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2009
SAN FRANCISCO

Extend Your PI Investment: *Deliver New Bottom Line Value in 30 Days*

Greg Kashmer - Dominion
Ed Yachimiak - AEP
Michael Saucier - Transpara

Empowering Business in Real Time
PI Infrastructure for the Enterprise

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Background

1 Minute Economic Refresher

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In the Beginning…

Source: AP Photo

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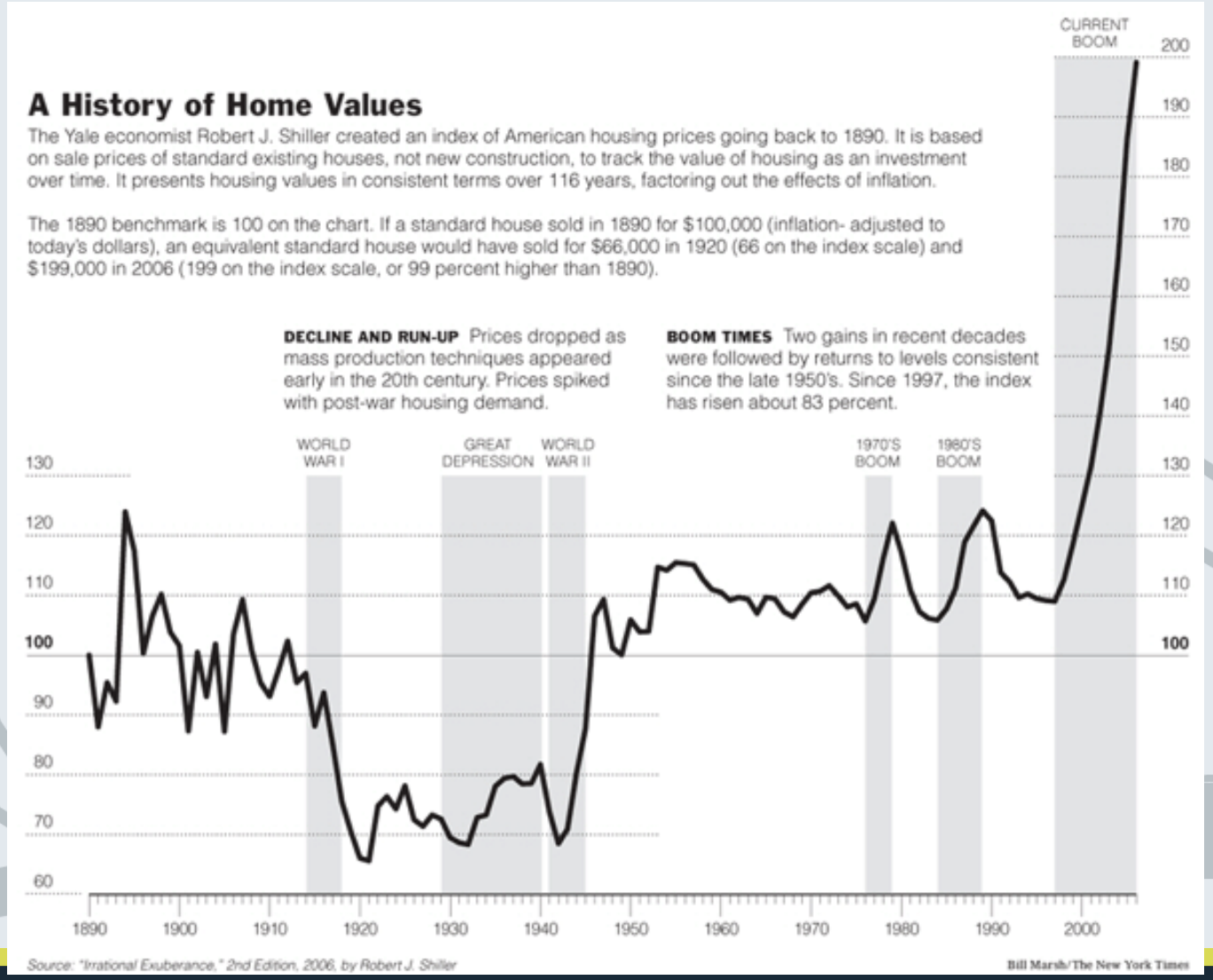
House Values Ballooned



Source: Irrational Exuberance, 2nd ed

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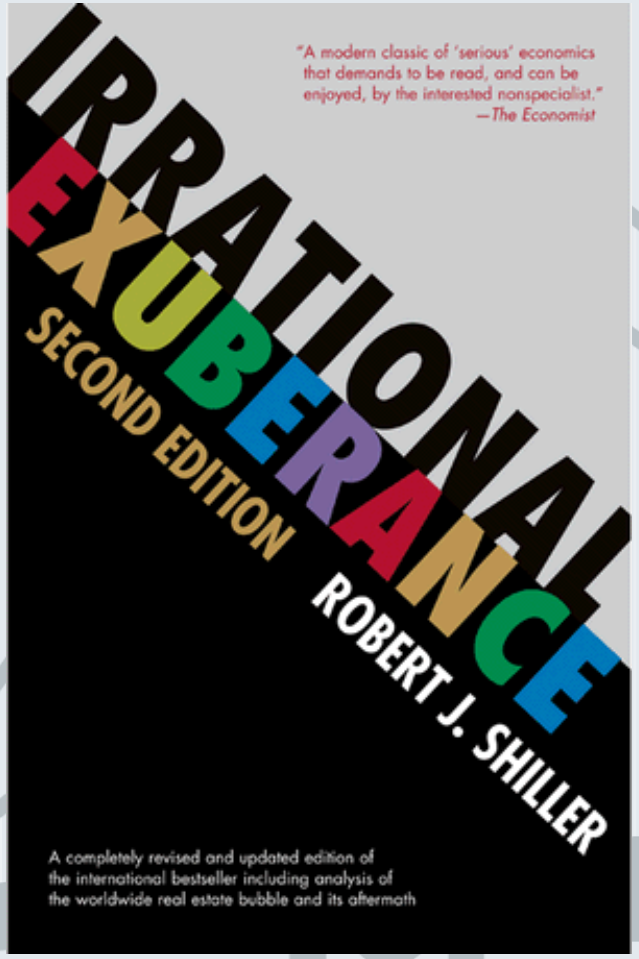
Homeowners Swooned



Source: Amazon.com

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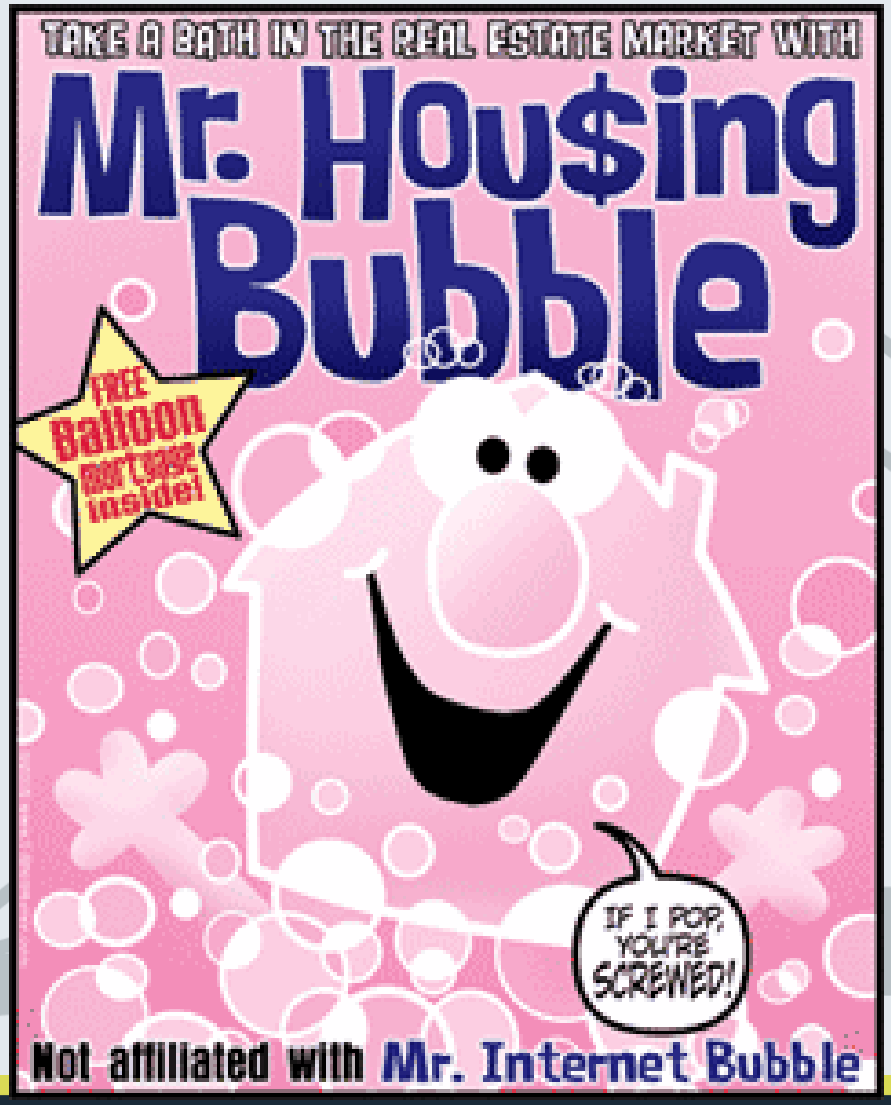
The Bubble Popped



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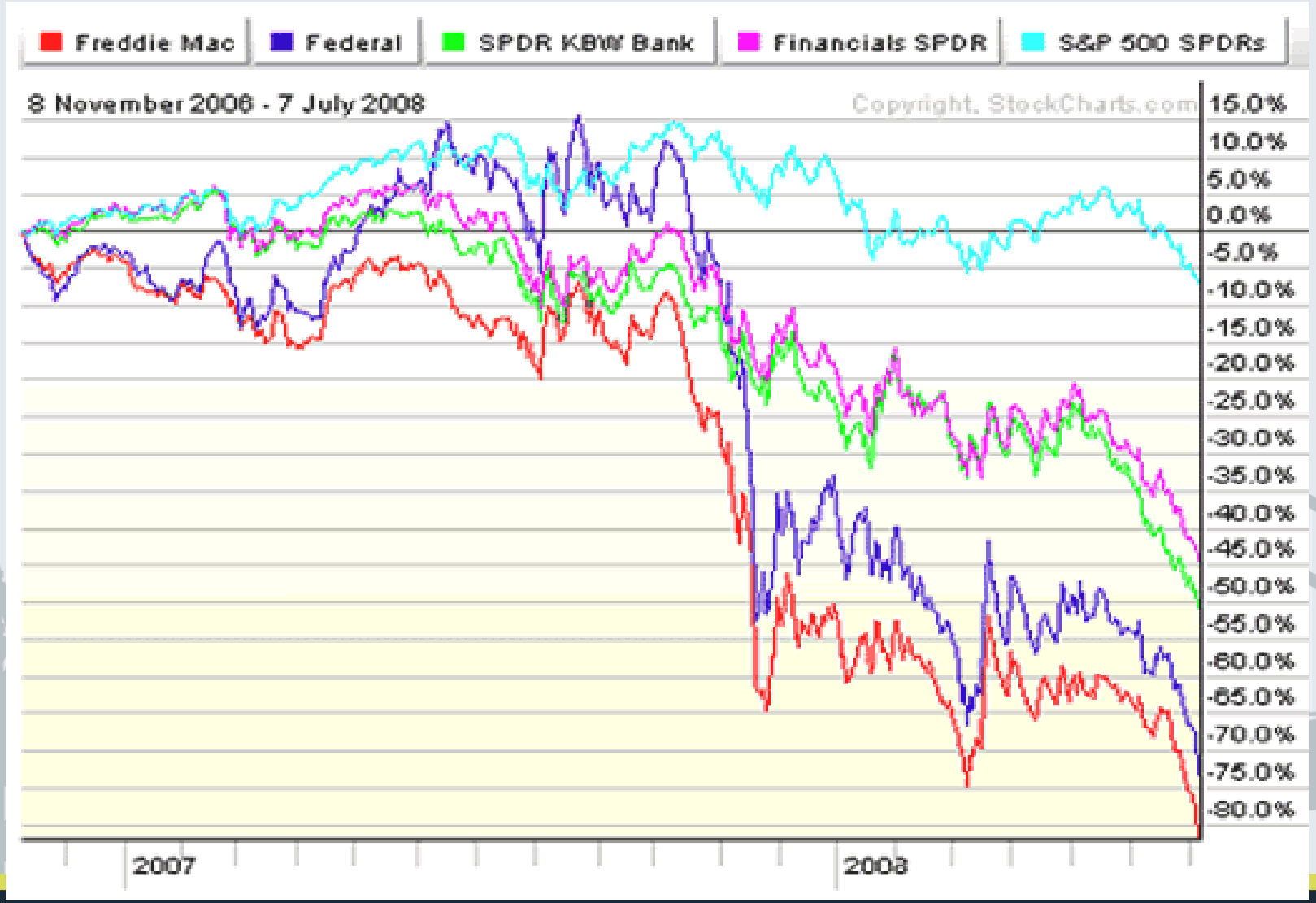
The Markets Flopped



Source: StockCharts.com

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The Economy Tanked

Source: Seattle Post-Intelligencer

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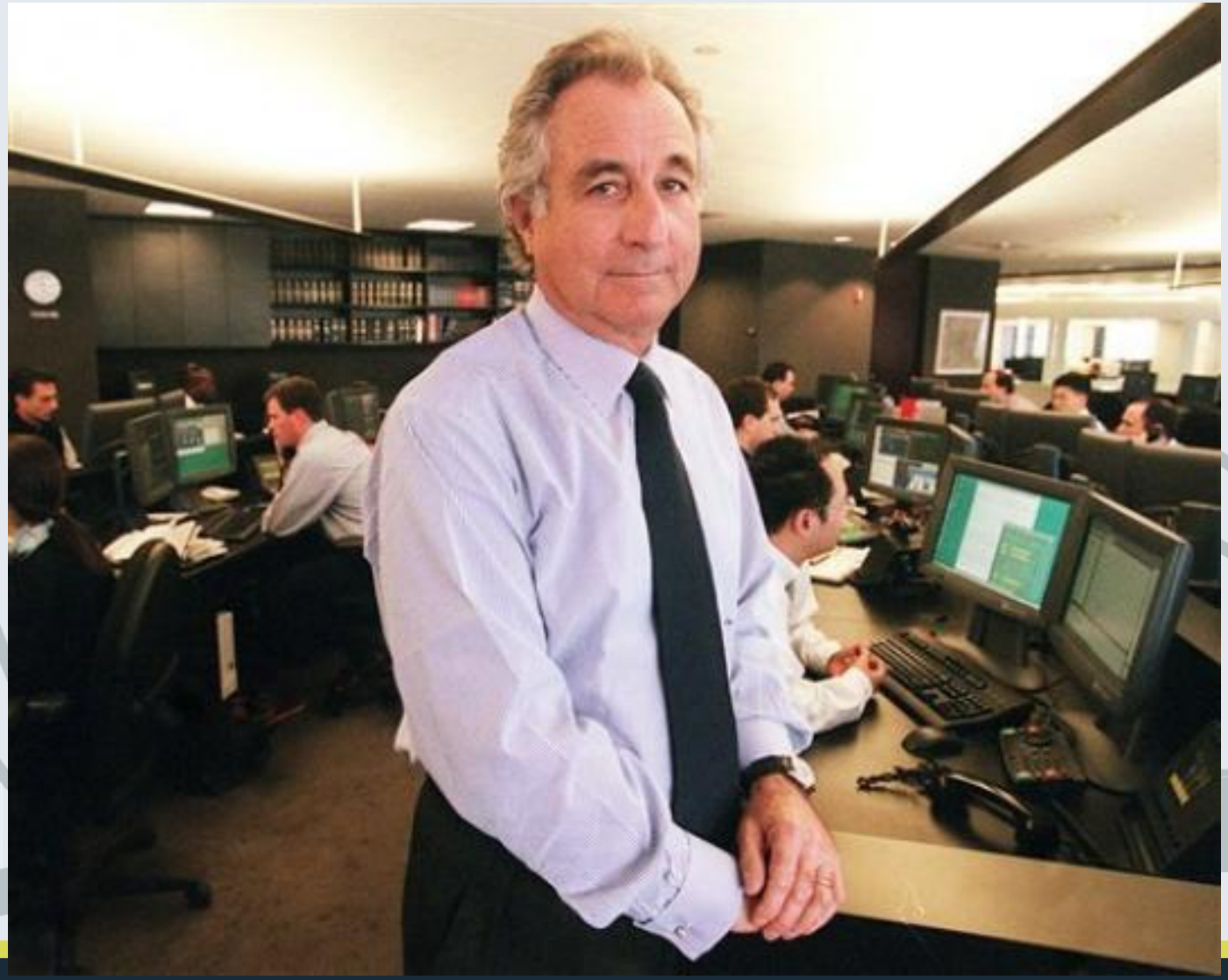
A Few Guilty Were Spanked



© Fox News

Source: nowholdon.wordpress.com

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Some Guilty Were Meaner

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Sent Us to the Cleaners

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Source: nowholdon.wordpress.com

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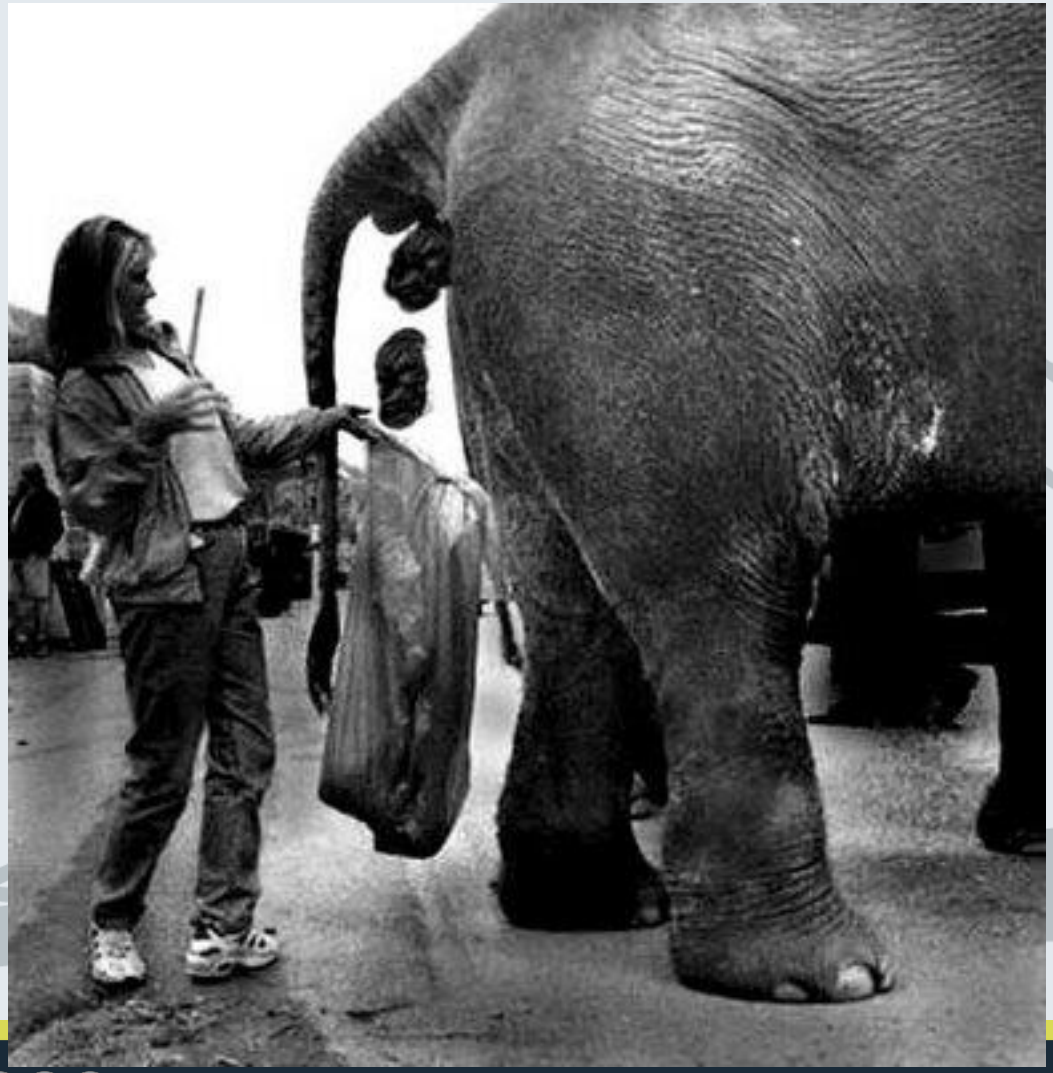
Or Just Left Us Holding the Bag



Source: AP Photo

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Problem

So Where

Are We ?

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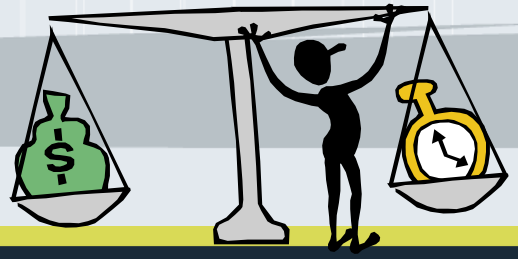
Projects Must Show Extremely Short-term Value



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But Long-Term Value is Still Important

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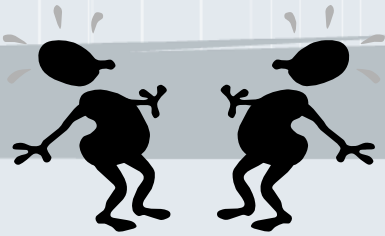
Approach

You Need *Both*



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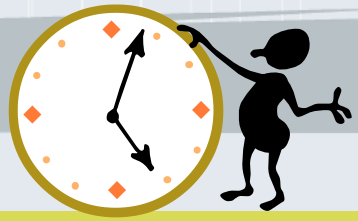
Value Now
And
Value Over Time



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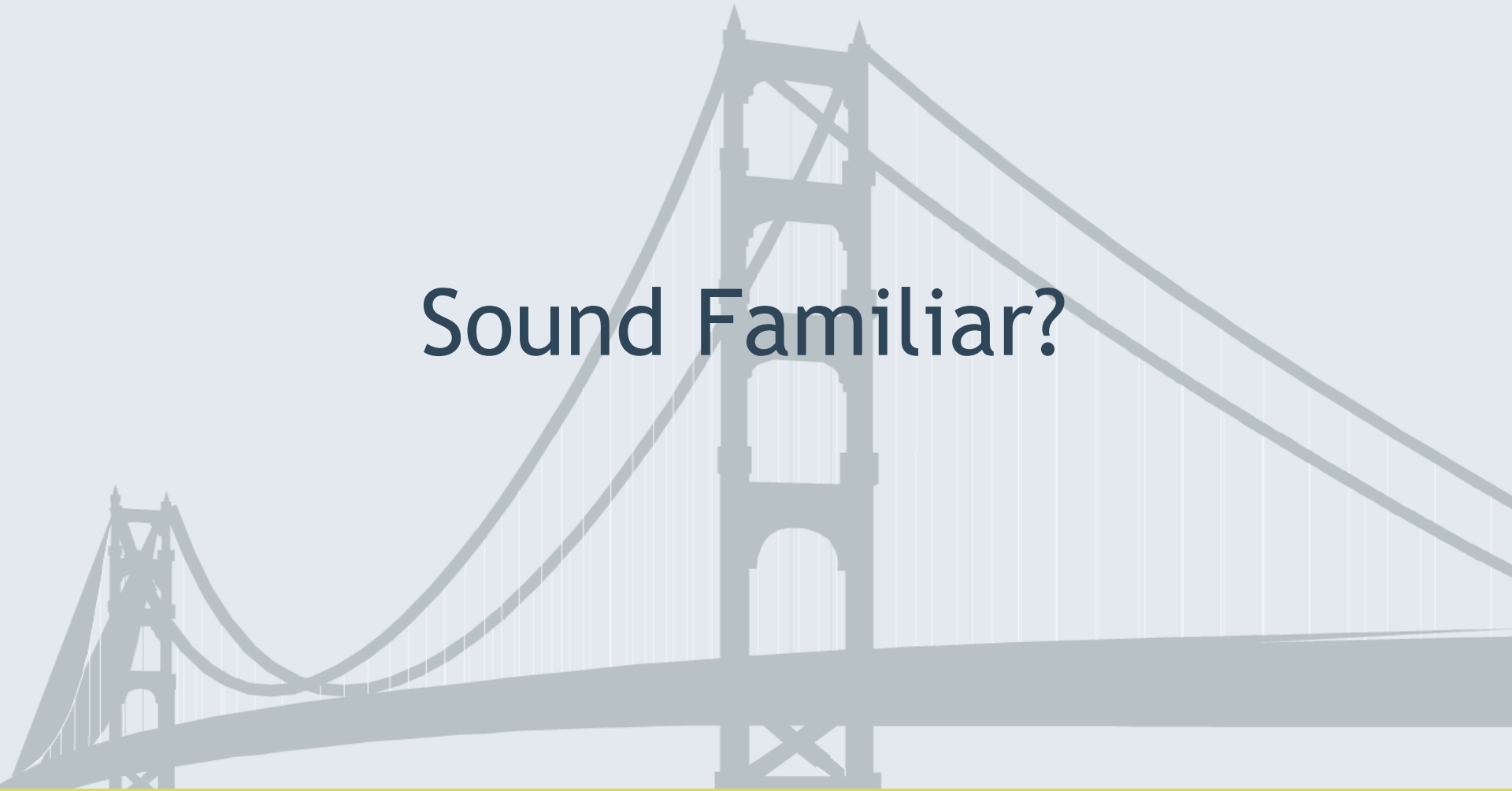

Sound Familiar?

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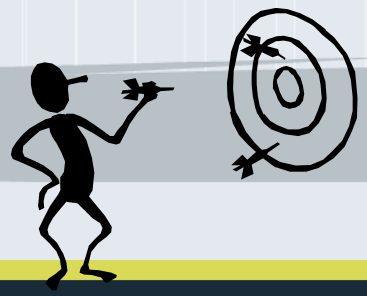
Focus Your Efforts



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Leverage PI !

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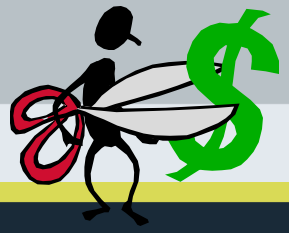
PI Projects:

Low Cost



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PI Projects:

Low Risk

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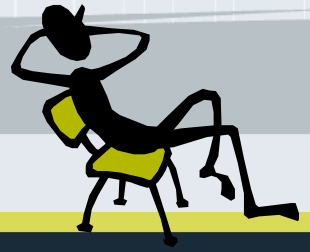
PI Projects:

Low Effort



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PI Projects:

Fast Time to Benefit

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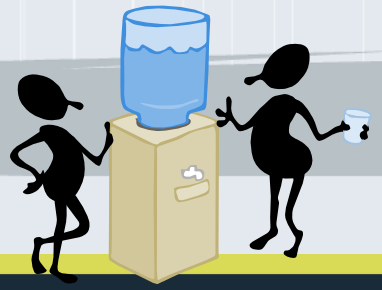
PI Projects:
Easily Socialized
for Quick Buy-In



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PI Projects:
Deliver Actionable Data
To Decision Makers

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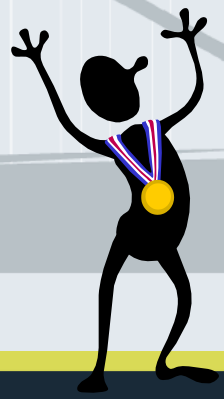
So Be A Hero



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Make Someone Say Wow!

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Put PI in Their Pocket

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Get Benefits Now.

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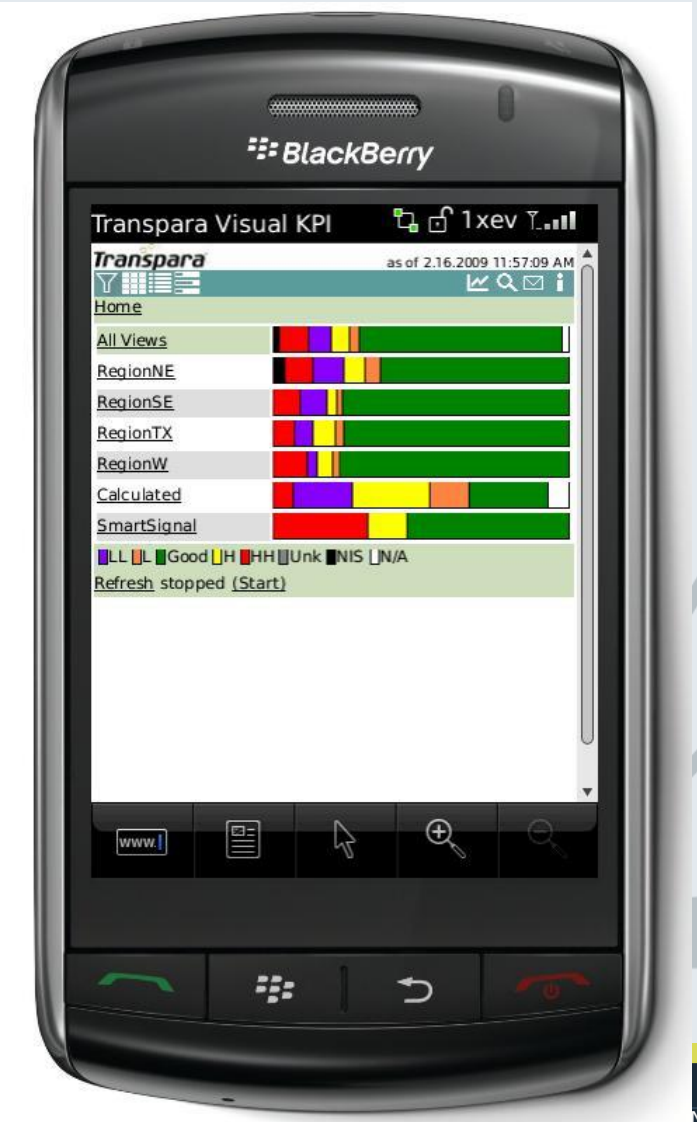
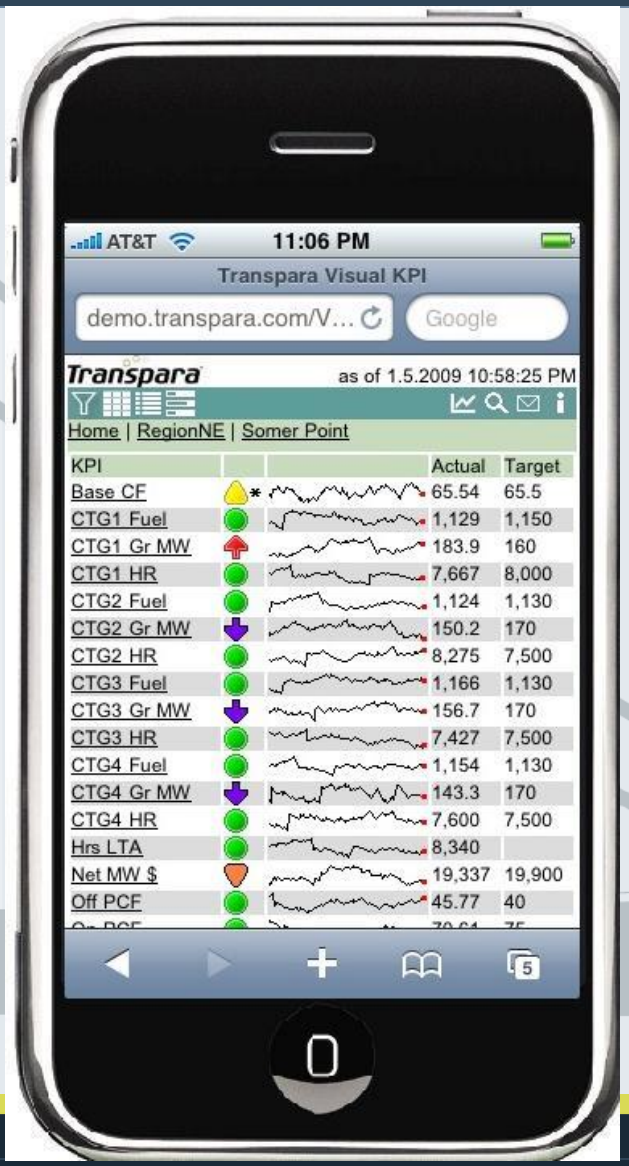
Visual KPI





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Visual KPI lets you

Take PI wherever you go !

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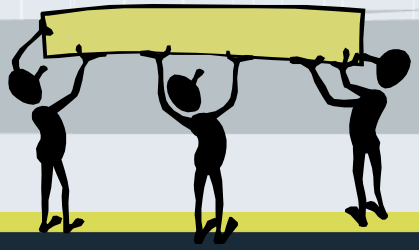
Solution

Visual KPI Creates

Spontaneous

Collaboration



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What's That?

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And Why Does it Matter?

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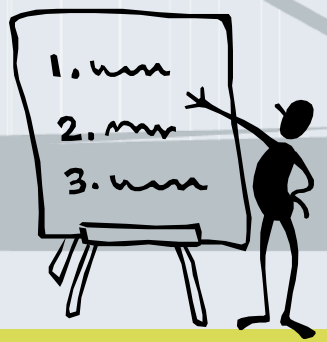
Example: Typical Project



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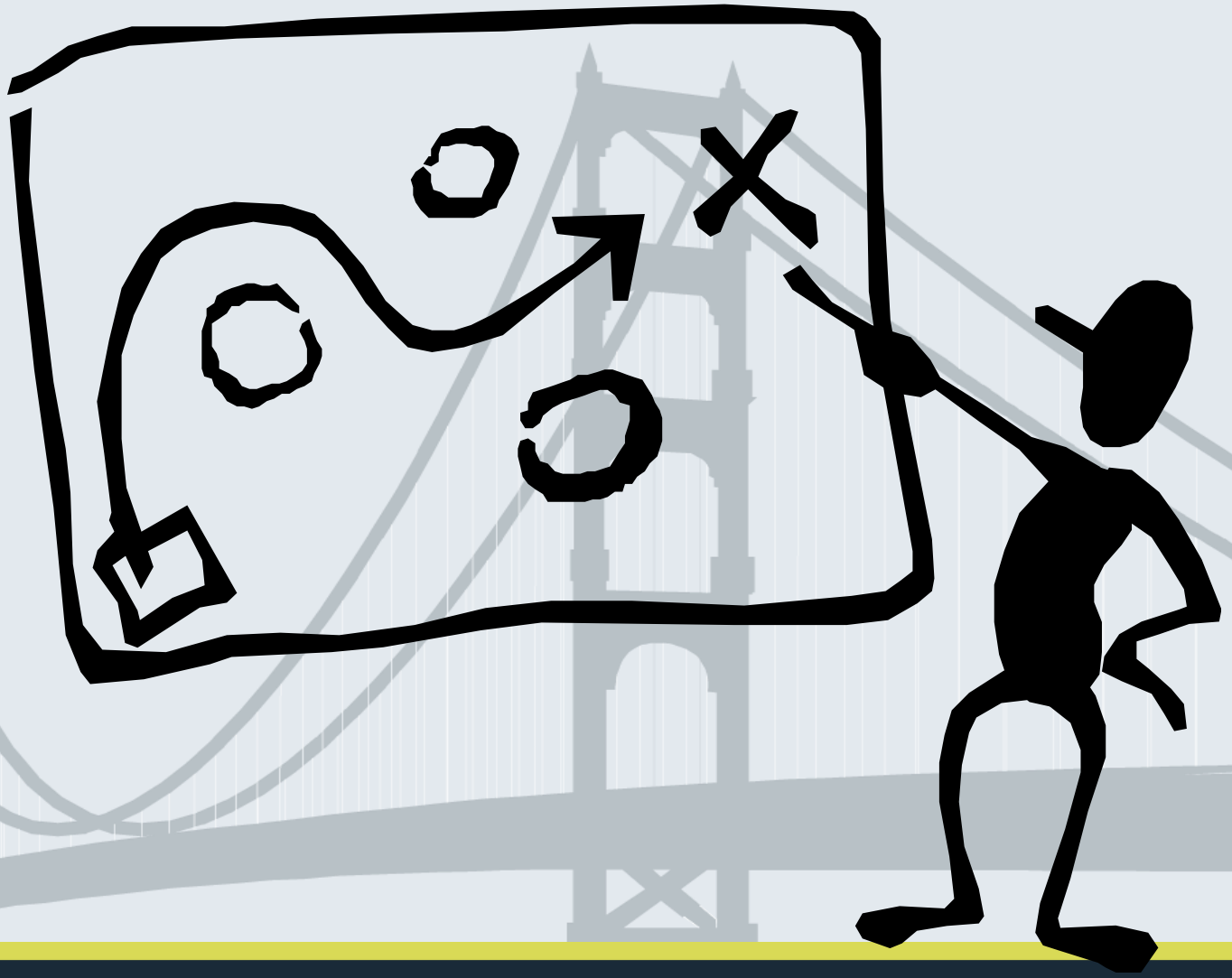

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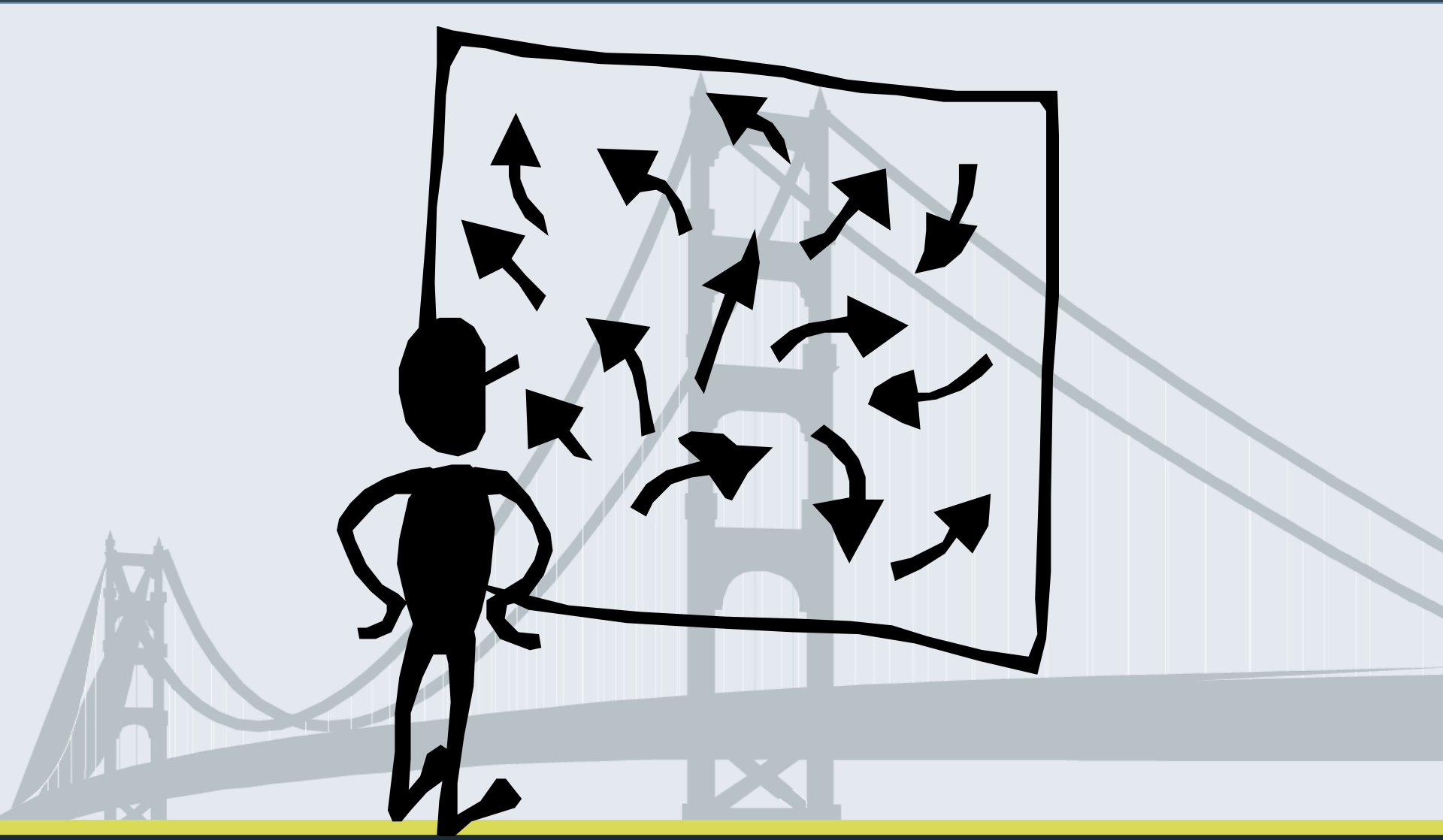

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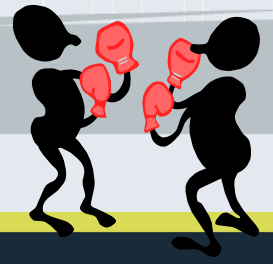
Chaos Happens When People Act on Conflicting Data



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Planned or Structured

Collaboration

Can Help

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But Requires

Many Meetings

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Central Control

Reduces Meetings

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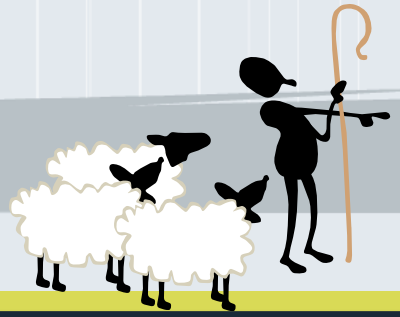
But Underutilizes People and Increases Bureaucracy



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People Will
Do the Right Thing

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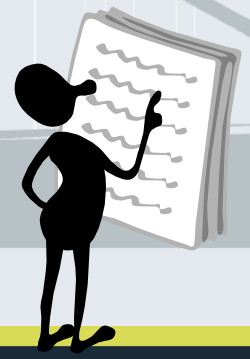
Given Reliable Metrics

For Decision Making



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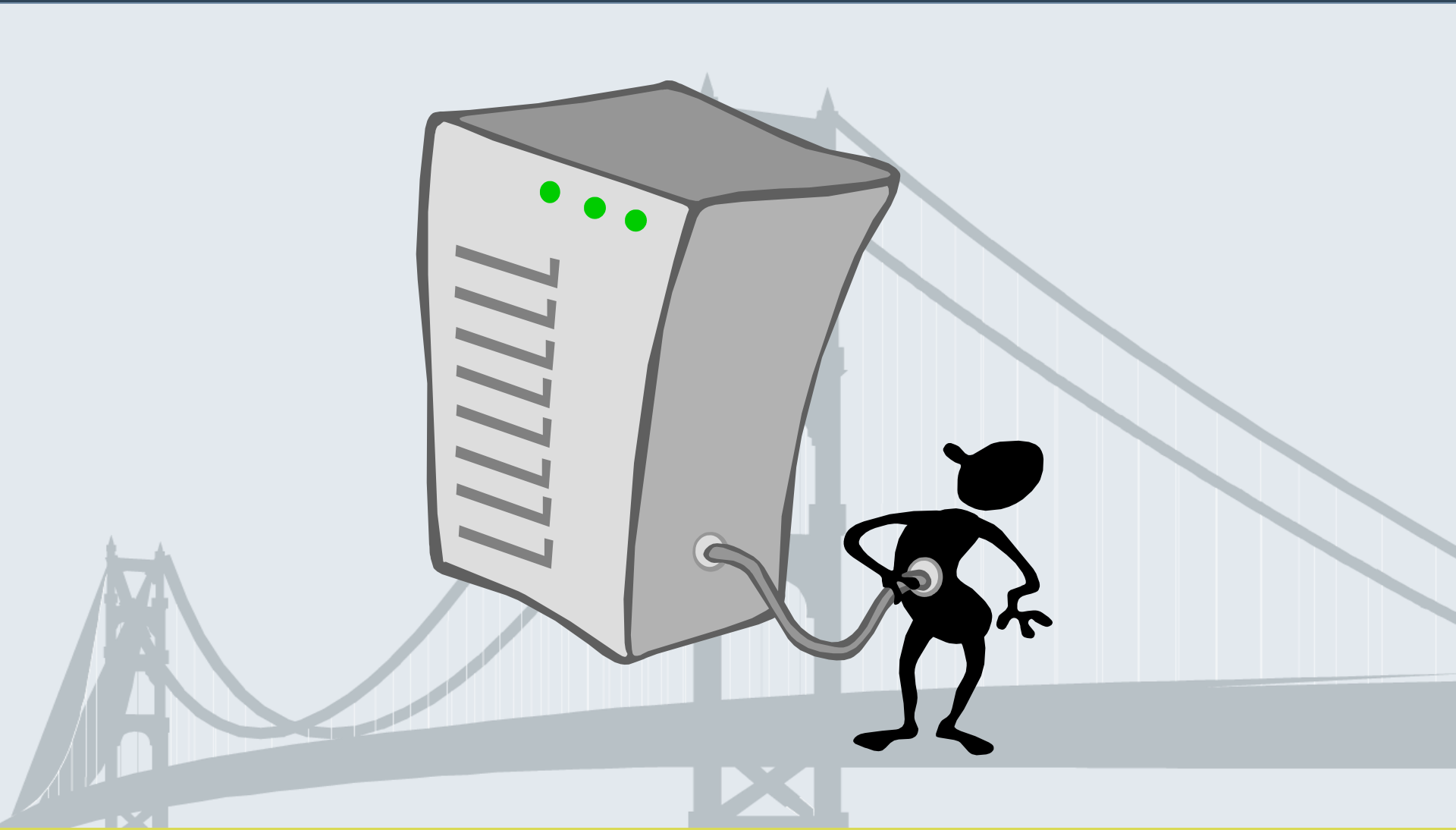

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So

Spontaneous Collaboration

is …..

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Answer

Teamwork Without

Meetings or Mandates

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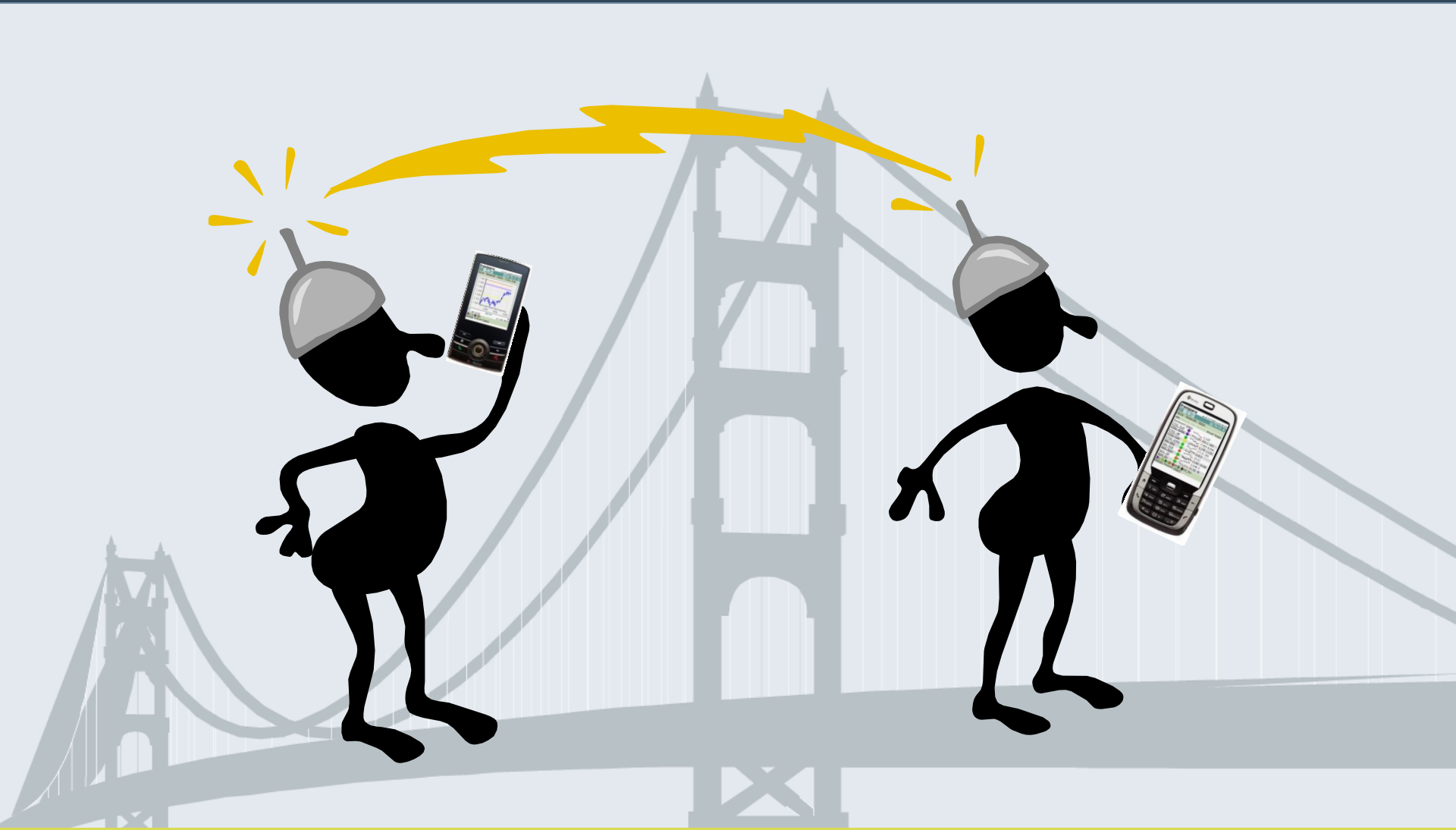

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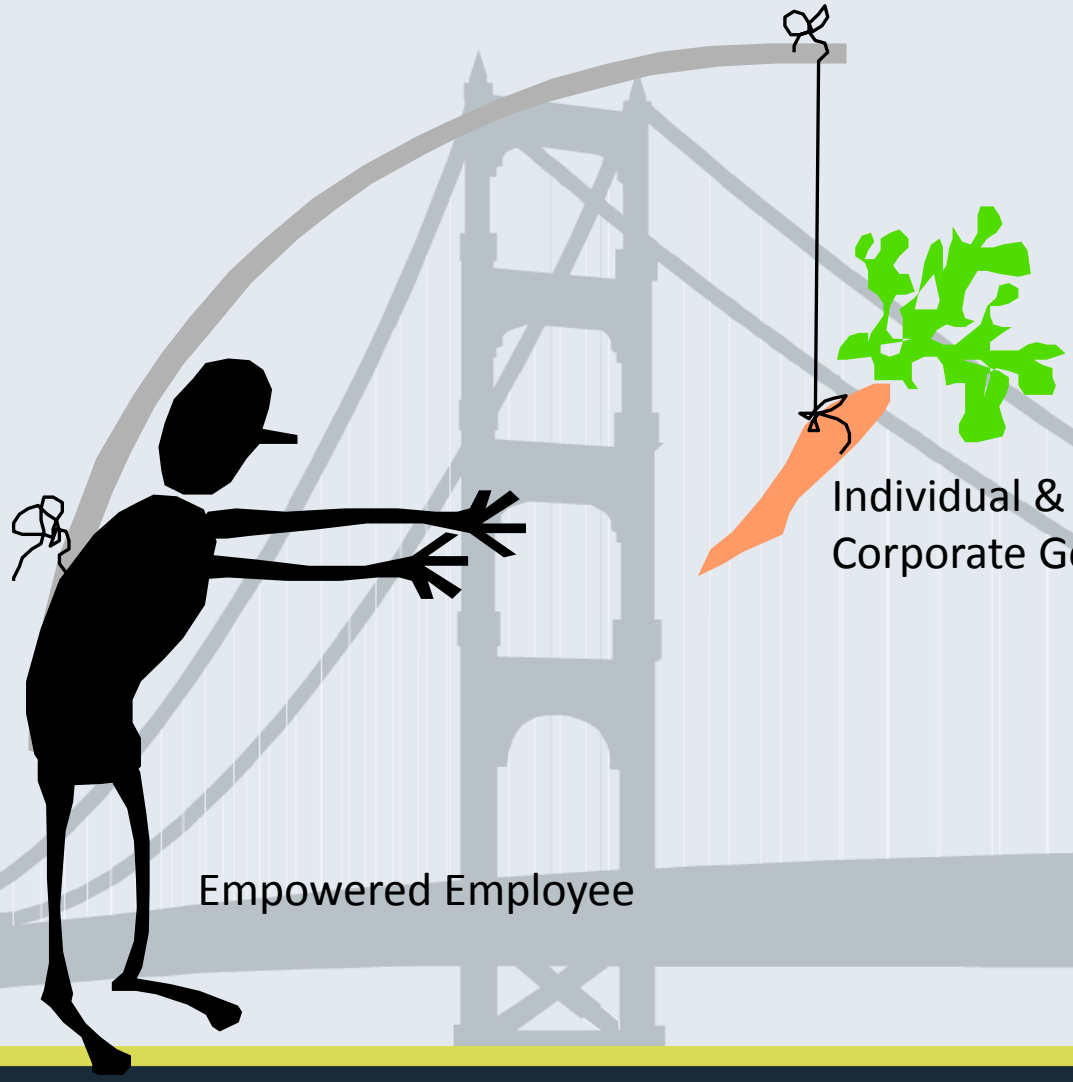

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So What Was This Talk About Again?

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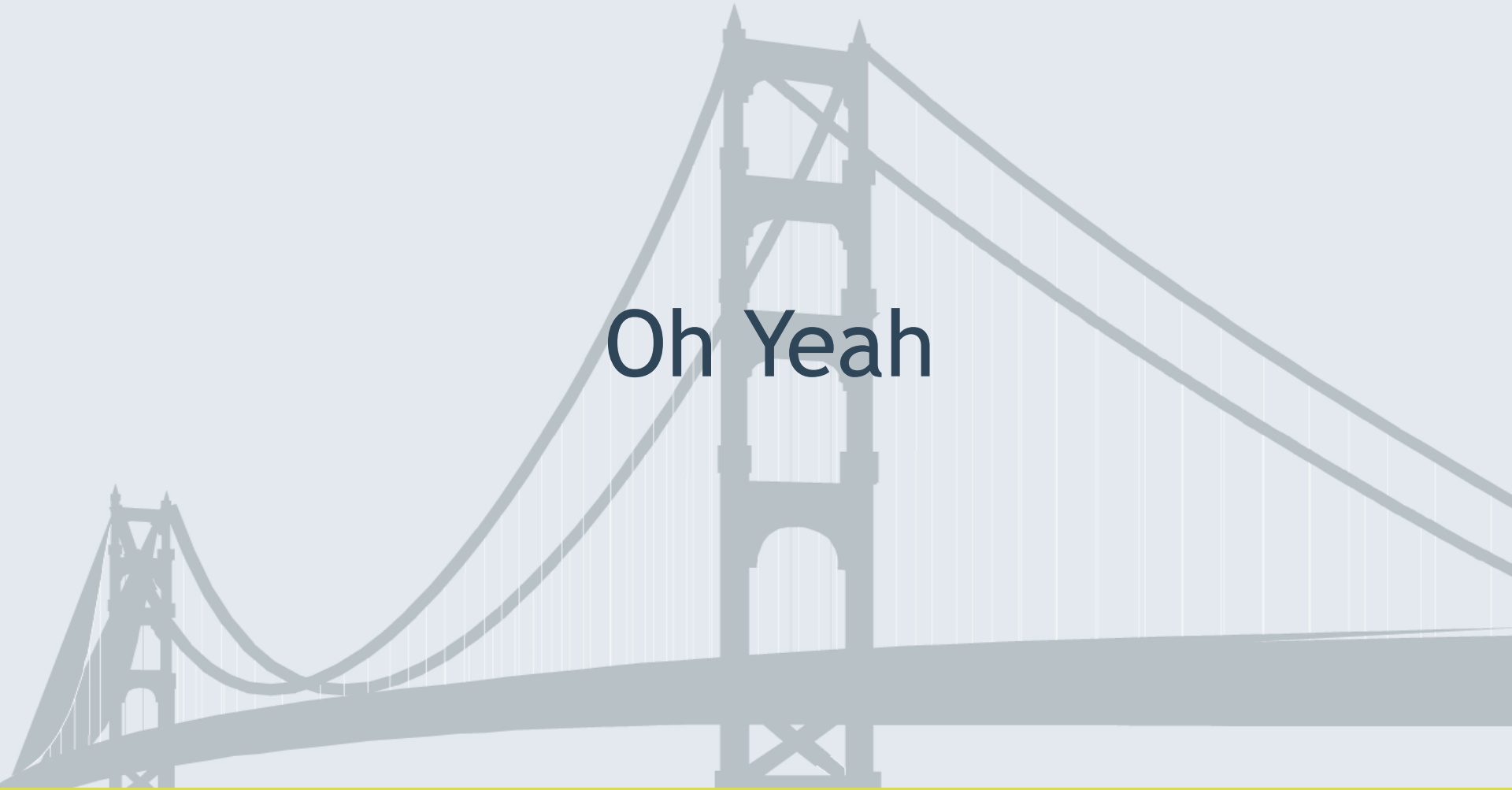

Oh Yeah

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Now I Remember

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New Value in 30 Minutes

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Distributed Teams

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Reach New Levels Of Productivity

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With

Spontaneous Collaboration

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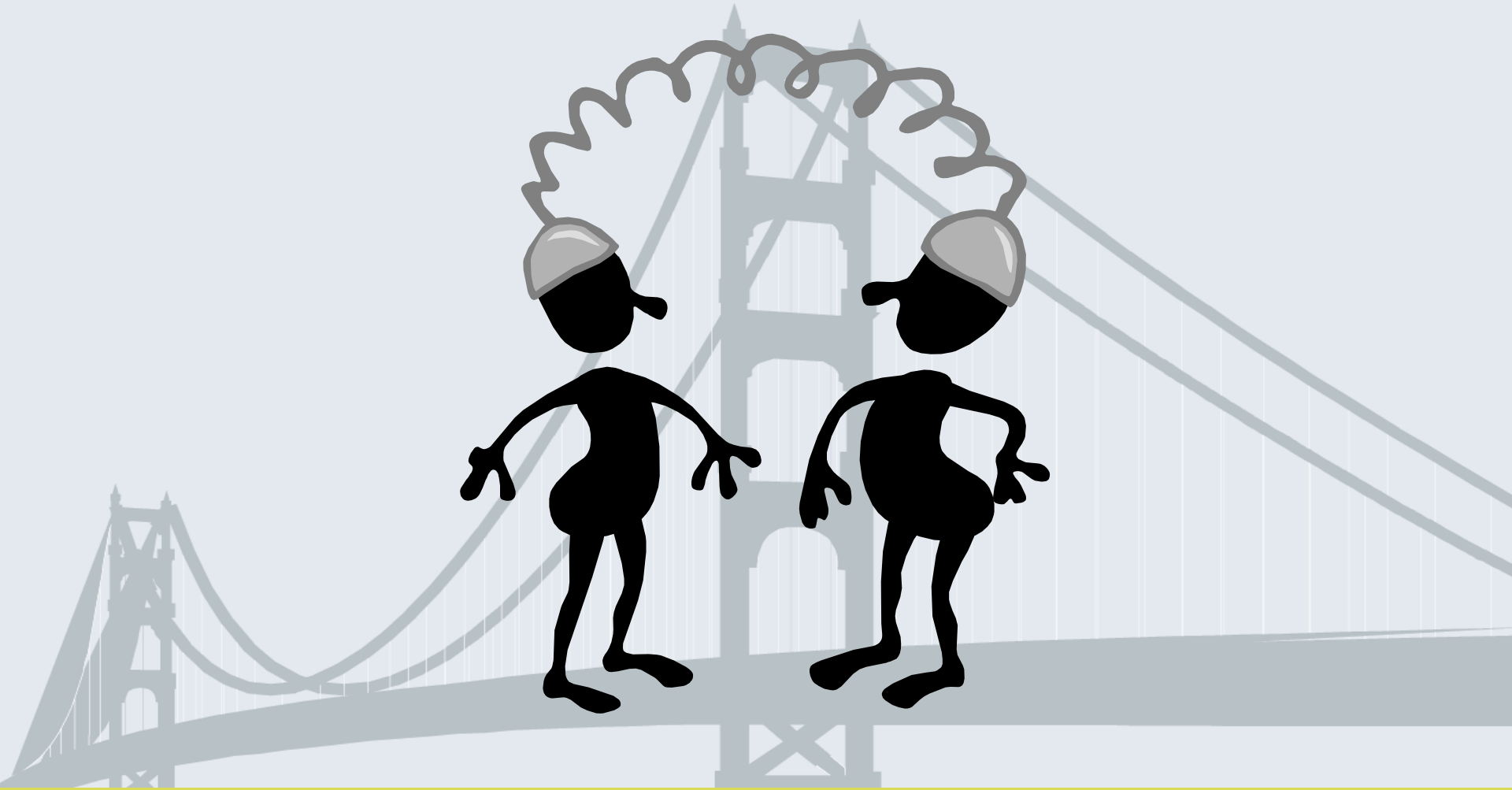

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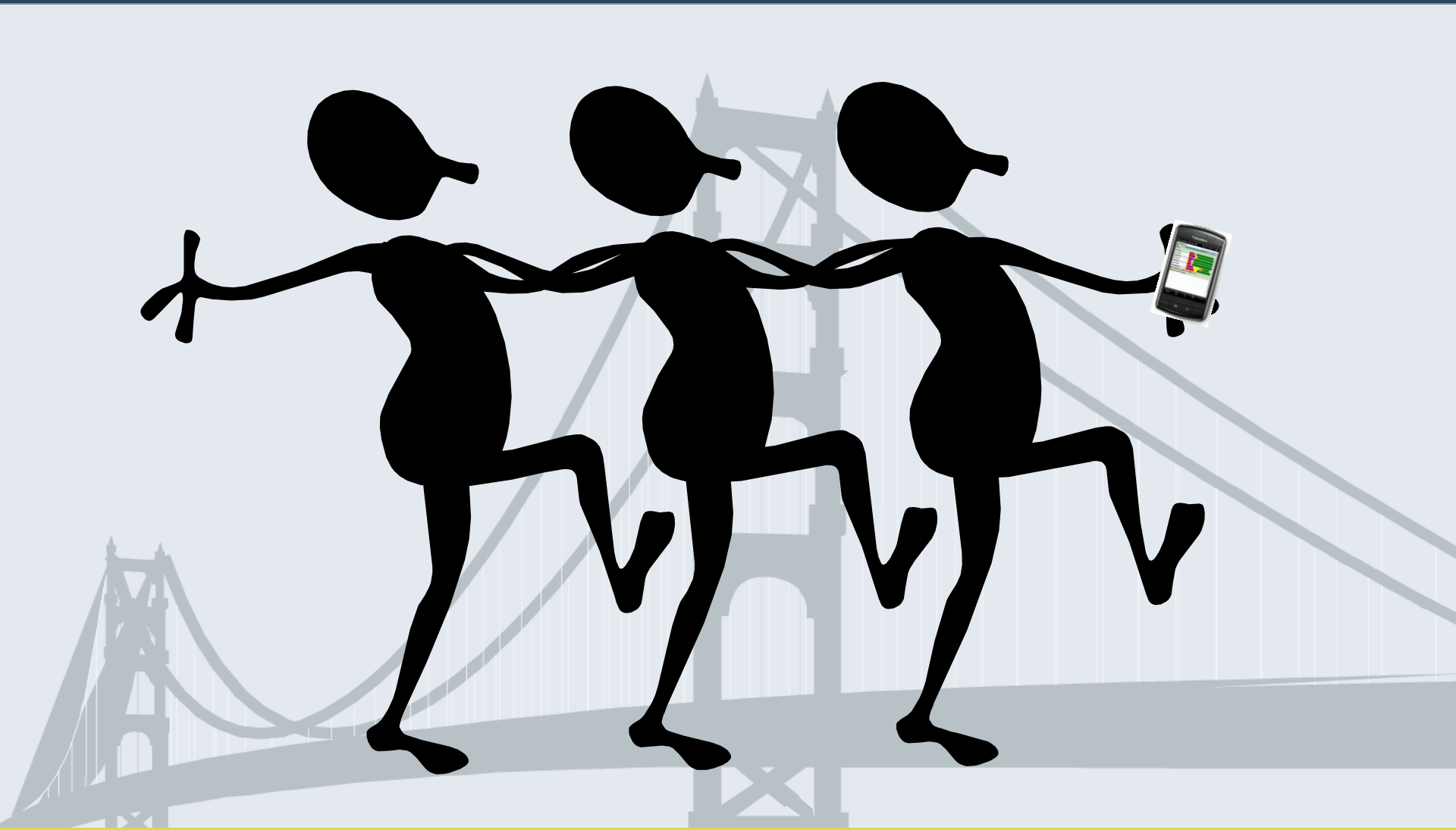

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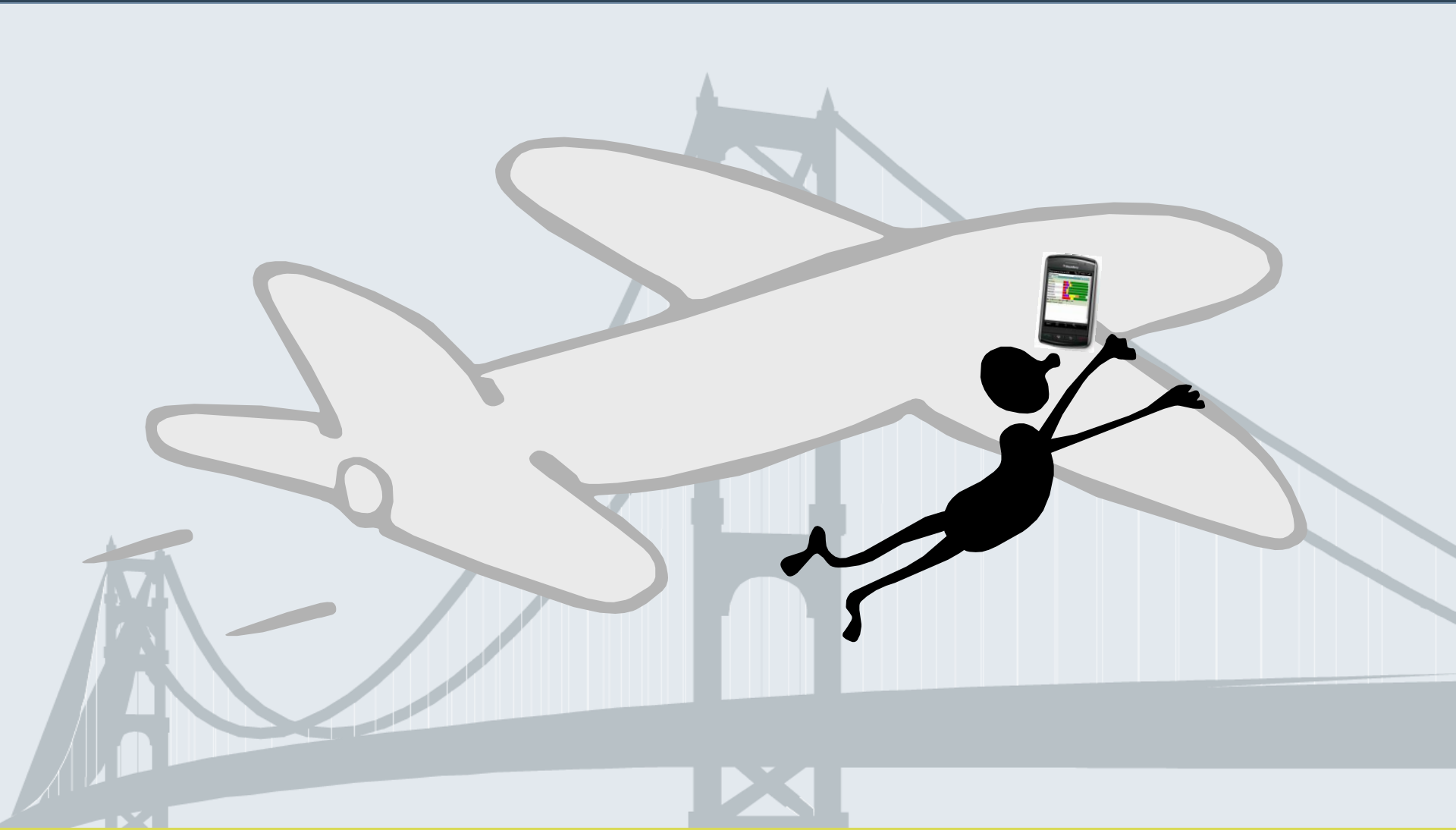

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And for Those Responsible?

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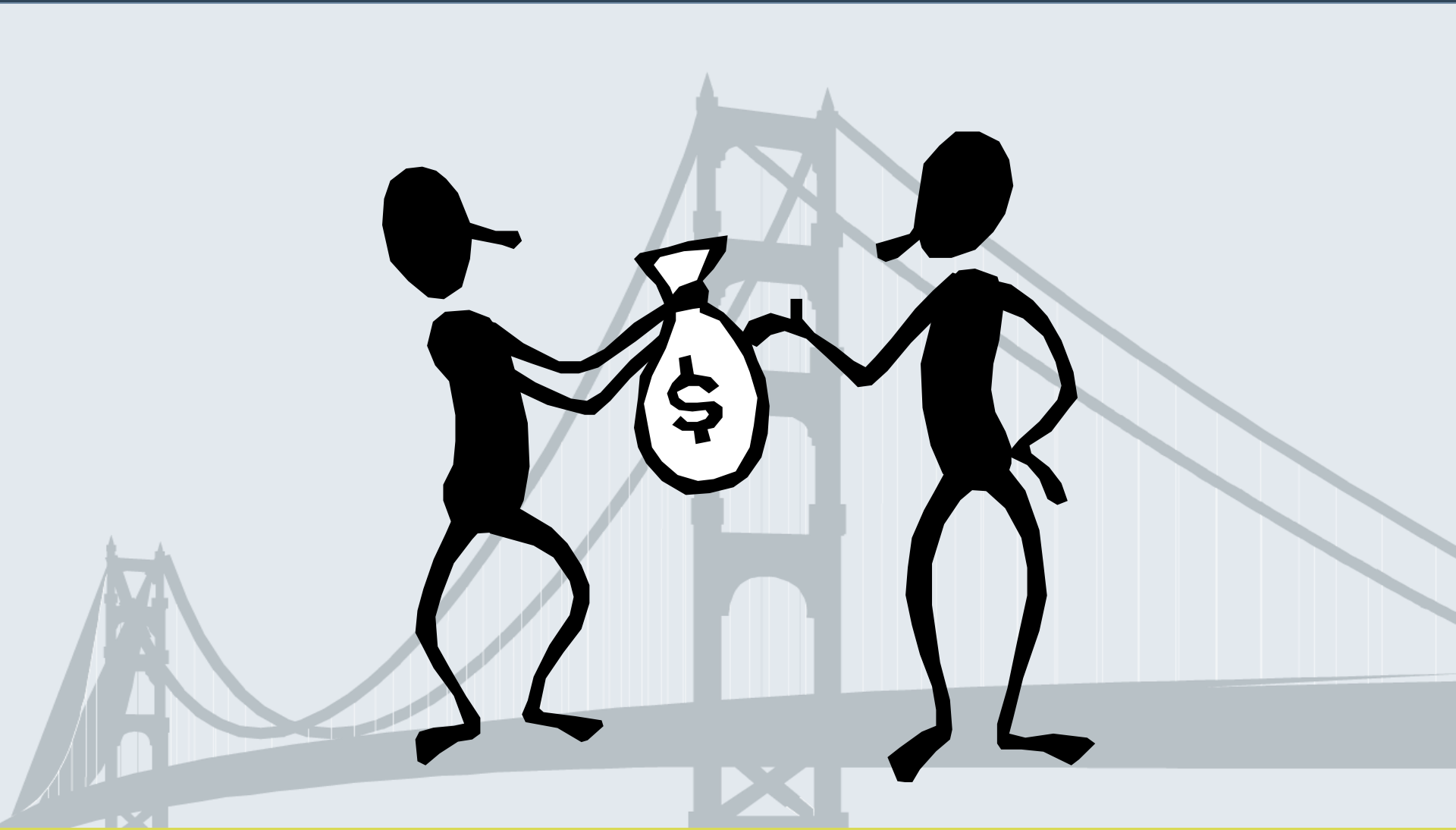

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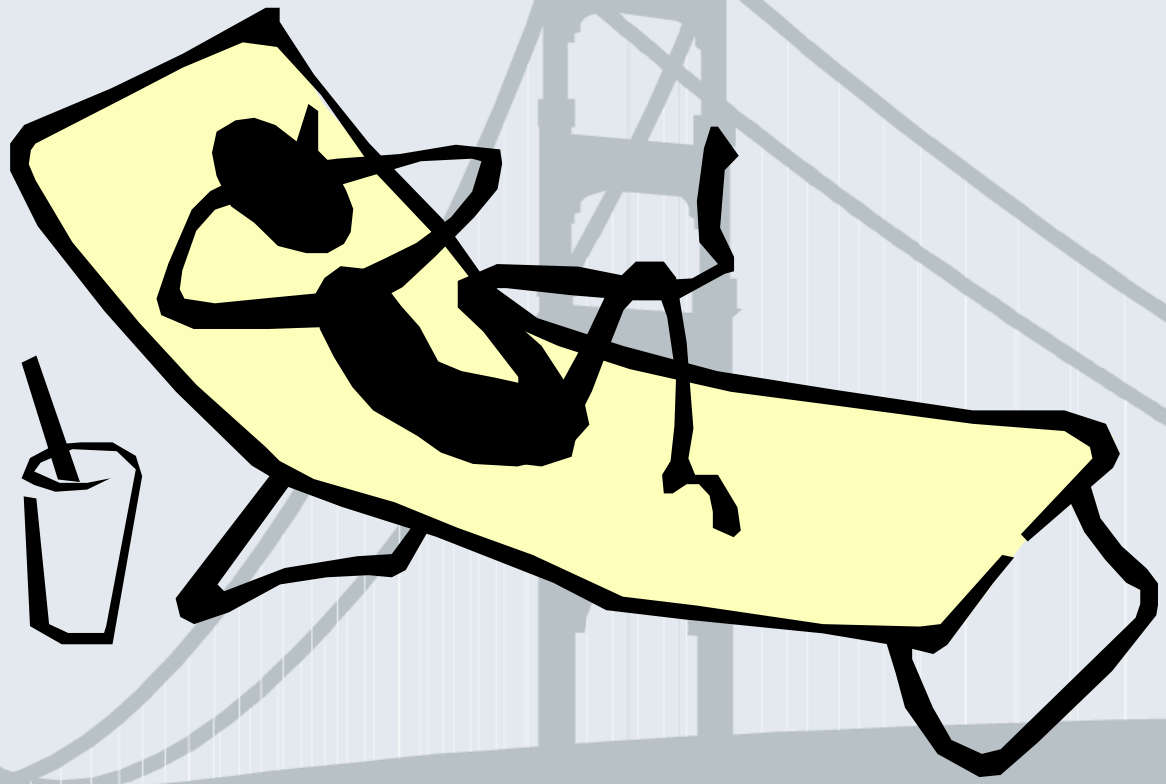

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Voice Of the Customer

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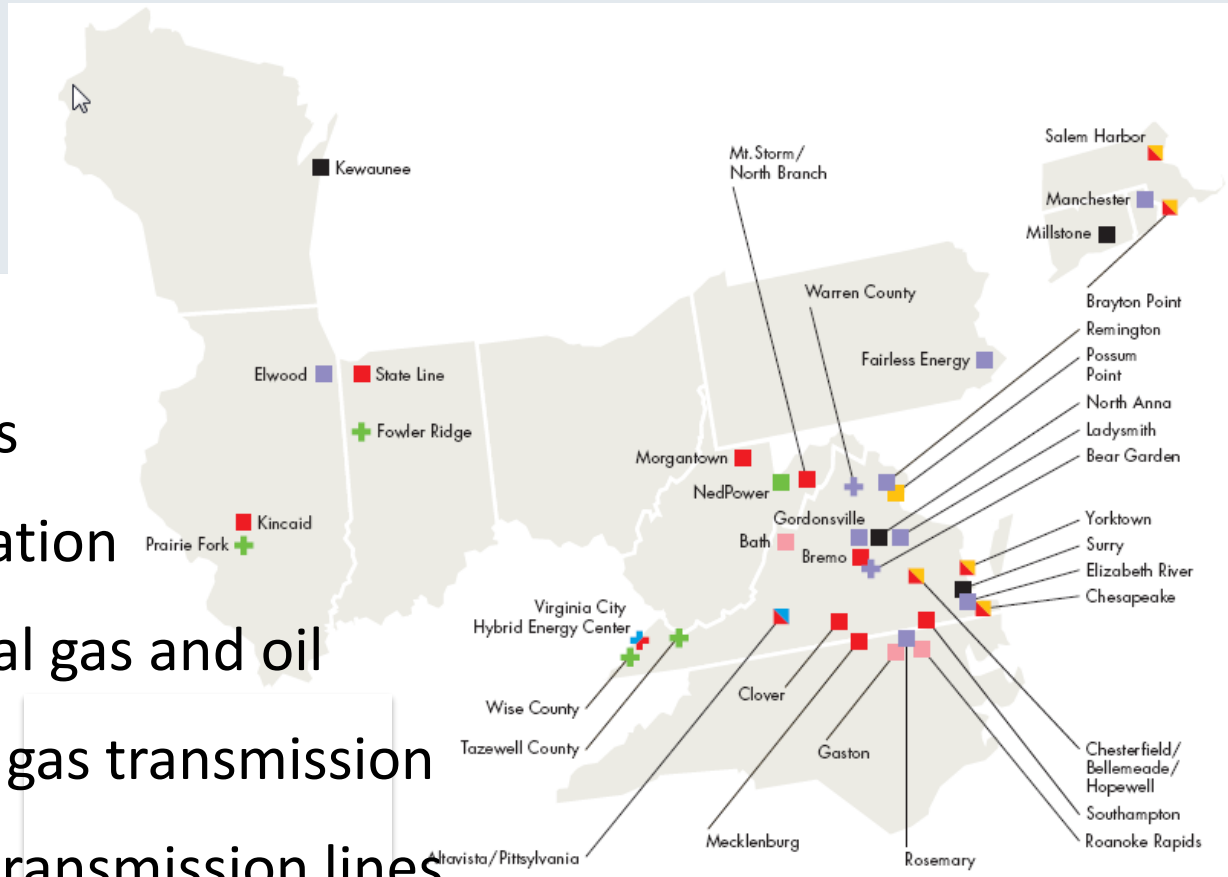
Dominion Energy

- HQ in Richmond, VA
- Operating in 12 states
- 27,000 MW of generation
- 1.2 trillion ft^3 natural gas and oil
- 14,000 mi. of natural gas transmission
- 6,000 mi. of electric transmission lines
- 975 billion ft^3 of gas storage capacity



Dominion - OSIsoft Footprint

- 23 PI Server installations in Dominion F&H
  - OSIsoft PI in use since 1997
  - Thick client tools
    - ProcessBook & DataLink primarily.
  - Firm tool throughout F&H

Key Purchase Decisions of Transpara

- Small Initial $$$ Investment
  - Reasonable Entry Price to Kindle Growth
- Fit Business and Dominion PI Improvement Plans
  - Enhance the Value of the PI Investment
- Seamless Integration of existing PI Data
- User-Familiar Configuration Tool, Easy Setup
- Optimized for Dominion Standard Blackberry

Evaluation & Implementation

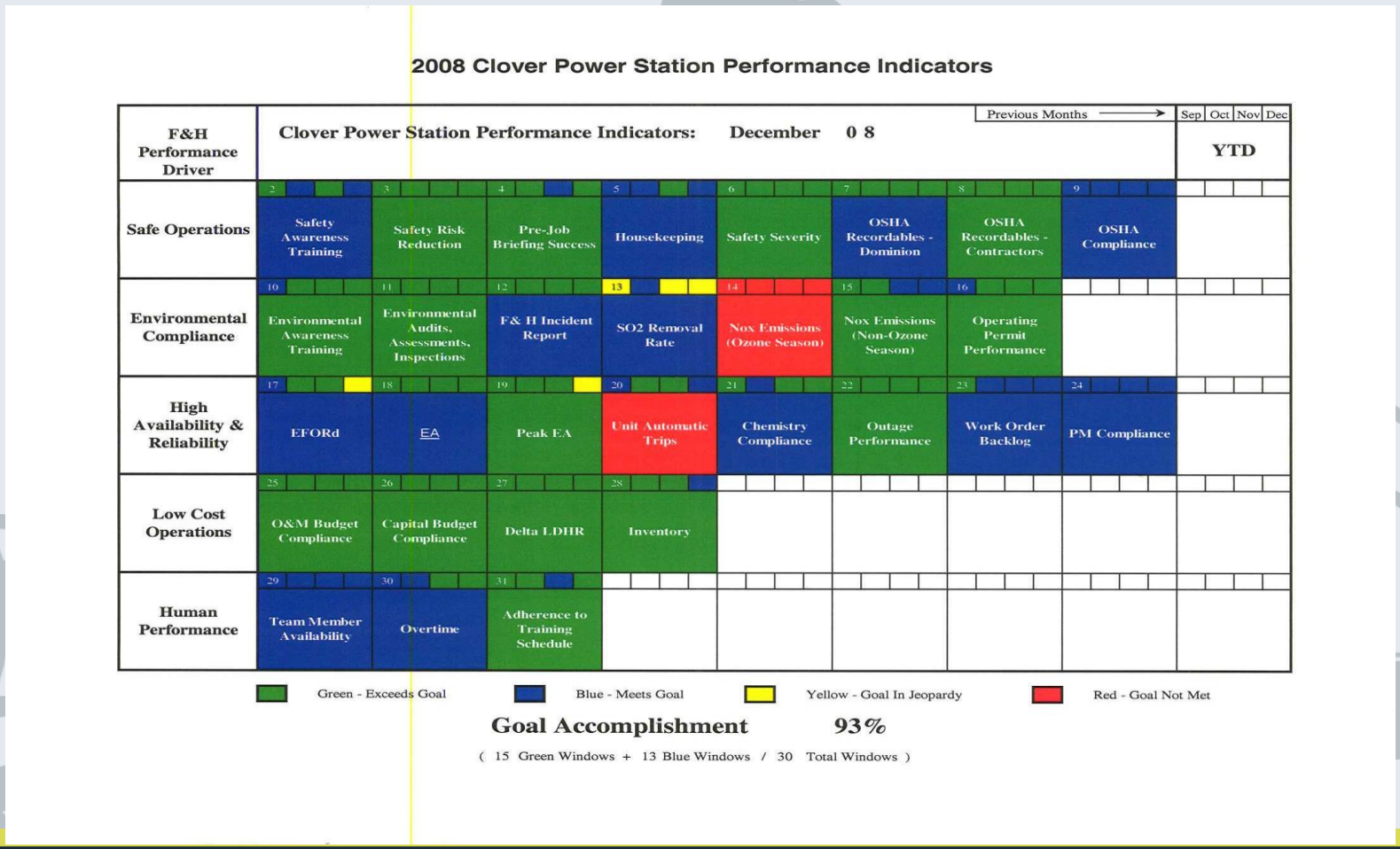
- High Level Pilot Program
  - 4th Quarter 2008
  - Focus on providing PI data to mobile devices
  - Focus group was Dominion Sr. VP F&H
- Purchased a small number of Client Licenses
  - 1st Quarter 2009
  - Initial focus will be on 'Serving' PI data
  - Growth may include other data connectors to capture more robust KPI's
- Full Implementation plan scheduled July 2009

Value Now:

- PI data now in reach of any mobile user
- Provide additional methods of connecting to PI data for real-time decision making
- Remote visibility into plant operations

Possible Product Application

- ***Excel*** Performance Indicators – Power Station



2008 Clover Power Station Performance Indicators

F&H Performance Driver	Clover Power Station Performance Indicators: December 0 8 (Previous Months → Sep, Oct, Nov, Dec; YTD)							
Safe Operations	2 Safety Awareness Training	3 Safety Risk Reduction	4 Pre-Job Briefing Success	5 Housekeeping	6 Safety Severity	7 OSHA Recordables - Dominion	8 OSHA Recordables - Contractors	9 OSHA Compliance
Environmental Compliance	10 Environmental Awareness Training	11 Environmental Audits, Assessments, Inspections	12 F& H Incident Report	13 SO2 Removal Rate	14 Nox Emissions (Ozone Season)	15 Nox Emissions (Non-Ozone Season)	16 Operating Permit Performance	
High Availability & Reliability	17 EFORd	18 EA	19 Peak EA	20 Unit Automatic Trips	21 Chemistry Compliance	22 Outage Performance	23 Work Order Backlog	24 PM Compliance
Low Cost Operations	25 O&M Budget Compliance	26 Capital Budget Compliance	27 Delta LDHR	28 Inventory				
Human Performance	29 Team Member Availability	30 Overtime	31 Adherence to Training Schedule					

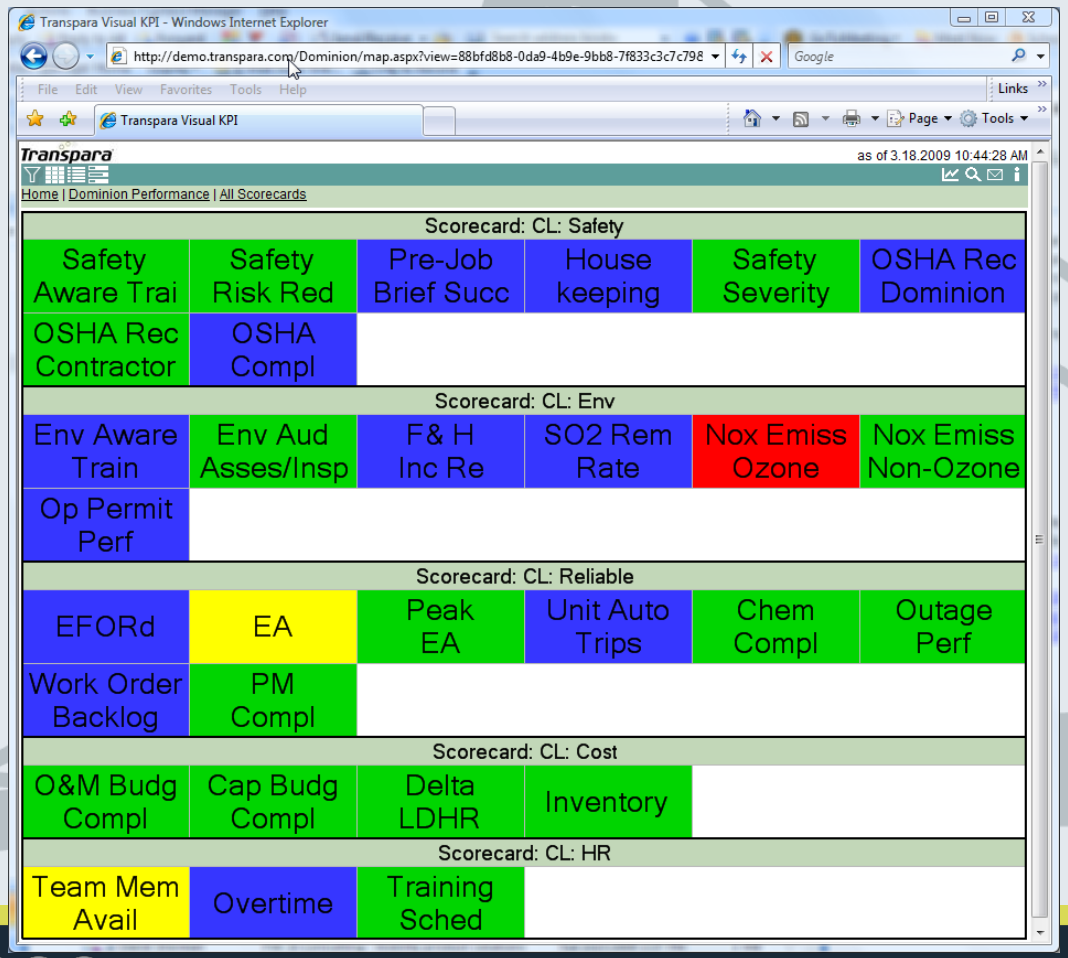
Green - Exceeds Goal Blue - Meets Goal Yellow - Goal In Jeopardy Red - Goal Not Met

Goal Accomplishment 93%

(15 Green Windows + 13 Blue Windows / 30 Total Windows)

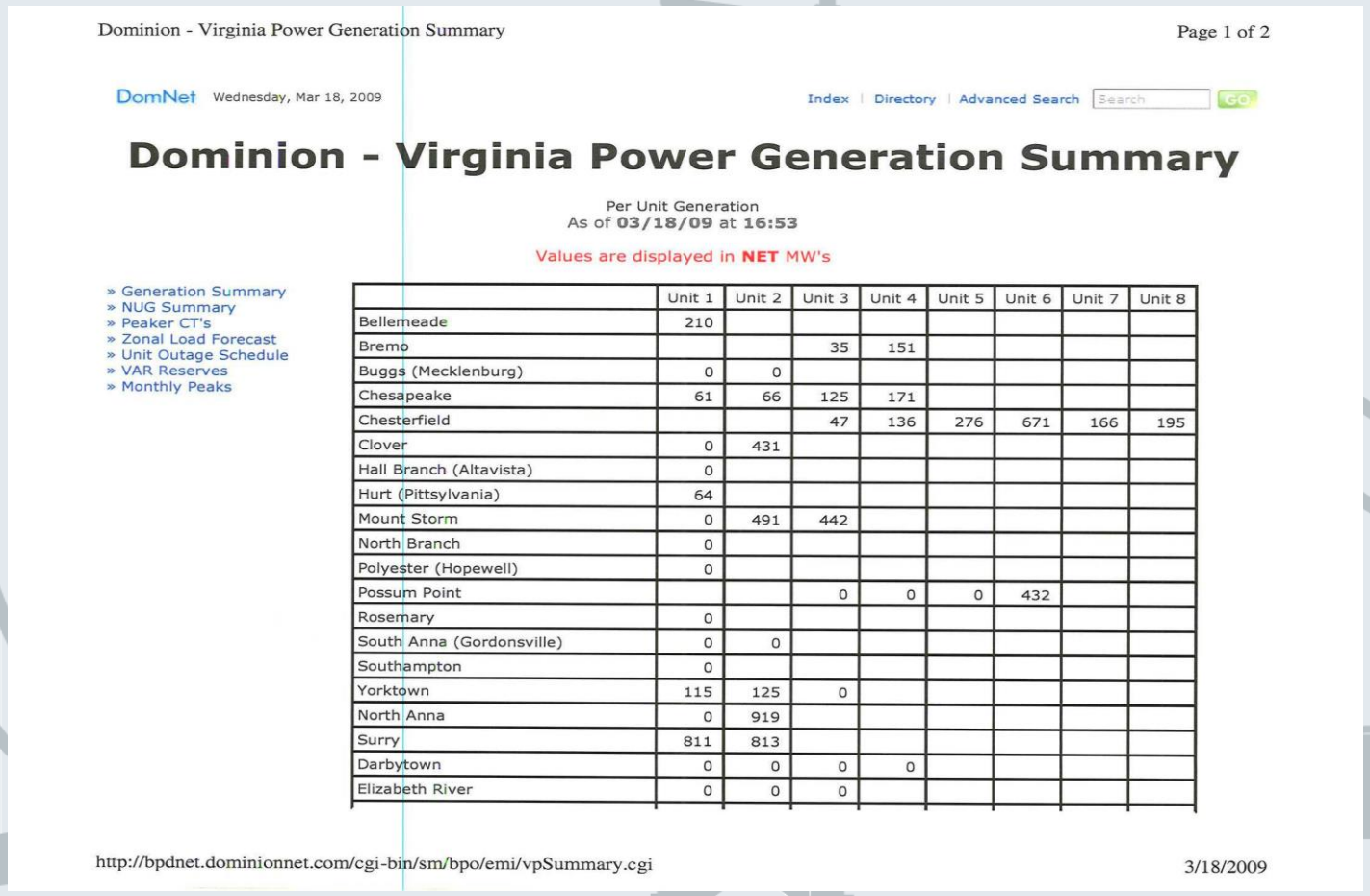
Prototype

- ***Web*** Performance Indicators – Power Station



Possible Product Application

- ***Paper*** Fleet Generation Overview



Dominion - Virginia Power Generation Summary Page 1 of 2

DomNet Wednesday, Mar 18, 2009 Index | Directory | Advanced Search Search GO

Dominion - Virginia Power Generation Summary

Per Unit Generation
As of **03/18/09** at **16:53**

Values are displayed in **NET** MW's

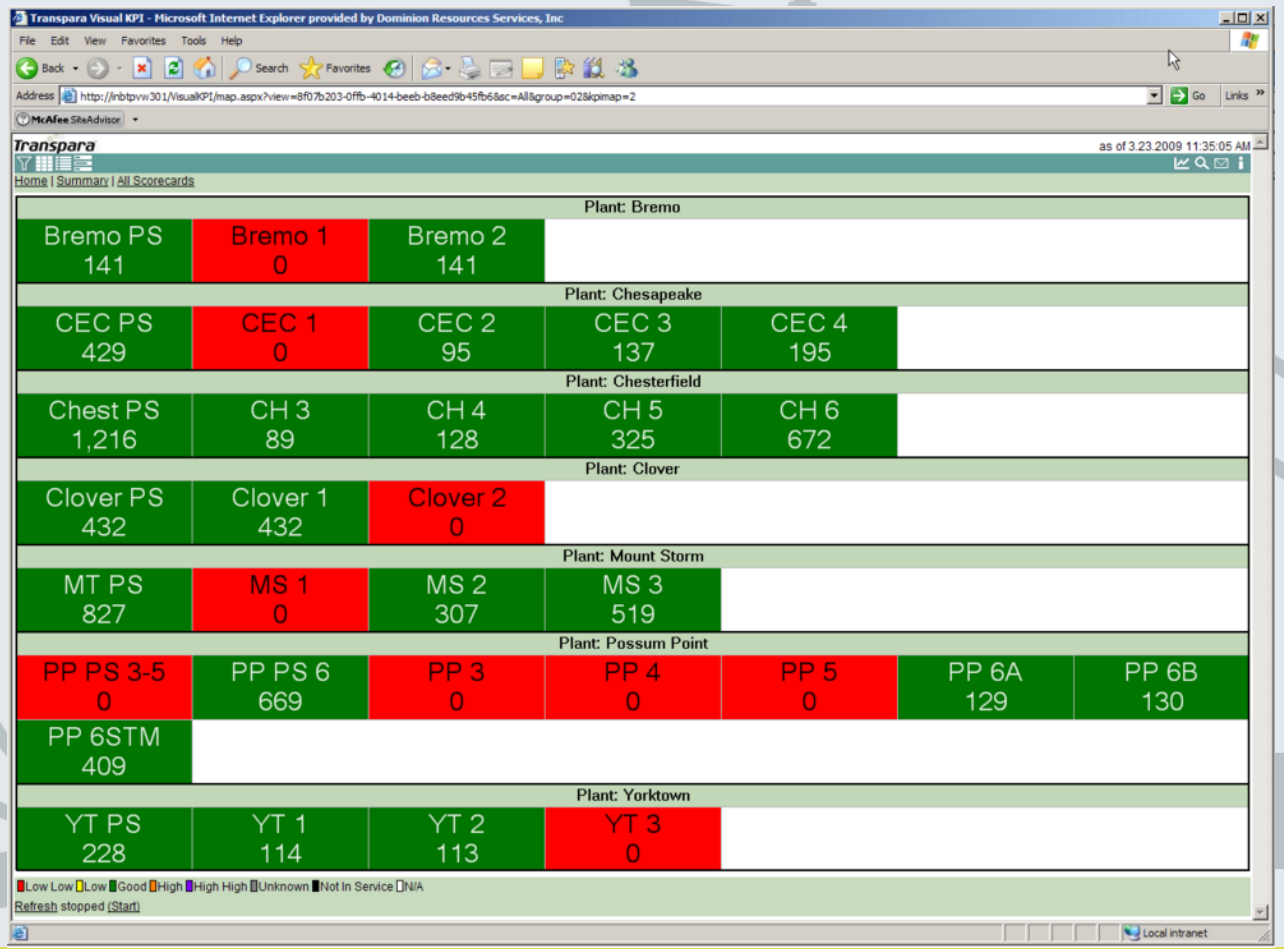
» Generation Summary
» NUG Summary
» Peaker CT's
» Zonal Load Forecast
» Unit Outage Schedule
» VAR Reserves
» Monthly Peaks

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
Bellemeade	210							
Bremo			35	151				
Buggs (Mecklenburg)	0	0						
Chesapeake	61	66	125	171				
Chesterfield			47	136	276	671	166	195
Clover	0	431						
Hall Branch (Altavista)	0							
Hurt (Pittsylvania)	64							
Mount Storm	0	491	442					
North Branch	0							
Polyester (Hopewell)	0							
Possum Point			0	0	0	432		
Rosemary	0							
South Anna (Gordonsville)	0	0						
Southampton	0							
Yorktown	115	125	0					
North Anna	0	919						
Surry	811	813						
Darbytown	0	0	0	0				
Elizabeth River	0	0	0					

http://bpdnet.dominionnet.com/cgi-bin/sm/bpo/emi/vpSummary.cgi 3/18/2009

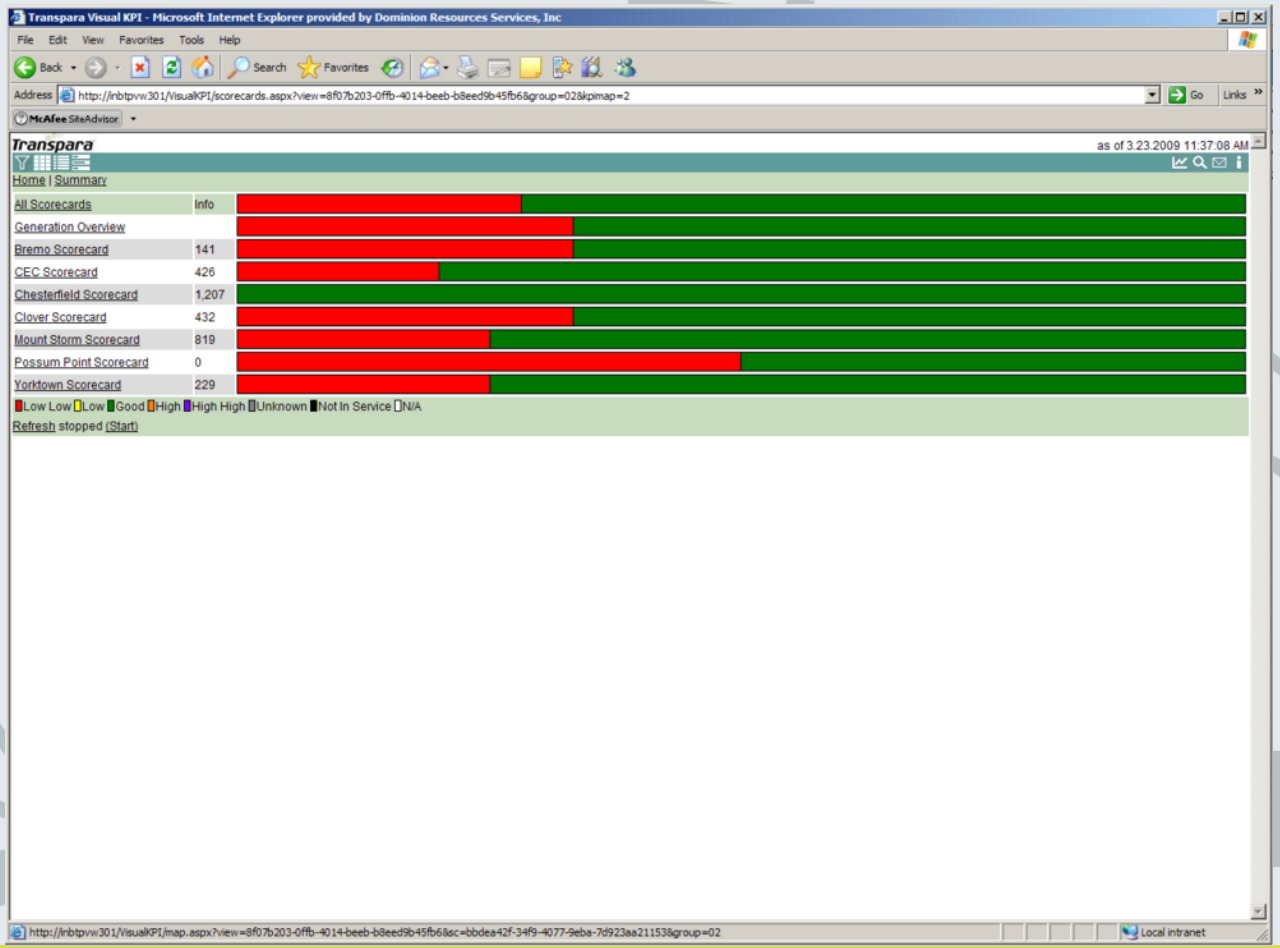
Prototype

- ***Real-time*** Fleet Generation Detail



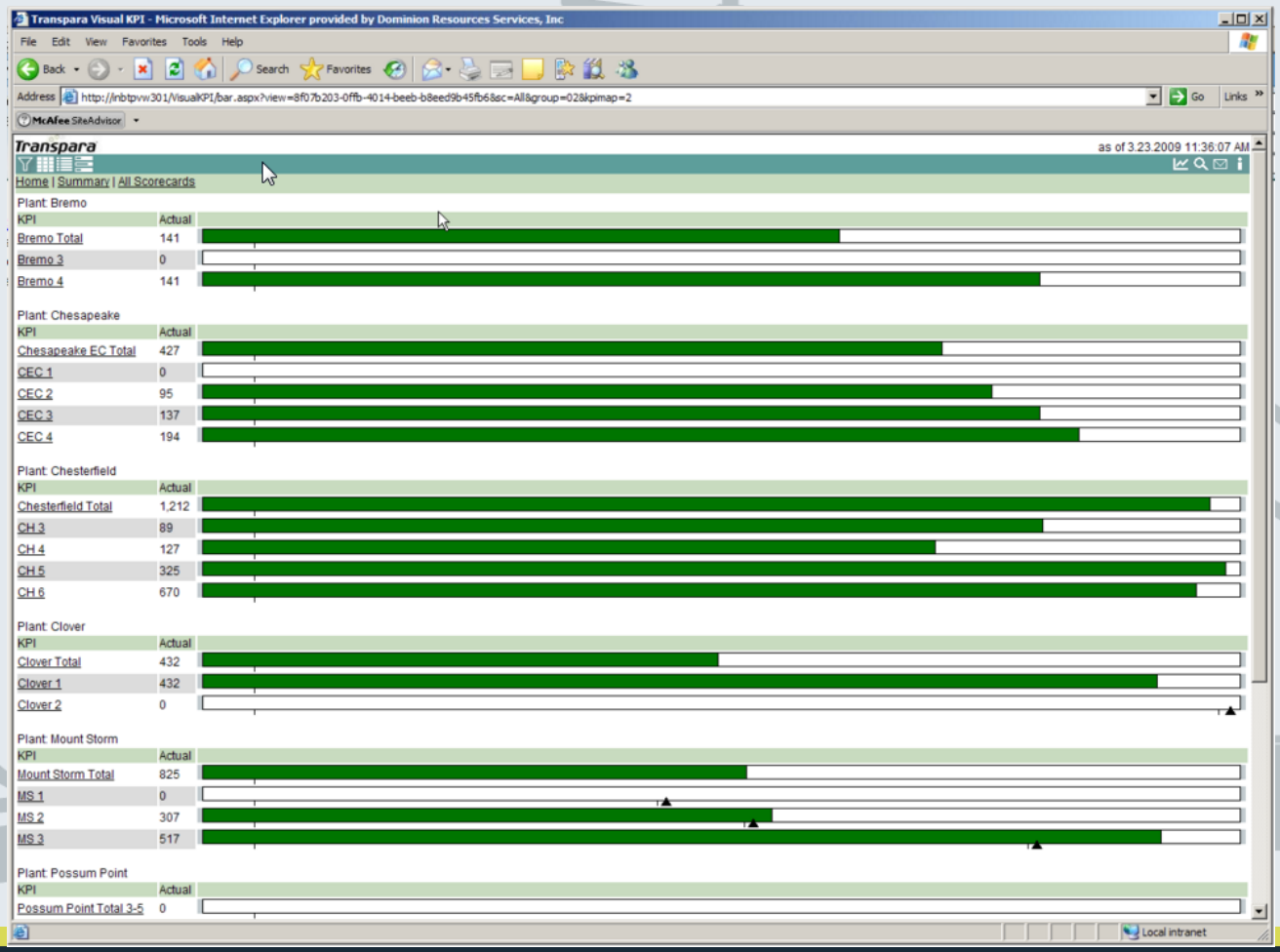
Prototype

- ***Real-time*** Fleet Generation Overview



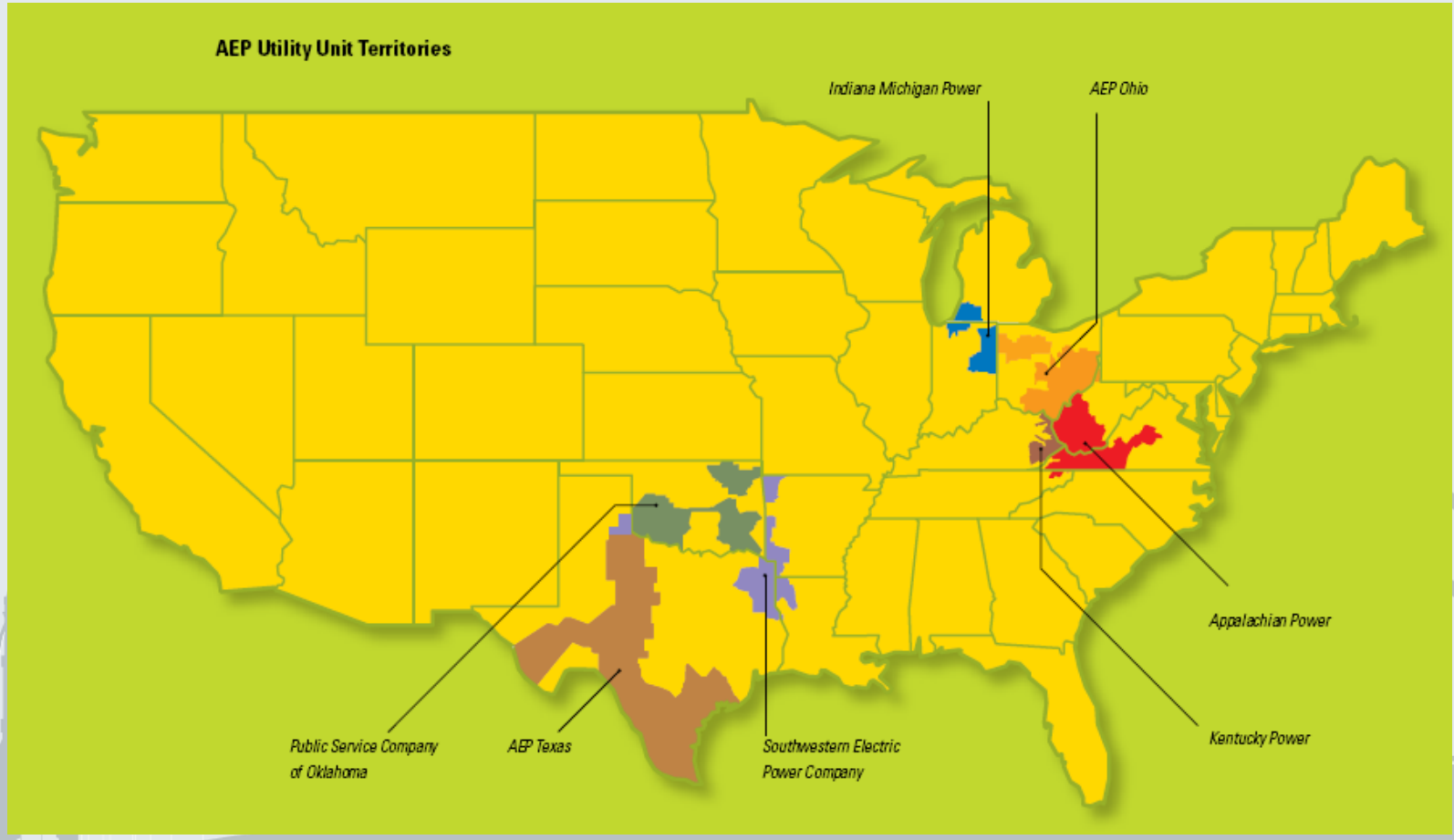
Prototype

- ***Real-time*** Generation – COC Separated Information

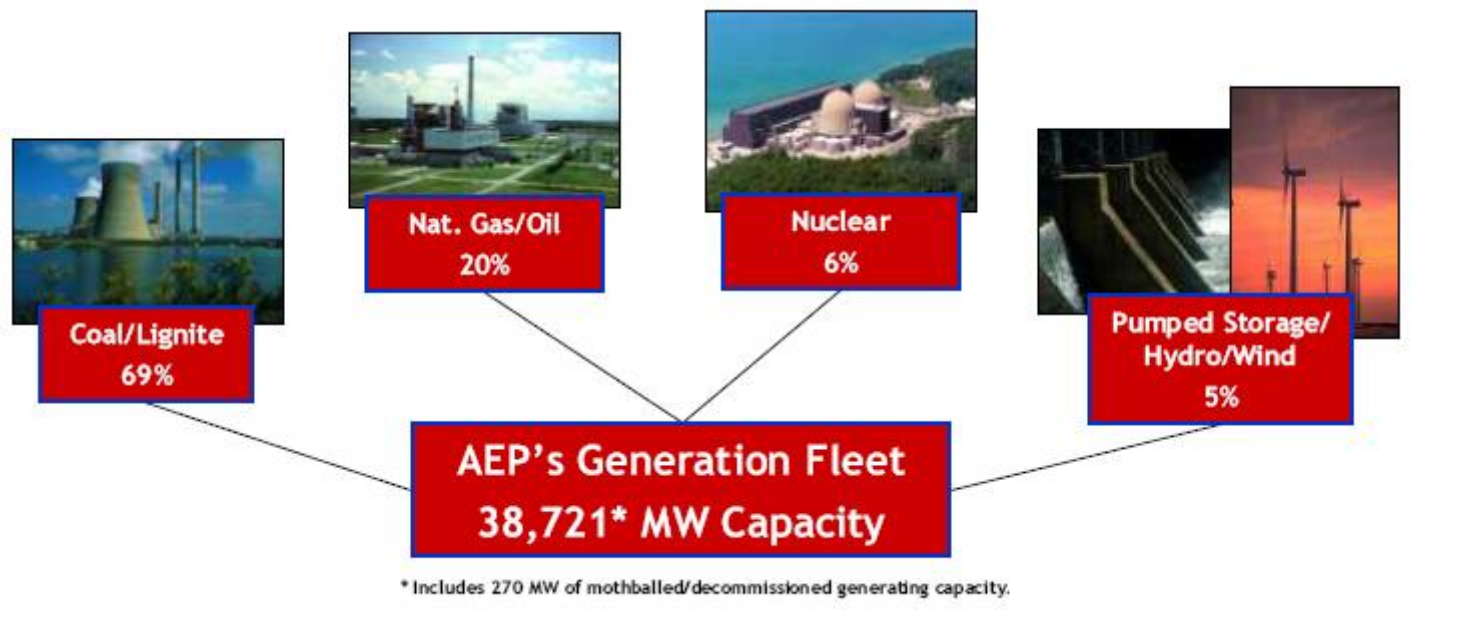


DOMINION SUMMARY

American Electric Power (AEP)

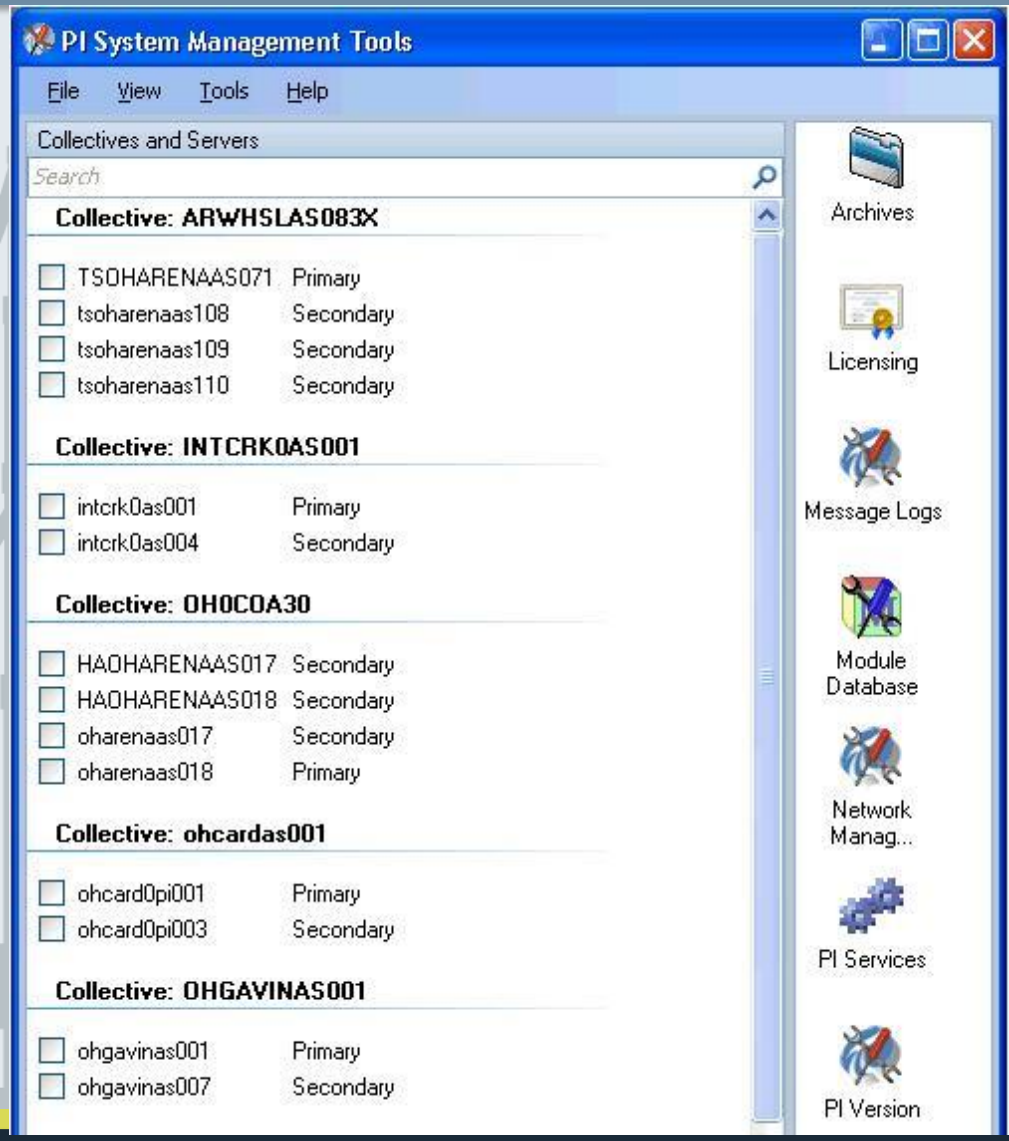


AEP's Generation Fleet



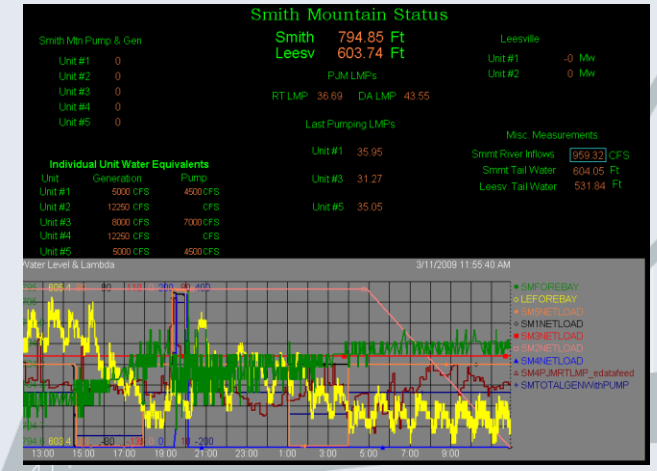
AEP's OSIsoft Footprint

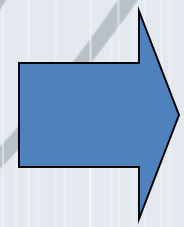
- 53 PI servers
- 767,000 tags
- Using PI since 1993
- HA PI used heavily



AEP's Initial Problem Statement

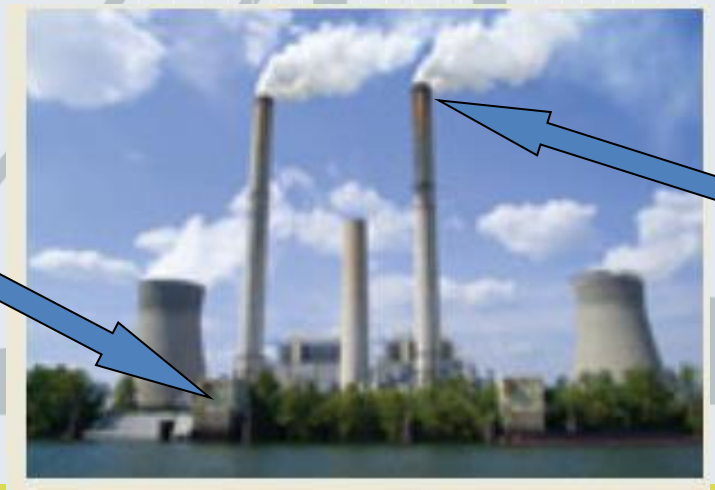
How do you provide real-time operating data to on-call support when an issue develops and the support staff is home, or worse yet, out riding their Harley?





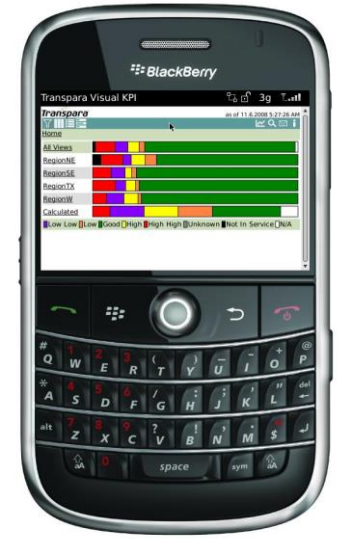
Power Plant Dilemma

How does a control tech troubleshoot an environmental instrument when the device is 800 feet up the stack and the instrument is displayed on PI in the control room?



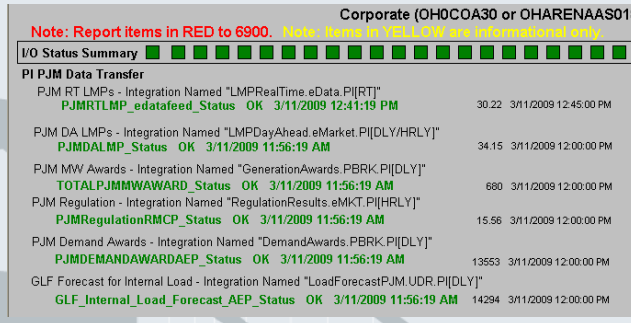
Plant Manager Envy

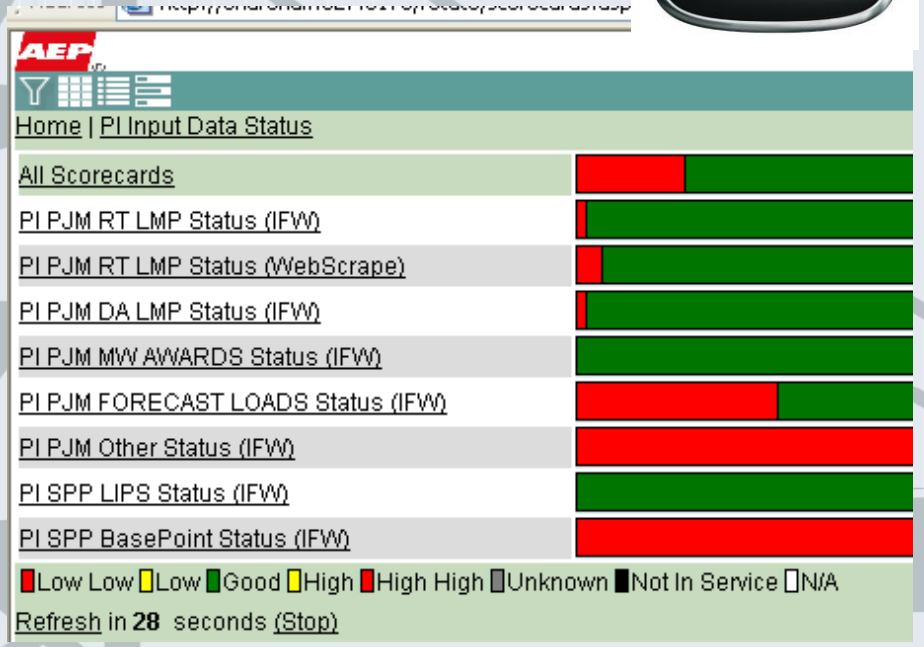
- Initially, power plants were slow to adopt Transpara PDA technology
- One plant developed a special display on unit operational KPIs for the manager to view from home.
- At a plant manager's meeting, when the SVP asked about a critical unit's startup status to meet load that morning, that manager had the right answer at the right time.
- The following week 3 more plants requested Transpara.
- And the word spread like wildfire……



Monitoring Data Flows from the RTO's

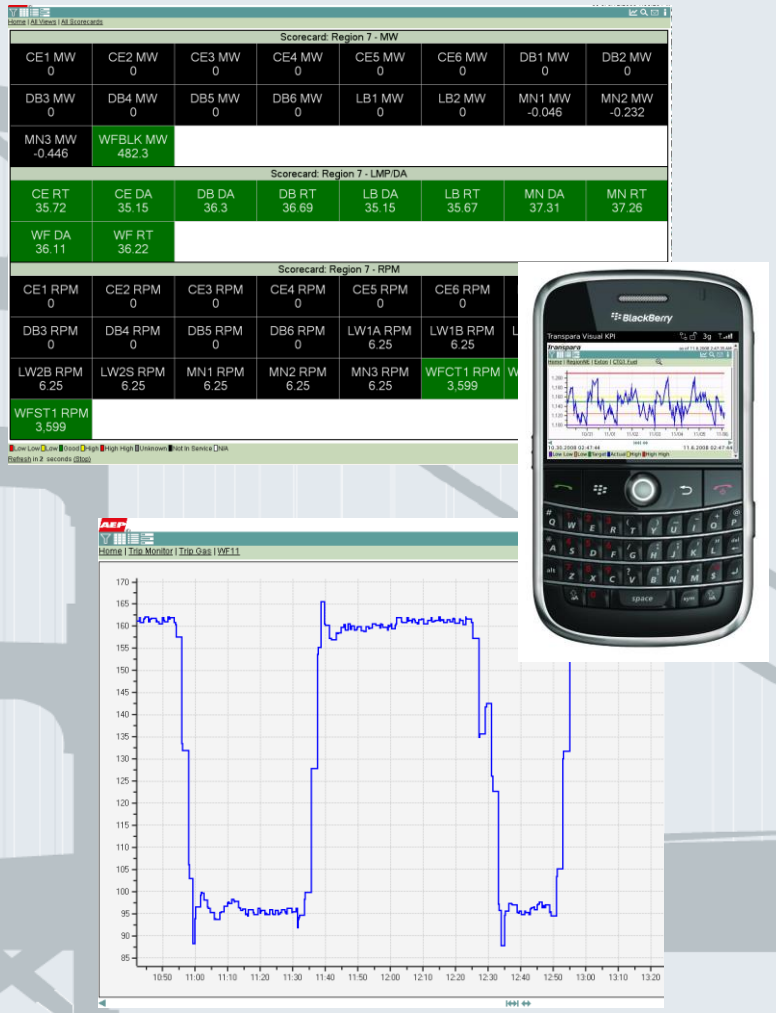
- Data flows from RTO systems to internal AEP systems from once per day to once every 5 minutes.
- Data flow is monitored in a PI ProcessBook Display.
- Displayed in Transpara as a large flat panel display for office monitoring
- But is available via Blackberry when the flows fail in the evening and support staff is at home and need to troubleshoot the issue.





Monitoring AEP's Gas Turbine Fleet

- AEP has an extensive simple cycle and combined cycle gas turbine fleet, reporting to a Director in Fossil and Hydro Operations
- Many of these units are dispatched as the RTO requires, a lot of times in the early morning and late evenings.
- Transpara and unit pages permits the Director to stay up on the operational status of his fleet, in the office, at home, or when traveling.



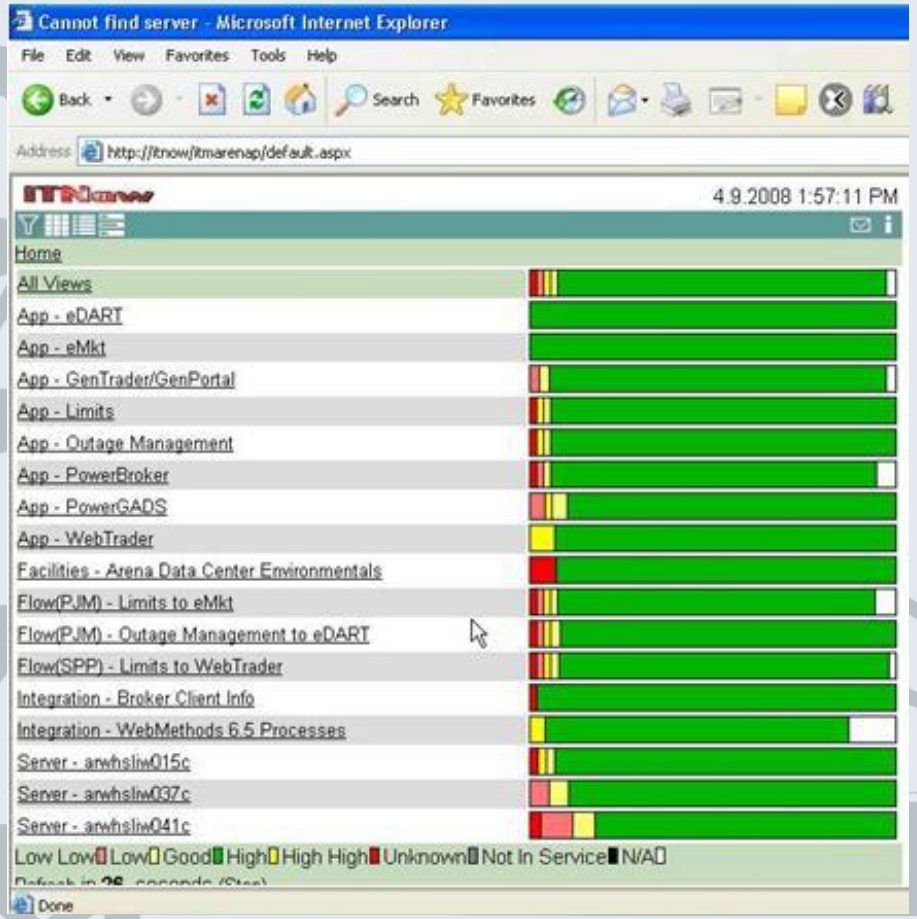
One Display is All They Need Approach

- At one of AEP's largest plants, a 50" flat screen display hangs in the control room with many Transpara points displayed.
- The screen is designed to be all green if normal operations.
- At shift change, when the new team comes onsite, non green points become a subject of discussion at shift handoff.

- With all points in one display, those off site just use one screen and scroll to the points in question.

Monitoring of IT Assets

- Standard metrics for IIS, ASP, .NET, SQL
- Targets and Limits around metrics derived from Technet
- Each KPI is linked back to the Technet reference document



AEP SUMMARY

Architecture

Data Sources

PI Historian

- Real-time Data
- Meta Data
- Equations

Any RDB / BI / OLAP

- Existing Data
- External KPIs
  - Perf Point Server

Any LOB App

- Link to financials
- Planned values
- SAP, MRO, etc.

Visual KPI Excel Editor

- Excel 2003 or Excel 2007 with VSTO
- Configuration only, no run-time association or storage

Web Services

Publish Scorecards via Web Services

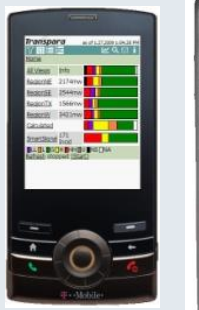
XML over HTTP

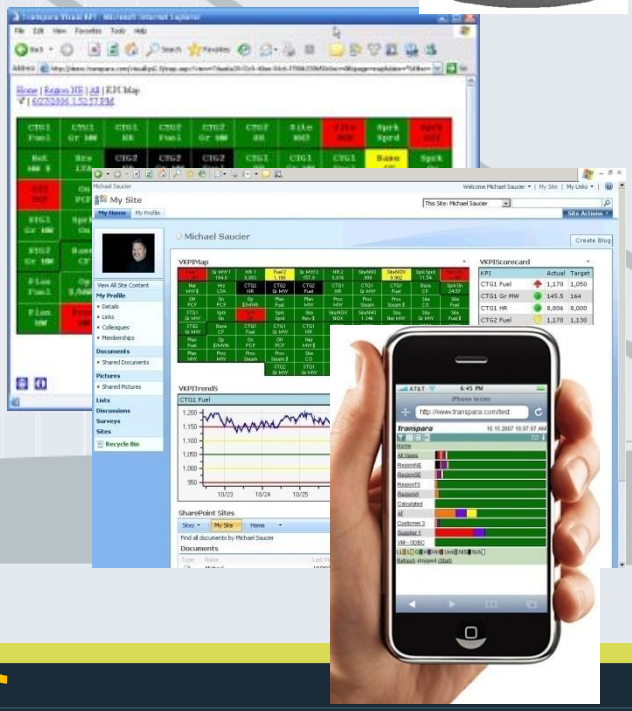
Web Services

Visual KPI Server

- Composite KPI Engine
- All meta data in SQL 2005, 2008
- Windows Server 2003, 2008

Any Mobile or Desktop Client





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Switch To Live Demo

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What this means to you

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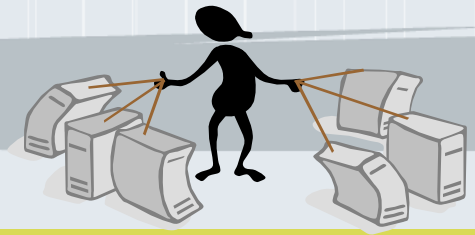
Guaranteed implementation



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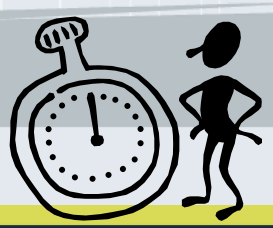
90 minutes

on your site

with your PI data



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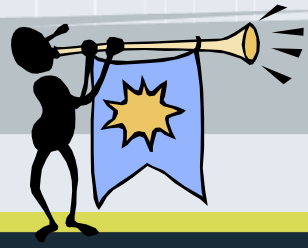
Call to Action

Special Offer

for

Today's UC Attendees



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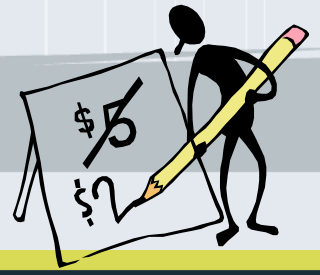
Free 90 day Pilot



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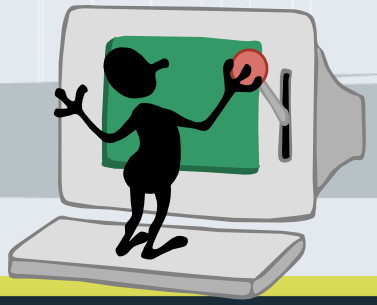
100% Installed



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Hands-On Training

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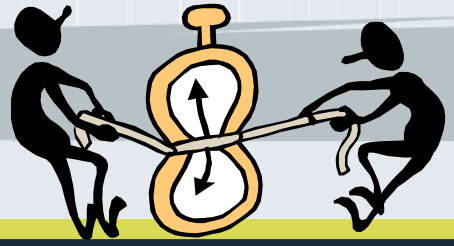
Working in 90 Minutes



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