



Enabling Enterprise Visibility with RtPortal

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Today's Information Challenges



Employees get 50%-75% of their relevant information directly from other people.



More than 80% of enterprise's digitized information reside in individual hard drives and in personal files.

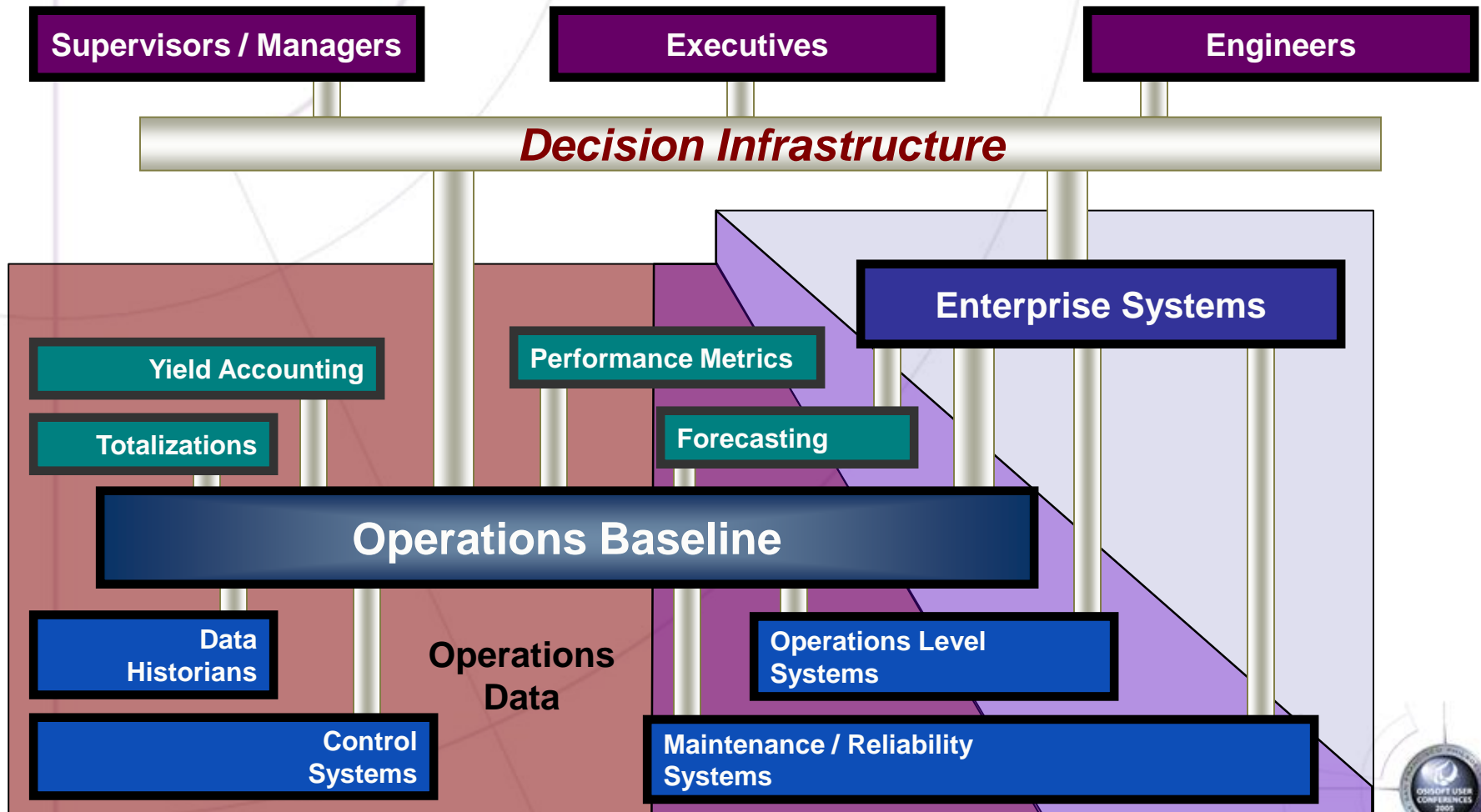


Individuals hold the key to the knowledge economy and most of it is lost when they leave the enterprise.

*From "The Knowledge Worker Investment Paradox"
Gartner research 7/17/2002*



Your Ideal Information Architecture



Real-time Performance Management

Know



**Better
Metrics**

- Immediate
- Role Based
- Actionable
- Secure

Act



**Smarter
Decisions**

- Relevant
- Timely
- Available
- Efficient

Profit

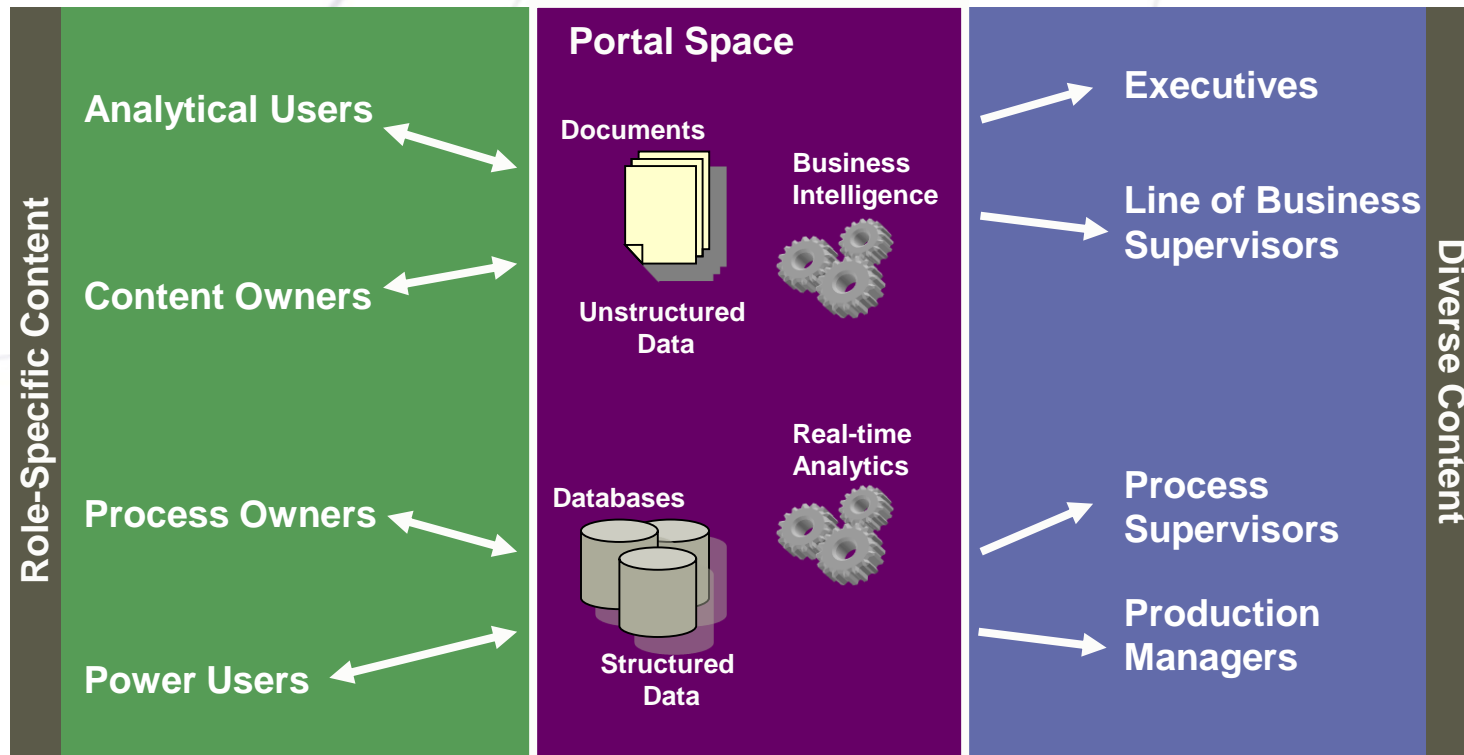


**Sustainable
Advantage**

Where the Portal Fits in the Information Worker's Desktop

Content Creators

Content Consumers



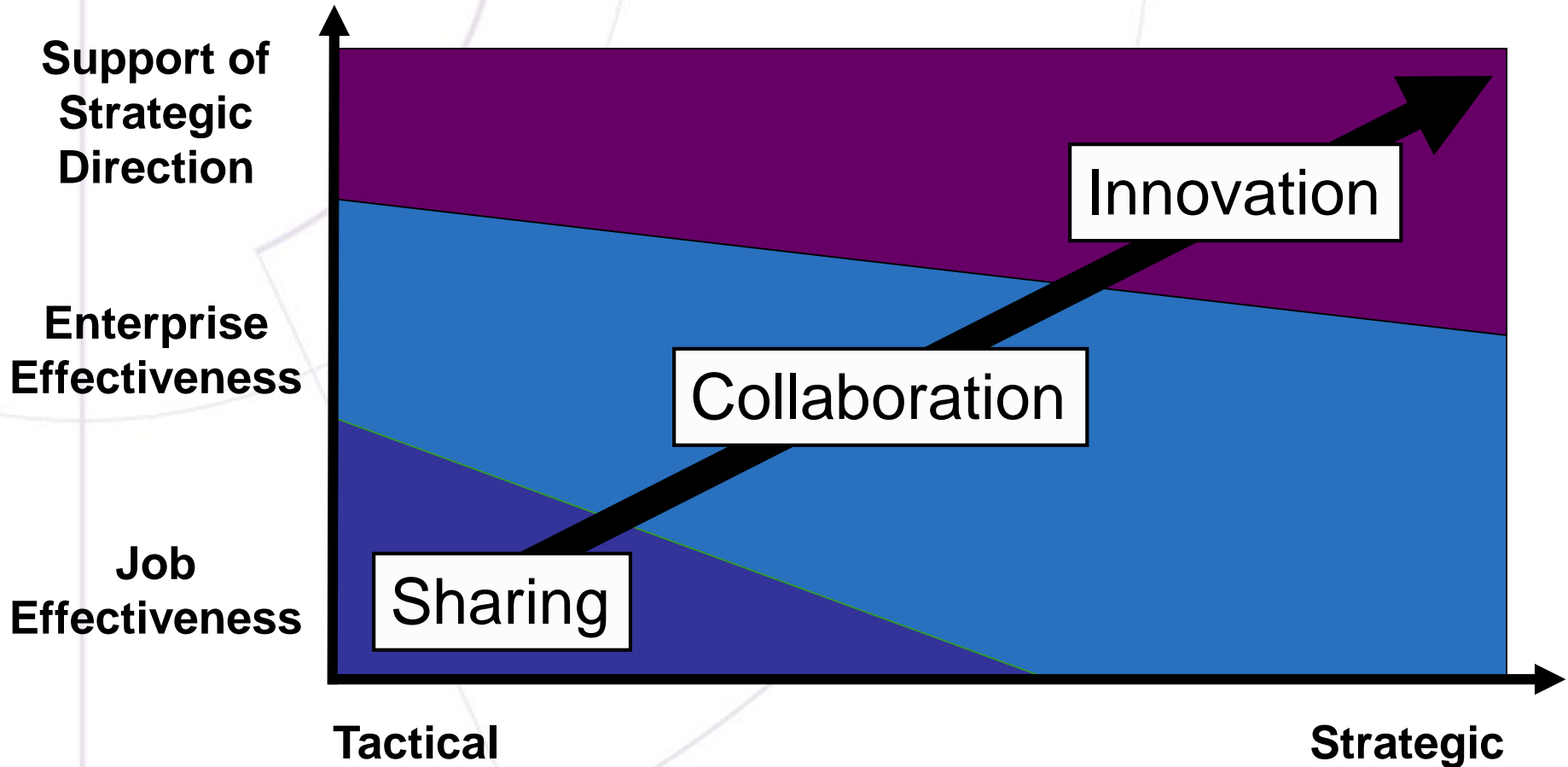
Building

Viewing

Portals Extend the Reach of Information



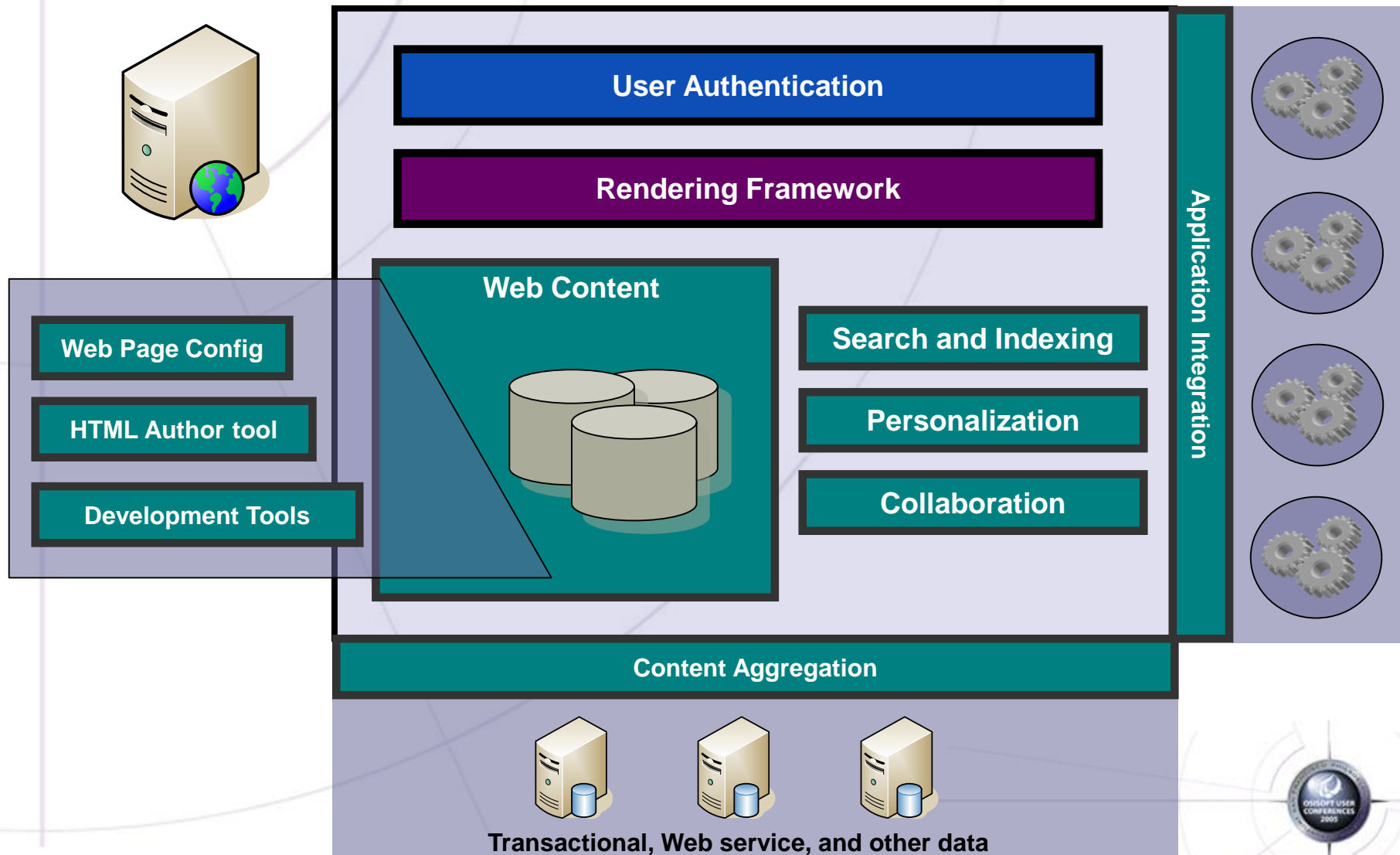
Enterprise Portal Benefits



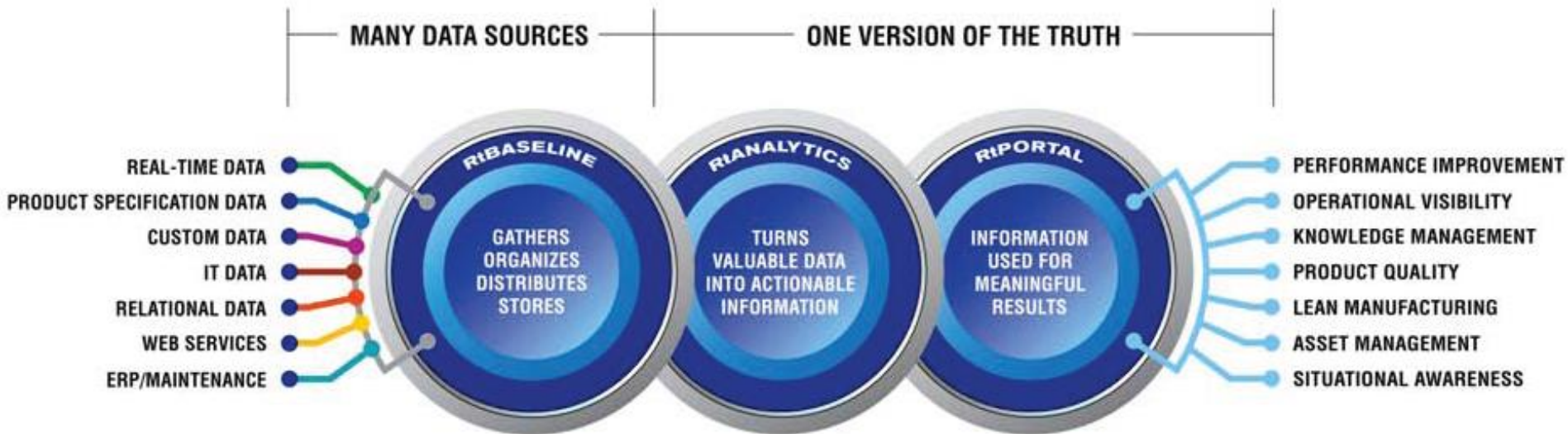
Source: Gartner Research "Justifying an Enterprise Knowledge Management Program"



Portal Framework

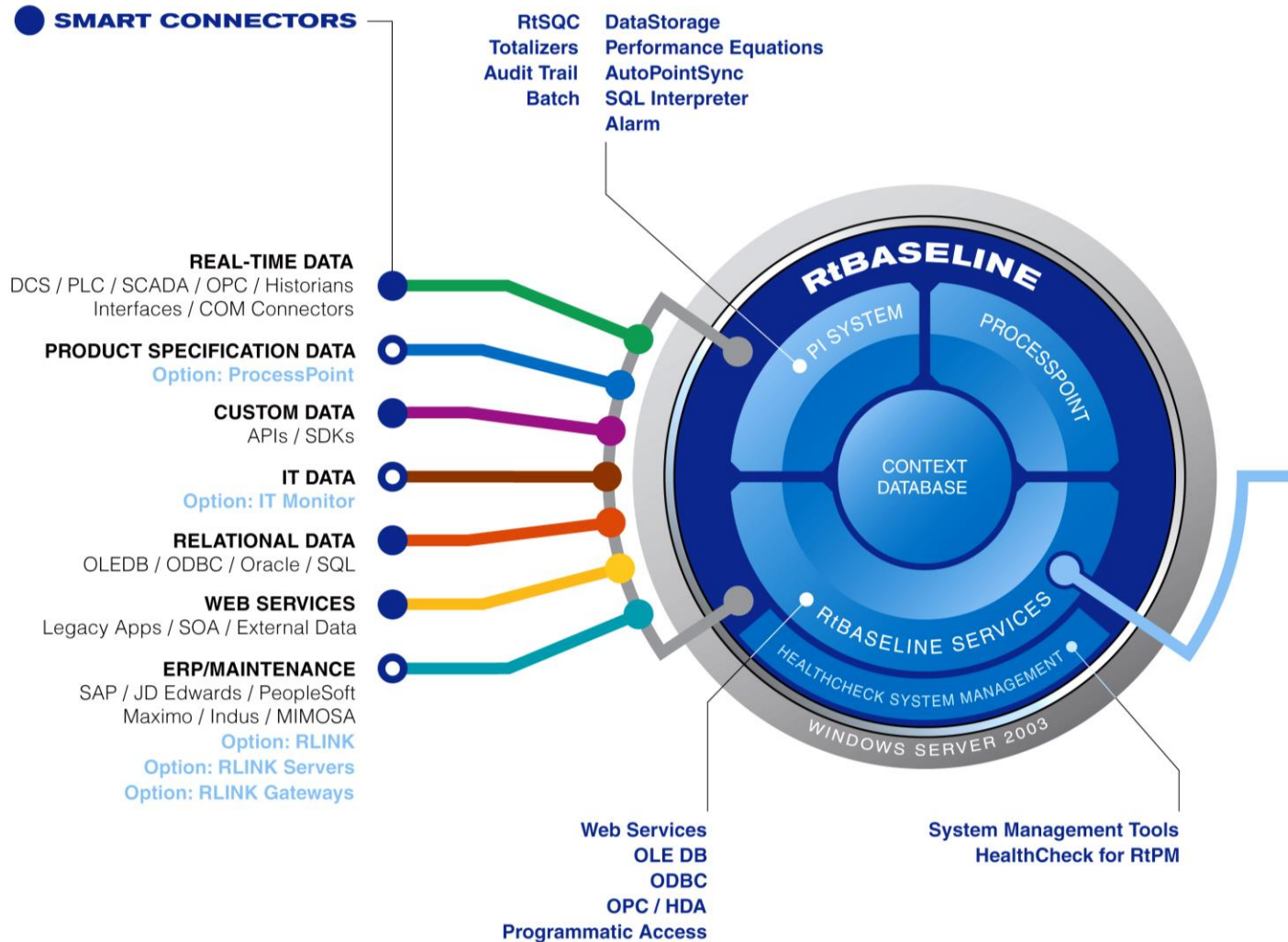


OSIsoft RtPM Platform



The OSIsoft platform provides comprehensive visibility into operations, unlocking the potential for timely analysis –fueling critical, informed and profitable actions.

RtBaseline – Unifying Disparate Data



RtAnalytics – Event-based Operational Metrics

RtAnalytics

- Creates a set of validated, trusted information
- Builds upon PI/RtPM infrastructure
- Enables timely reporting to the business

Sigmafine
RtReports Compliance
ProcessTemplates
Control Monitor

RtBaseline / PI

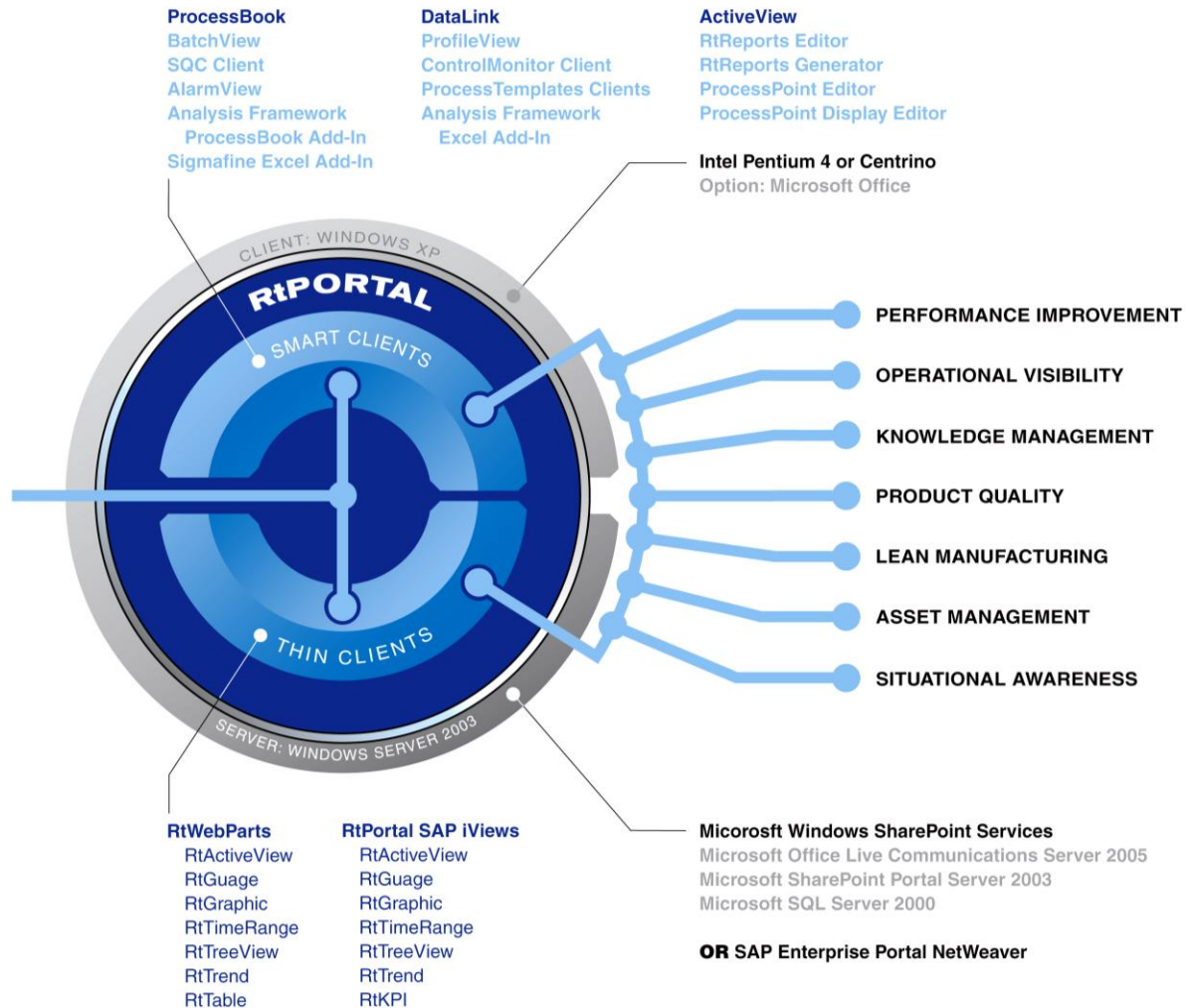
- Source data
- Structure information
- Repository for validated information



RtPortal

- Distribution
- Visualization
- Reporting
- Configuration

RtPortal – Visualization



Information Worker Challenges

- No 'visibility' into operational performance
 - Slow time to react to market changes
- Many versions of the same data
 - Lack of validated information
- Limited communication & collaboration across businesses
- Little capability to perform knowledge capture or management

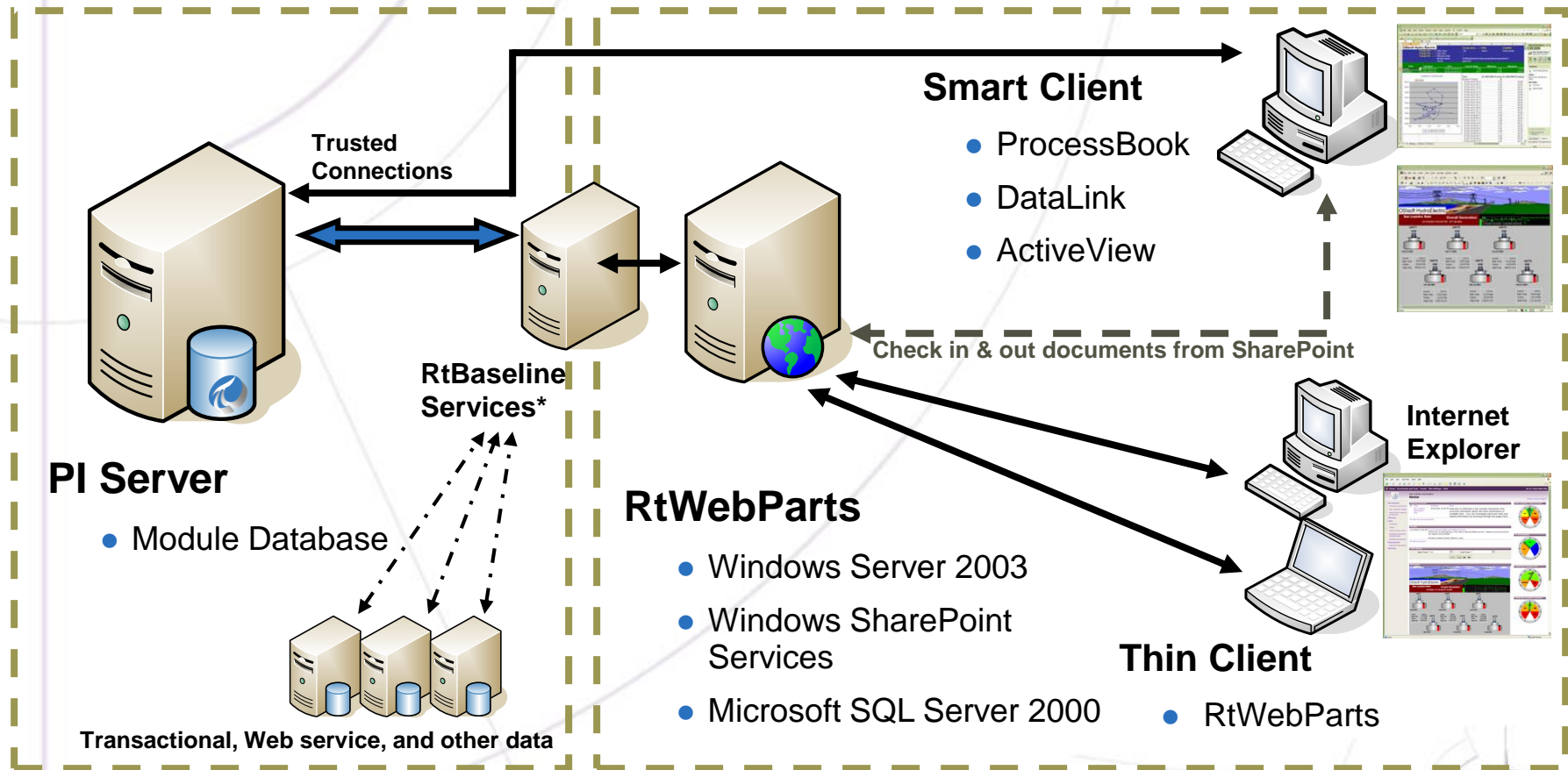
Resulting in compromised quality, safety and profitability—and ultimately impacting the corporate bottom line



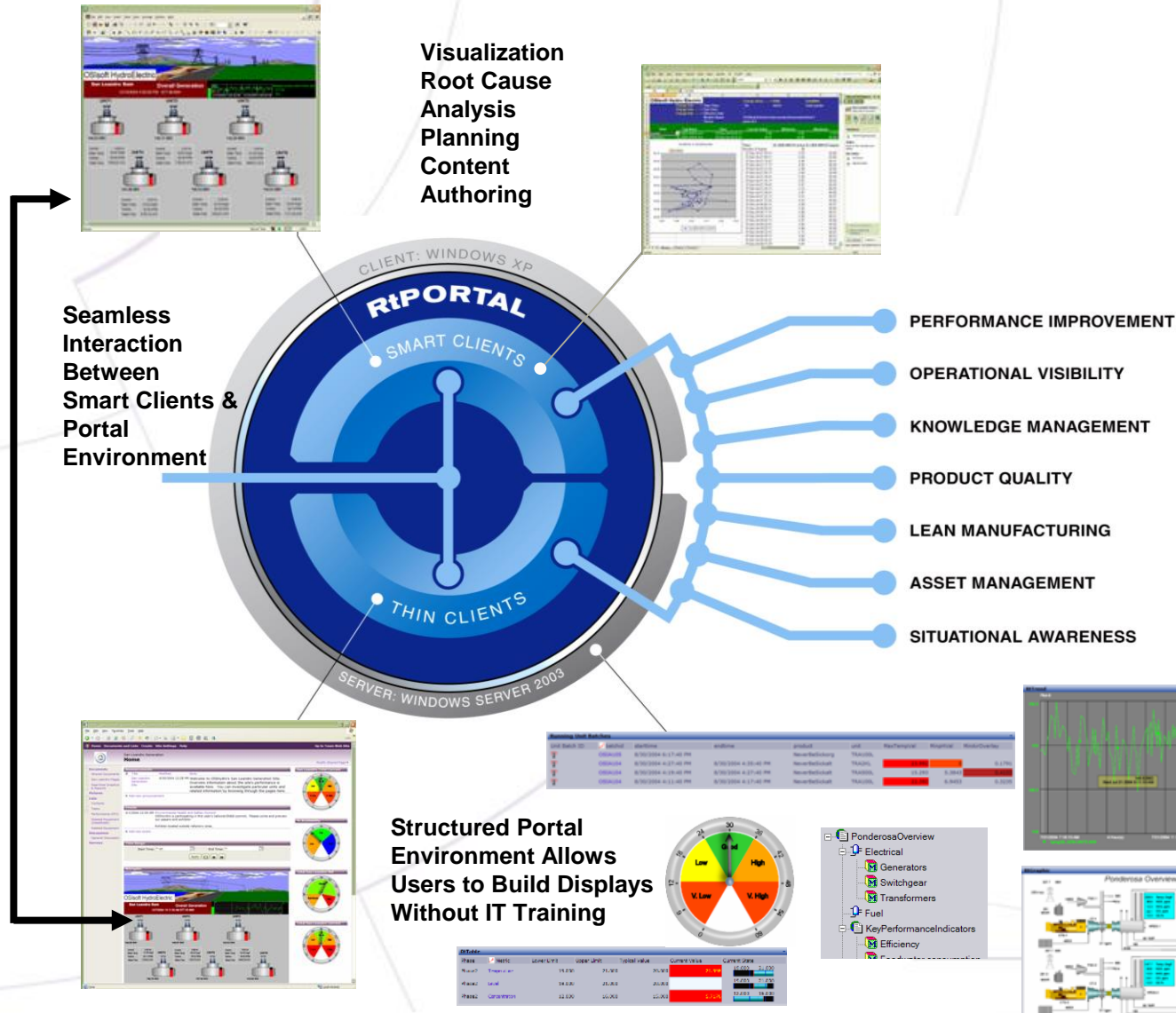
RtPortal Architecture

RtBaseline

RtPortal



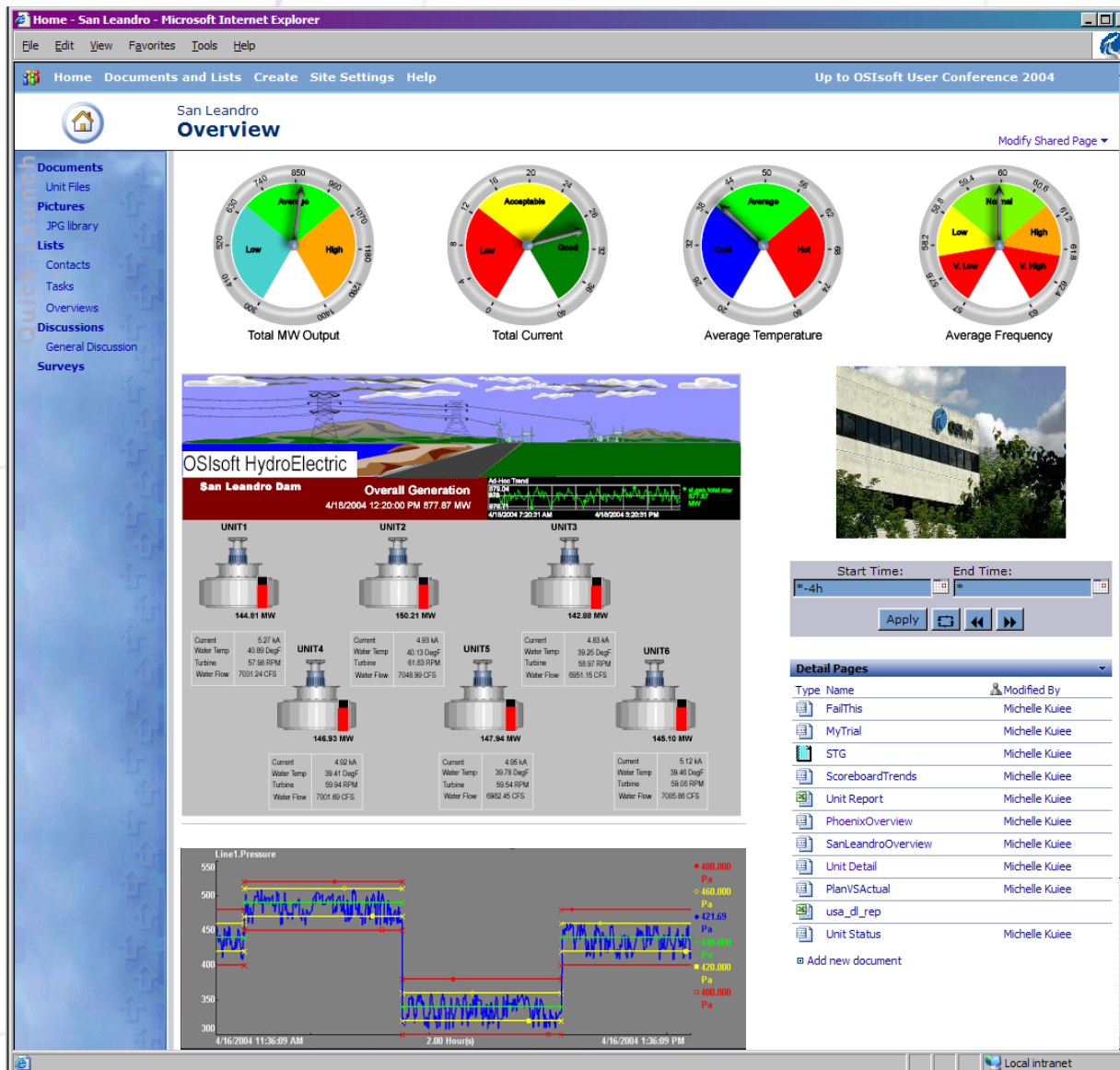
The Portal Experience





Portal Examples

Example #1: A Simple Portal Page

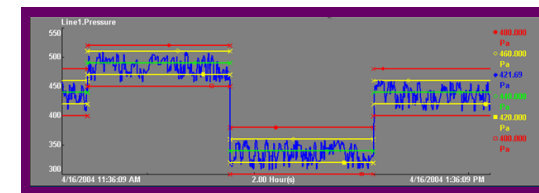
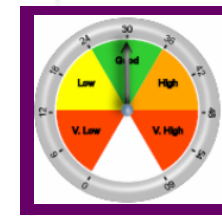


Direct Web Part Interaction



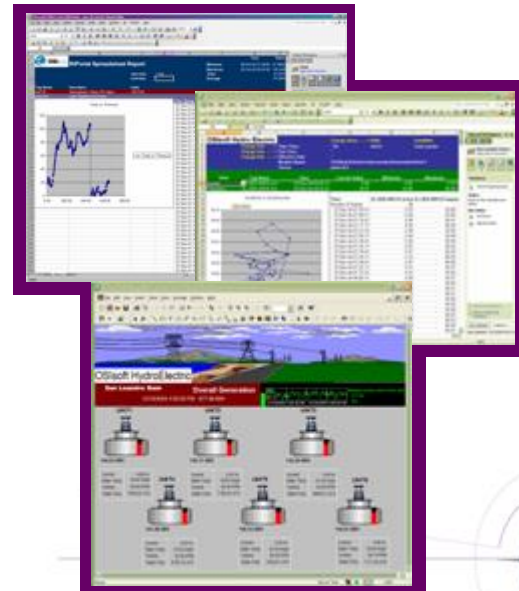
Start Time: End Time:

Apply



Detail Pages

Type	Name	Modified By
	FailThis	Michelle Kuiee
	MyTrial	Michelle Kuiee
	STG	Michelle Kuiee
	ScoreboardTrends	Michelle Kuiee
	Unit Report	Michelle Kuiee
	PhoenixOverview	Michelle Kuiee
	SanLeandroOverview	Michelle Kuiee
	Unit Detail	Michelle Kuiee
	PlanVSActual	Michelle Kuiee
	usa_dl_rep	
	Unit Status	Michelle Kuiee
<input type="button" value="Add new document"/>		



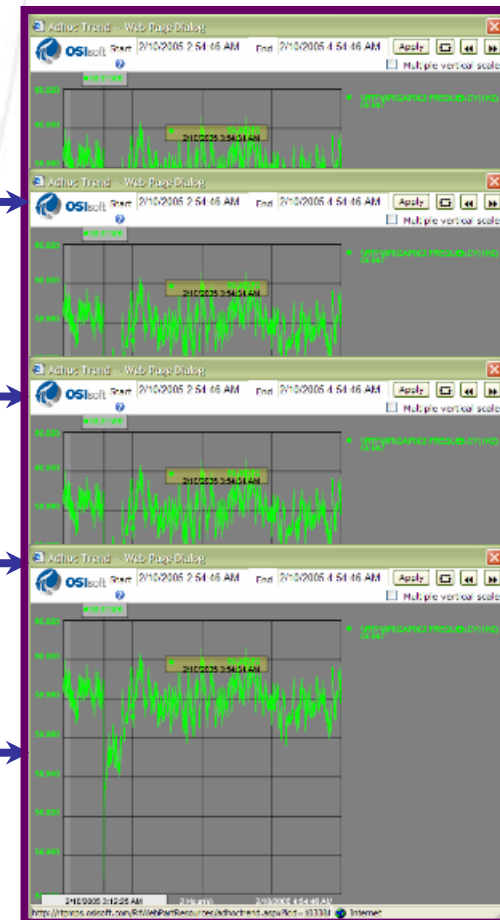
Ad-hoc Web Part Interaction

Ad-hoc Trends

Launch
ProcessBook














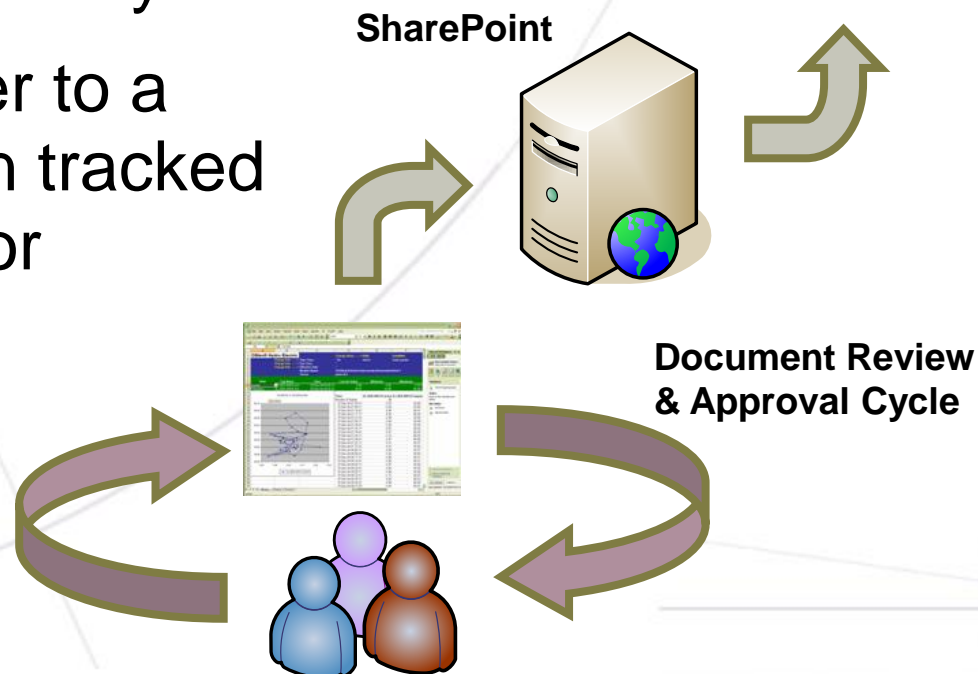
Edit &
Check In



Document Workflow

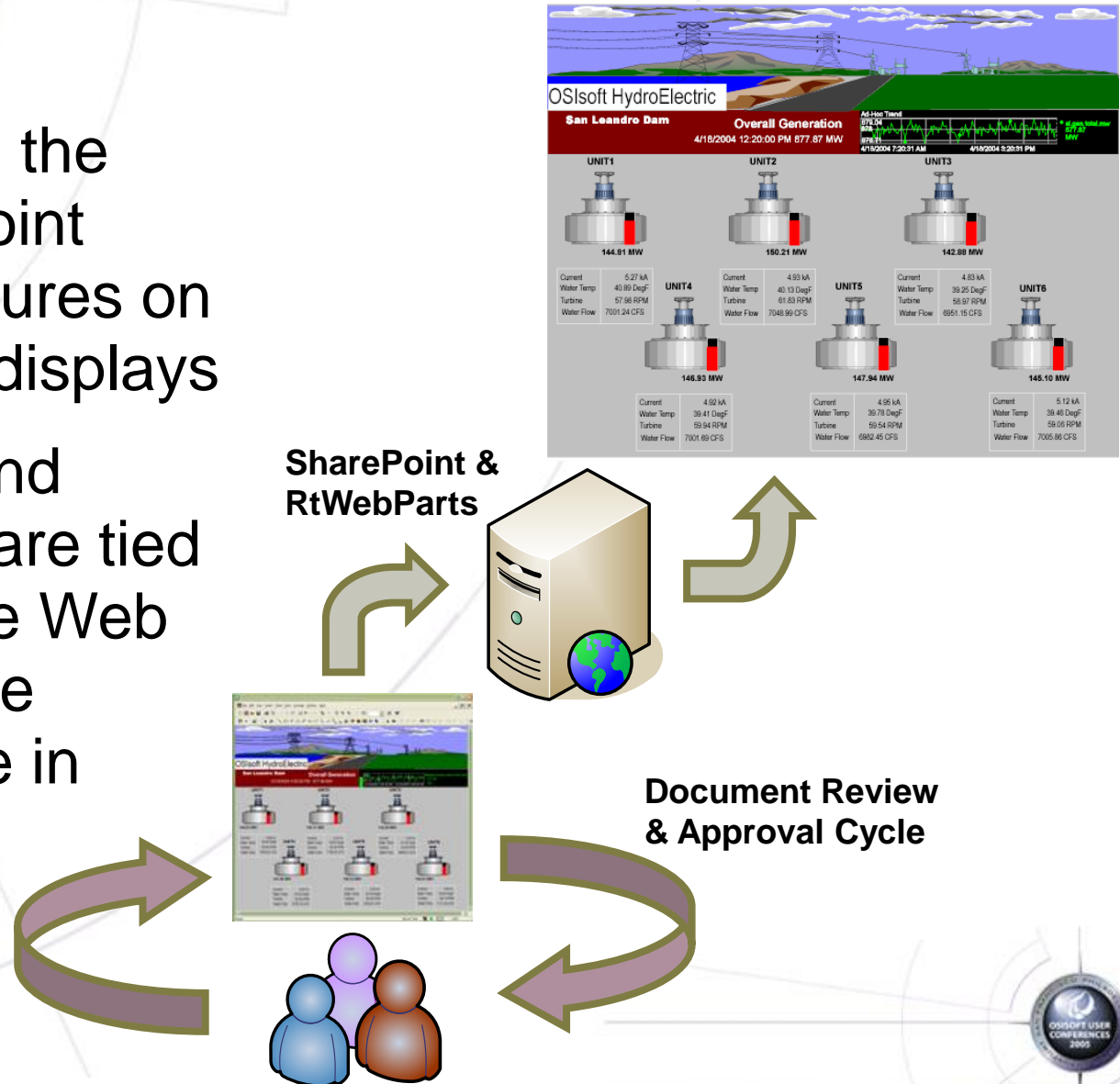
- The SharePoint infrastructure lets users collaborate and publish relevant documents into a Document Library
- Users can refer to a single, revision tracked environment for documents

Detail Pages		
Type	Name	Modified By
	FailThis	Michelle Kuiee
	MyTrial	Michelle Kuiee
	STG	Michelle Kuiee
	ScoreboardTrends	Michelle Kuiee
	Unit Report	Michelle Kuiee
	PhoenixOverview	Michelle Kuiee
	SanLeandroOverview	Michelle Kuiee
	Unit Detail	Michelle Kuiee
	PlanVSActual	Michelle Kuiee
	usa_dl_rep	
	Unit Status	Michelle Kuiee
Add new document		



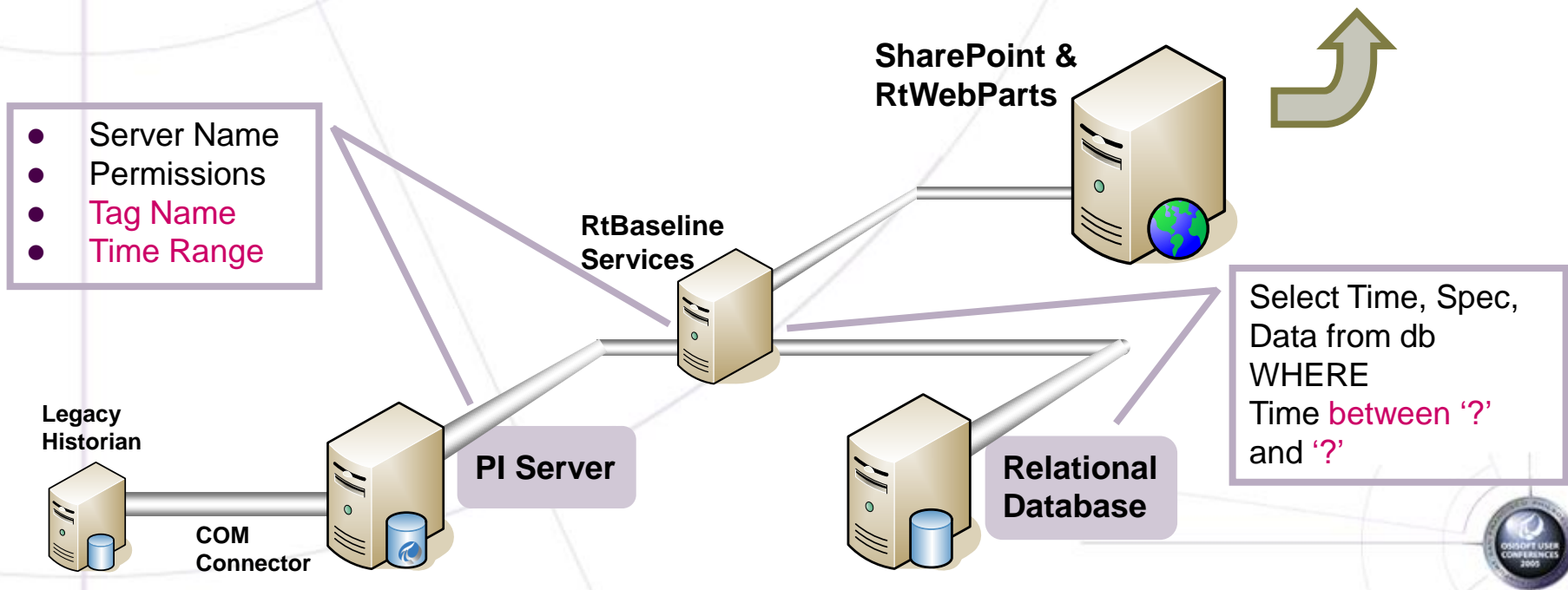
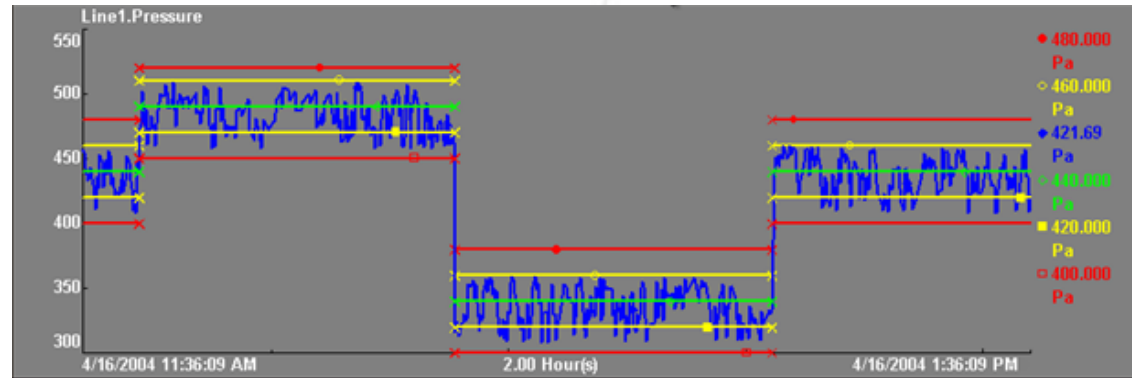
ProcessBook Workflow

- Users can use the same SharePoint document features on ProcessBook displays
- RtWebParts and ProcessBook are tied together so the Web parts reflect the changes made in ProcessBook



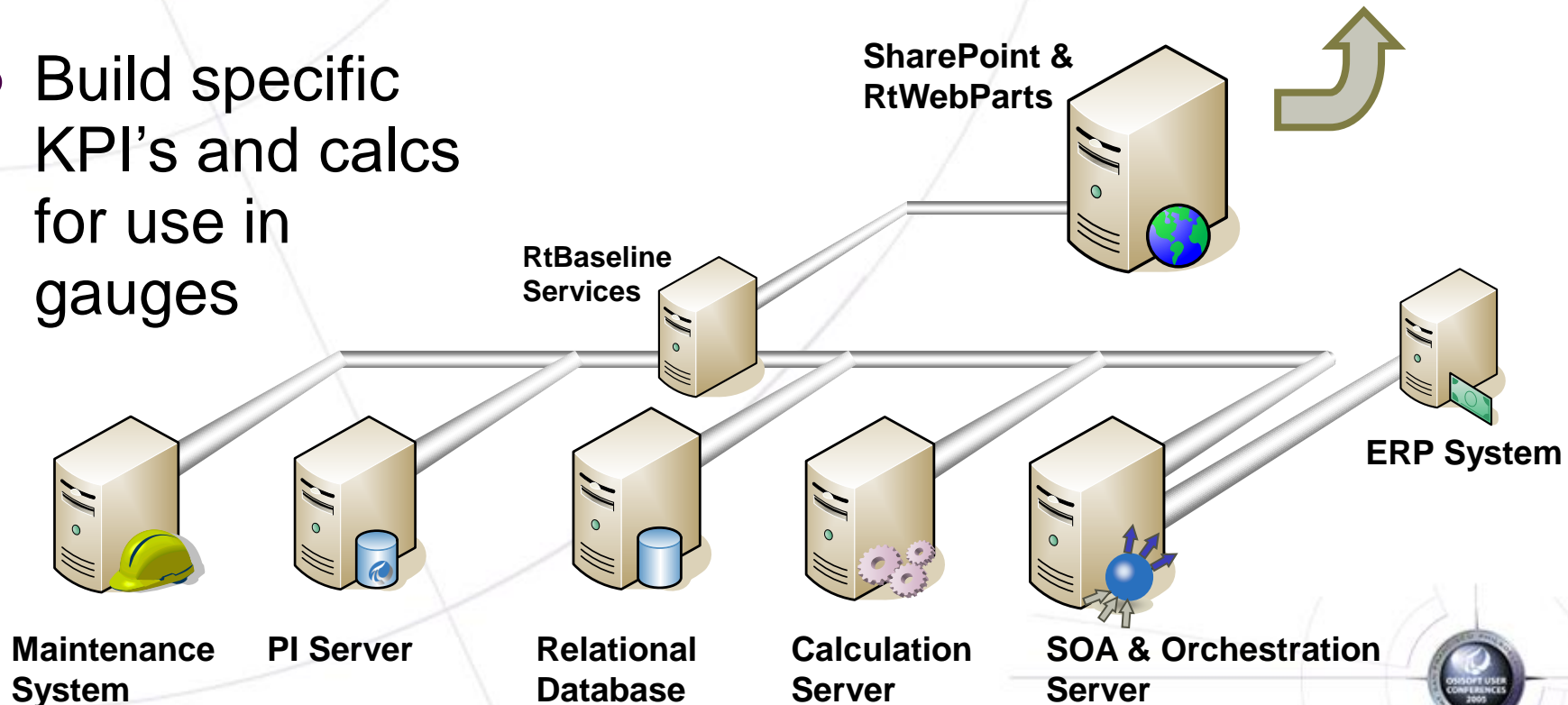
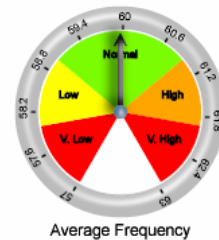
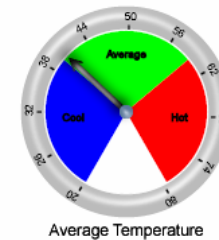
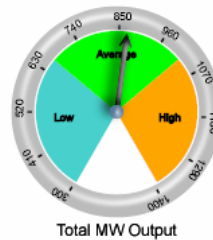
The Data Behind the Trend

- Trends require time series data
- Each dataset can be from a different source



The Data Behind the Gauges

- Use OLEDB, native PI access, and Web services
- Build specific KPI's and calcs for use in gauges



Data Security

- Active Directory Identity
- SharePoint Web Part Security
- SharePoint Roles

- Dataset Permissions
- User Account
- Password

- User security
 - Directory Services
 - Application Security

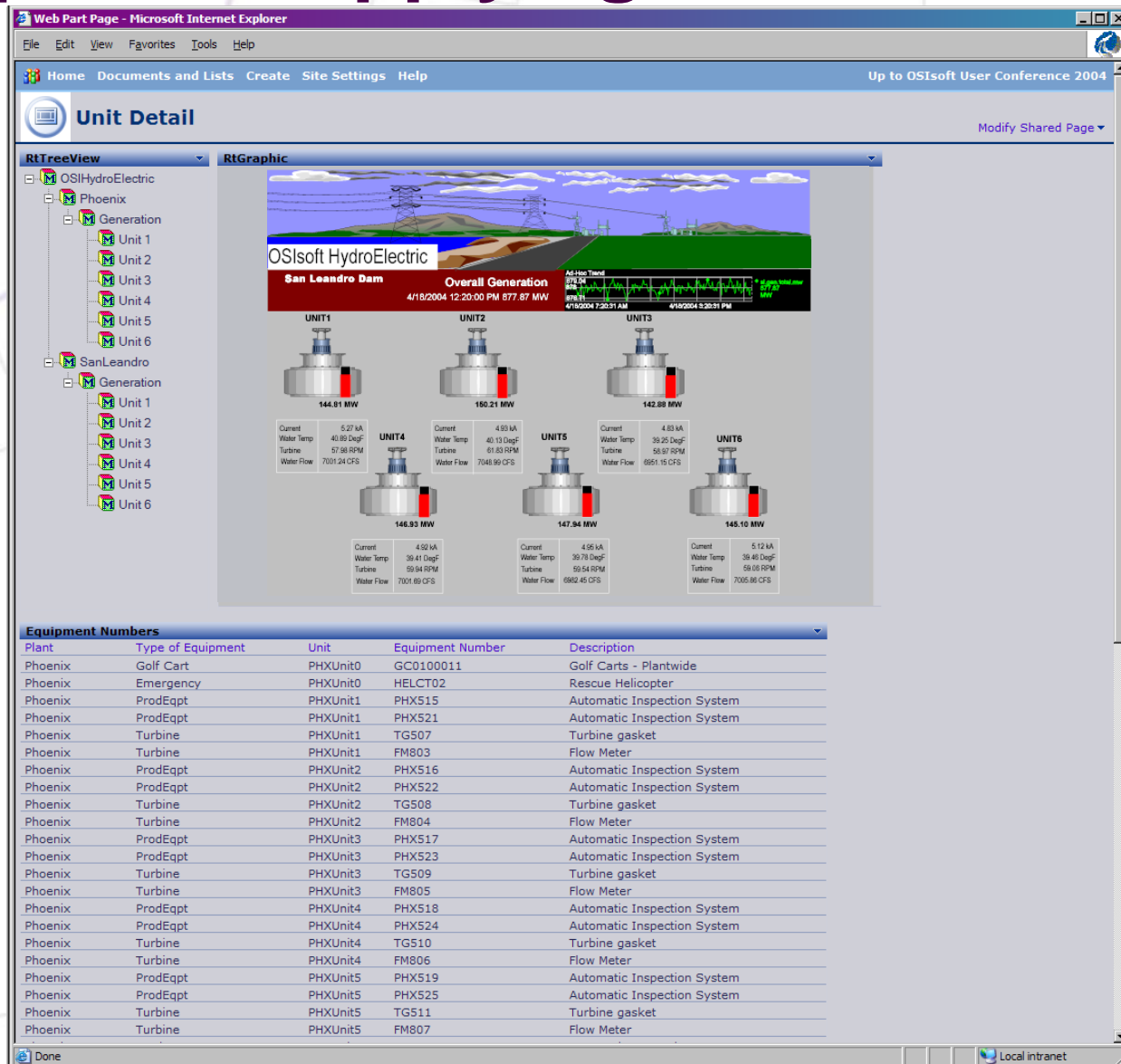
SharePoint &
RtWebParts

RtBaseline
Services

Relational
Database

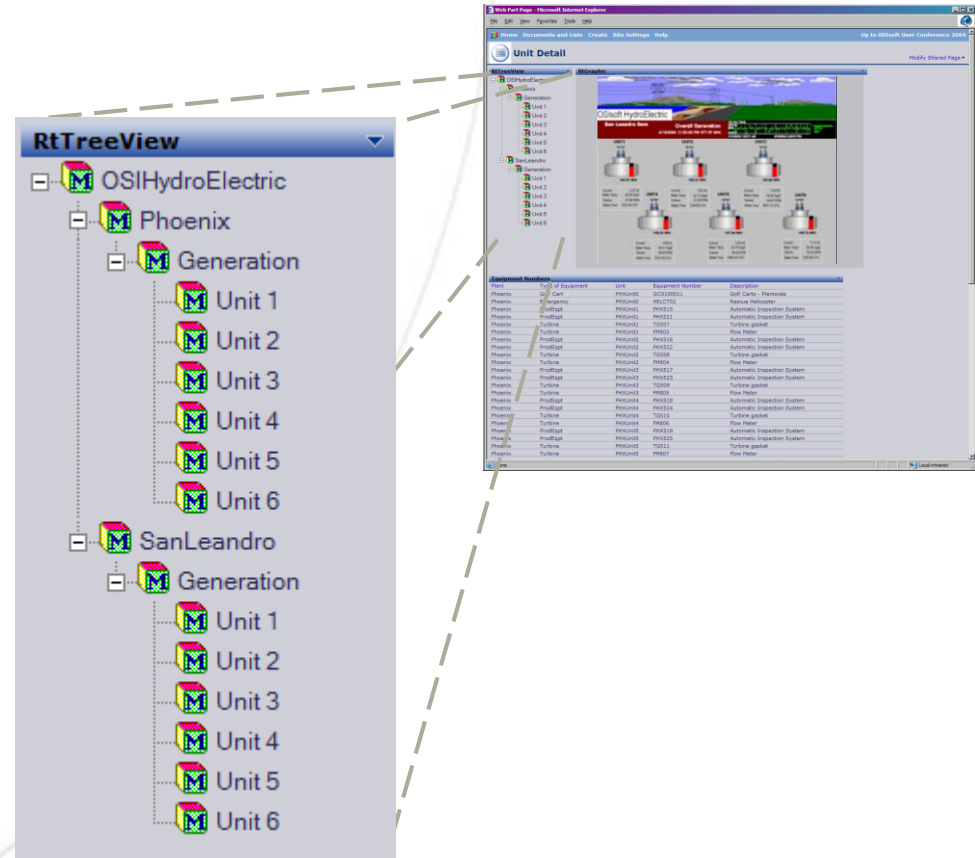


Example #2: Applying Context

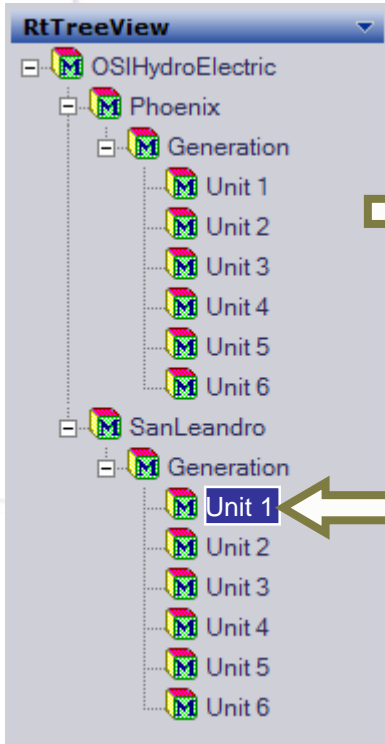


Web Parts Driving Context

- The RtTreeView can drive a page using contextual information
- RtWebParts use the SharePoint connection infrastructure to do inter-part communication

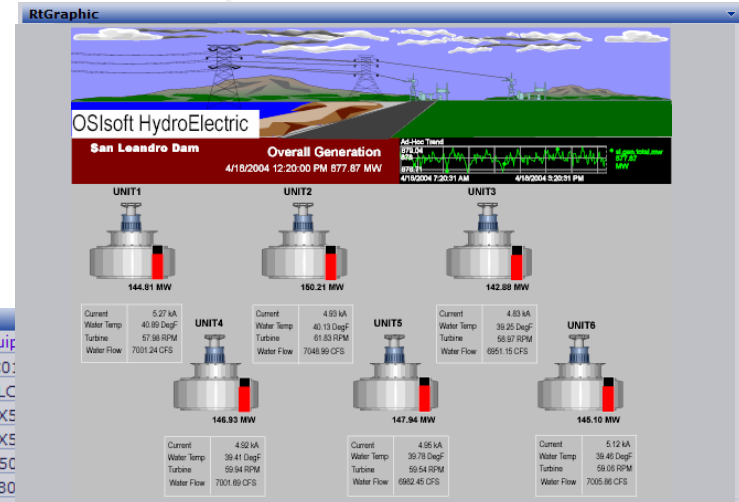


Connections Pass Information



Equipment Numbers

Plant	Type of Equipment	Unit	Equip
Phoenix	Golf Cart	PHXUnit0	GC01
Phoenix	Emergency	PHXUnit0	HELC
Phoenix	ProdEqpt	PHXUnit1	PHX516
Phoenix	ProdEqpt	PHXUnit1	PHX522
Phoenix	Turbine	PHXUnit1	TG508
Phoenix	Turbine	PHXUnit1	FM804
Phoenix	ProdEqpt	PHXUnit2	PHX517
Phoenix	ProdEqpt	PHXUnit2	PHX523
Phoenix	Turbine	PHXUnit2	TG509
Phoenix	Turbine	PHXUnit2	FM805
Phoenix	ProdEqpt	PHXUnit3	PHX518
Phoenix	ProdEqpt	PHXUnit3	PHX524
Phoenix	Turbine	PHXUnit3	TG510
Phoenix	Turbine	PHXUnit3	FM806
Phoenix	ProdEqpt	PHXUnit4	PHX519
Phoenix	ProdEqpt	PHXUnit4	PHX525
Phoenix	Turbine	PHXUnit4	TG511
Phoenix	Turbine	PHXUnit4	FM807



SharePoint &
RtWebParts



RtBaseline
Services

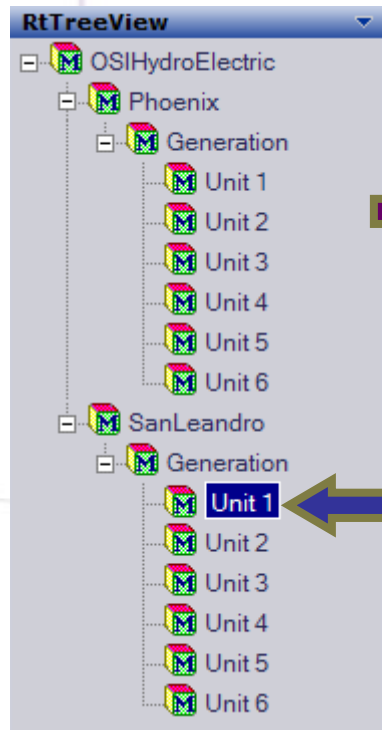


PI Server



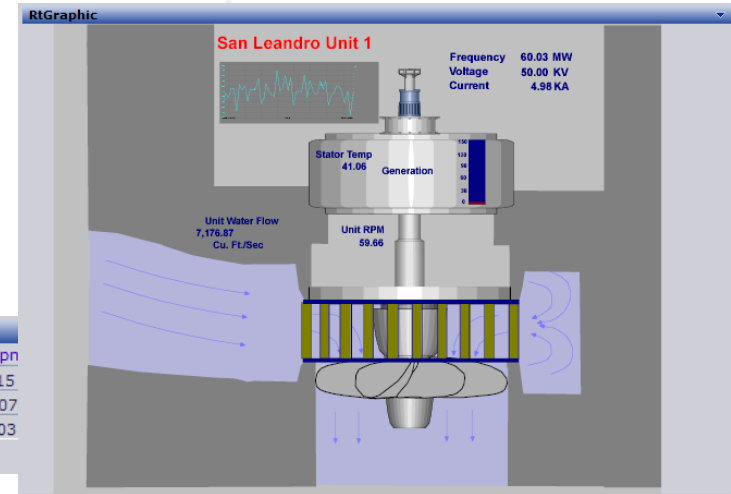
Context
Meta Data

Information Changes to Match the Selection



- File Path
- Unit Name
- Aliases

Plant	Type of Equipment	Unit	Equipn
SanLeandro	ProdEqpt	SLUnit1	SL515
SanLeandro	Turbine	SLUnit1	TG507
SanLeandro	Turbine	SLUnit1	FM803
Add new item			

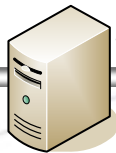


- Aliases
- Properties
- Data sources

SharePoint &
RtWebParts



RtBaseline
Services



PI Server &
Module Database



- Web parts use context information to filter information, alter database queries, or navigate to new pages and graphics



Before Applying Context

Web Part Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Home Documents and Lists Create Site Settings Help Up to OSIsoft User Conference 2004

Unit Detail

Modify Shared Page ▾

RtTreeView

- OSIHydroElectric
 - Phoenix
 - Generation
 - Unit 1
 - Unit 2
 - Unit 3
 - Unit 4
 - Unit 5
 - Unit 6
 - SanLeandro
 - Unit 1
 - Unit 2
 - Unit 3
 - Unit 4
 - Unit 5
 - Unit 6

RtGraphic

Equipment Numbers

Plant	Type of Equipment	Unit	Equipment Number	Description
Phoenix	Golf Cart	PHXUnit0	GC0100011	Golf Carts - Plantwide
Phoenix	Emergency	PHXUnit0	HELCT02	Rescue Helicopter
Phoenix	ProdEqpt	PHXUnit1	PHX515	Automatic Inspection System
Phoenix	ProdEqpt	PHXUnit1	PHX521	Automatic Inspection System
Phoenix	Turbine	PHXUnit1	TG507	Turbine gasket
Phoenix	Turbine	PHXUnit1	FM803	Flow Meter
Phoenix	ProdEqpt	PHXUnit2	PHX516	Automatic Inspection System
Phoenix	ProdEqpt	PHXUnit2	PHX522	Automatic Inspection System
Phoenix	Turbine	PHXUnit2	TG508	Turbine gasket
Phoenix	Turbine	PHXUnit2	FM804	Flow Meter
Phoenix	ProdEqpt	PHXUnit3	PHX517	Automatic Inspection System
Phoenix	ProdEqpt	PHXUnit3	PHX523	Automatic Inspection System
Phoenix	Turbine	PHXUnit3	TG509	Turbine gasket
Phoenix	Turbine	PHXUnit3	FM805	Flow Meter
Phoenix	ProdEqpt	PHXUnit4	PHX518	Automatic Inspection System
Phoenix	ProdEqpt	PHXUnit4	PHX524	Automatic Inspection System
Phoenix	Turbine	PHXUnit4	TG510	Turbine gasket
Phoenix	Turbine	PHXUnit4	FM806	Flow Meter
Phoenix	ProdEqpt	PHXUnit5	PHX519	Automatic Inspection System
Phoenix	ProdEqpt	PHXUnit5	PHX525	Automatic Inspection System
Phoenix	Turbine	PHXUnit5	TG511	Turbine gasket
Phoenix	Turbine	PHXUnit5	FM807	Flow Meter

Done Local intranet

The Resulting Page

The screenshot shows a web browser window displaying a 'Unit Detail' page. The page features a left-hand navigation pane with a tree view showing the hierarchy: OSIHydroElectric > Phoenix > Generation > Unit 1. A blue arrow points to 'Unit 1'. The main content area displays a 3D model of a turbine. Above the model, a small graph shows a fluctuating signal. To the right of the model, a table lists key performance indicators: Frequency (60.03 MW), Voltage (50.00 KV), and Current (4.98 KA). Below the model, a table titled 'Equipment Numbers' lists various components and their descriptions. At the bottom, a table titled 'Unit Files' lists documents related to the unit, including configuration files, reports, and a diagram.

San Leandro Unit 1

Frequency 60.03 MW
Voltage 50.00 KV
Current 4.98 KA

Stator Temp 41.06
Generation
Unit RPM 59.66

Unit Water Flow 7,176.87 Cu. Ft./Sec

Equipment Numbers

Plant	Type of Equipment	Unit	Equipment Number	Description
SanLeandro	ProdEqpt	SLUnit1	SL515	Automatic Inspection System
SanLeandro	Turbine	SLUnit1	TG507	Turbine gasket
SanLeandro	Turbine	SLUnit1	FM803	Flow Meter

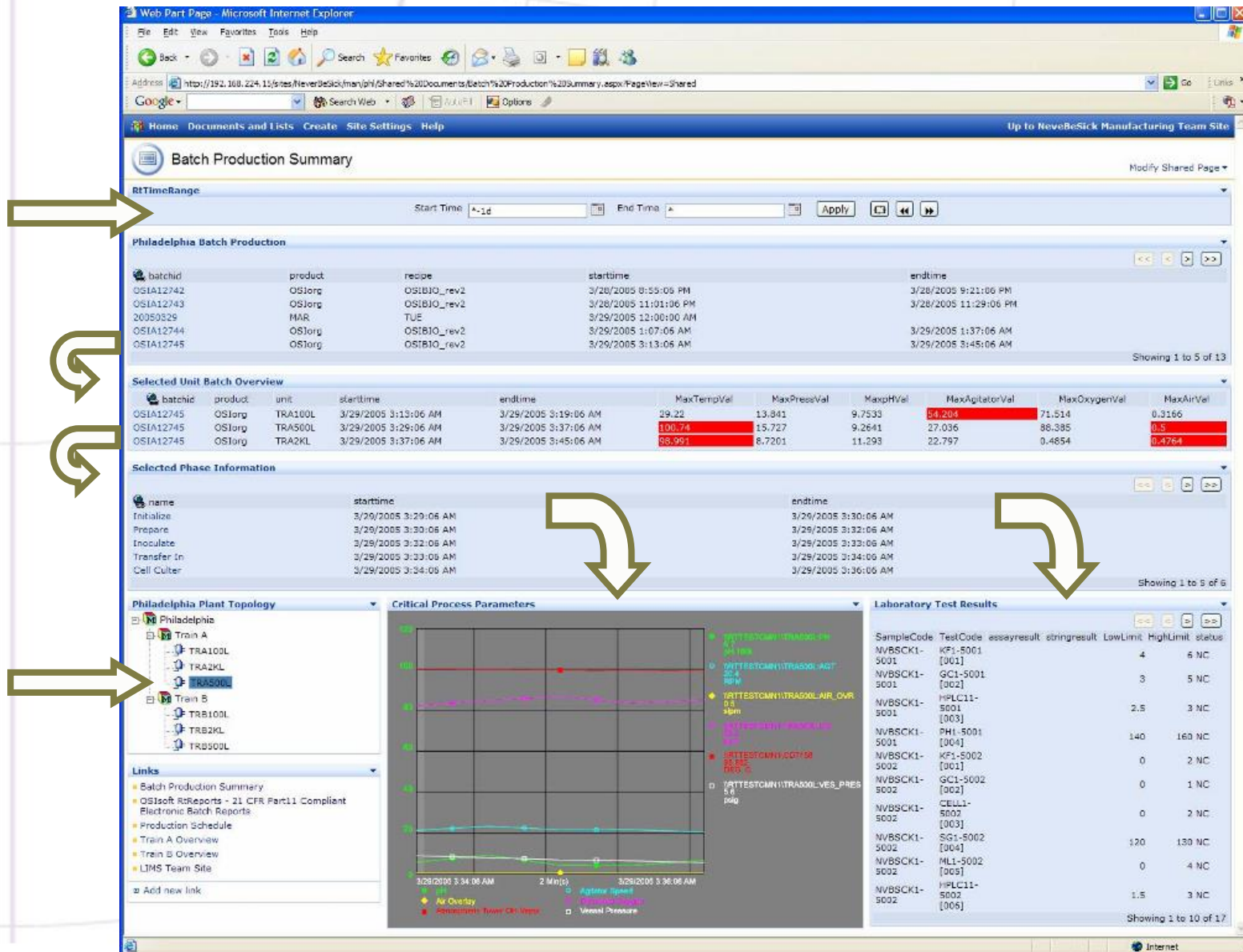
[Add new item](#)

Unit Files

Plant	Unit	Type	Name	Modified	Modified By	Checked Out To
SanLeandro	SLUnit1	DataSetConfig	DataSetConfig	5/23/2004 1:52 PM	Michelle Kuiee	
SanLeandro	SLUnit1	DataSetPreview	DataSetPreview	5/23/2004 1:52 PM	Michelle Kuiee	
SanLeandro	SLUnit1	Unit Report	Unit Report	5/23/2004 1:54 PM	Michelle Kuiee	
SanLeandro	SLUnit1	usa_dl_rep	usa_dl_rep	5/23/2004 2:27 PM	Michelle Kuiee	

[Add new document](#)

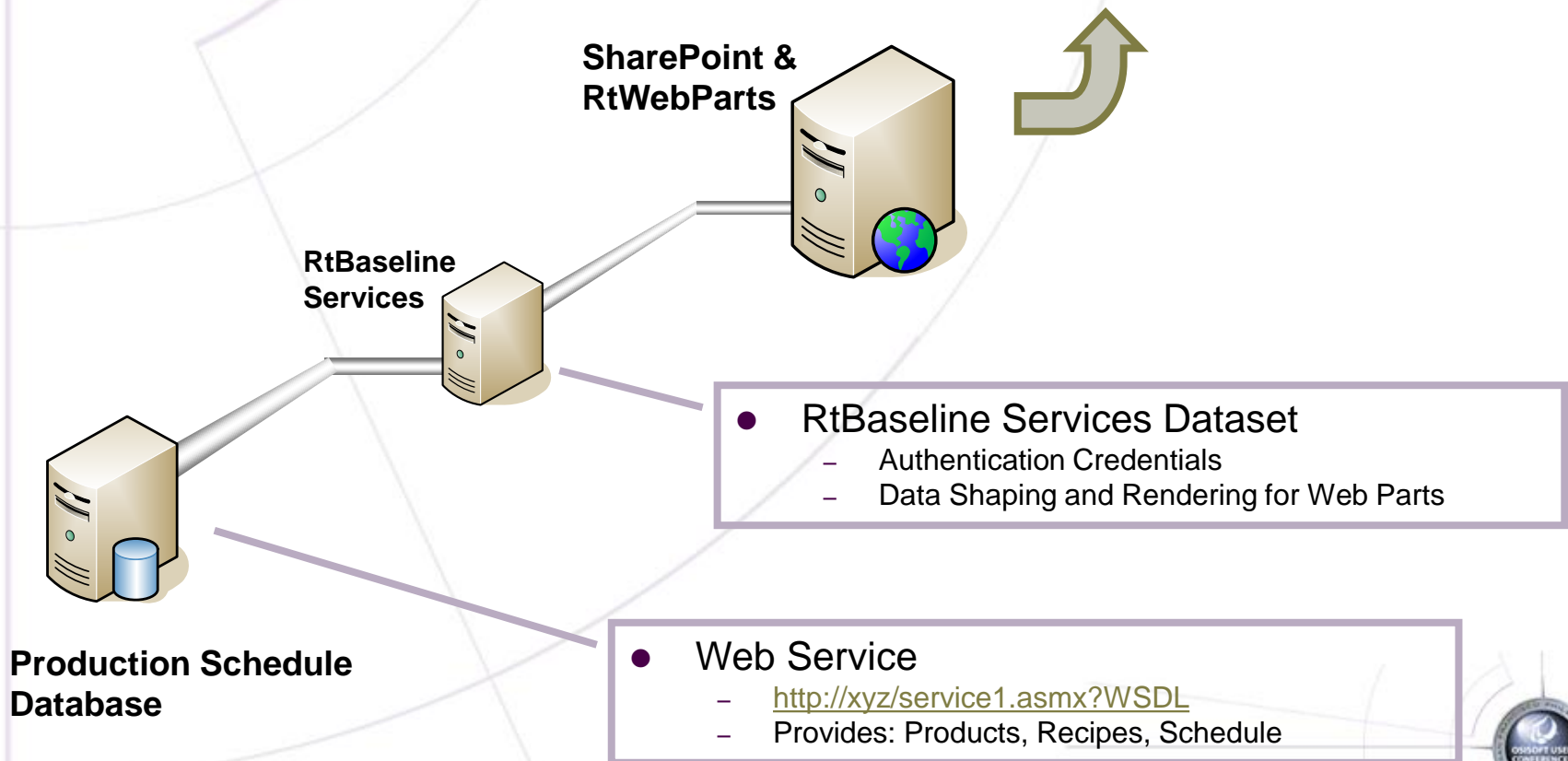
Example #3: Context Between Data Sources



Production Information

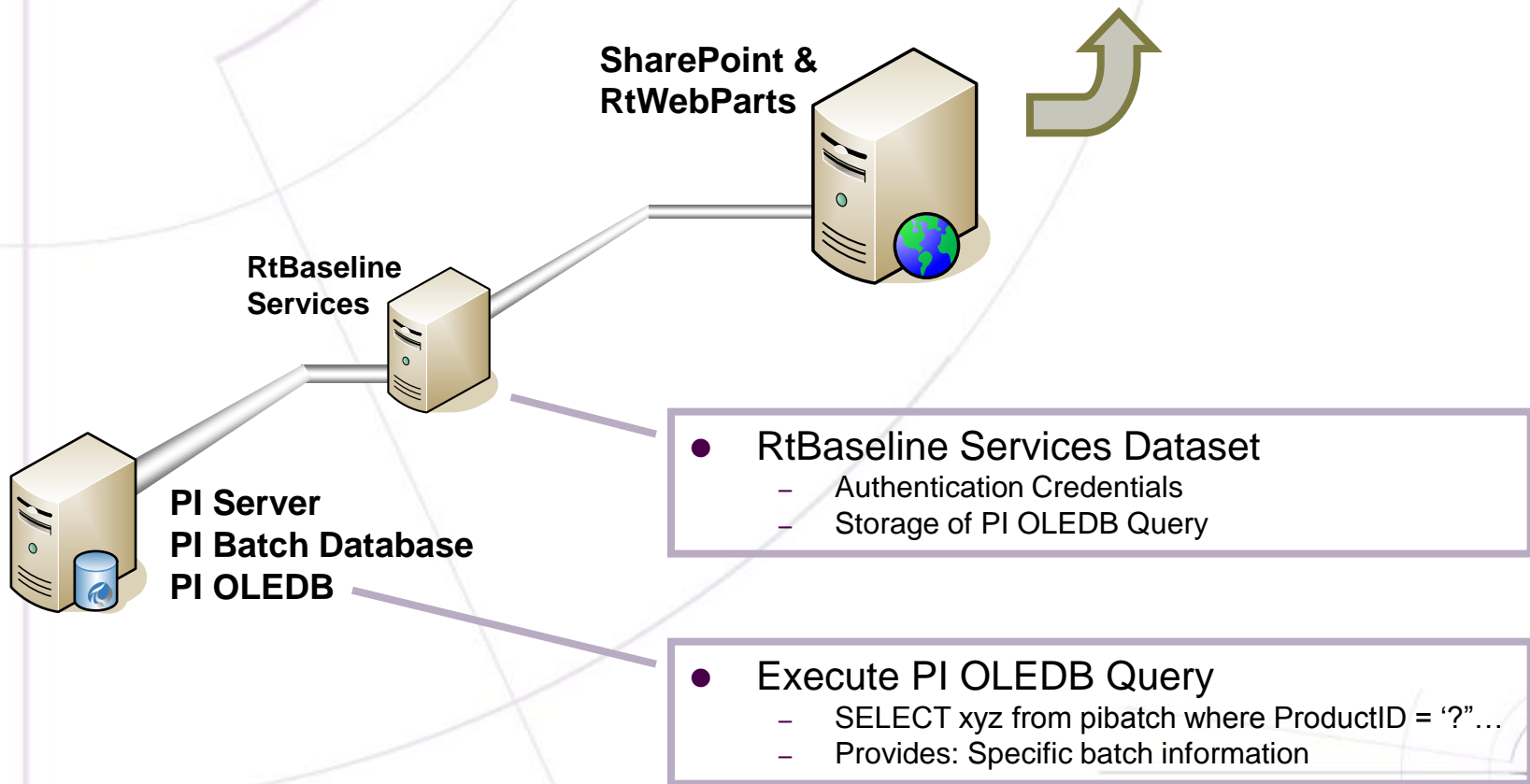
batchid	product	recipe	starttime	endtime
OSIA12742	OSIorg	OSIBIO_rev2	3/28/2005 8:55:06 PM	3/28/2005 9:21:06 PM
OSIA12743	OSIorg	OSIBIO_rev2	3/28/2005 11:01:06 PM	3/28/2005 11:29:06 PM
20050329	MAR	TUE	3/29/2005 12:00:00 AM	
OSIA12744	OSIorg	OSIBIO_rev2	3/29/2005 1:07:06 AM	3/29/2005 1:37:06 AM
OSIA12745	OSIorg	OSIBIO_rev2	3/29/2005 3:13:06 AM	3/29/2005 3:45:06 AM

Showing 1 to 5 of 13



PI Batch Data

Selected Unit Batch Overview										
batchid	product	unit	starttime	endtime	MaxTempVal	MaxPressVal	MaxpHVal	MaxAgitatorVal	MaxOxygenVal	MaxAirVal
OSIA12745	OSIorg	TRA100L	3/29/2005 3:13:06 AM	3/29/2005 3:19:06 AM	29.22	13.841	9.7533	54.204	71.514	0.3166
OSIA12745	OSIorg	TRA500L	3/29/2005 3:29:06 AM	3/29/2005 3:37:06 AM	100.74	15.727	9.2641	27.036	88.385	0.5
OSIA12745	OSIorg	TRA2KL	3/29/2005 3:37:06 AM	3/29/2005 3:45:06 AM	98.991	8.7201	11.293	22.797	0.4854	0.4764



The Tale of Two Tables

- Pass a key parameter to another table via SharePoint's Web Part Connections

Philadelphia Batch Production

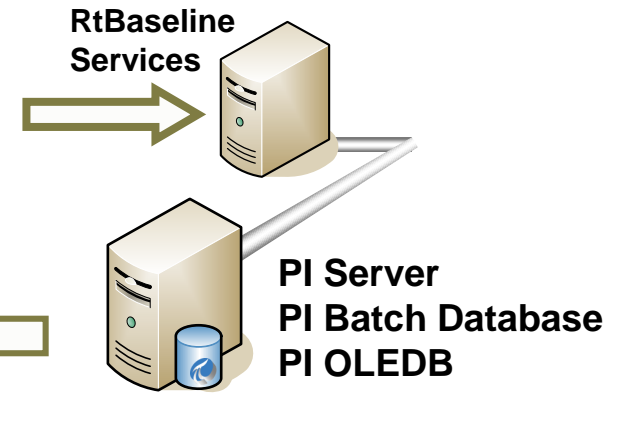
batchid	product	recipe	starttime	endtime
OSIA12742	OSIorg	OSIBIO_rev2	3/28/2005 8:55:06 PM	3/28/2005 9:21:06 PM
OSIA12743	OSIorg	OSIBIO_rev2	3/28/2005 11:01:06 PM	3/28/2005 11:29:06 PM
20050329	MAR	TUE	3/29/2005 12:00:00 AM	
OSIA12744	OSIorg	OSIBIO_rev2	3/29/2005 1:07:06 AM	3/29/2005 1:37:06 AM
	OSIorg	OSIBIO_rev2	3/29/2005 3:13:06 AM	3/29/2005 3:45:06 AM

Showing 1 to 5 of 13



Query: Select * from table where ProdID is "?" order by StartTime

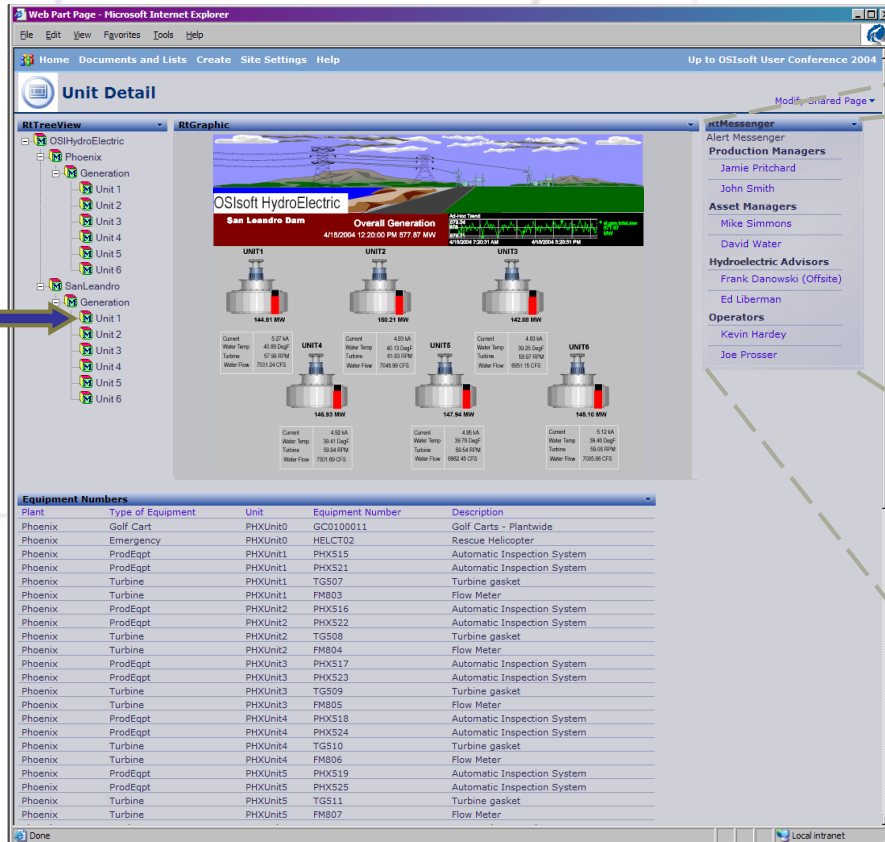
- Re-query RtBaseline Services to return new information



Selected Unit Batch Overview

batchid	product	unit	starttime	endtime	MaxTempVal	MaxPressVal	MaxpHVal	MaxAgitatorVal	MaxOxygenVal	MaxAirVal
OSIA12745	OSIorg	TRA100L	3/29/2005 3:13:06 AM	3/29/2005 3:19:06 AM	29.22	13.841	9.7533	54.204	71.514	0.3166
OSIA12745	OSIorg	TRA500L	3/29/2005 3:29:06 AM	3/29/2005 3:37:06 AM	100.74	15.727	9.2641	27.036	88.385	0.5
OSIA12745	OSIorg	TRA2KL	3/29/2005 3:37:06 AM	3/29/2005 3:45:06 AM	98.991	8.7201	11.293	22.797	0.4854	0.4764

Example #4: Involving Communications



RtMessenger

Alert Messenger

Production Managers

Jamie Pritchard

John Smith

Asset Managers

Mike Simmons

David Water

Hydroelectric Advisors

Frank Danowski (Offsite)

Ed Liberman

Operators

Kevin Hardey

Joe Prosser

A Filtered, Relevant Contact List

The screenshot shows a web application interface with a left sidebar containing a tree view of units. A blue arrow points to 'Unit 1' under the 'SanLeandro' category. The main content area displays a 3D diagram of a turbine unit with various data points: Frequency 60.03 MW, Voltage 50.00 kV, Current 4.88 KA, Stator Temp 41.06, Unit Water Flow 7.176.87 Cu FL/Sec, and Unit RPM 59.66. Below the diagram are two tables: 'Equipment Numbers' and 'Unit Files'. On the right, a 'RtMessenger' window is open, displaying a filtered contact list for 'Asset Managers', 'Reservoir Advisors', and 'Operators'.

RtMessenger
Alert Messenger
Asset Managers

- Mike Simmons
- David Water

Reservoir Advisors

- Frank Danowski (Offsite)
- Ed Liberman

Operators

- Kevin Hardey
- Joe Prosser

Equipment Numbers

Plant	Type of Equipment	Unit	Equipment Number	Description
SanLeandro	ProdEqpt	SLUnit1	SL515	Automatic Inspection System
SanLeandro	Turbine	SLUnit1	TG507	Turbine gasket
SanLeandro	Turbine	SLUnit1	FM503	Flow Meter

Unit Files

Plant	Unit	Type Name	Modified	Modified By	Checked Out To
SanLeandro	SLUnit1	DataSetConfig	5/23/2004 1:52 PM	Michelle Kuiee	
SanLeandro	SLUnit1	DataSetPreview	5/23/2004 1:52 PM	Michelle Kuiee	
SanLeandro	SLUnit1	Unit Report	5/23/2004 1:54 PM	Michelle Kuiee	
SanLeandro	SLUnit1	usa_d_rep	5/23/2004 2:27 PM	Michelle Kuiee	

- The contact list can be experts, location-based roles, or anyone who should be ready to support an information worker

OSIsoft's Visualization Roadmap

- Context and Data Integration

- Module Database Today
- Analysis Framework Today
- Foundation Coming Soon

- Visualization

- RtWebParts 1.0 Released
- RtWebParts 1.1
 - New parts like RtMessenger
 - More functionality
- ProcessBook 3.x and DataLink 3.x



Guidelines

- Start with a pilot project
- Incrementally build pages and applications
- Identify the potential users and their roles
- Research and understand business needs and requirements developing strong use cases
- Establish standards and practices in architecture and security
- Develop an enterprise naming convention
- Develop reusable KPI's, calculations and data queries



What to See at UC2k5

- Today
 - Analysis Framework Demo Pod
 - RtPortal Demo Pods & Expo Theatre Talks
 - RtWebParts, RtPortal iViews, ProcessBook & DataLink
- Tomorrow
 - Service Oriented Architecture Breakout
 - Analysis Framework Breakout
 - Foundation Ending Keynote
- Plus so much more!



Enabling Enterprise Visibility

Build Upon a Framework

- Visualize and collaborate using a standard platform
- Enable visibility through information sharing

Enhance Existing Processes

- Deliver a single version of the truth
- Give users information within applications that suit their roles

Create New Opportunities

- Promote collaboration across boundaries
- Fuel critical, informed, profitable actions

OSIsoft delivers portal components for Microsoft's SharePoint and SAP's Enterprise Portal frameworks that enable your Real-time Performance Management goals.

