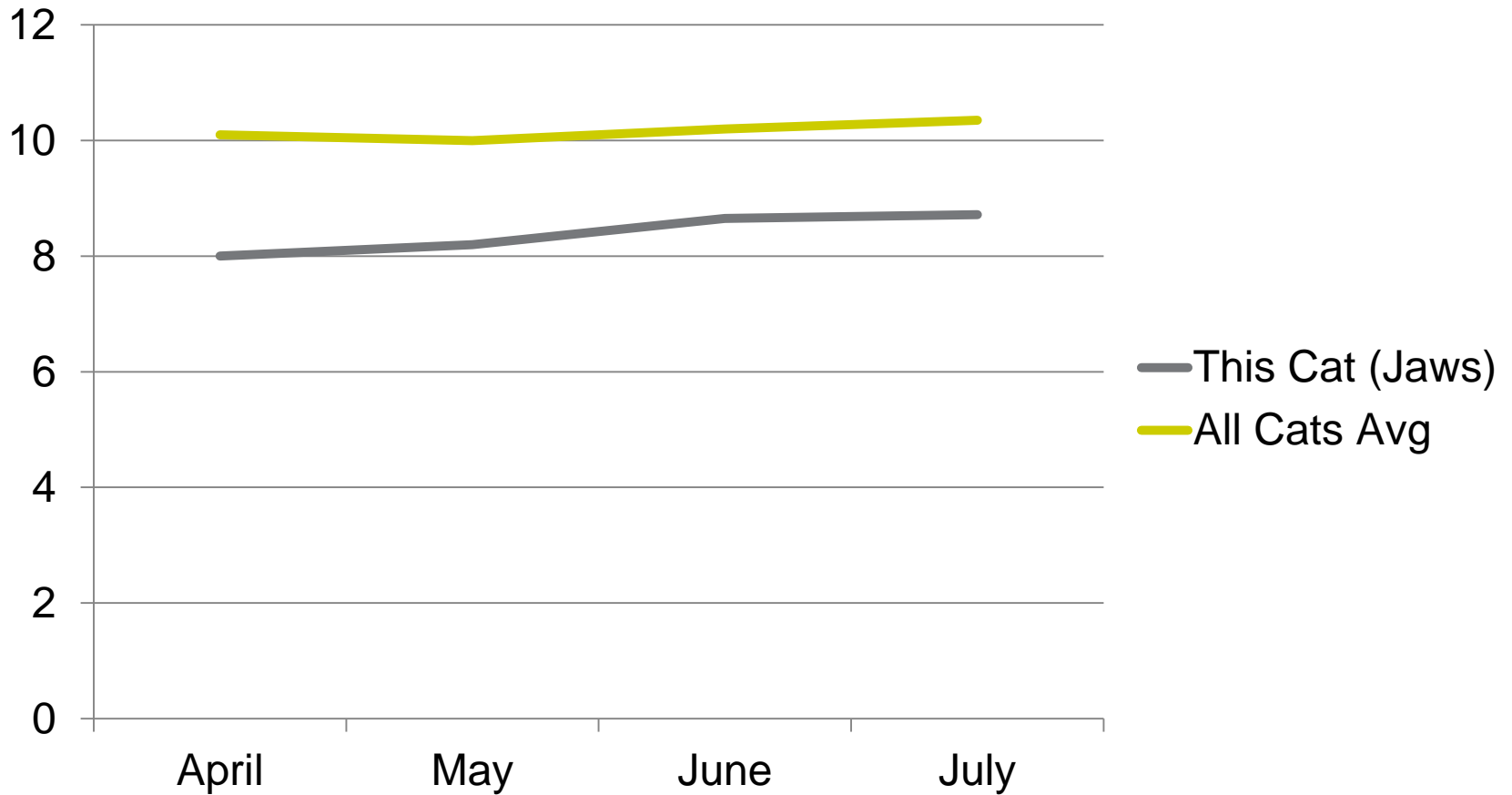
Cause: retribution?

Daily Human Time



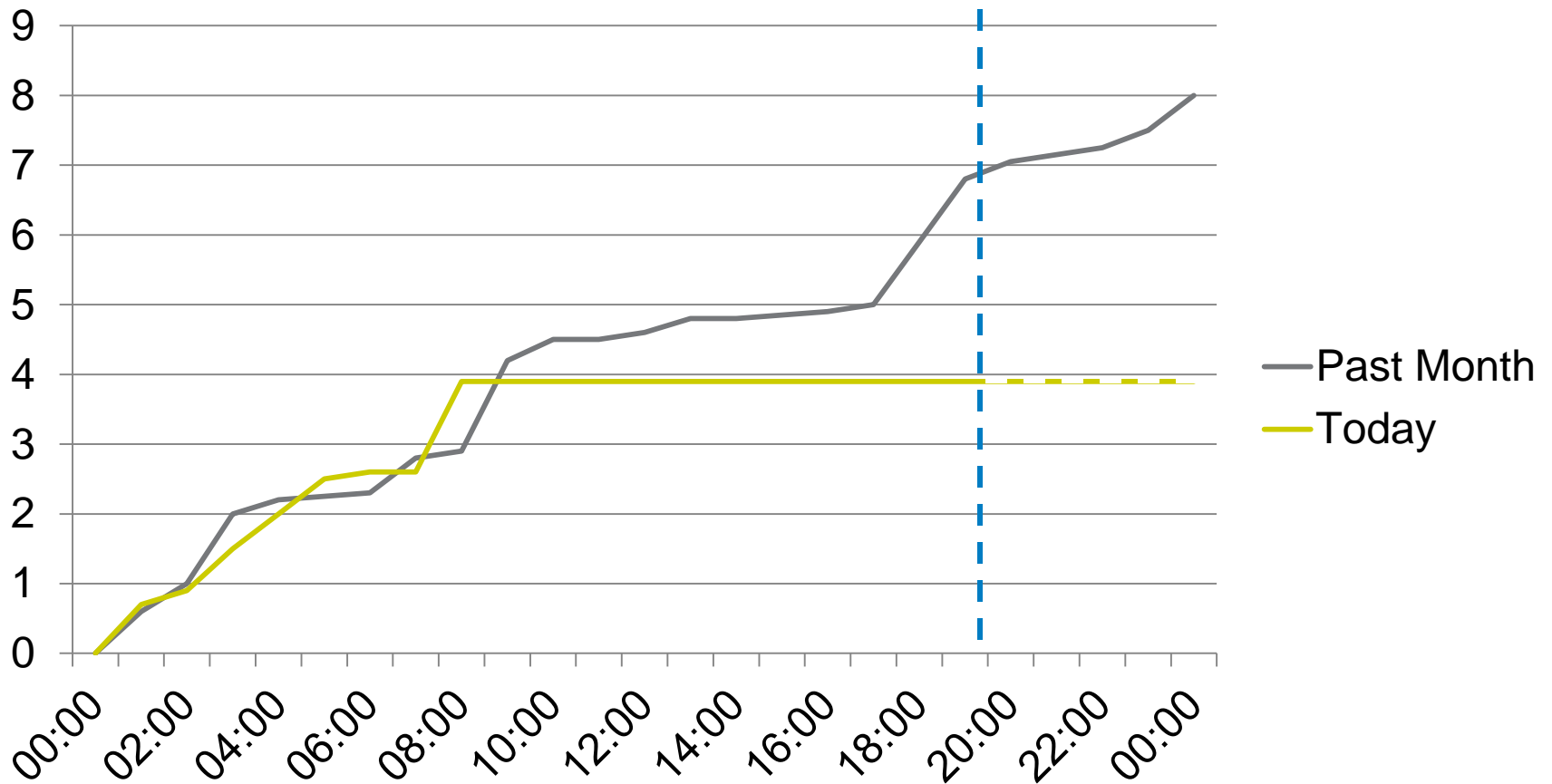
Cause: hunger?

Cat Body Weight (lbs)



Cause: hunger?

Cumulative Food Consumption



Cause: hunger?

All Cats' Food Consumption

Daily Cumulative Deviance from Avg

Cat	Deviance (oz)
Wallace	-0.8
Walker	0
McDonald	0.5
Jaws	-2.9

Jaws' Food Consumption

Cumulative per day (oz)

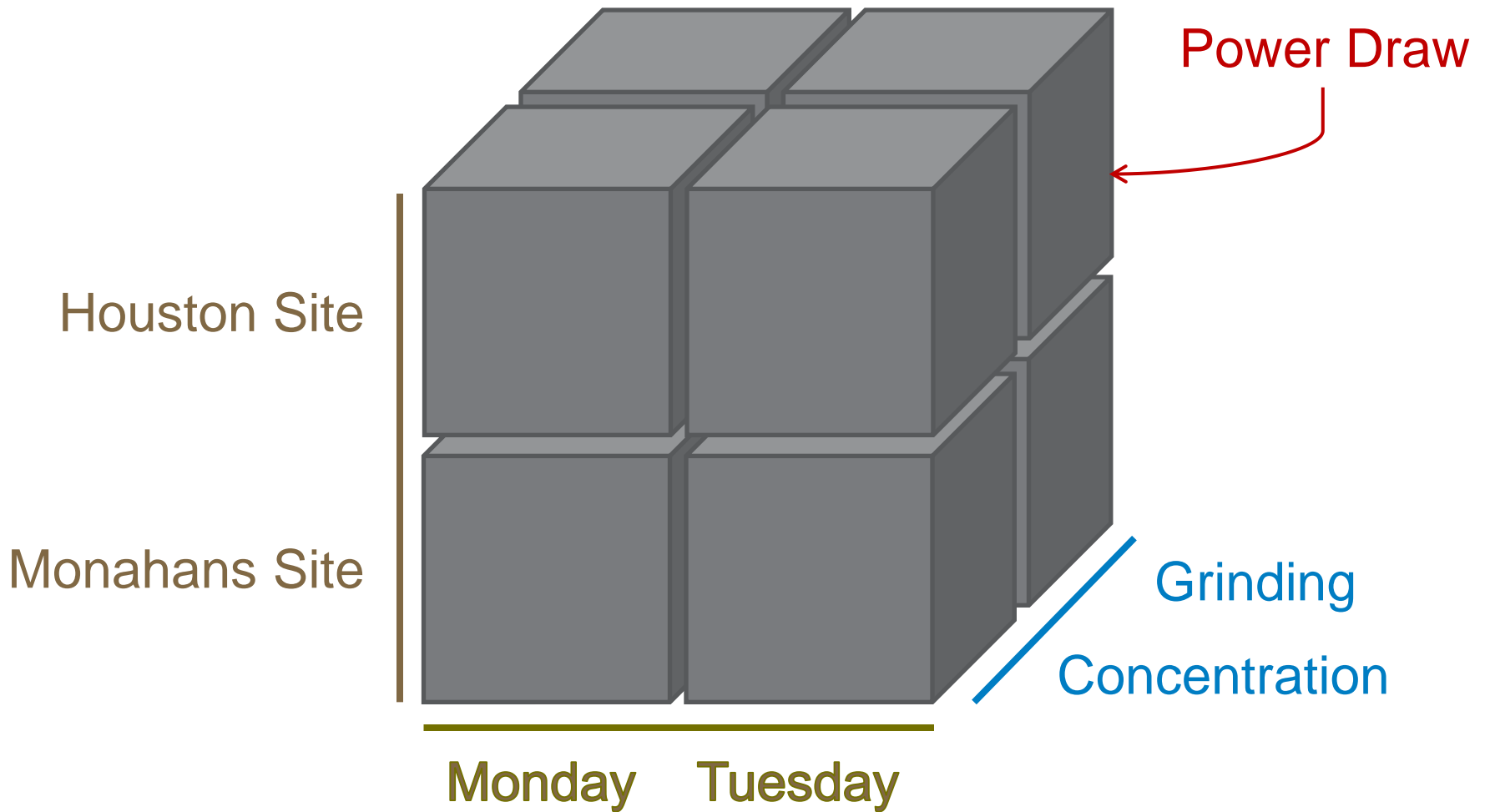
	Past Month	Today		Difference
07:00	2.8	2.6	●	-0.2
08:00	2.9	3.9	●	1
09:00	4.2	3.9	●	-0.3
10:00	4.5	3.9	●	-0.6
11:00	4.5	3.9	●	-0.6
12:00	4.6	3.9	▲	-0.7
13:00	4.8	3.9	▲	-0.9
14:00	4.8	3.9	▲	-0.9
15:00	4.85	3.9	▲	-0.95
16:00	4.9	3.9	▲	-1
17:00	5	3.9	▲	-1.1
18:00	5.9	3.9	▲	-2
19:00	6.8	3.9	◆	-2.9
20:00	7.05			
21:00	7.15			
22:00	7.25			

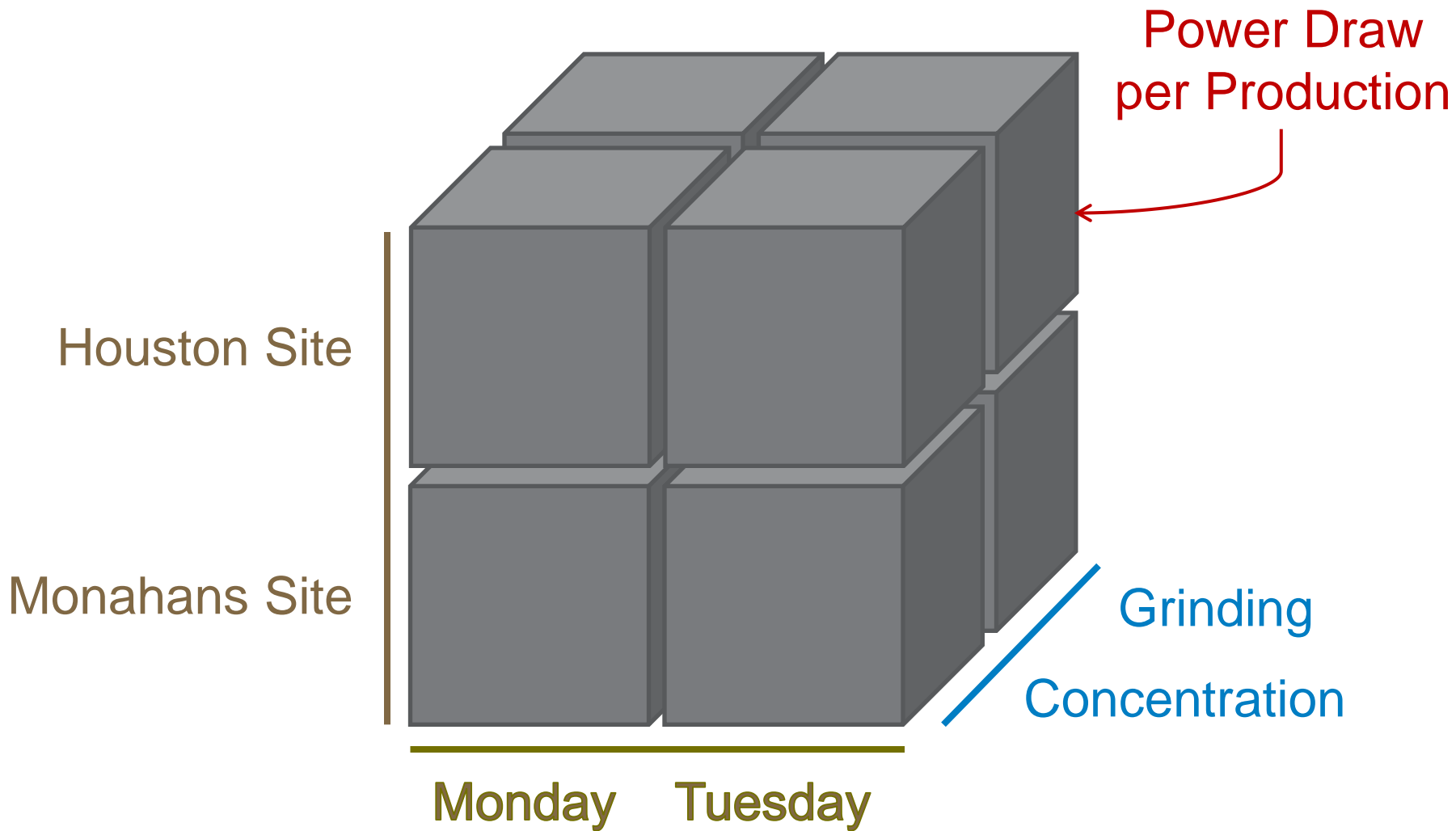


Threadneedle
MINERALS
HOUSTON, TX



Part I: Cube Fundamentals







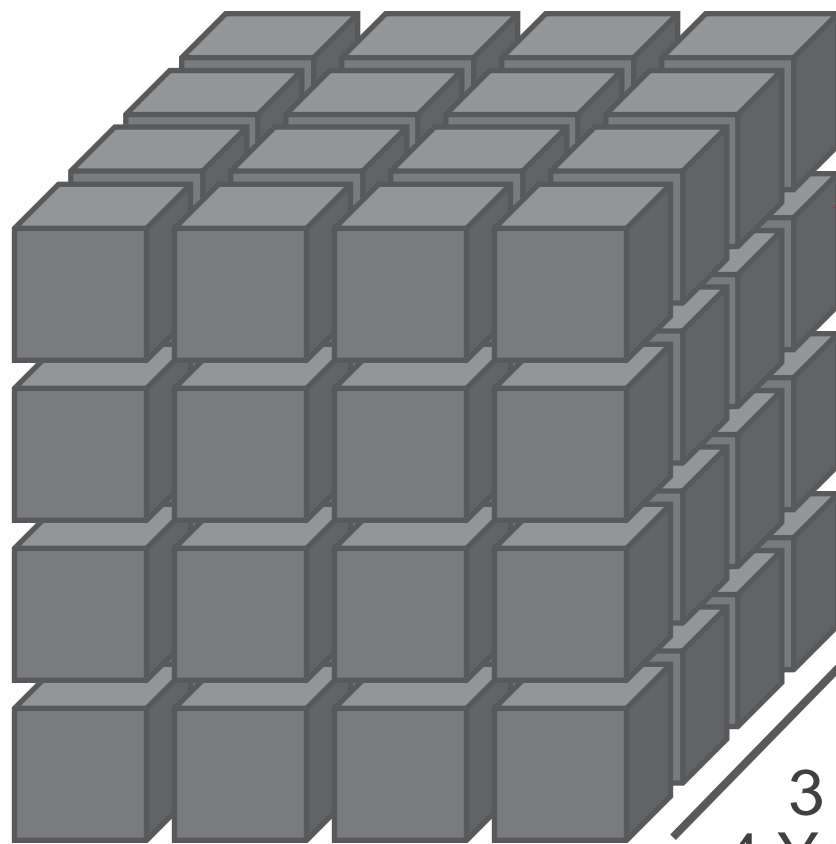
Pump Utilization Factor

$f < 0.5$

$0.5 < f < 1$

$1 < f < 1.5$

$1.5 < f$



Maintenance Time

1 Year
2 Years
3 Years
4 Years
Pump Age

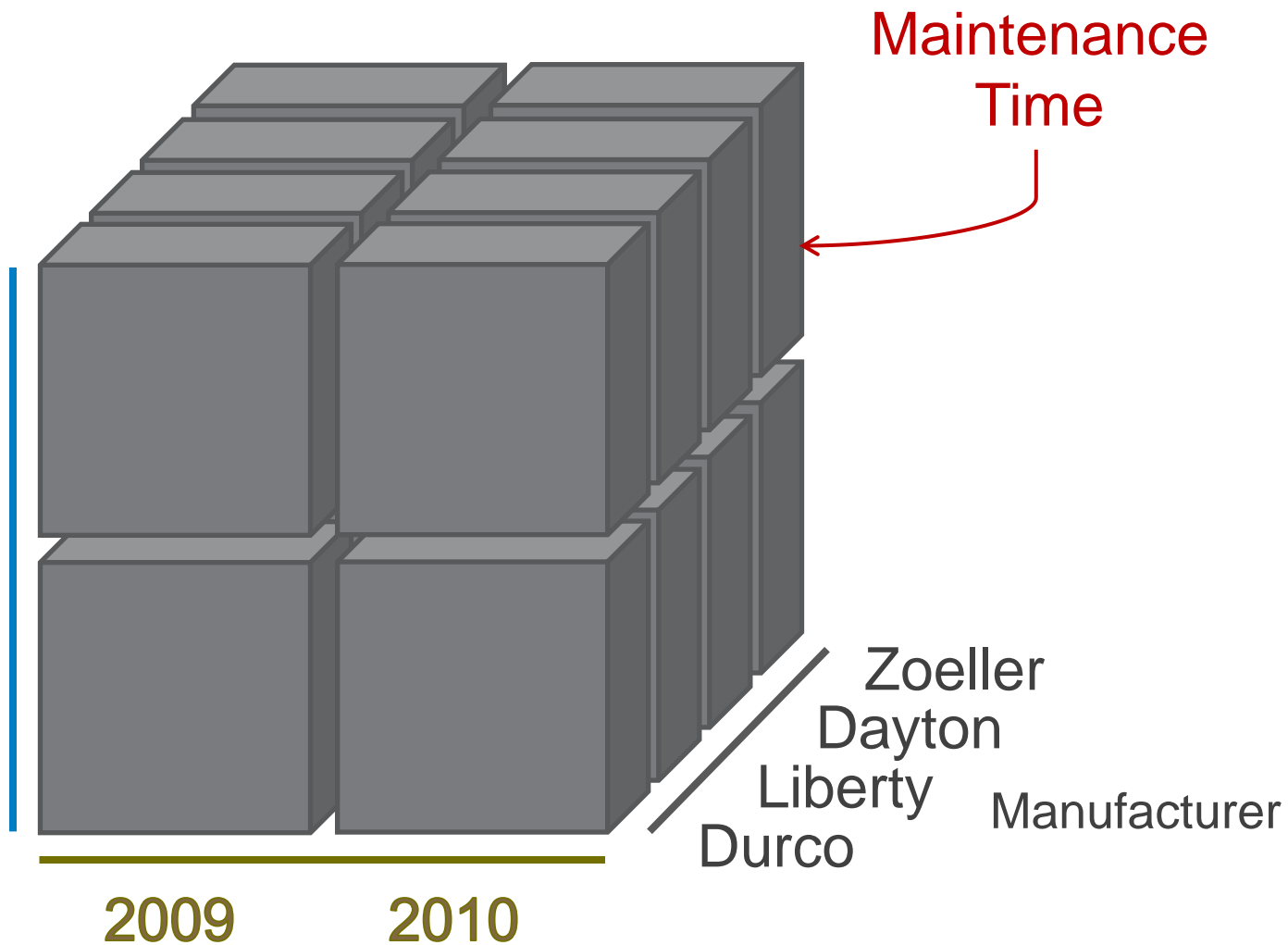
April May June July



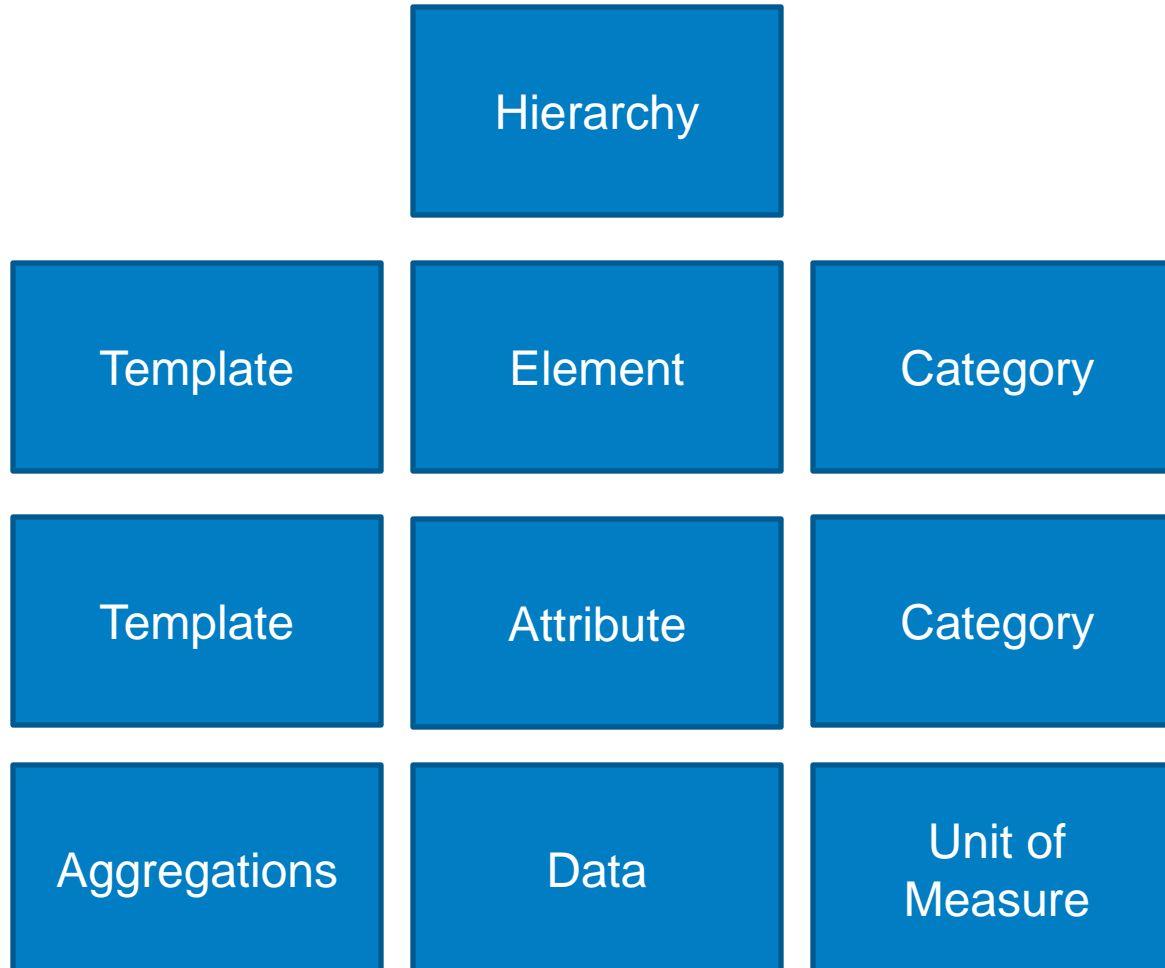
Utilization Factor
 $1.5 < f$

Grinding

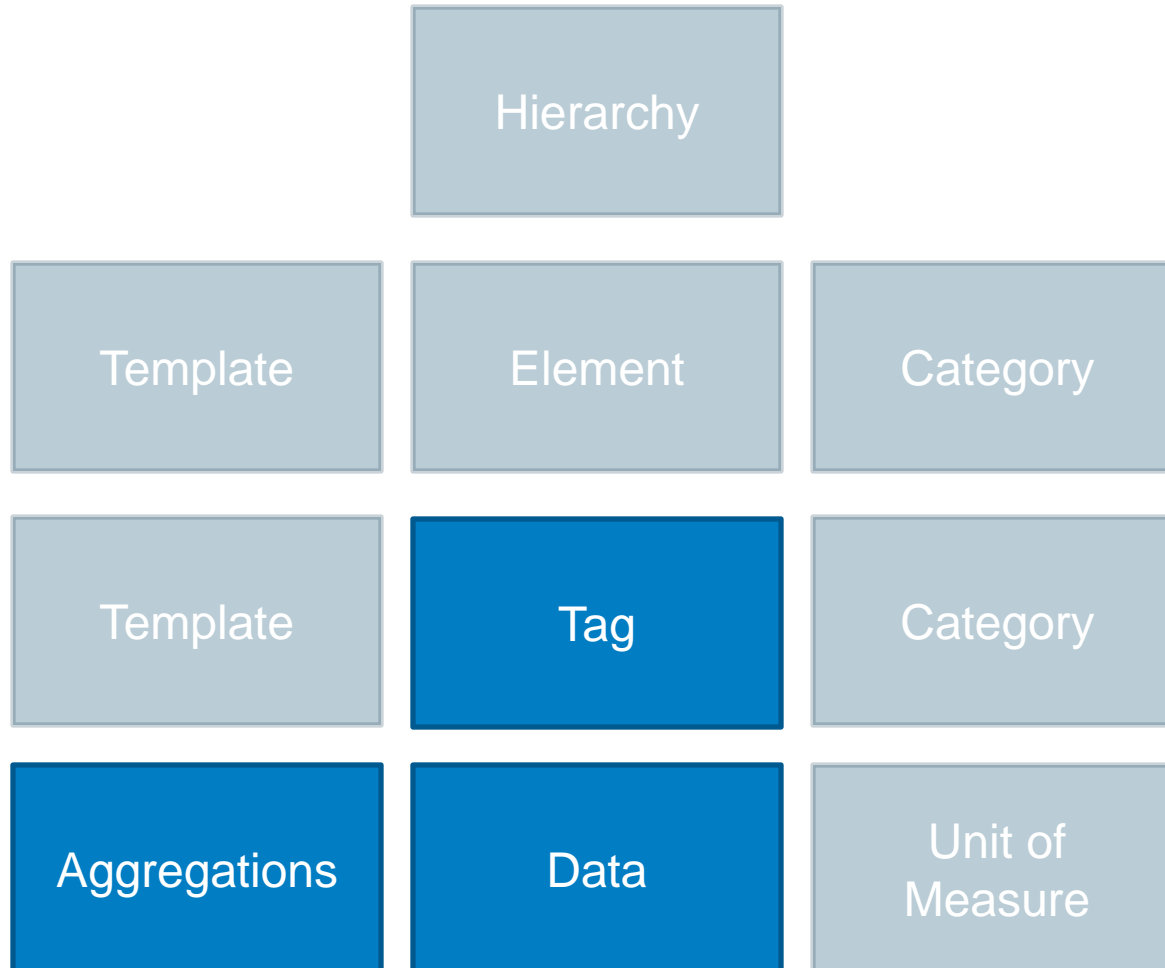
Concentration



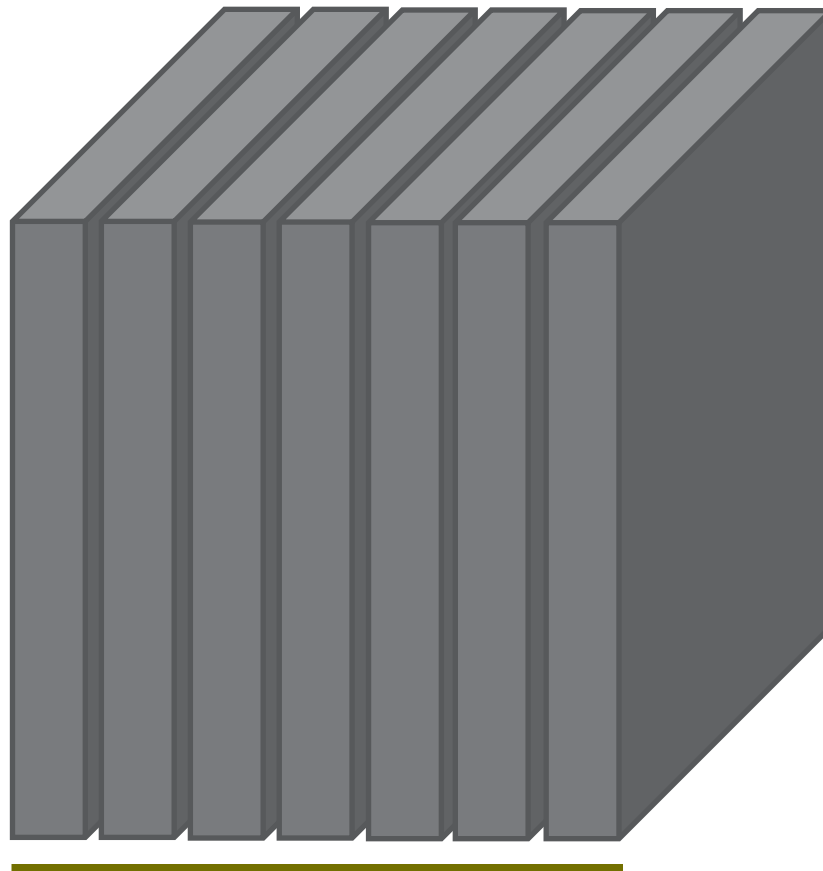
PI Asset Framework



PI Data Archive



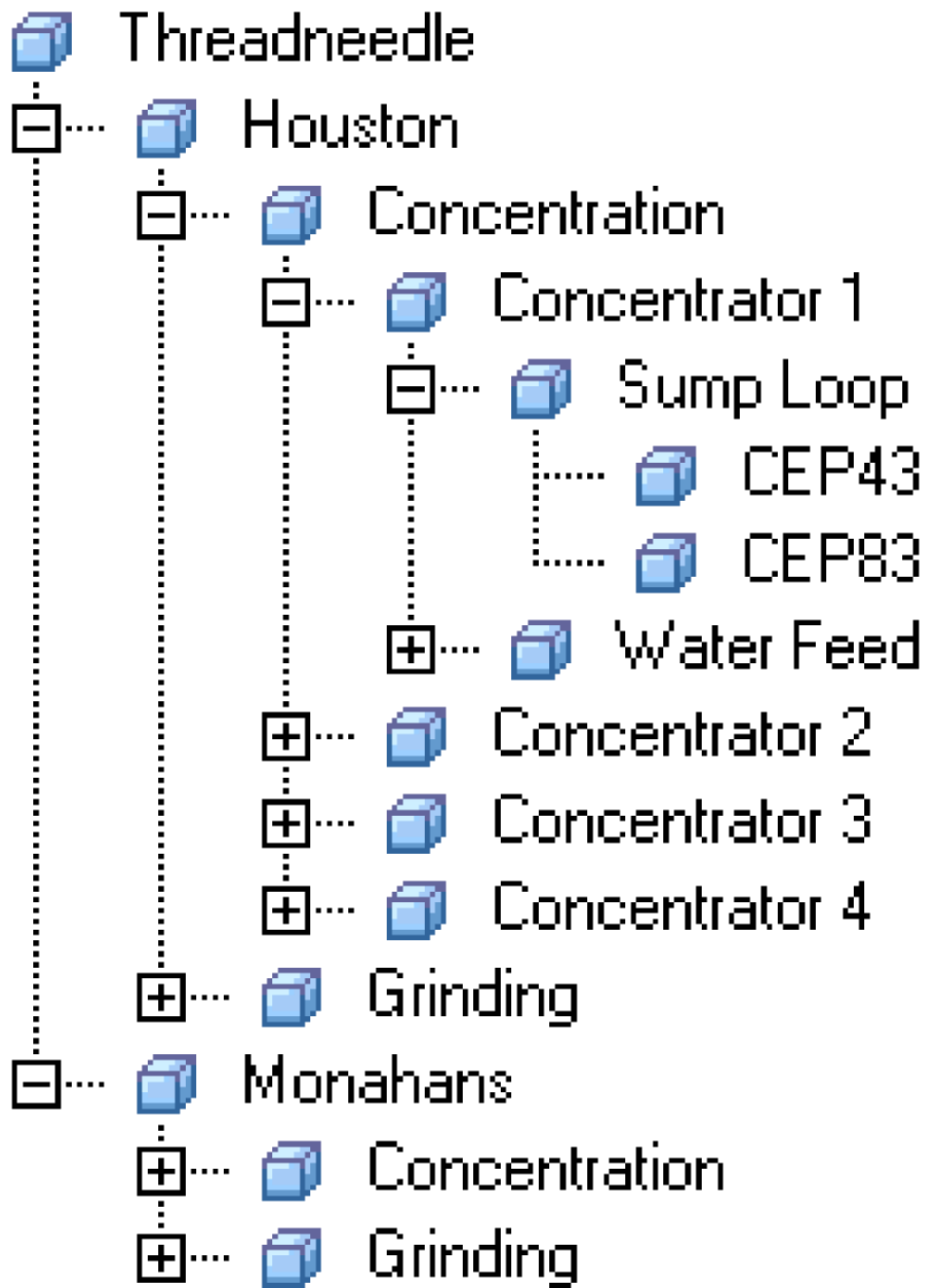
No metadata? No cube.

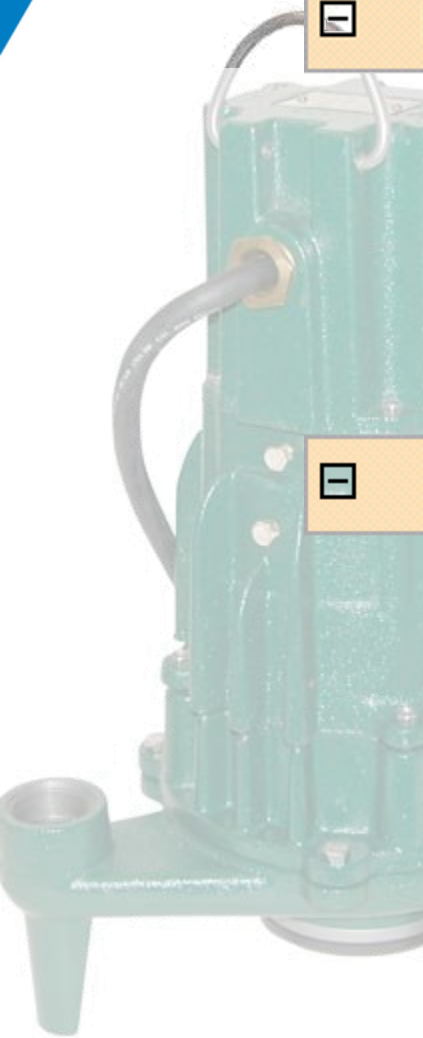


(any timestep)



Plant	<ul style="list-style-type: none">• Houston
Workgroup	<ul style="list-style-type: none">• Concentration
Workshop	<ul style="list-style-type: none">• Concentrator 1
Subprocess	<ul style="list-style-type: none">• Sump Loop
Equipment	<ul style="list-style-type: none">• Pump

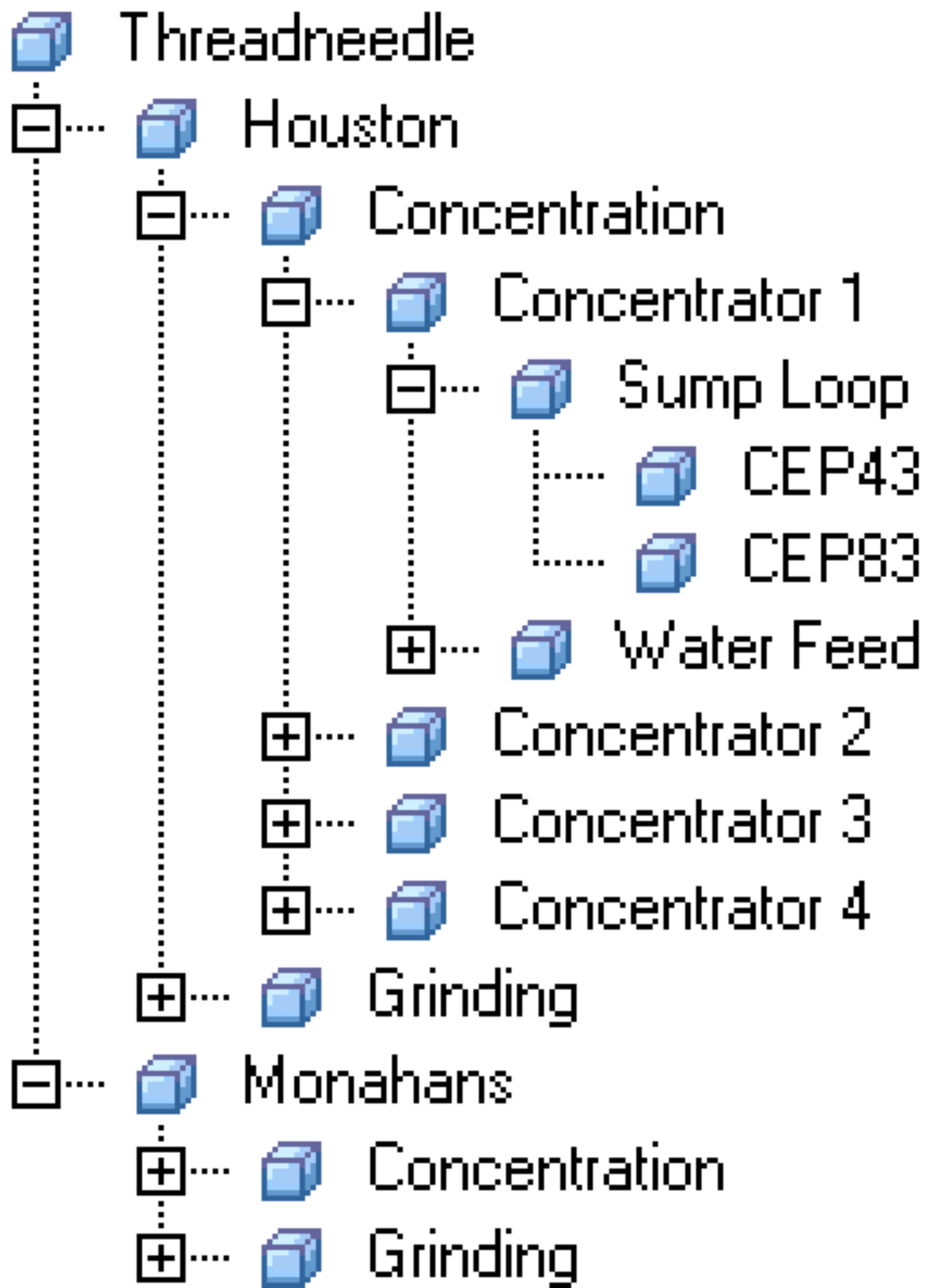




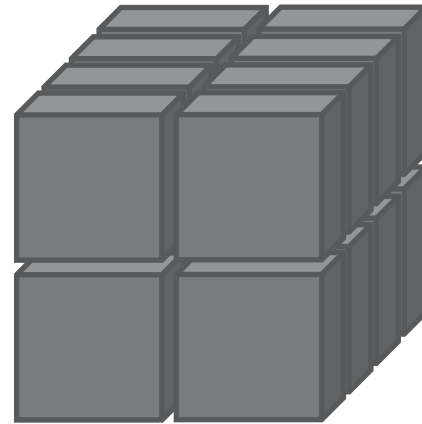
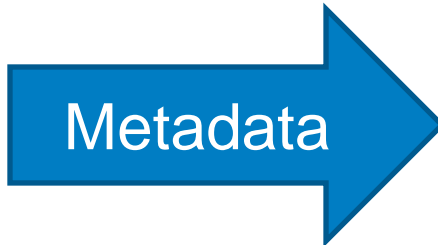
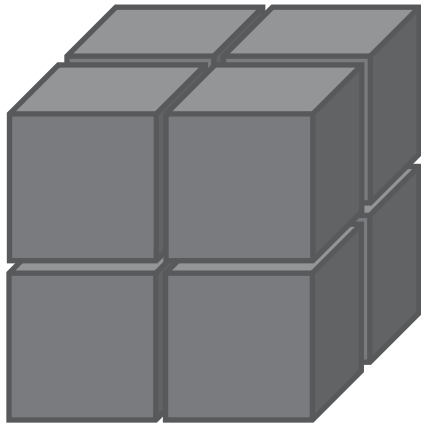
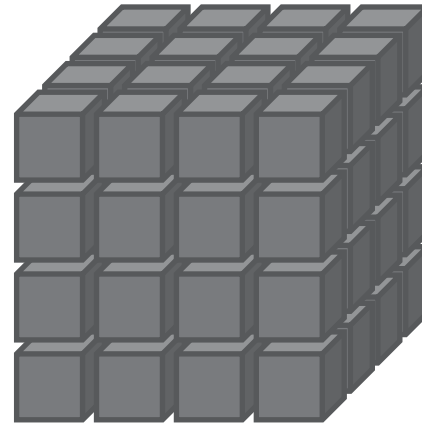
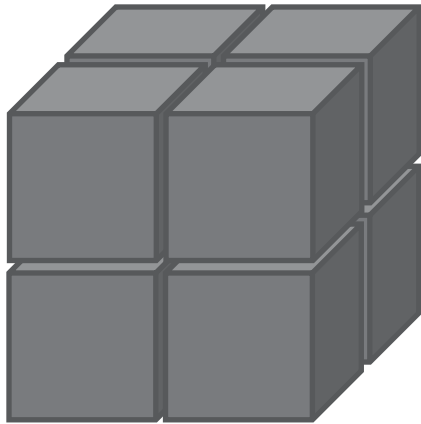
Controls			
<input checked="" type="checkbox"/>		Operational State	Normal
<input checked="" type="checkbox"/>		Target Flow	29.35795 m3/h
Process			
<input checked="" type="checkbox"/>		Flow	20.4290657043457 m3/h
<input checked="" type="checkbox"/>		Head Pressure	64.8066329956055 kPa
<input checked="" type="checkbox"/>		Power Draw	71.4016 A
<input checked="" type="checkbox"/>		Speed	482.1259 rpm
Specifications			
	<input checked="" type="checkbox"/>	Manufacturer	Zoeller
	<input checked="" type="checkbox"/>	Model	PM-200
	<input checked="" type="checkbox"/>	Phases	3
	<input checked="" type="checkbox"/>	Rating	8 hp
	<input checked="" type="checkbox"/>	Type	Centrifugal
	<input checked="" type="checkbox"/>	Voltage	230 V



Part II: Building Cubes



Necessities for a cube



Consistent hierarchy



Enterprise

- Threadneedle

Plant

- Houston

Workgroup

- Concentration

Workshop

- Concentrator 1

Subprocess

- Sump Loop

Equipment

- Pump

Consistent metadata with AF templates



Slurry Dump



Water Supply



Transfer



Sump Loop

Facts & Dimensions				
Flow	Current Draw	Voltage	Target Flow	
PUMPS	ELECTRIC	PUMPS	CONTROLLED PUMPS	
				+
				+
				+

Conjuring a template hierarchy

Pump

- Flow

Electric
Pump

- Current Draw
- Speed

Controlled
Pump

- Target Flow





Demo: Making PI AF cube-friendly

Elements

- Elements
 - Production ModuleDB
 - Threadneedle

- Elements
- Event Frames
- Library
- Unit of Measure
- MyPI
- Notifications
- Contacts

Elements

Group by: Category Template

Search

Name	Description	Category	Type	Template
Production ModuleDB	Do not delete this element. Deleting this element will delete all...		None	
Threadneedle			None	Enterprise

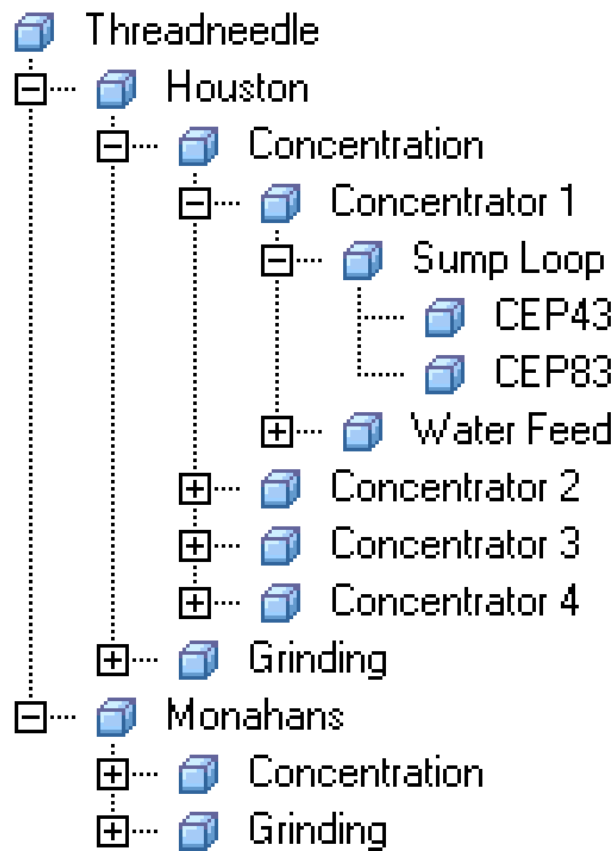
2 Elements





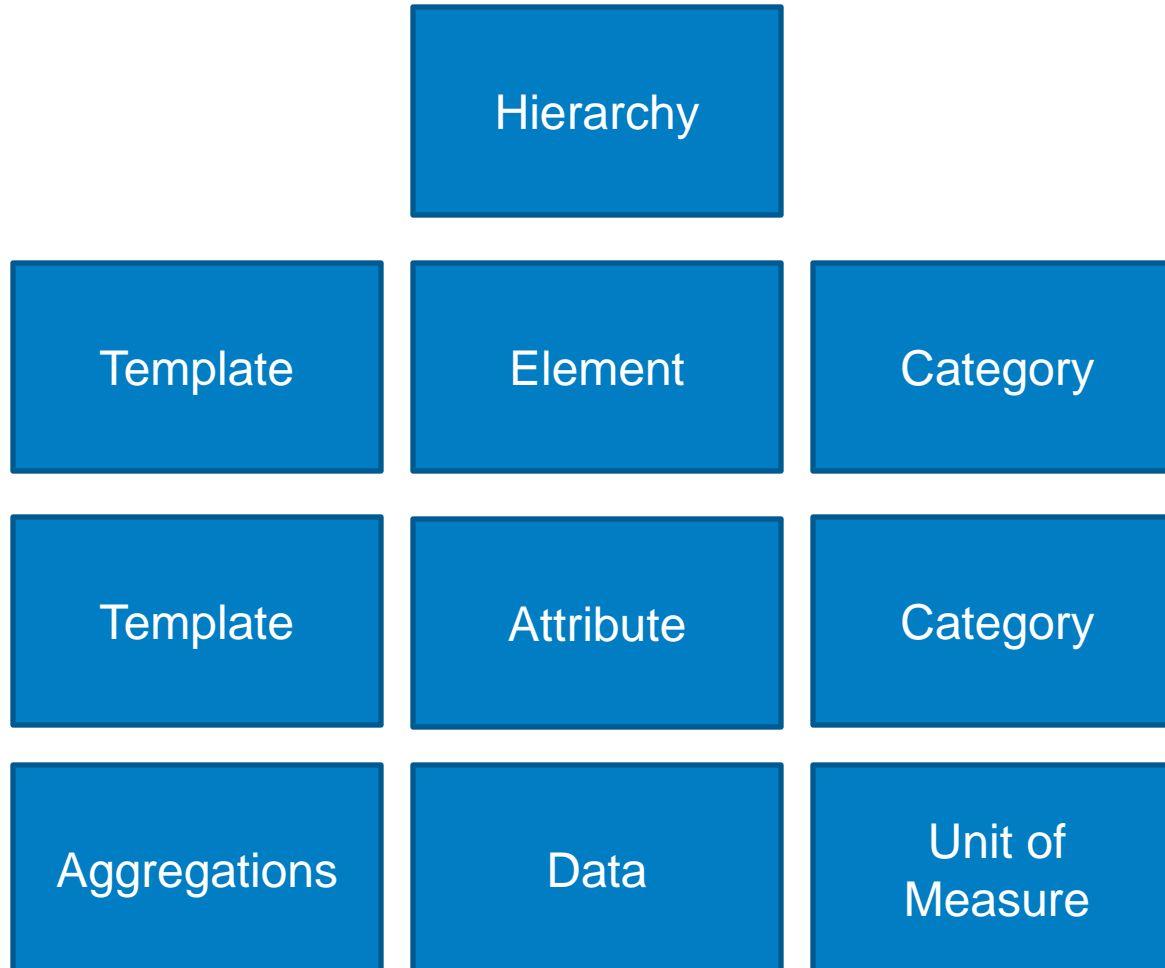
Part III: From PI AF to cube

From objects to tables



Site	Workgroup	Workshop	Subprocess	Equipment
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65
Monahans	Concentration	Concentrator 1	Water Feed	CEP65

PI Asset Framework Object Sets



Hierarchy table

Site	Workgroup	Workshop	Subprocess	Equipment	Attribute	Value	Time	EquipmentID
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	89.94	7/22/2011 3:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	94.06	7/22/2011 3:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	90.70	7/22/2011 4:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	90.89	7/22/2011 4:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	91.87	7/22/2011 5:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	95.05	7/22/2011 5:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	93.14	7/22/2011 6:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	93.45	7/22/2011 6:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	51.74	7/21/2011 12:00:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	55.03	7/21/2011 12:30:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	58.62	7/21/2011 1:00:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	82.07	7/21/2011 1:30:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	70.48	7/21/2011 2:00:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	73.15	7/21/2011 2:30:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	73.11	7/21/2011 3:00:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	74.58	7/21/2011 3:30:00 AM	{3D333308-E996-4...

Site

Workgroup

Workshop

Subprocess

Equipment

Attribute

Value

Time

Equipment ID

Hierarchy and elements

Equipment ID

Site	Workgroup	Workshop	Subprocess	Equipment	Attribute	Value	Time	EquipmentID
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	89.94	7/22/2011 3:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	94.06	7/22/2011 3:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	90.70	7/22/2011 4:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	90.89	7/22/2011 4:30:00 PM	{BD8B3096-EFED-4...

Name	ID	ElementTemplateID
CEP62	{011ABF6D-2C0C-4B02-AEAD-7C604FEA62FD}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP61	{5041CD88-CF6C-400C-B507-48F9A88CD5BA}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP59	{0253F3C9-7078-4397-BCE8-0D1E1BD4E31F}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP58	{97B1033A-C1DE-40A0-8100-3AA442AA0A52}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP57	{9D99808D-7108-4223-84B6-47DB8E3FED44}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP56	{694D73F6-C729-4D32-84DC-F2D5E081793D}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP55	{BD8B3096-EFED-4A86-8940-6A9EB9F3EA42}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP54	{3D333308-E996-4186-BBD1-154843AC8487}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP53	{9325D03E-02A9-44F7-815C-519D44E0B2AF}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP52	{99883E44-827A-4143-A443-F533F490F3C5}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP51	{A9F4FC95-10D0-4297-B14B-6FDA9FE846BD}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP50	{85EE7453-04F6-4565-BE2E-872A3758D98A}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP49	{EAD8B97E-6BC3-49AD-B32E-FBD53FEDBFC3}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}

Name	Equip. ID	Template ID
Cleaner	CEP54	3D333308-E996-4...
Head Pres...	CEP55	BD8B3096-EFED-4...
Head Pres...	CEP56	694D73F6-C729-4...
Head Pres...	CEP57	9D99808D-7108-4...
Head Pres...	CEP58	97B1033A-C1DE-4...
Head Pres...	CEP59	0253F3C9-7078-4...
Head Pres...	CEP61	5041CD88-CF6C-4...
Head Pres...	CEP62	011ABF6D-2C0C-4...

Name

Equip. ID

Template ID

Hierarchy and elements

Equipment ID

Site	Workgroup	Workshop	Subprocess	Equipment	Attribute	Value	Time	EquipmentID
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	89.94	7/22/2011 3:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	94.06	7/22/2011 3:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	90.70	7/22/2011 4:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	90.89	7/22/2011 4:30:00 PM	{BD8B3096-EFED-4...

Table: Elements

Name	ID	ElementTemplateID
CEP62	{011ABF6D-2C0C-4B02-AEAD-7C604FEA62FD}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP61	{5041CD88-CF6C-400C-B507-48F9A88CD5BA}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP59	{0253F3C9-7078-4397-BCE8-0D1E1BD4E31F}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP58	{97B1033A-C1DE-40A0-8100-3AA442AA0A52}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP57	{9D99808D-7108-4223-84B6-47DB8E3FED44}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}
CEP56	{694D73F6-C729-4D32-84DC-F2D5E081793D}	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}

Table: Element Templates

Name	InheritancePath	ID
Pump	\	{1B6DECDA-56DC-4E69-BF77-F9AA6D7ECF37}
Process Area	\	{74874607-AD81-4DA9-87BA-662B8D0980CE}
Electric Pump	\Pump\	{7448D808-672E-4344-ABBE-490228BAB4F3}
Enterprise	\Process Area\	{4FB4C261-0BF8-4024-BA98-278697DBC89C}
Site	\Process Area\	{A1C9435C-7E82-4579-91EF-2A1CCE1E6120}
Workgroup	\Process Area\	{812FBCD1-24EC-4926-8340-4BF3587CA252}
Workshop	\Process Area\	{F25B267D-8B79-4DCC-9436-0C5C9A3635E07}
Subprocess	\Process Area\	{B28E0231-DA6E-4EAC-9438-E847DCAB2538}
Controlled Electric Pump	\Pump\Electric Pump\	{4C4AD23A-59A7-4EE8-AEA1-6993360F9CCD}

Template ID

Hierarchy table

Site	Workgroup	Workshop	Subprocess	Equipment	Attribute	Value	Time	EquipmentID
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	89.94	7/22/2011 3:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	94.06	7/22/2011 3:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	90.70	7/22/2011 4:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	90.89	7/22/2011 4:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	91.87	7/22/2011 5:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	95.05	7/22/2011 5:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	93.14	7/22/2011 6:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	93.45	7/22/2011 6:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	51.74	7/21/2011 12:00:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	55.03	7/21/2011 12:30:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	58.62	7/21/2011 1:00:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	82.07	7/21/2011 1:30:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	70.48	7/21/2011 2:00:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	73.15	7/21/2011 2:30:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	73.11	7/21/2011 3:00:00 AM	{3D333308-E996-4...
Houston	Grinding	Grinder 2	Cleaner	CEP54	Head Pres...	74.58	7/21/2011 3:30:00 AM	{3D333308-E996-4...

Site

Workgroup

Workshop

Subprocess

Equipment

Attribute

Value

Time

Equipment ID

Assets and times

Time

Site	Workgroup	Workshop	Subprocess	Equipment	Attribute	Value	Time	EquipmentID
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	89.94	7/22/2011 3:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	94.06	7/22/2011 3:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	90.70	7/22/2011 4:00:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	90.89	7/22/2011 4:30:00 PM	{BD8B3096-EFED-4...
Houston	Grinding	Grinder 1	Rougher	CEP55	Head Pres...	91.87	7/22/2011 5:00:00 PM	{BD8B3096-EFED-4...

TimeRaw	Date	Year	Month	Week	Weekday	Hour
7/21/2011 10:10:00 AM	7/21/2011	2011	July	30	Thursday	10
7/21/2011 10:20:00 AM	7/21/2011	2011	July	30	Thursday	10
7/21/2011 10:30:00 AM	7/21/2011	2011	July	30	Thursday	10
7/21/2011 10:40:00 AM	7/21/2011	2011	July	30	Thursday	10
7/21/2011 10:50:00 AM	7/21/2011	2011	July	30	Thursday	10
7/21/2011 11:00:00 AM	7/21/2011	2011	July	30	Thursday	11
7/21/2011 11:10:00 AM	7/21/2011	2011	July	30	Thursday	11
7/21/2011 11:20:00 AM	7/21/2011	2011	July	30	Thursday	11
7/21/2011 11:30:00 AM	7/21/2011	2011	July	30	Thursday	11
7/21/2011 11:40:00 AM	7/21/2011	2011	July	30	Thursday	11
7/21/2011 11:50:00 AM	7/21/2011	2011	July	30	Thursday	11
7/21/2011 12:00:00 PM	7/21/2011	2011	July	30	Thursday	12
7/21/2011 12:10:00 PM	7/21/2011	2011	July	30	Thursday	12

Site

Work

Time

Date

Year

Month

Week

Day

Hour

Time

Equipment ID

Linking details about *time*

Equipment	Attribute	Value	Time
CEP55	Head Pres...	89.94	7/22/2011 3:00:00 PM
CEP55	Head Pres...	94.06	7/22/2011 3:30:00 PM
CEP55	Head Pres...	90.70	7/22/2011 4:00:00 PM

Edit Relationship [?] [X]

Create a lookup relationship between two tables

Select the tables and columns you want to use to create the relationship.

Table:

Column:

Related Lookup Table:

Related Lookup Column:

OK Cancel

TimeRaw	Date	Year	Month	Week	Weekday	Hour
7/21/2011 10:10:00 AM	7/21/2011	2011	July	30	Thursday	10
7/21/2011 10:20:00 AM	7/21/2011	2011	July	30	Thursday	10
7/21/2011 10:30:00 AM	7/21/2011	2011	July	30	Thursday	10



Demo: Building a PowerPivot analysis



OSIsoft.
SEMINÁRIO
REGIONAL
LATAM SOUTH

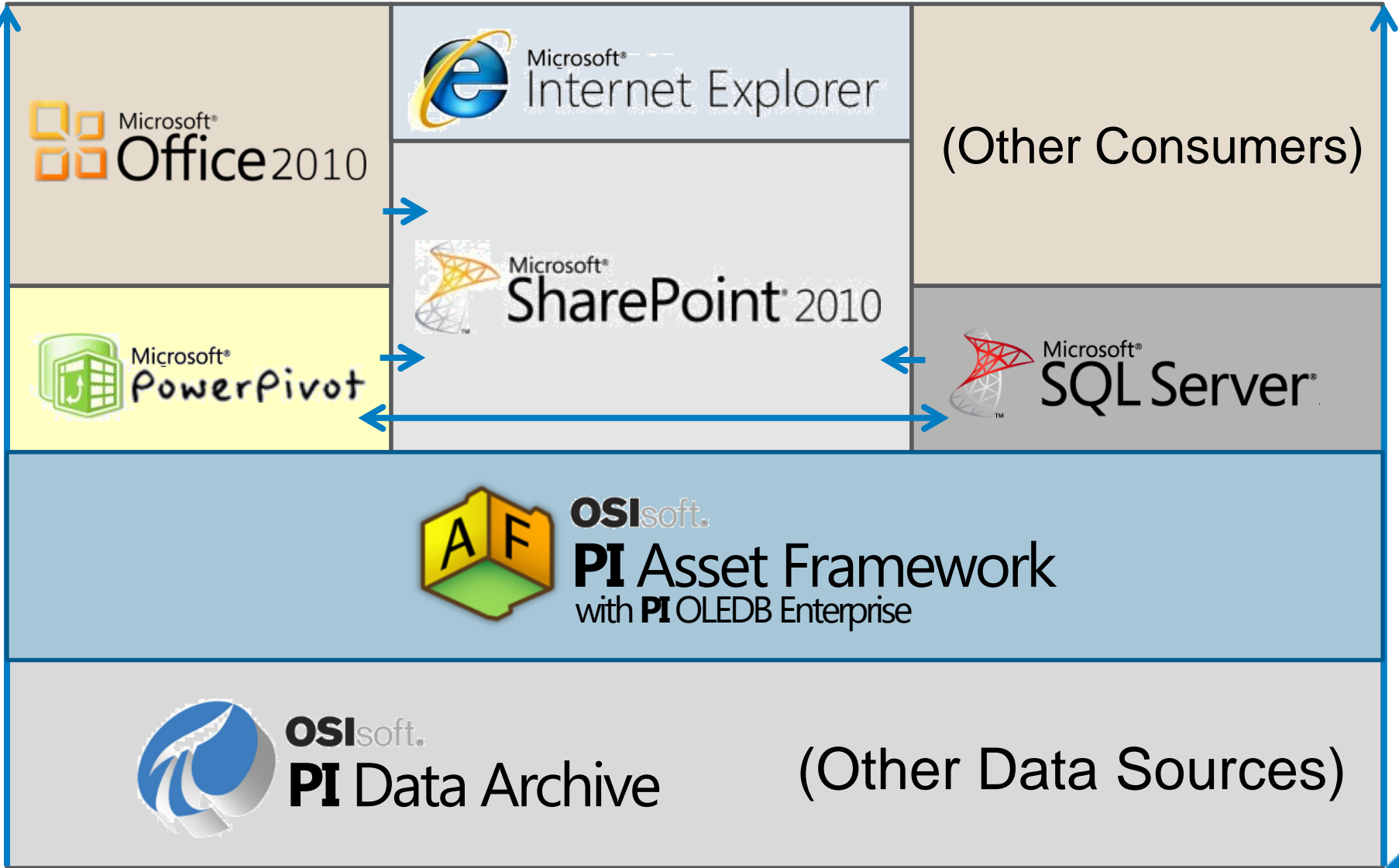
TEC 2011





Part IV: Consuming Cubes

Delivering Business Information



PowerPivot Site ▶ PowerPivot Gallery
Share a document with the team by adding it to this document library.

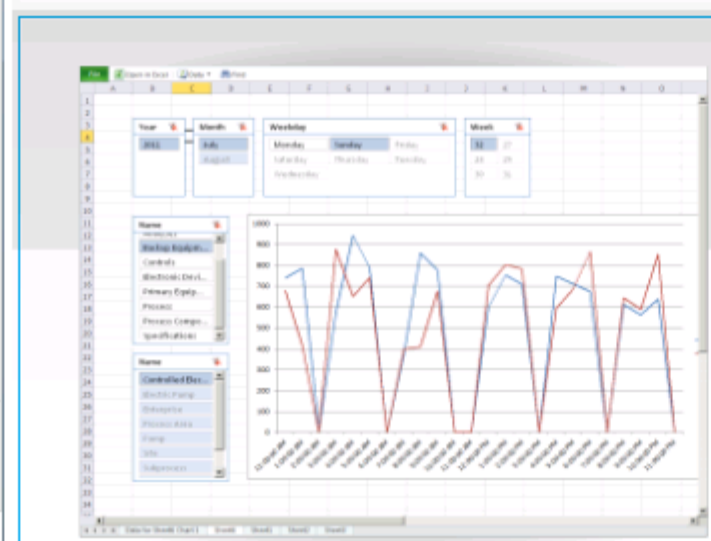
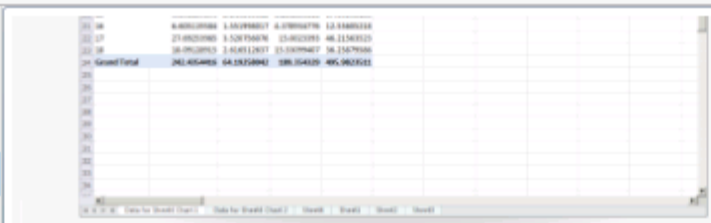
PowerPivot Site

- Libraries
- Site Pages
- Shared Documents
- PowerPivot Gallery

- Lists
- Calendar
- Tasks
- Discussions
- Team Discussion

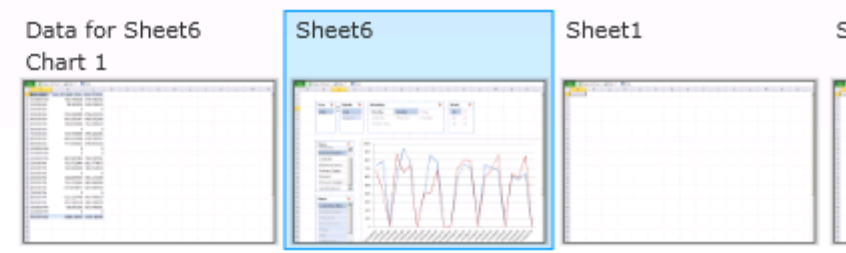
- Sites
- People and Groups

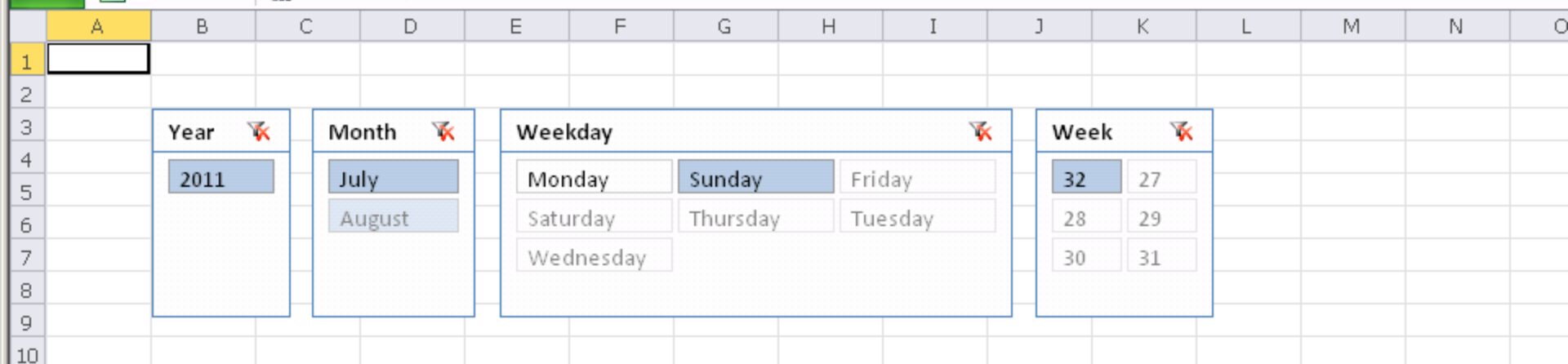
- Recycle Bin
- All Site Content



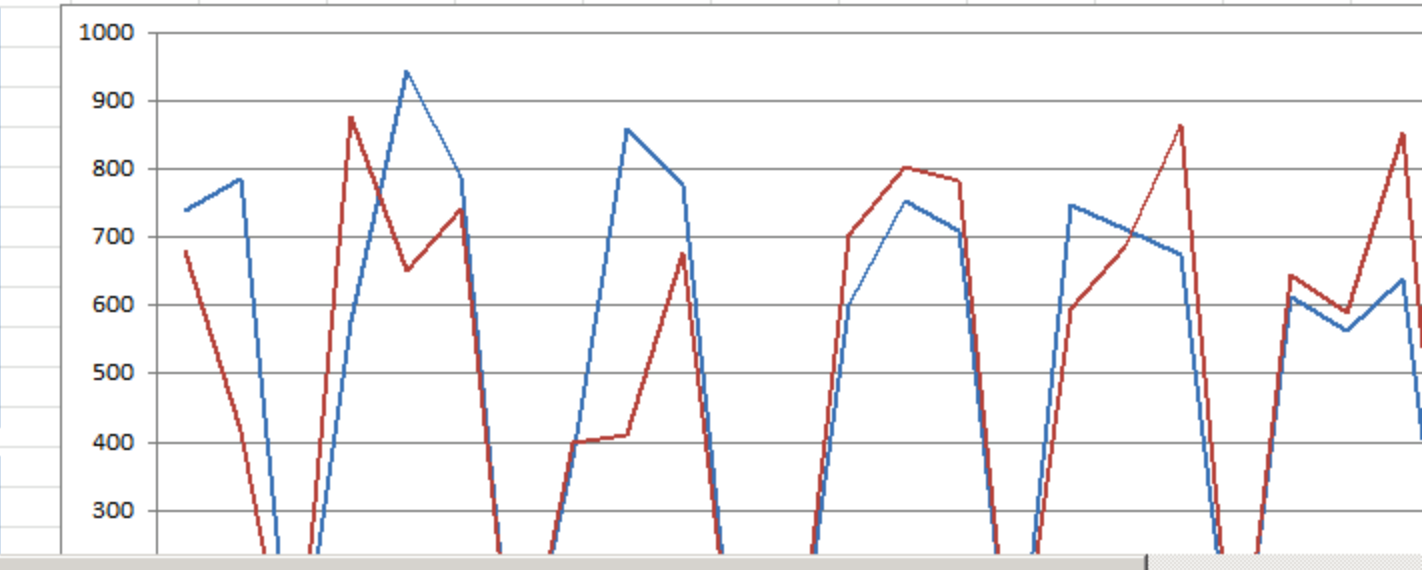
Pumps_in_PowerPivot_Transpose

Last Modified By: System Account, Date: 8/1/2011
Created By: System Account





- Name
- Analyses
 - Backup Equipm...
 - Controls
 - Electronic Devi...
 - Primary Equip...
 - Process
 - Process Compo...
 - Specifications
- Name
- Controlled Elec...



Business Intelligence Center

The Business Intelligence Center enables you to collaborate, discover and manage the information you need to drive the business forward, empowered with the right business insights enabling them to make informed decisions, and move the business forward, one activity at a time.

Analyze and Share with Excel Services



Share your Excel workbooks with your team through Excel Services. Maintain data connections, interactivity and rich formatting without ever leaving your browser.

- [View Excel Services samples](#)
- [Learn more online](#)

Explore Your Data with Visualizations



Publish your highly-formatted charts and reports using Excel Services. For interactive visualizations like the decomposition tree, use PerformancePoint Services.

- [Start using PerformancePoint Services](#)
- [Learn more online](#)

Monitor Key Performance

Use scorecards and status lists to track your progress towards goals more effectively. At a glance, your organization can see how it is performing and identify areas that require attention.

Build and Share Reports

Publish your Excel workbooks to SharePoint using Excel Services and let your team access and interact with their data in full fidelity. Use PerformancePoint Services analytic views to gain quick insights from your dashboards.

Create Dashboards

Use SharePoint to create rich, interactive dashboards that help you turn data into insights. Dashboard pages can include scorecards, Excel

Consuming PowerPivot in PerformancePoint

The screenshot displays the Microsoft PerformancePoint Designer interface. At the top, the title bar reads "Untitled - Dashboard Designer". Below it is a ribbon with tabs for "Home", "Edit", and "Create". The ribbon contains several groups of icons: "Clipboard" (Paste, Cut, Copy), "Workspace" (Add Items, Remove, Refresh), "Item" (Properties, Permissions, Rename, Delete), "Changes" (Compare Item, Validate Item, Mark Differences), and "Import" (Import Items).

On the left side, there is a "Workspace Browser" pane showing a tree view of the workspace structure:

- Untitled Workspace
- Data Connections
- PowerPivot_Pumps
- PerformancePoint Content
 - Categories To Show
 - Enterprise Pumps Performa
 - Flow Accuracy
 - Pump Performance

The main area of the interface is divided into three tabs: "Editor" (selected), "Properties", and "Time". The "Editor" tab shows a view of a PowerPivot cube named "PowerPivot_Pumps". Below the cube name, there are "Connection Settings" and "Data Source Settings" sections.

Connection Settings

- Use Standard Connection
 - Server: [Text Box]
 - Database: [Text Box]
 - Roles: [Text Box]
- Use the following connection

Data Source Settings

- Authentication:
 - Unattended Service Account
 - All users connect using the Unattended Service Account.
 - Unattended Service Account and add authenticated user name in connection string
 - All users connect using the Unattended Service Account. The authenticated user name is provided as the value of the "Custom string property."

At the bottom of the "Use the following connection" section, a text box contains the following connection string:

```
PROVIDER=MSOLAP;DATA SOURCE=http://bros/PowerPivot%20Gallery/Pumps_in_PowerPivot_Transpose.xlsx
```

Defining KPIs in PerformancePoint

Untitled - Dashboard Designer

create

Item Changes Import

Editor Properties

← Flow Accuracy

Actual and Targets ⌵

Name	Compare To	Number Format	Indicators	Data Mappings	Calculation
Actual		(Default)		Sum of Flow (PowerPivo...	Default
▶ Target	Actual	(Default)	⊗ ⊕ ⊙	Sum of Target Flow (Po...	Default

Thresholds ⌵

Set Scoring Pattern and Indicator...

Worst(High)	150%				
Threshold 5	130%	⊗	>130.00%		
Threshold 4	110%	⊕	130.00% to >1...		
Threshold 3	99.99999999	⊙	110.00% to >1...		
Threshold 2	90%	⊙	100.00% to >9...		
Threshold 1	80%	⊕	90.00% to >80...		
Worst(Low)	0%	⊗	80.00% or less		

Scorecards in PerformancePoint

Untitled - Dashboard Designer

Home Edit Create

Clipboard: Paste, Cut, Copy
 Workspace: Add Items, Add Lists, Remove, Refresh
 Item: Properties, Permissions, Rename, Delete
 Changes: Compare Item, Validate Item, Mark Differences
 Import: Import Items

Workspace Browser << Editor Properties

Untitled Workspace

- Data Connections
 - PowerPivot_Pumps
- PerformancePoint Content
 - Categories To Show
 - Enterprise Pumps Performance
 - Flow Accuracy
 - Pump Performance

Enterprise Pumps Performance

	Actual	Target	
[-] Flow Accuracy			✓
[-] All	64432.8964737356	66335.3398107216	✓ -3%
Houston	39123.0795080289	40694.1007833853	✓ -4%
[-] All	39123.0795080289	40694.1007833853	✓ -4%
Concentrator 1	5080.49920621514	5533.5285776034	✓ -8%
Concentrator 2	4814.48785747588	4189.00970929861	⚠ -15%
Concentrator 3	5038.91336396337	5038.84391784668	✓ 0%
Concentrator 4	4989.12287643552	4756.3847669065	✓ -5%
Grinder 1	7078.64234757423	8614.59991985559	⚠ -18%
Grinder 2	5538.19304433465	6690.3824262321	⚠ -17%
Grinder 3	6583.22081203014	5871.35146564245	⚠ -12%
Monahans	25309.8169657066	25641.2390273362	✓ -1%
[-] All	25309.8169657066	25641.2390273362	✓ -1%
Concentrator 1	4775.85472634435	4303.64942024648	⚠ -11%
Concentrator 2	4995.1765389517	4753.43164952099	✓ -5%
Concentrator 3	4621.90978845954	4976.77690519392	✓ -7%

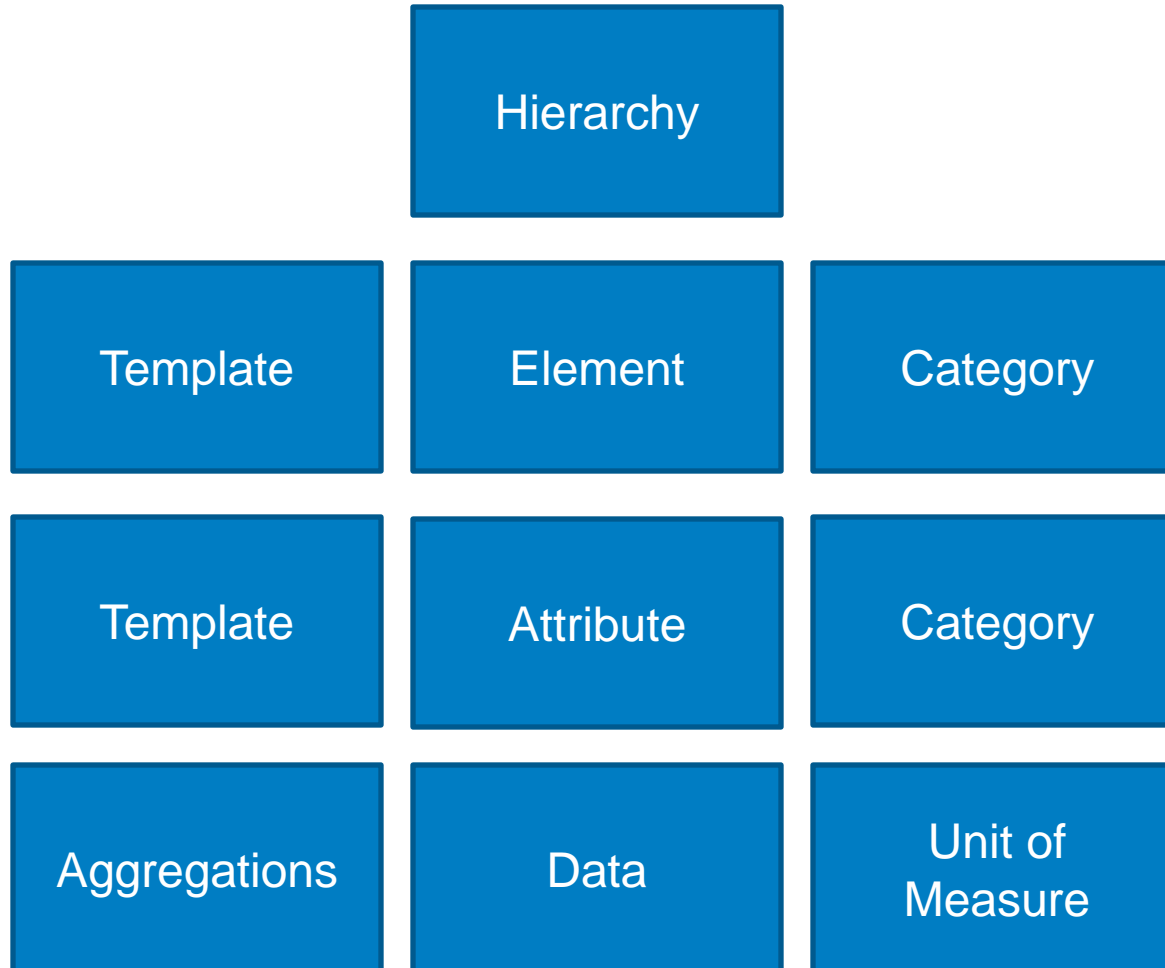
© Copyright 2011 OS!soft, LLC 48

CFE: Six weeks to enterprise BI

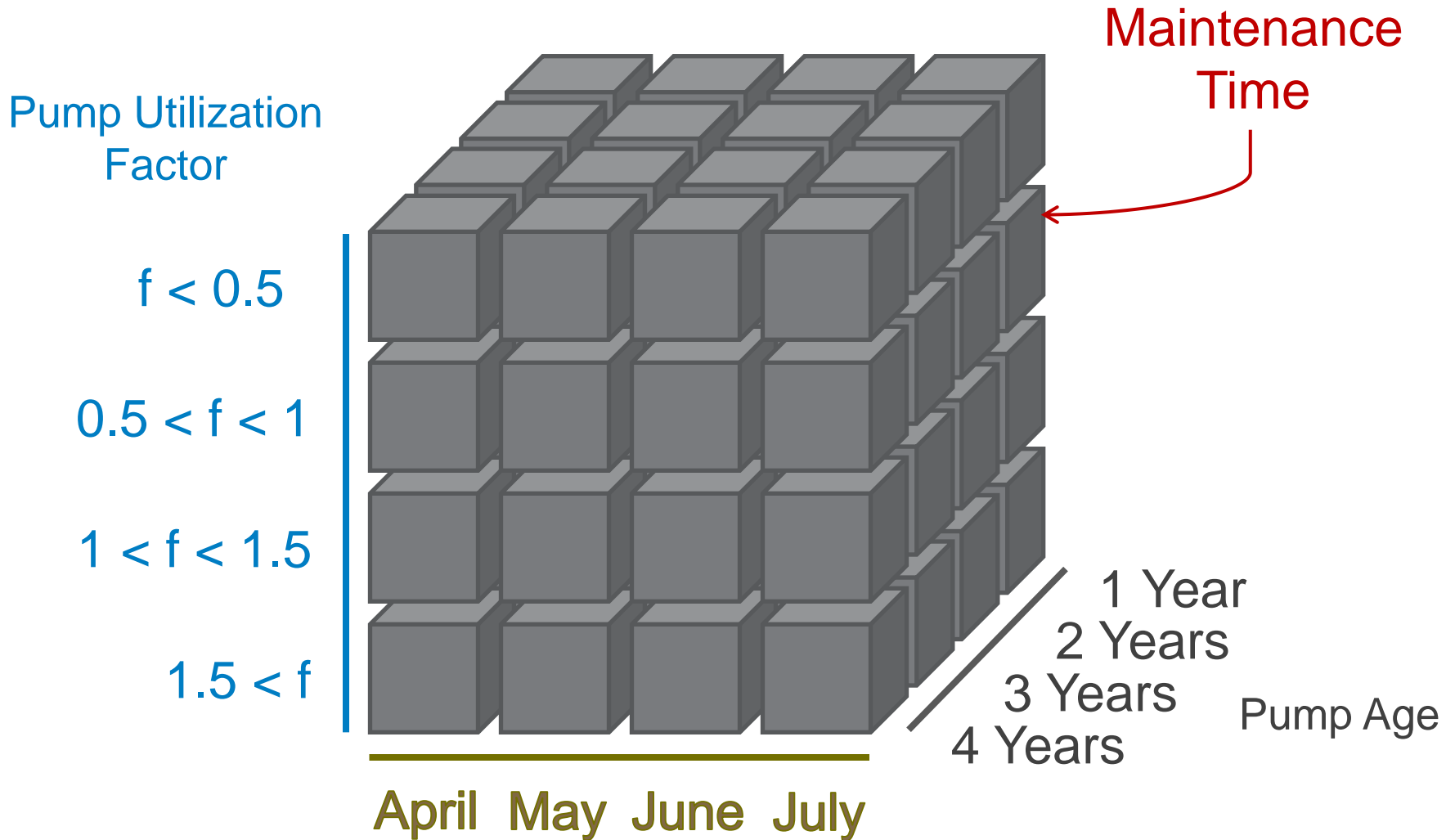


search for: **CFE Microsoft OSIsoft**

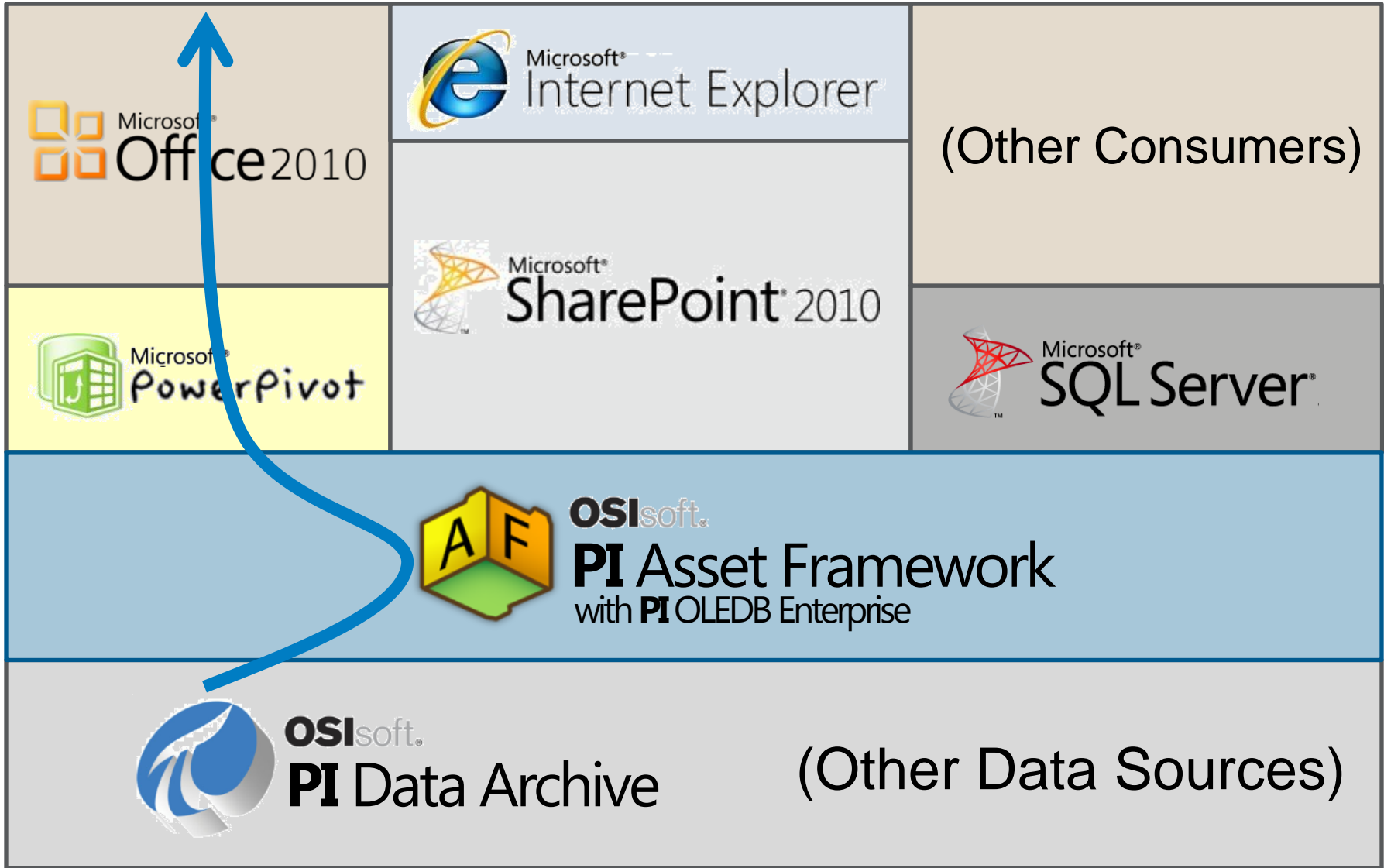
PI Asset Framework



Useful data cube



A good starting point





OSIsoft vCampus Live! 2011
where PI geeks meet

Palace Hotel · San Francisco, CA
Week of November 28th



Thank you