Regional Seminar Series

Paris, France

Retours d'expérience à travers le monde

Martin Levionnois
OSIsoft

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AGENDA

- Cette présentation est constituée exclusivement de matériels issus des utilisateurs du système PI:
  - Users Conference
  - Regional Seminars

Saudi Aramco

Saudi Arabian Oil Company (Saudi Aramco)

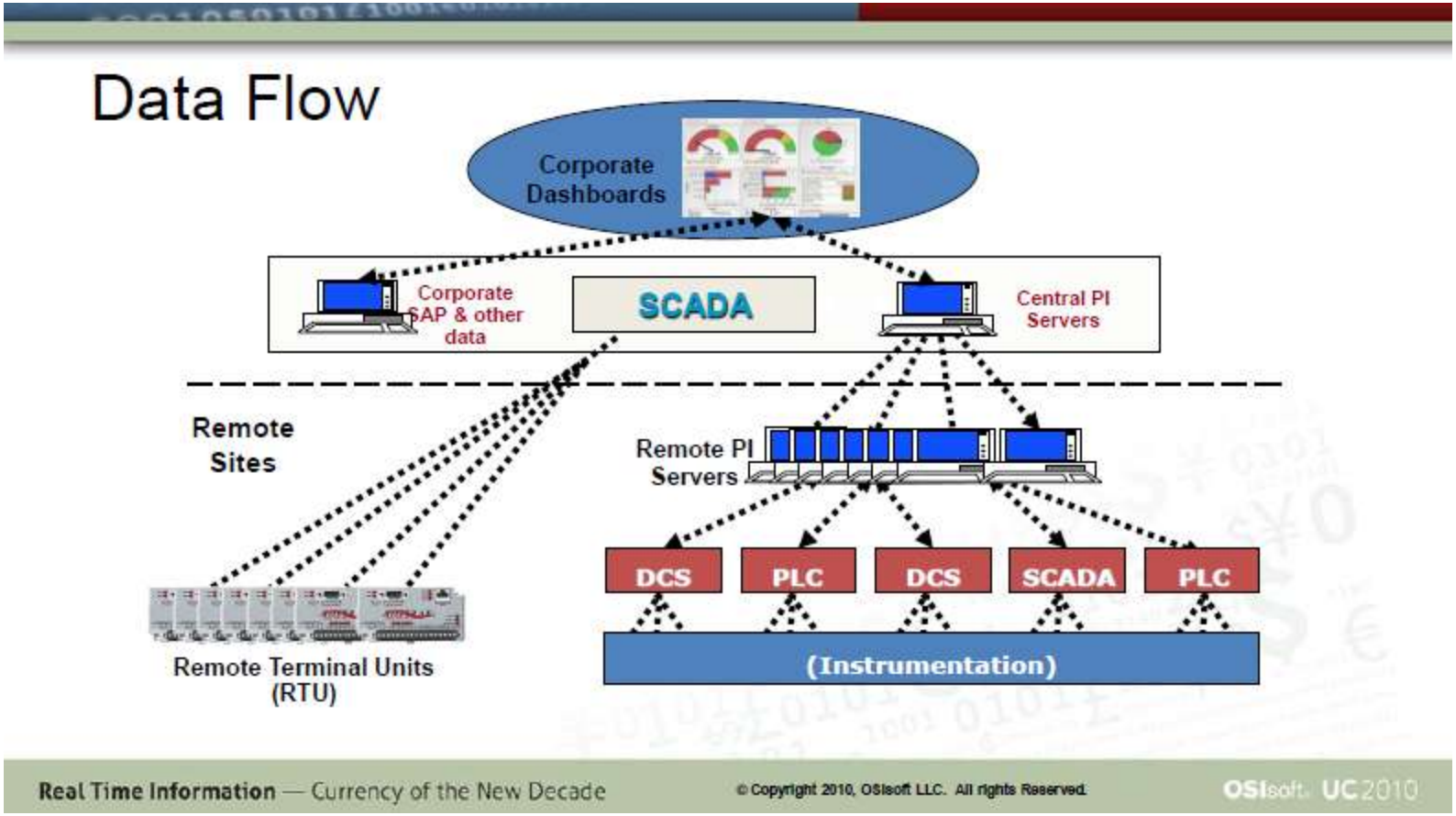
- Fully integrated global petroleum enterprise of Saudi Arabia (exploration, production, refining, marketing, & Int shipping)
- Leads the word in crude oil production and export
- Responsible for about 1/4 of the worlds proven oil reserves
- Four refineries, ten gas and NGL plants, and three local joint ventures
- Number of joint ventures around the word in oil & gas refining & petrochemical businesses (USA, China, Japan)
- Headquarters in Dhahran – Saudi Arabia
- 54,000 employees (2 of 7 in training)

PI @ SaudiAramco

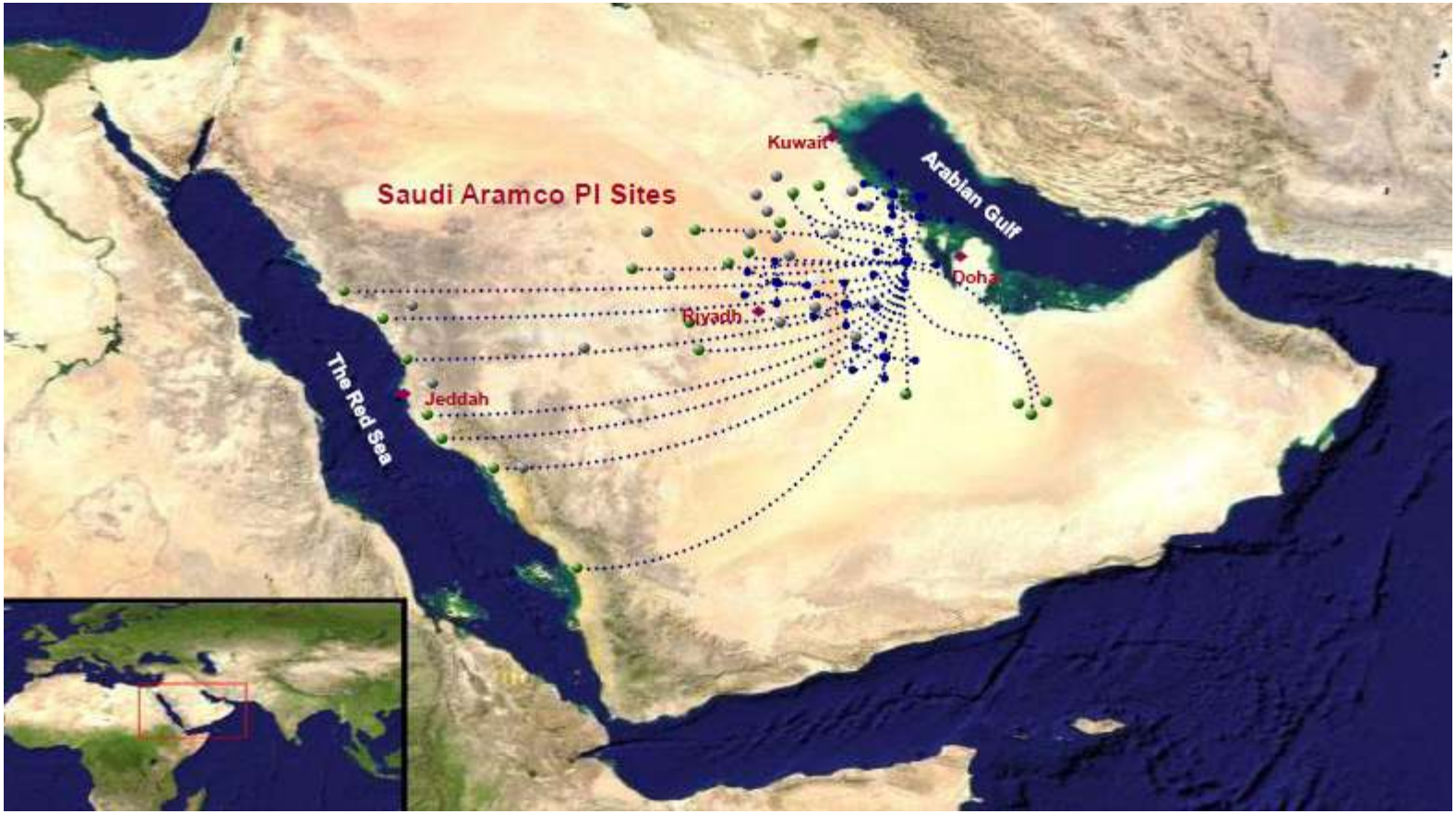
OSIsoft at Saudi Aramco

- Largest user of PI and OSIsoft products in the Middle East
- First agreement was signed in 1996
- Approximately 105 PI servers
- Utilizing about 1.7 million PI tags.
- 2500+ of PI clients
  - PI-ProcessBook
  - PI-DataLink
  - PI-WebParts

Architecture PI (symbolique)



Architecture PI (vue du ciel...)



Objectifs autour de la proactivité

The need for good indicators

- Understand exactly what is going on
- Know how well we are doing
- Analyze the past (what happened)
- Provide feedback on current operation
- Support preparing actions/modifications in response to changes
- Learn of potential problems that might need early actions to be avoided

Seuils de criticité définis

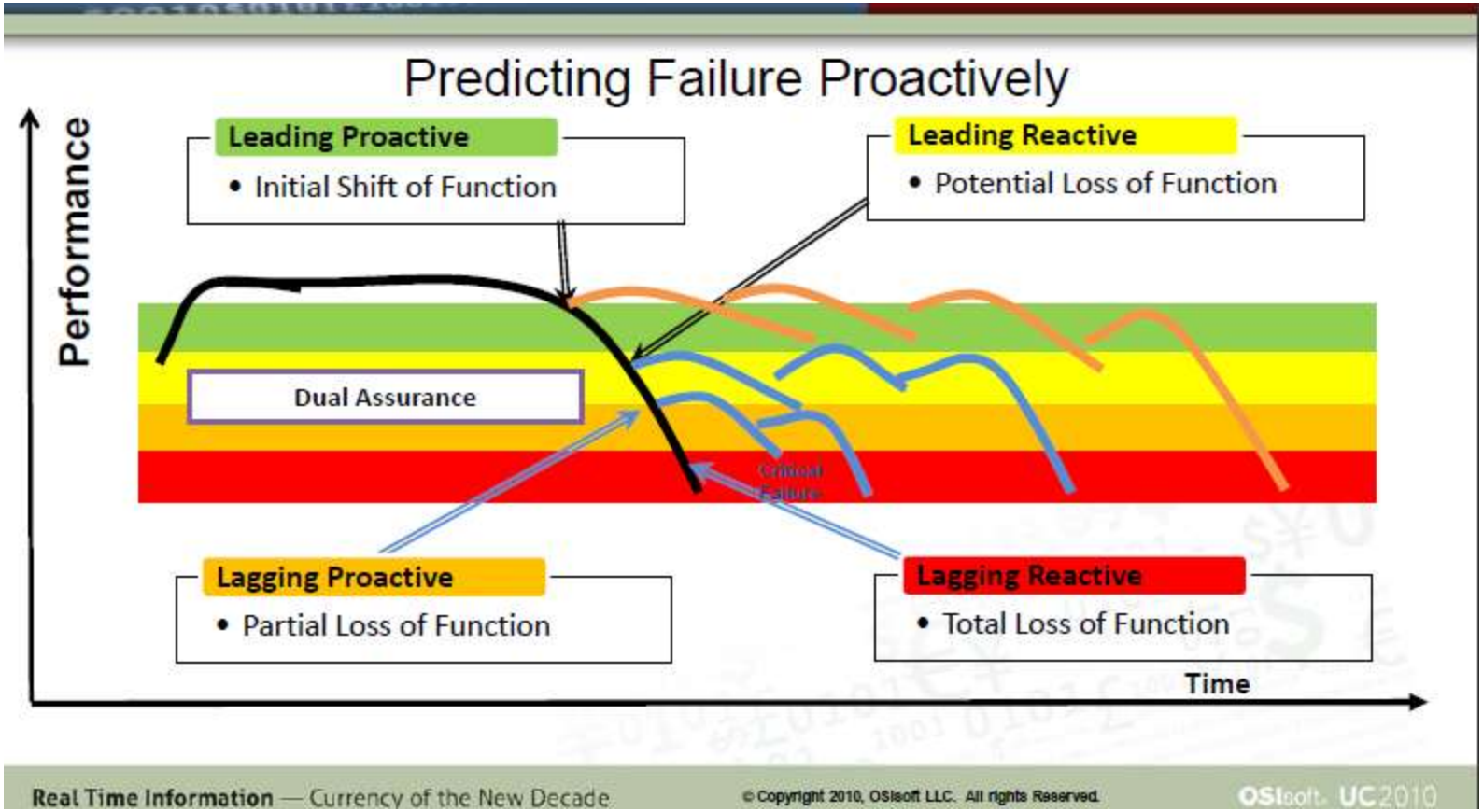
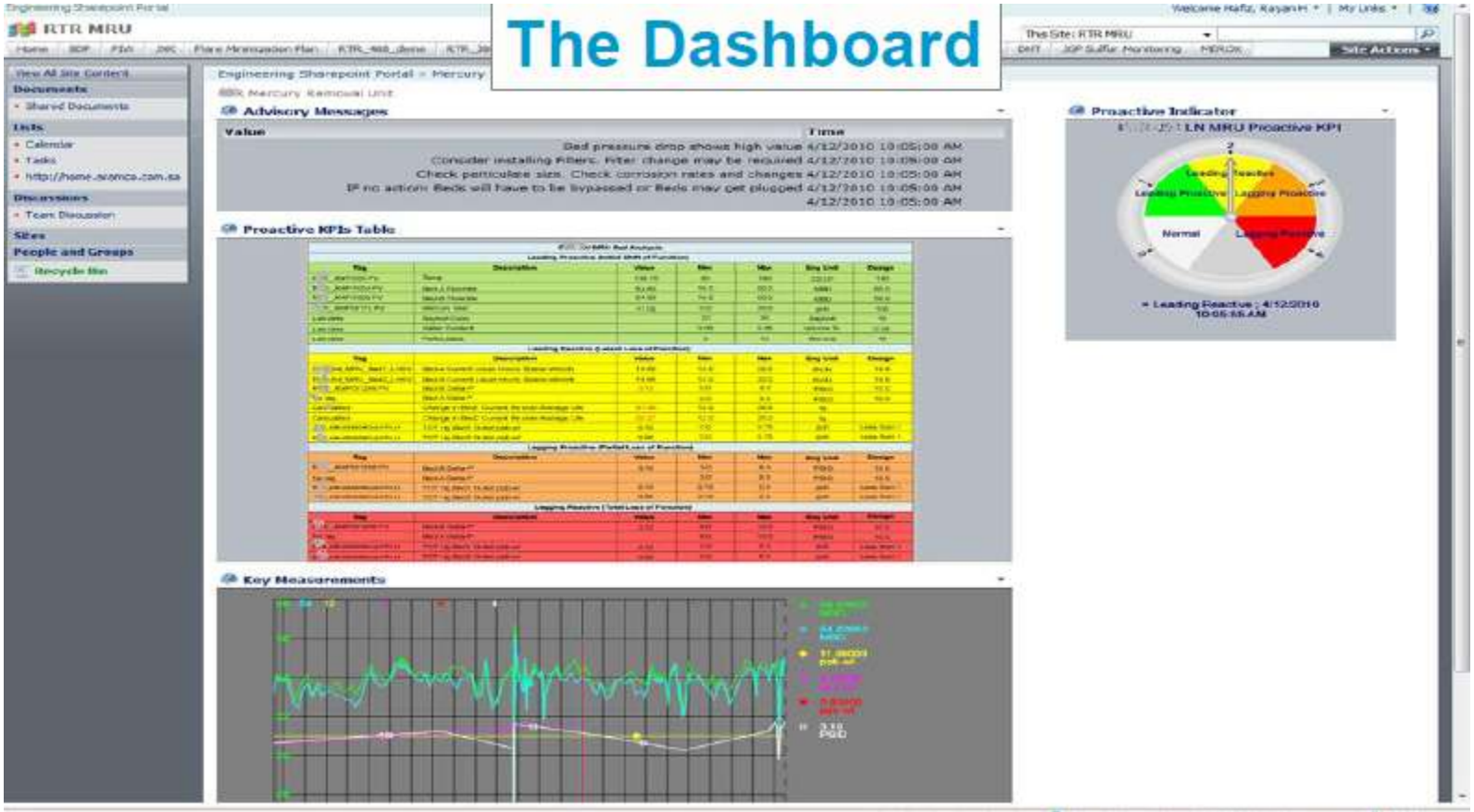


Tableau de bord conditionnel



Résumé des bénéfices observés

Summary of benefits

- Complete monitoring and management pro-active tools
- Possibility to add any new units with minimal modifications
- Impact on performance improvement means multiple millions of dollars in additional revenues
- Solution's template could be used for other functionalities/applications
- The integration/utilization of OSIsoft tools removed layers of complications
- No additional investment is required

International Power

International Power

IPR's Capability

33GW

- IPR is a leading independent power generator
- 33.2GW (21.4GW net) capacity in operation
- 3.3GW (988MW net) under construction.

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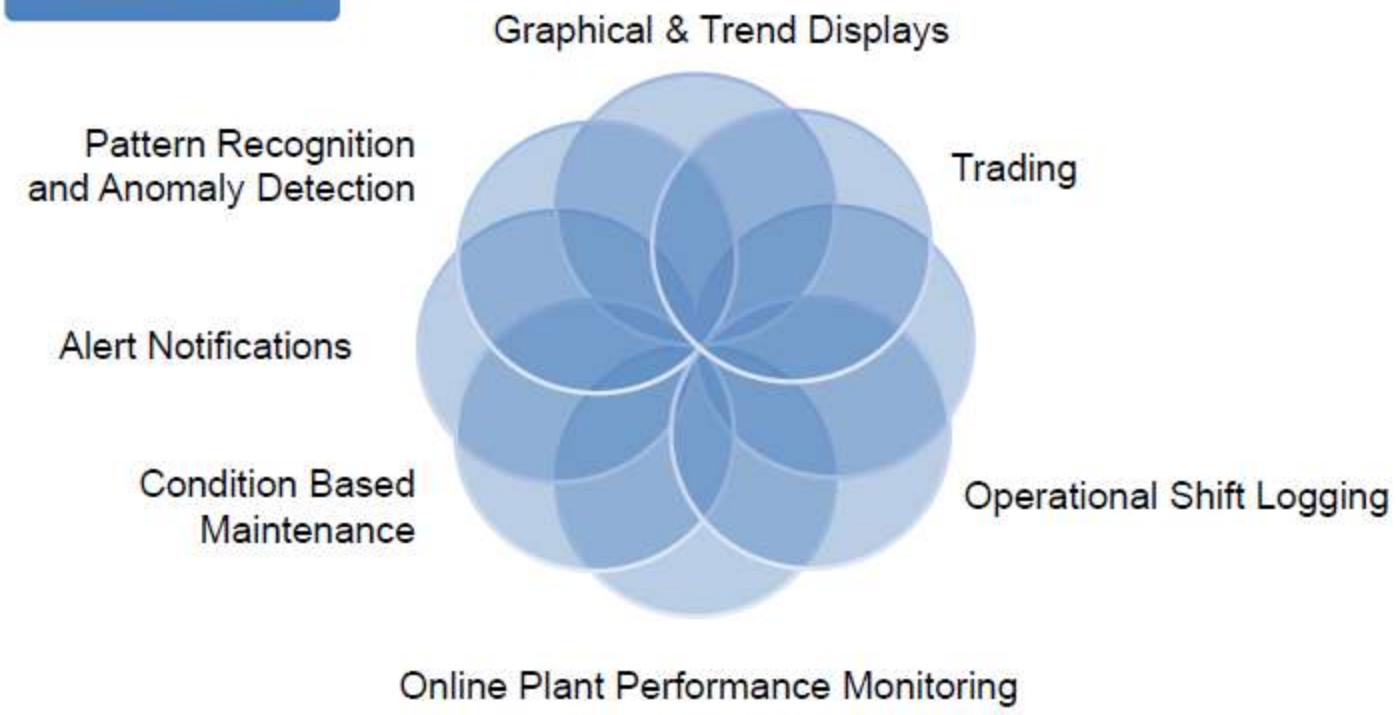
Les utilisations de PI en temps-réel

How do we use PI?

Data historians are typically used to support the following key processes

Real Time



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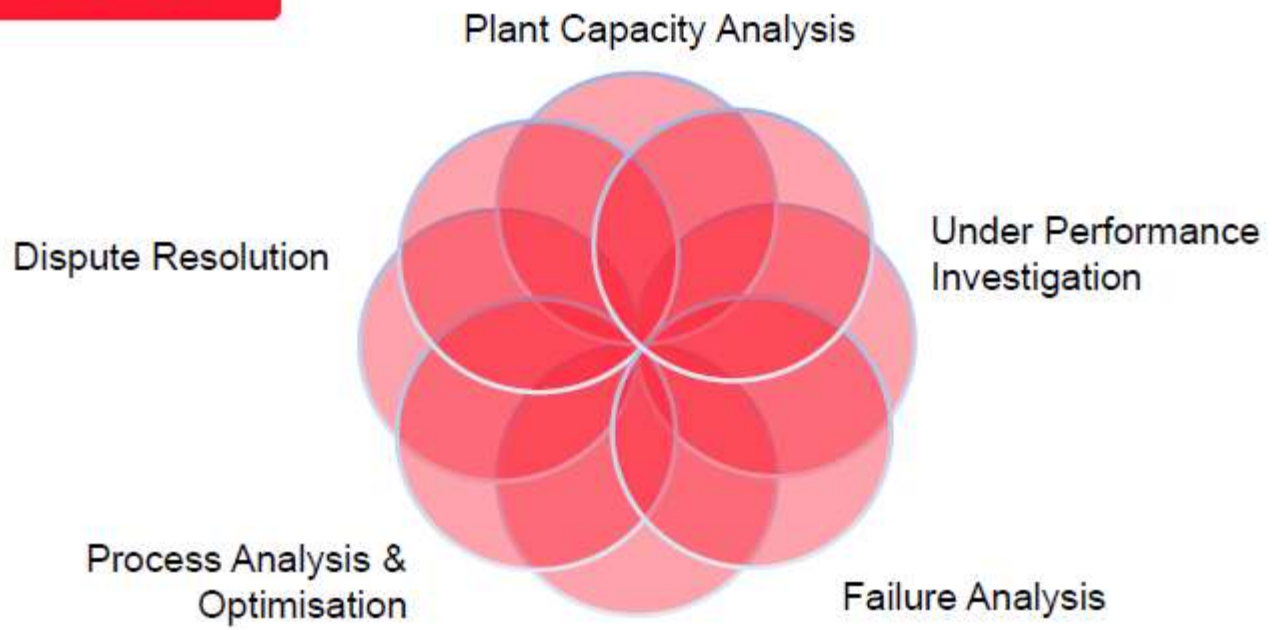
Les utilisations de PI en ad-hoc

How do we use PI?

Data historians are typically used to support the following key processes

Ad Hoc



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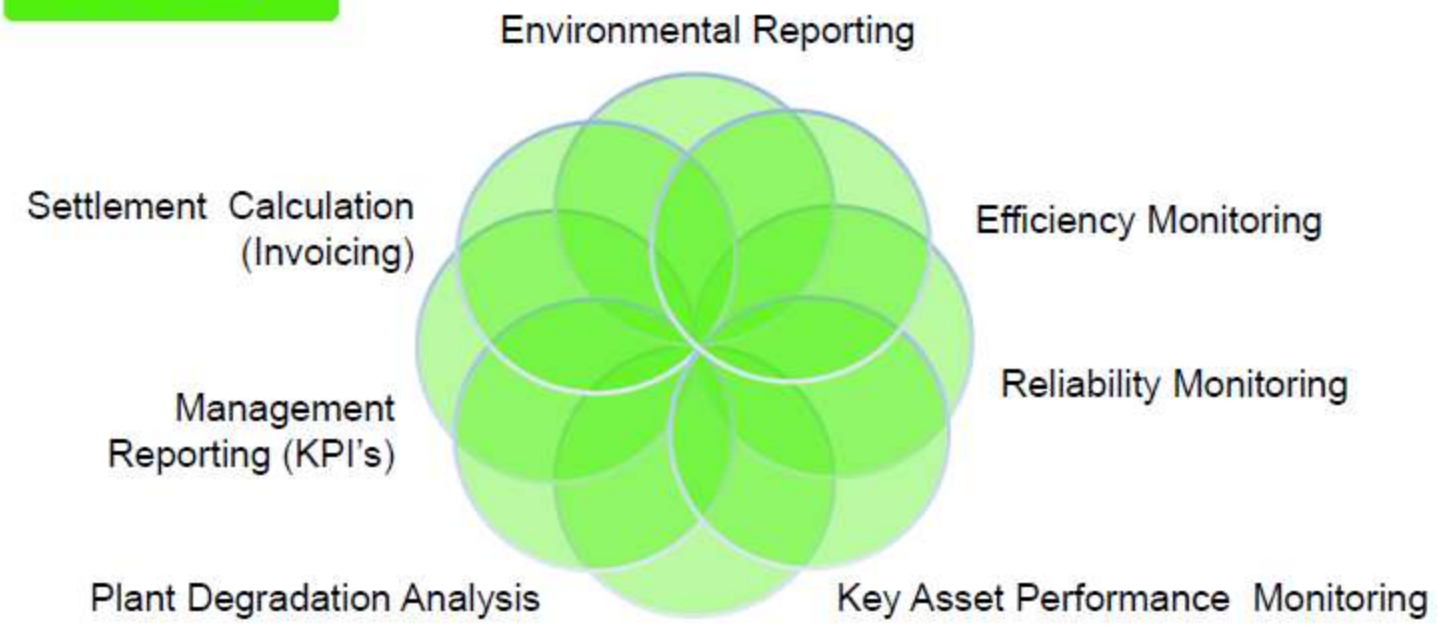
Les utilisations de PI – base mensuelle

How do we use PI?

Data historians are typically used to support the following key processes

Monthly



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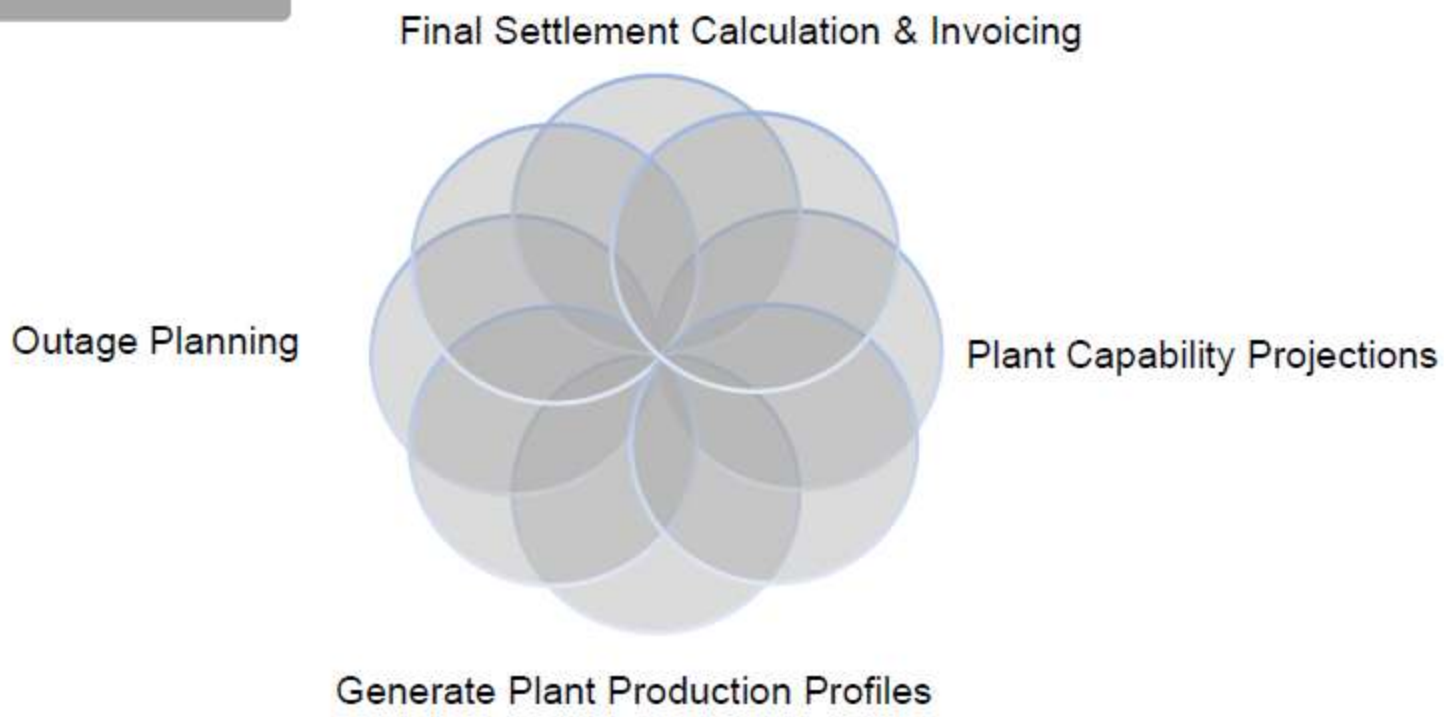
Les utilisations de PI – base annuelle

How do we use PI?

Data historians are typically used to support the following key processes

Annually



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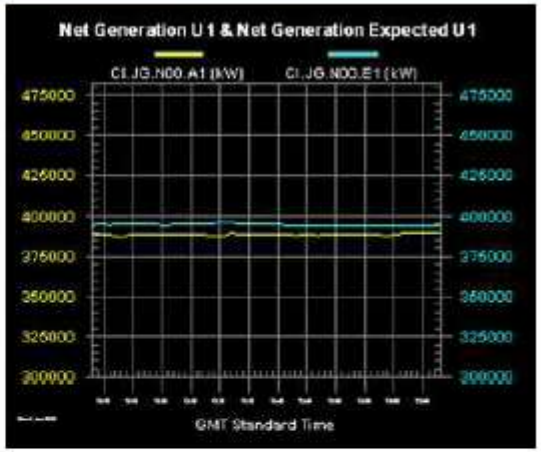
Empowering Business in Real Time.

REEX1: Résolution de disputes

PI as Data Source: Case Study 1

Thermal Performance Monitoring



- Proved to gas supplier that gas flow measurements were incorrect
- Gas supplier reimbursed > £1million

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REEX1: Maintenance prédictive

Real Time Integration - Case Study 2

Condition Based Maintenance

Aims

Optimise Maintenance Effectiveness by:

- Changing planned maintenance intervals:
  - From "time" based (e.g. every 3 months)
  - To "condition" based (e.g. every 2000 running hours)

Benefits

- 1 plant reduced boiler maintenance costs by $120 000pa

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Alyeska Pipeline

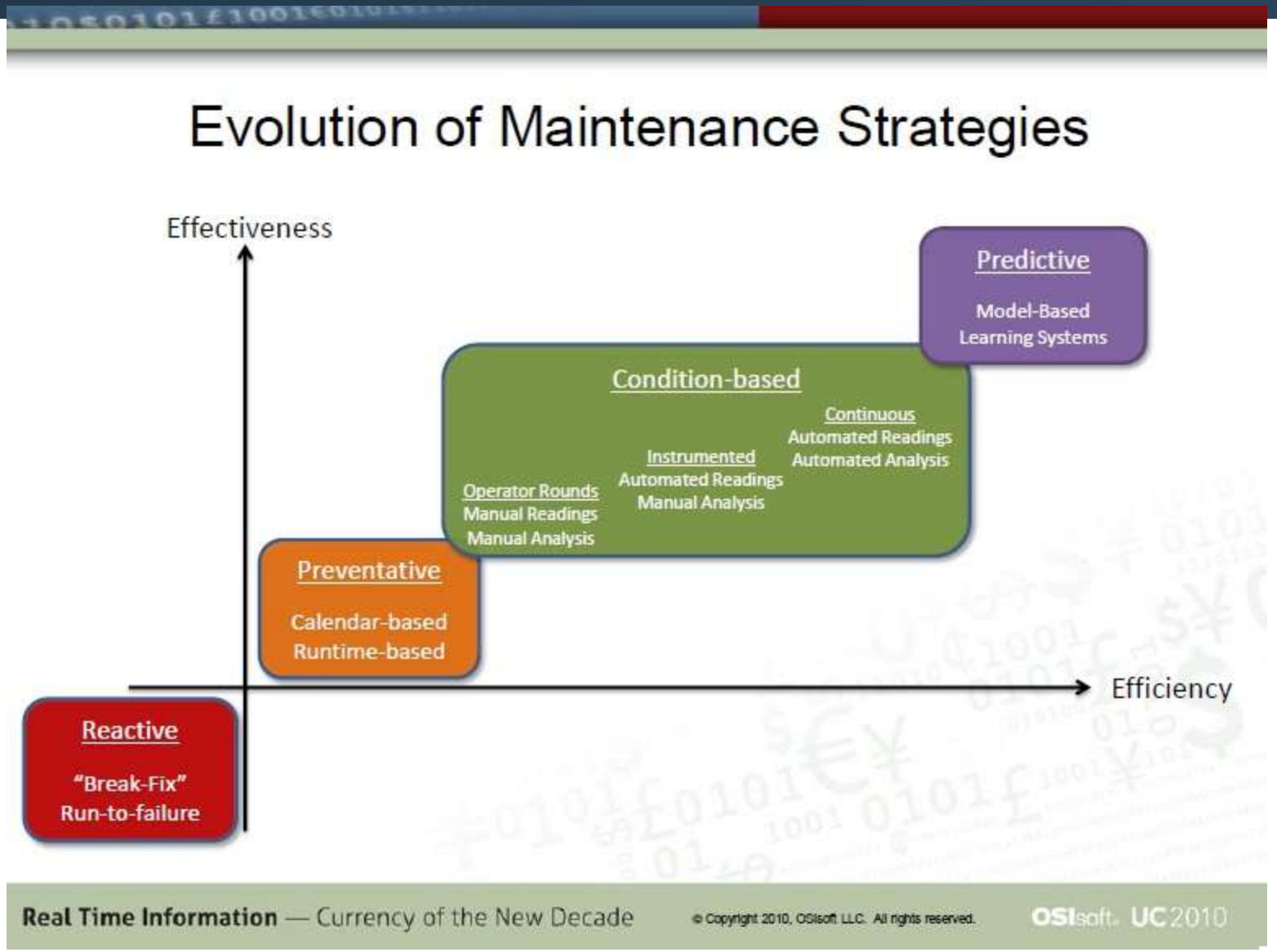
Alyeska Pipeline

ABOUT ALYESKA PIPELINE

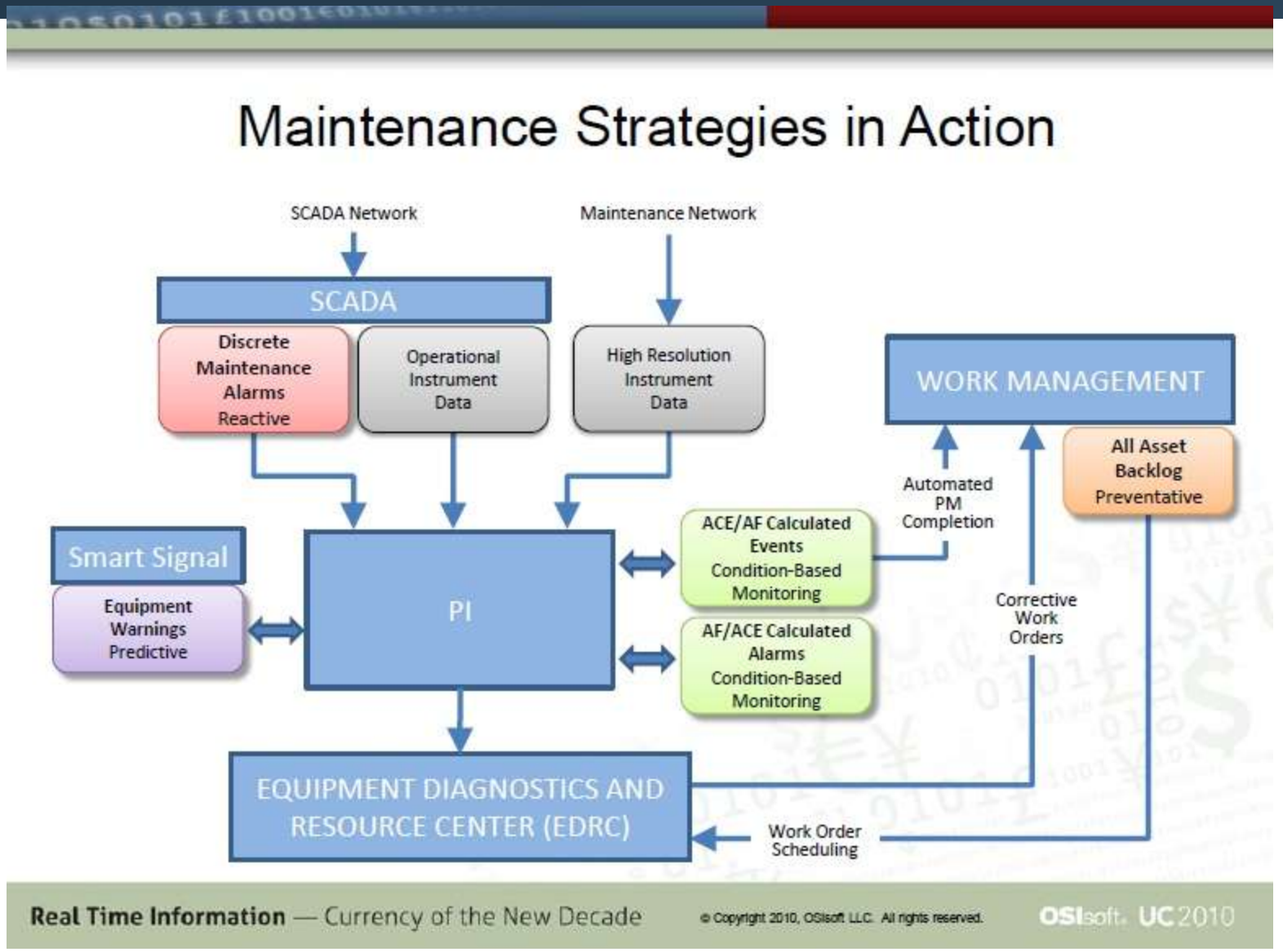
Alyeska pipeline SERVICE COMPANY

- 800 miles long
- 48” diameter pipe
- 5 Pump Stations
- Marine Terminal
- 1.4 Million bpd operating capacity
- Logistics & Operations centers in Valdez, Anchorage, and Fairbanks

Evolution de la stratégie de maintenance



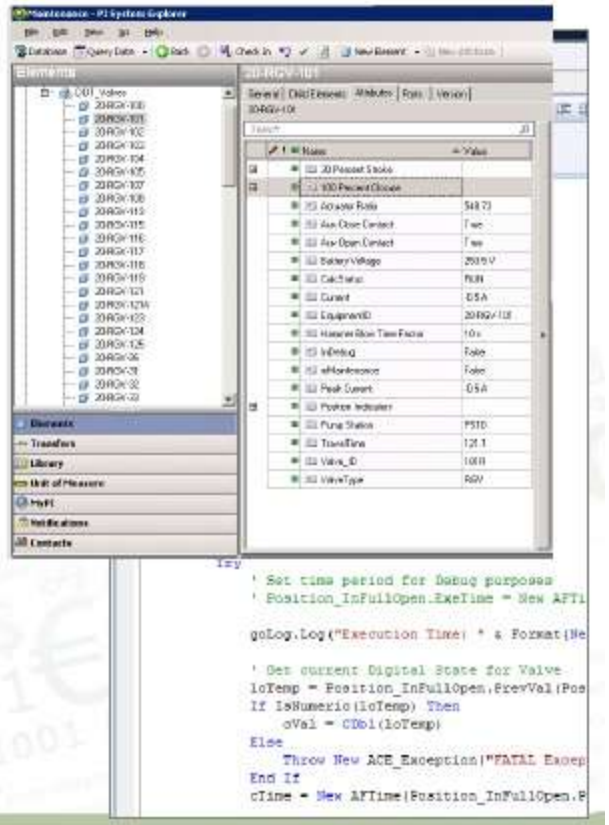
PI au coeur de la stratégie de maintenance



PI-AF & PI-ACE, fondations du projet

Analysis Framework & Advanced Computing Engine

- Foundation of our architecture
  - Model assets to Alyeska standard system / subsystem / component hierarchy
  - Re-usable structured logic for asset-based Continuous Monitoring
  - Integrate disparate data sources
  - Provides notifications architecture
  - Platform for continuous monitoring of similar equipment types



Bénéfices tangibles

TANGIBLE BENEFITS

EDRC BENEFIT	ANNUAL SAVINGS
Regulatory Calendar-based PM Automation	
DOT Valve Strokes – Reduced Field Man-Hours	$400,000
Function Testing of Valves – Reduced Field Man-Hours	$100,000
DOT Relief Valve Testing	$50,000
Tank Level PM's	$35,000
Continuous CBM and PBM Algorithms	
Unplanned Downtime Avoidance	$350,000
Device Deviation Monitoring – Reduced Field Man Hrs	$150,000
FIRST YEAR ANNUAL SAVINGS	**$1,085,000**

eBay

eBay

Introduction

On an average day, someone on eBay
- sells a vehicle every minute
- sells auto parts every second
- sells diamond jewelry every 2 minutes.

"The foundation of our revenue is our data centers..."

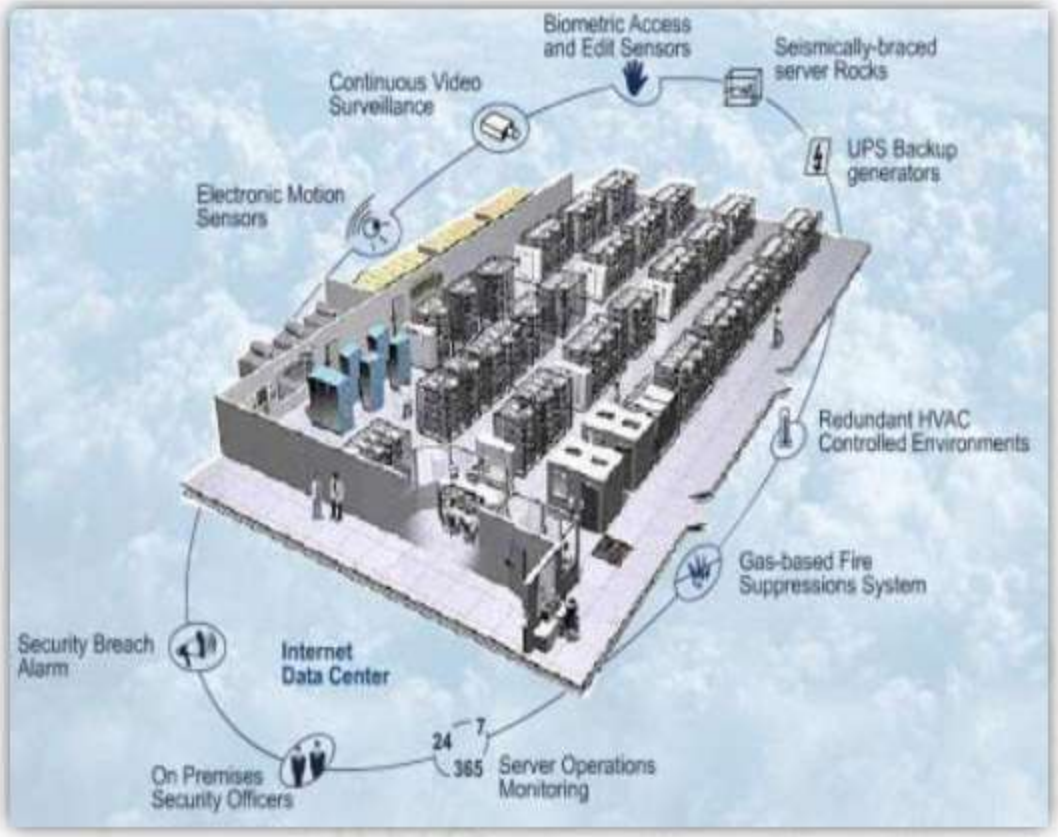
Dean Nelson, eBay
Dir, Global DC Strategy

Une grande variété de type et de sources de données

Monitoring Requirement

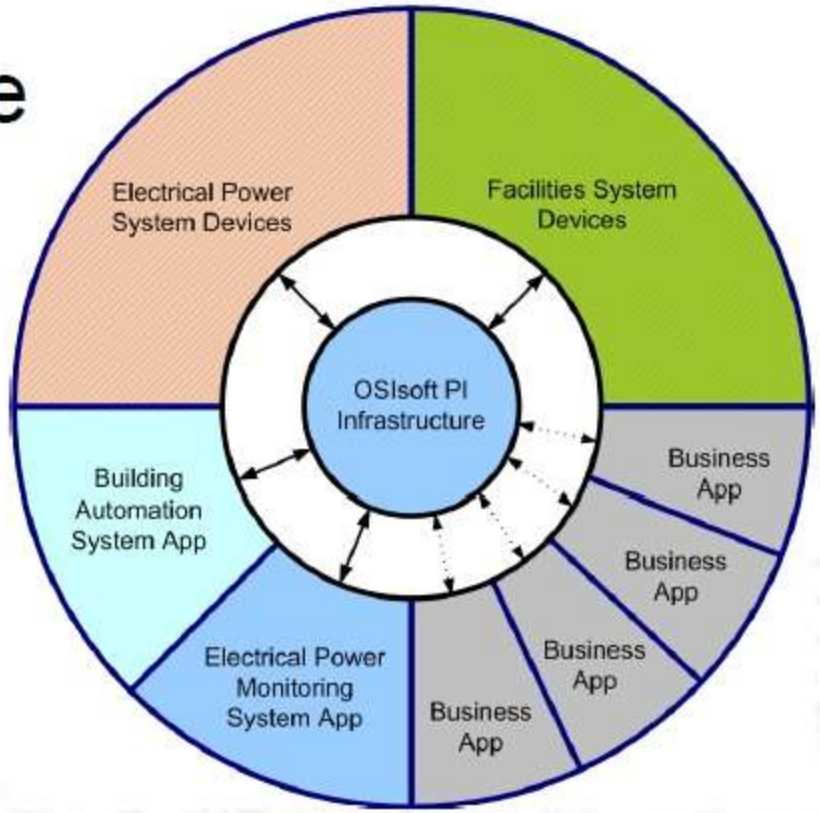
Treat Mechanical, Power, IT and Security as one complete system

- *Nearly 1000 devices*
- *Over 110,000 points*

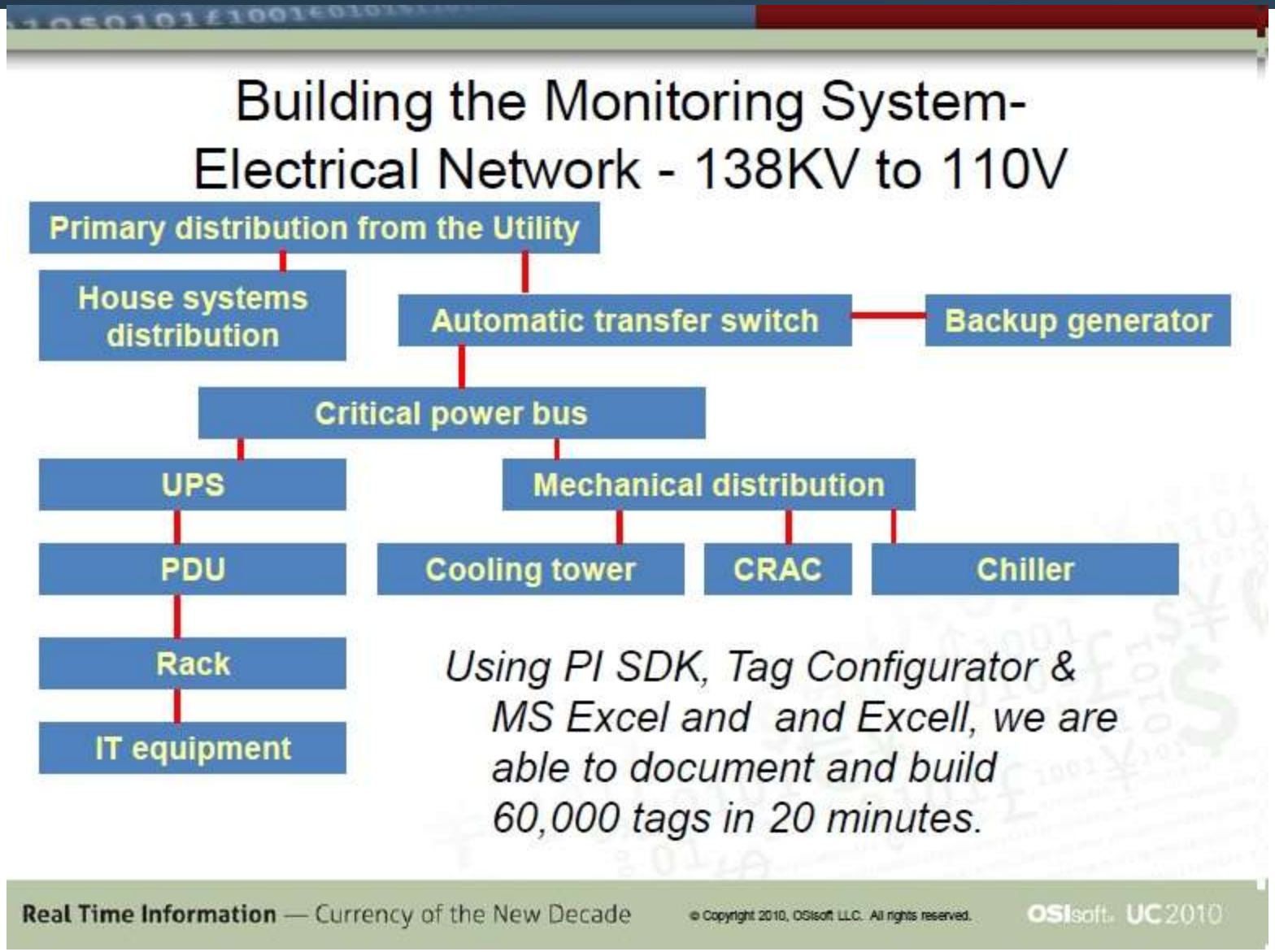


Infrastructure PI chez eBay

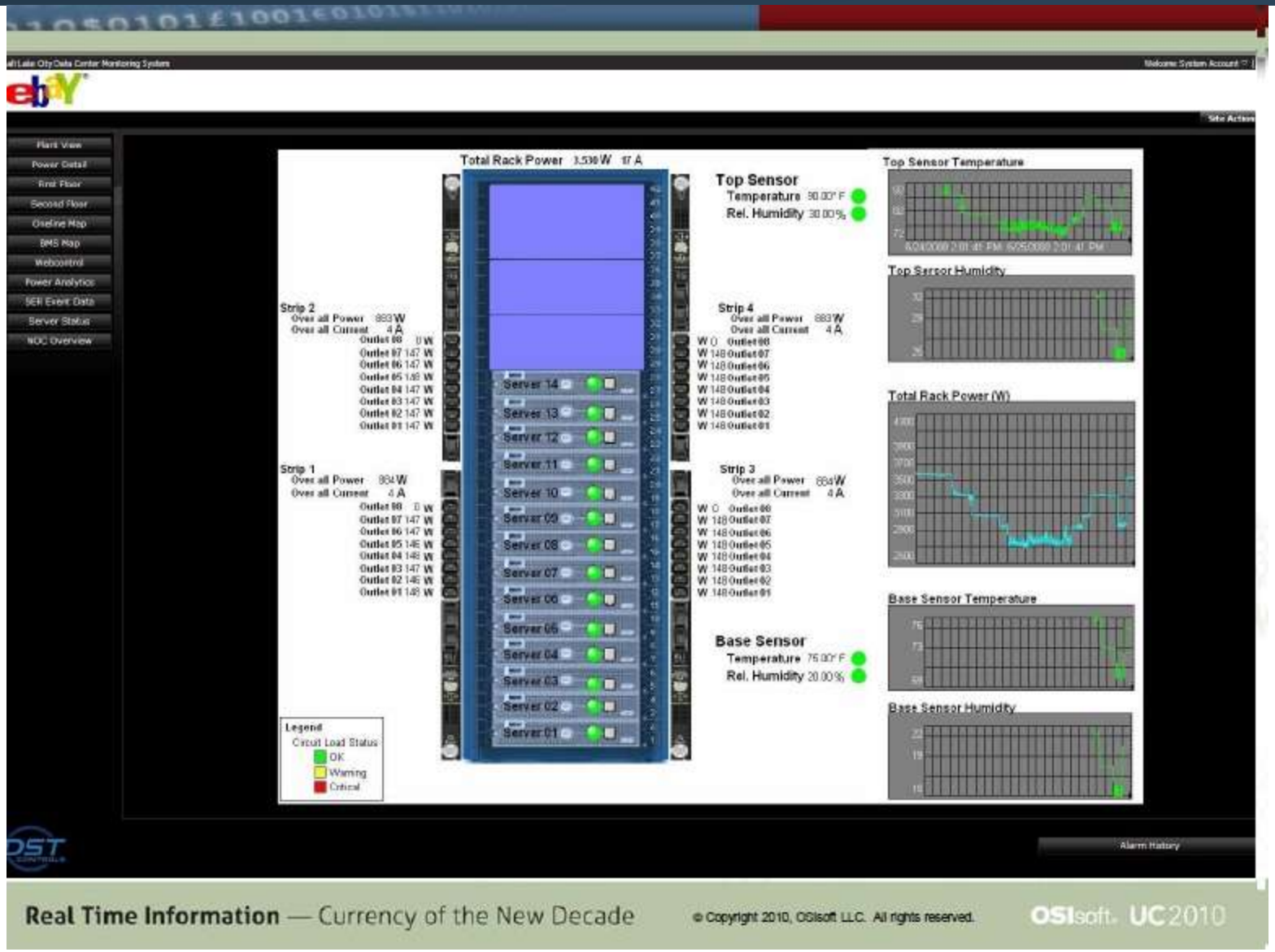
PI is an infrastructure



Données électriques, mécaniques et IT



Portail de suivi temps-réel



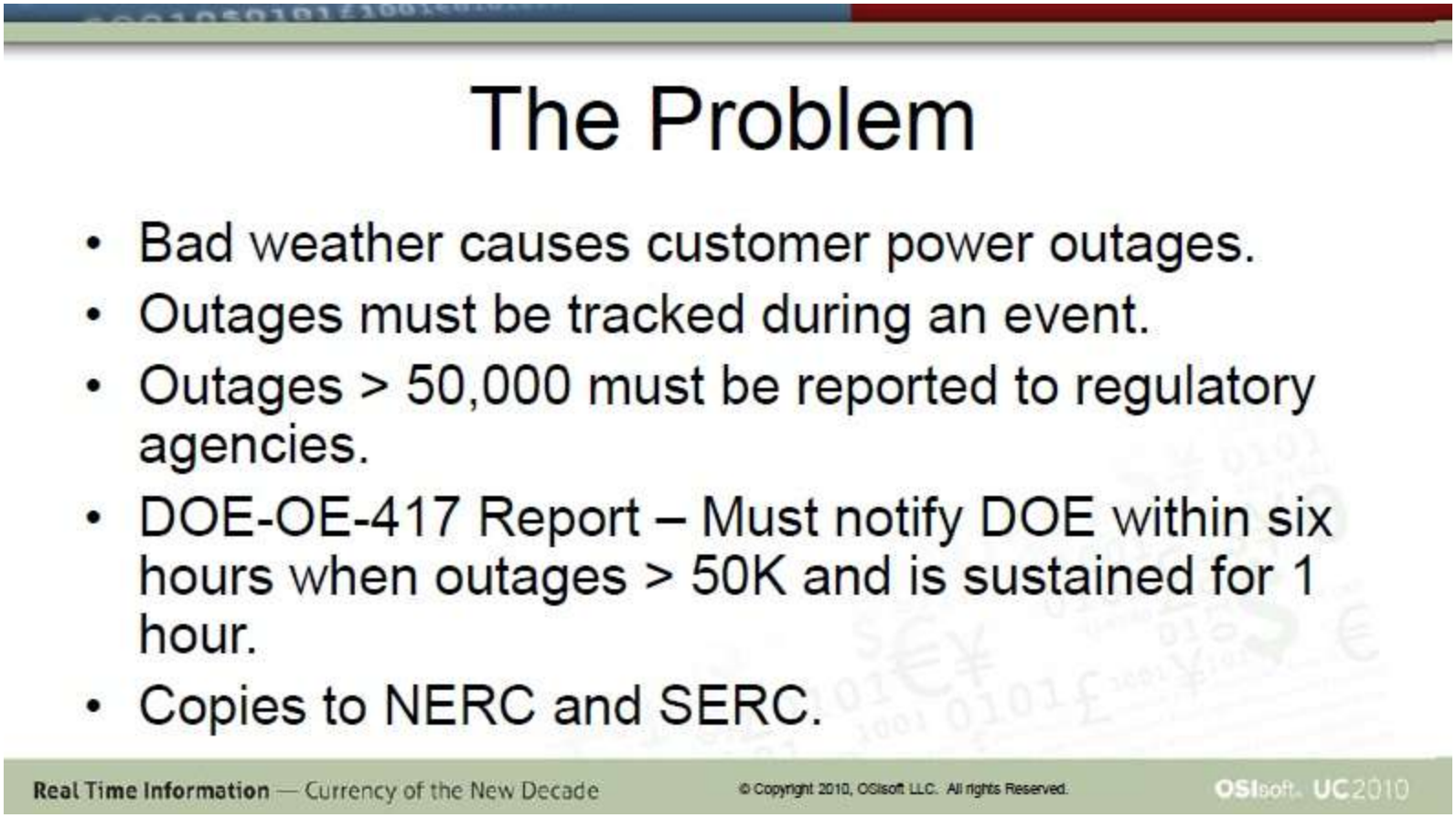
Duke Energy

Duke Energy

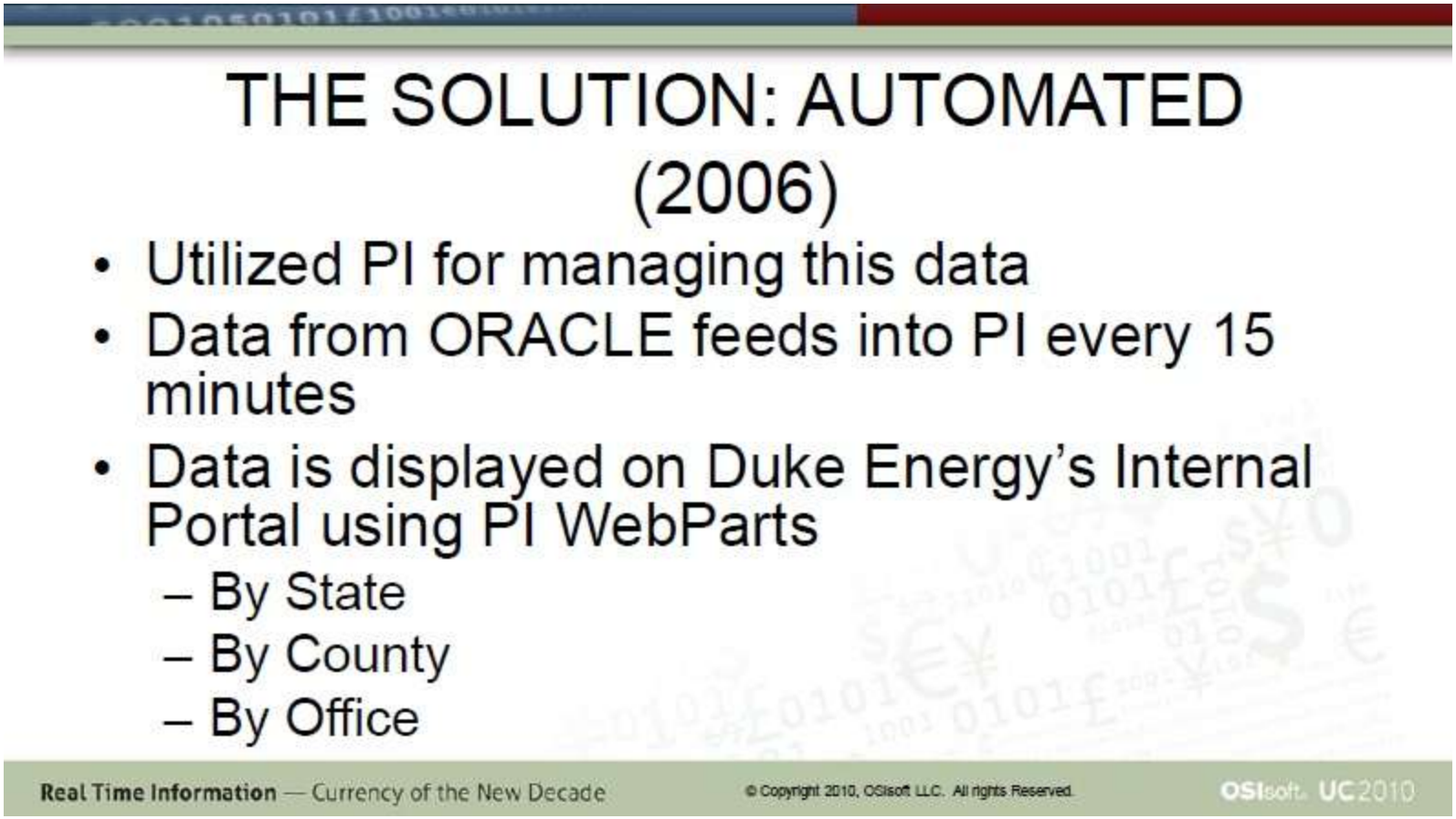
FACTS ABOUT DUKE ENERGY

- 150+ years of service
- 4 million customers
- Fortune 500
- $50 billion in assets
- Stock dividends for 80+ years
- Traded on NYSE as DUK
- Dow Jones Sustainability Index

Le problème: Insuffisance de réactivité, de traçabilité et de visibilité



La solution: Mise en place d'une infrastructure temps-reel PI



Visibilité en temps-réel du terrain aux terminaux mobiles via PI

THE SOLUTION: Mobile

- Currently 43 users receiving customer outage data on four types of Blackberry devices
  - 8830 World Edition
  - Storm
  - Tour
  - Bold

Real Time Information — Currency of the New Decade

OSIsoft. UC2010

Résultats

RESULTS

- Eliminated around the clock staff to chart customer outages during storms
- Data available immediately via company portal to anyone that needs it
- Multiple visual formats available via PI WebParts
- Data now available 365 days per year, 24x7

EDP

EDP

EDP Group

Renewables

U.S.A.
Generation capacity
1,556 MW
Energy generated (2007)
2,003 GWh

Europe
Generation capacity
2,290 MW
Energy generated
1,957 GWh

Brazil

Generation capacity
1.044 MW
Electricity distribution
12,731 GWh
3,284 thousand customers

Portugal

Generation capacity
9,003 MW
Electricity distribution
23,129 GWh
6,067 thousand customers
Gas distribution
188 thousand customers

Spain

Generation capacity
2.978 MW
Electricity distribution
4,911 GWh
623 thousand customers
Gas supply
496 thousand customers

OSIsoft.

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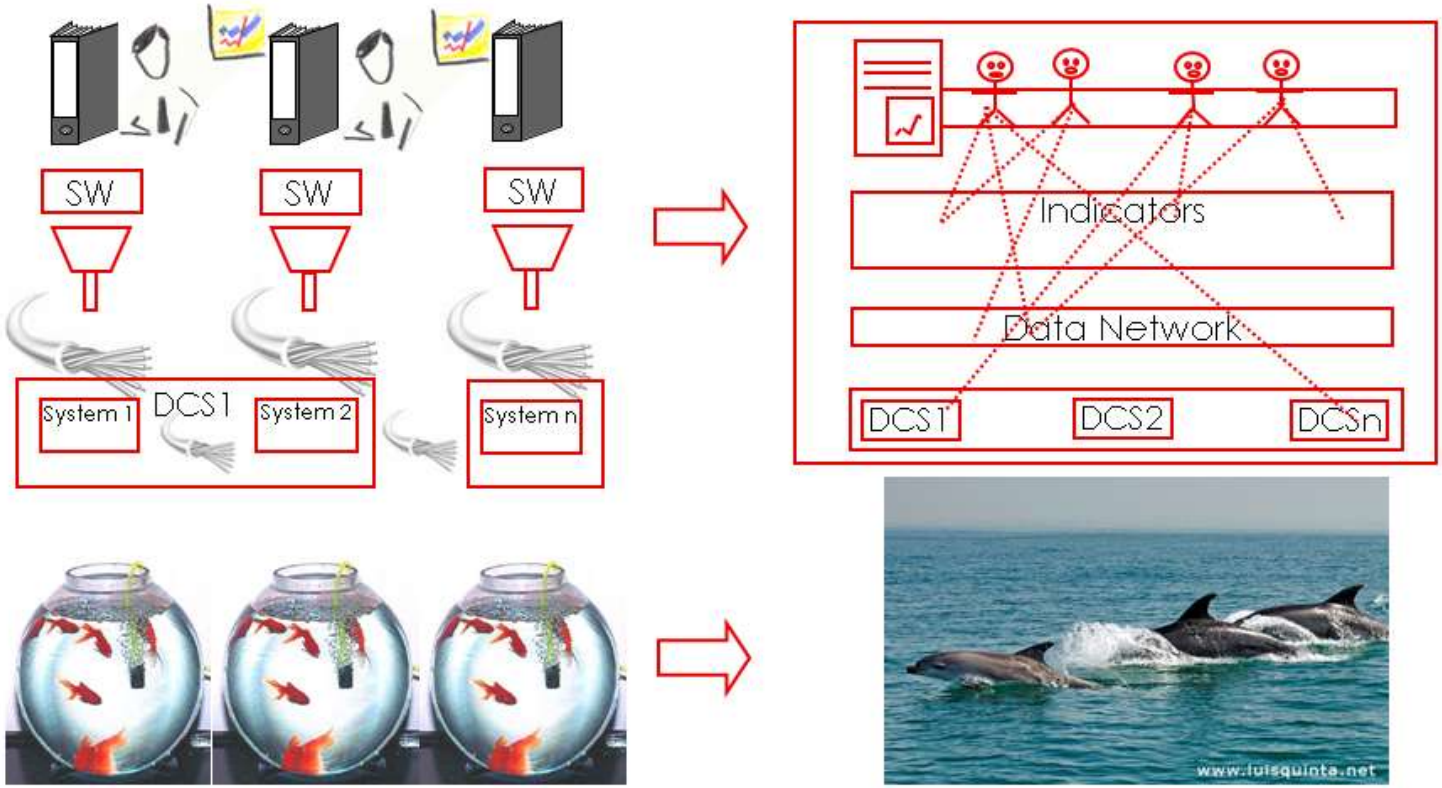
Le dilemme

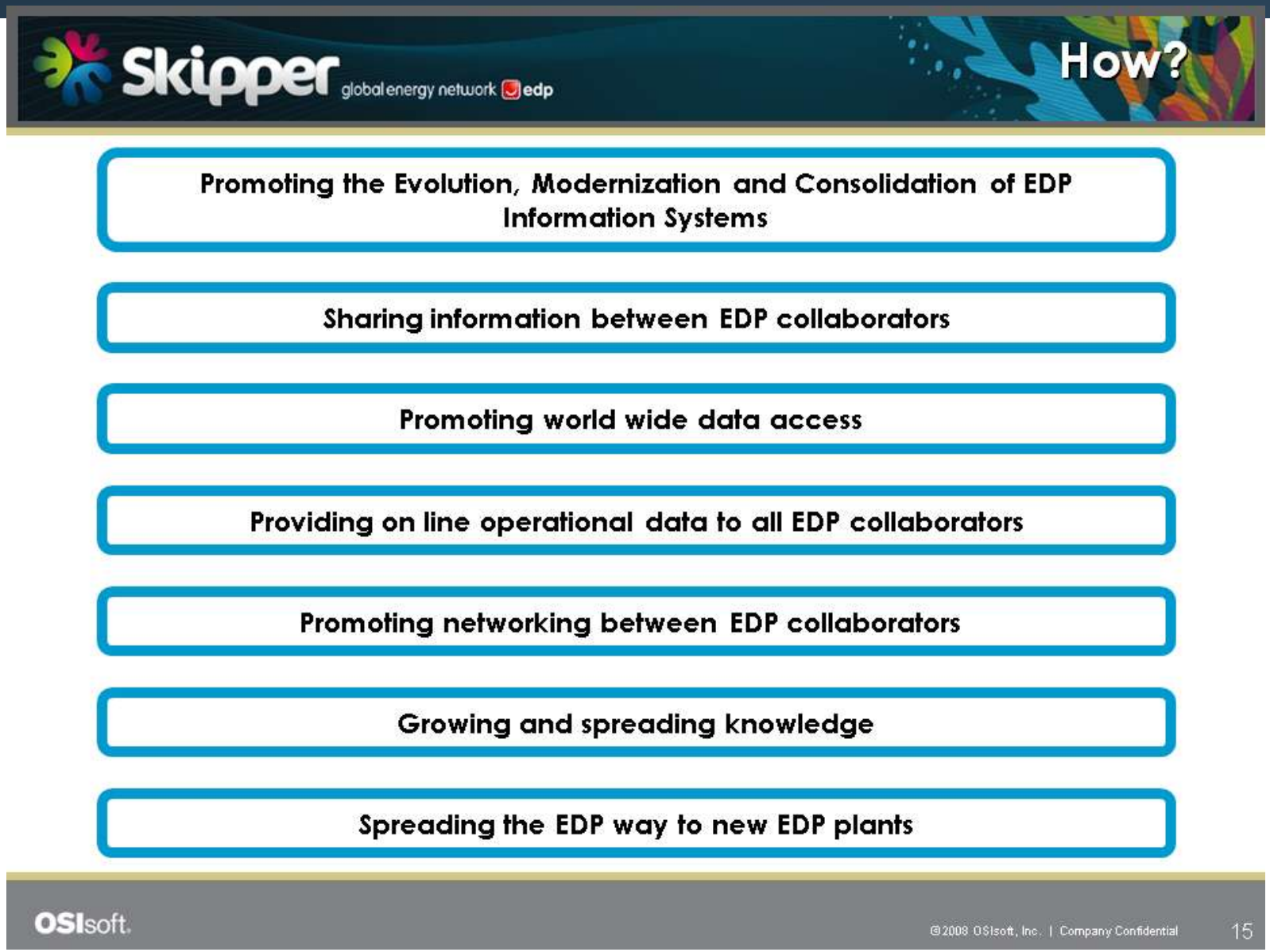
Skipper global energy network edp

What is our main goal?

Moving from each one working by itself to everyone sharing information and working together



L'*EDP way*



Le choix de PI

Skipper global energy network edp

Requirements

Open system

Scalable

IT state of the art

Easy

Universal

... on budget and on time

OSIsoft.

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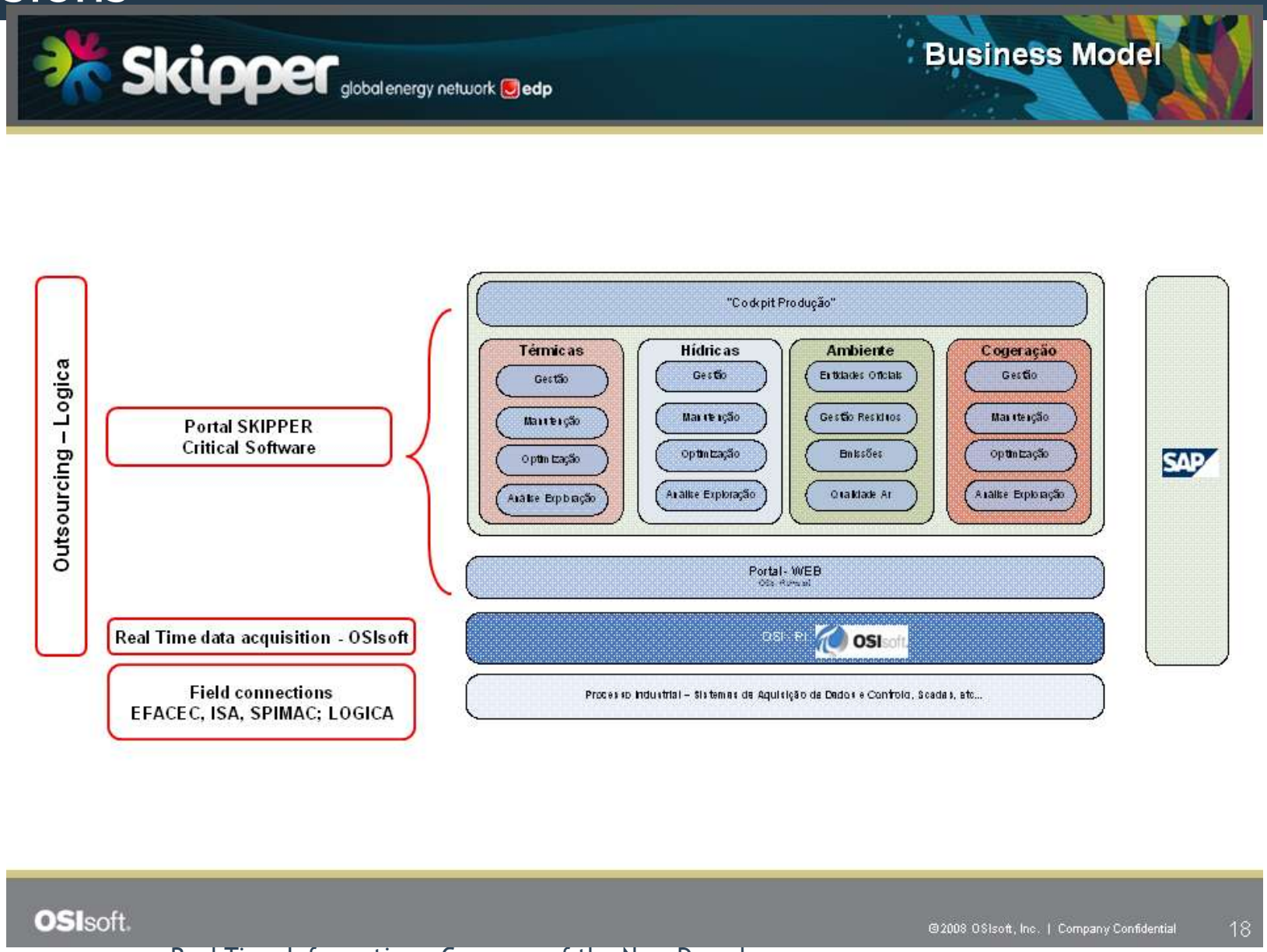
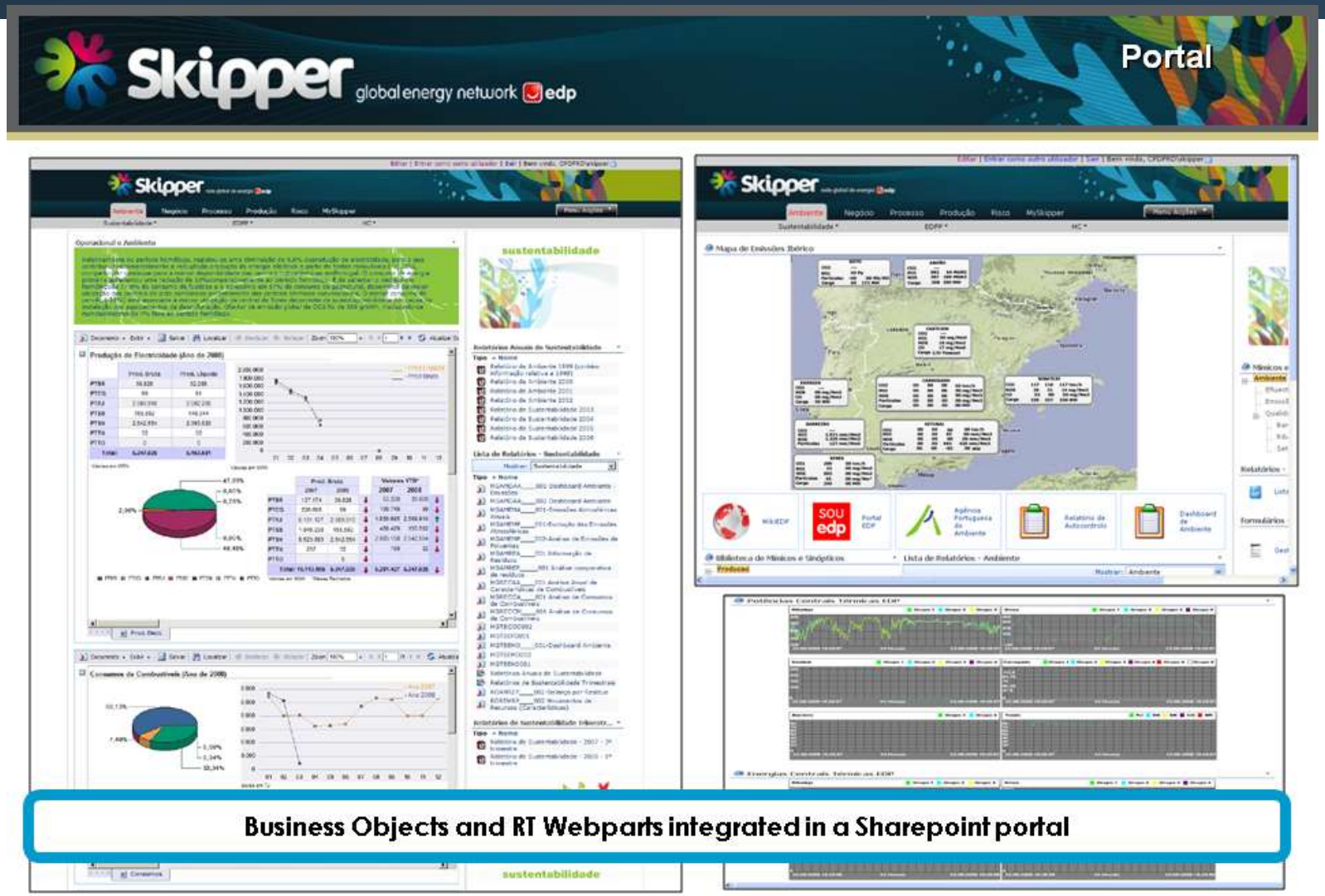
Socle commun au service de toutes les divisions

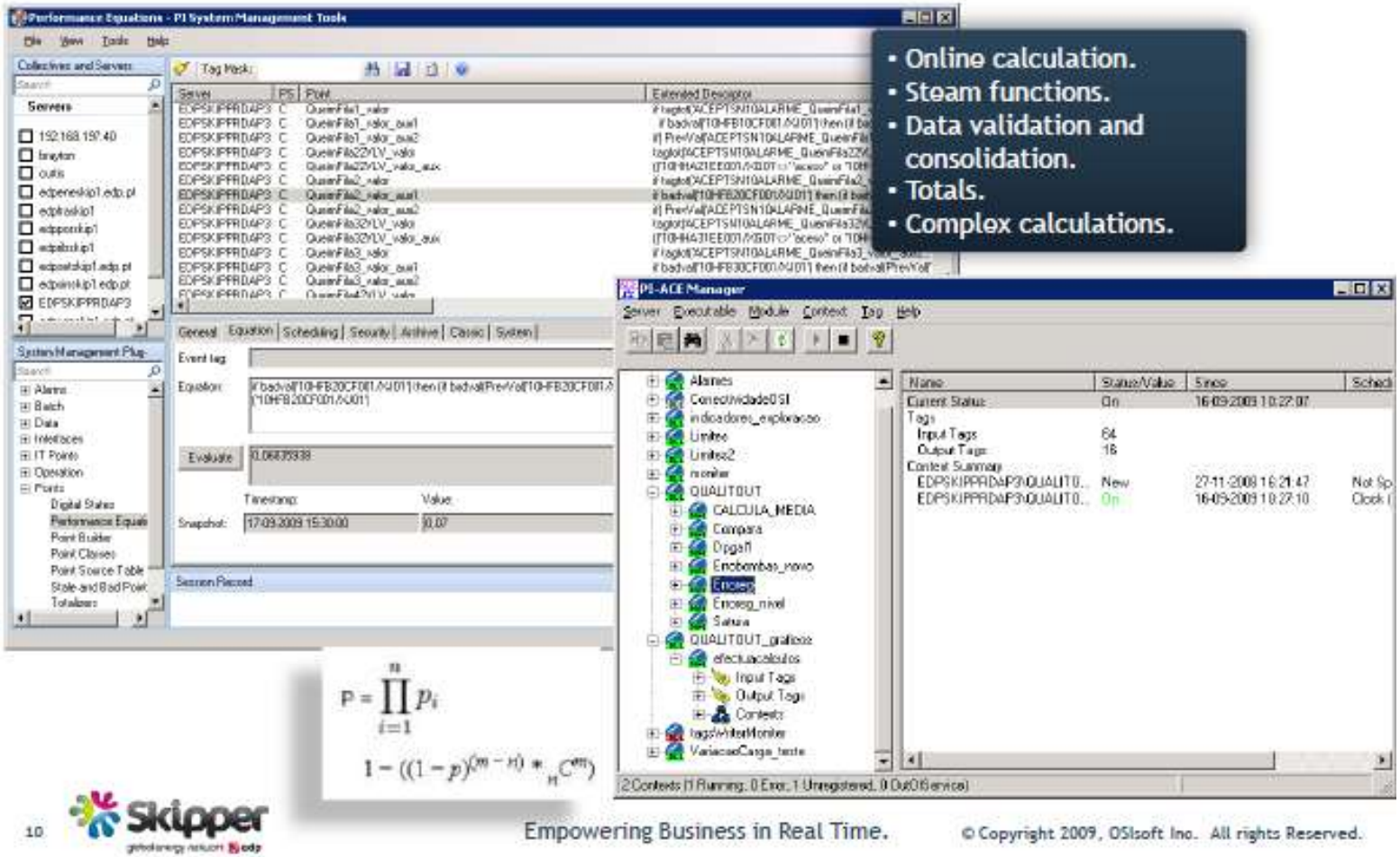


Une vue exhaustive de la performance



Une large variété de calculs

Performance Equation, Totalizer and ACE



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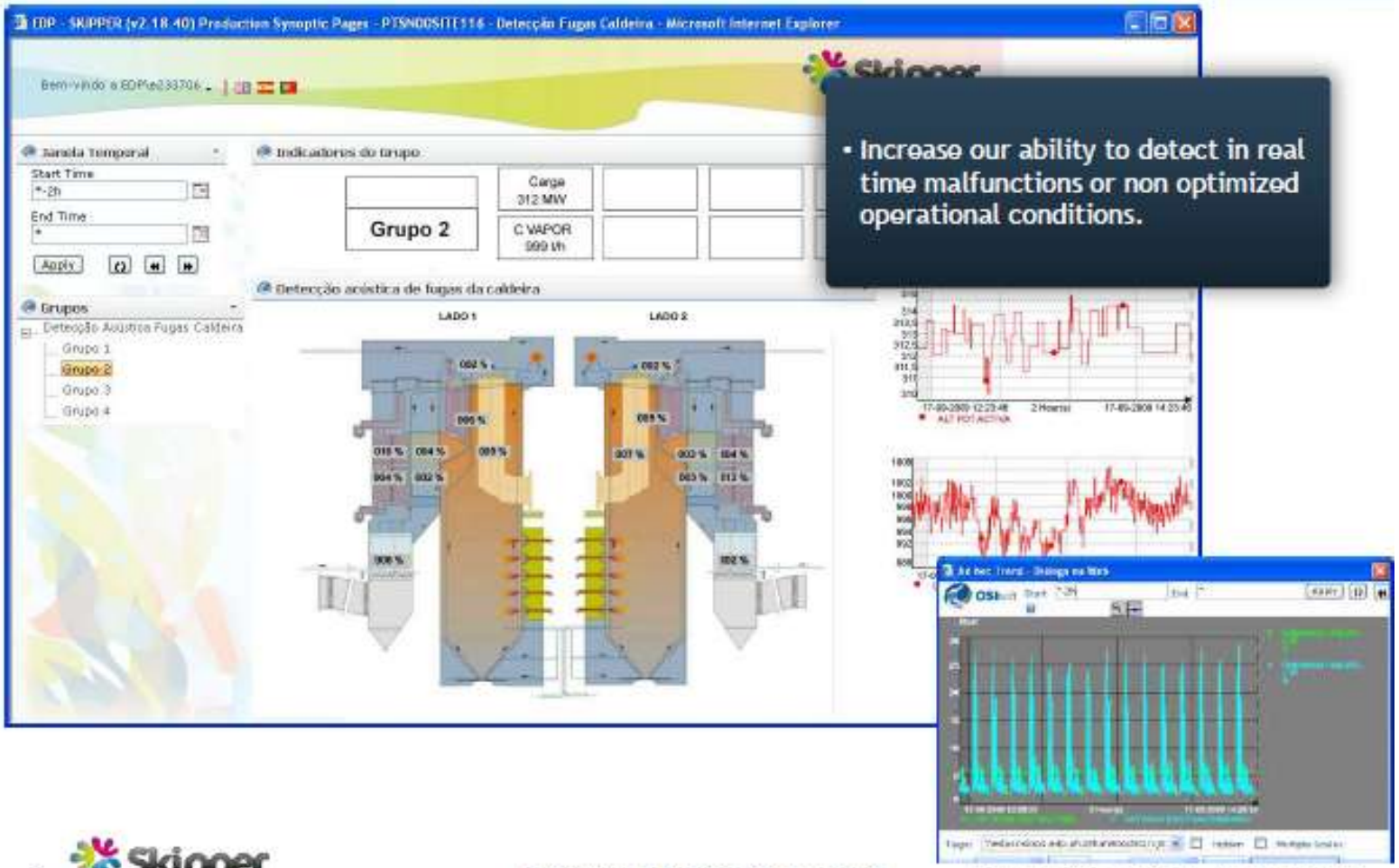
Skipper

Empowering Business in Real Time.

Détection en temps-réel de dysfonctionnements

Applications - Boiler leakage



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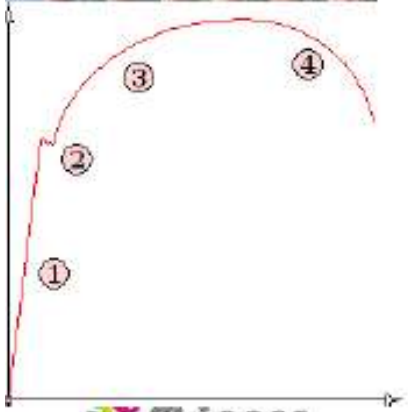
Empowering Business in Real Time.

Détermination de la durée de vie effective des équipements

Applications - Remaining Life-Time



Vida Restante

Data de Início 01-07-2009 00:00:00

Data de Fim 31-08-2009 00:00:00

Central SINES

Grupo SINES GRUPO 1

Formulário Todos Sines 1

Parâmetro	Tag	Valor de Referência	Máximo da Escala			
PRESSÃO	10HAH50CP001.VAL01	165	170	120	10	2T40-10HAH50CP001 - CAD MED P VAPOR
TEMPERATURA	10HAH50CP002.VAL01	540	560	500	10	2T40-10HAH50 - SOBREAQUECEDORES CALDEIRA

- Development of tools to support power plant equipment operation and maintenance.

Temperatura (ºC)	120,00	125,00	130,00	135,00	140,00	145,00	150,00	155,00	160,00	165,00	170,00
560,00						0					
554,00	0	0	0	0	0	0	0	0	0	0	0
548,00	0	0	0	0	0	0	0	0	0	0	0
542,00	0	0	0	0	0	0	0	0	0	0	0
536,00	0	0	0	0	0	0	0	0	0	2	0
530,00	0	0	0	0	0	0	0	0	1	775	4393
524,00	0	0	1	1	0	0	0	0	1	217	202
518,00	0	0	0	1	0	0	1	1	0	123	21
512,00	1	0	0	0	0	0	0	0	2	65	16
506,00	0	0	0	0	0	0	0	0	0	28	1
500,00	1	0	0	0	2	0	0	1	1	15	2
						651					

Pressão (bar)

Número de Falhas: 0

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Empowering Business in Real Time.