
REAL-TIME PERFORMANCE MANAGEMENT FOR THE ENTERPRISE
RtPM
SAN FRANCISCO PHILADELPHIA HOUSTON FRANKFURT
OSISOFT USER CONFERENCES 2005
REAL-TIME PERFORMANCE MANAGEMENT FOR THE ENTERPRISE
RtPM

Javier Rodríguez Roncero

Telvent

Business Development

TELVENT

The Global RealTime IT Company

A Business Case for a Centralized Plant Information System for Abengoa Bioenergy

Agenda

- Telvent's Company Profile
- Abengoa Bioenergy's Company Profile
- Business Challenges
- Key Drivers in Implementing PI
- Technical Solution
- Project Plan
- Expected Benefits
- Questions

Telvent's Vision

Telvent's vision is to be the leading provider of complete RealTime IT solutions in selected industrial sectors (Energy, Traffic, Transport and Environment) in Europe, North America, Latin America and China, enabling our customers to more efficiently manage their operations and business processes.

Spain

Madrid

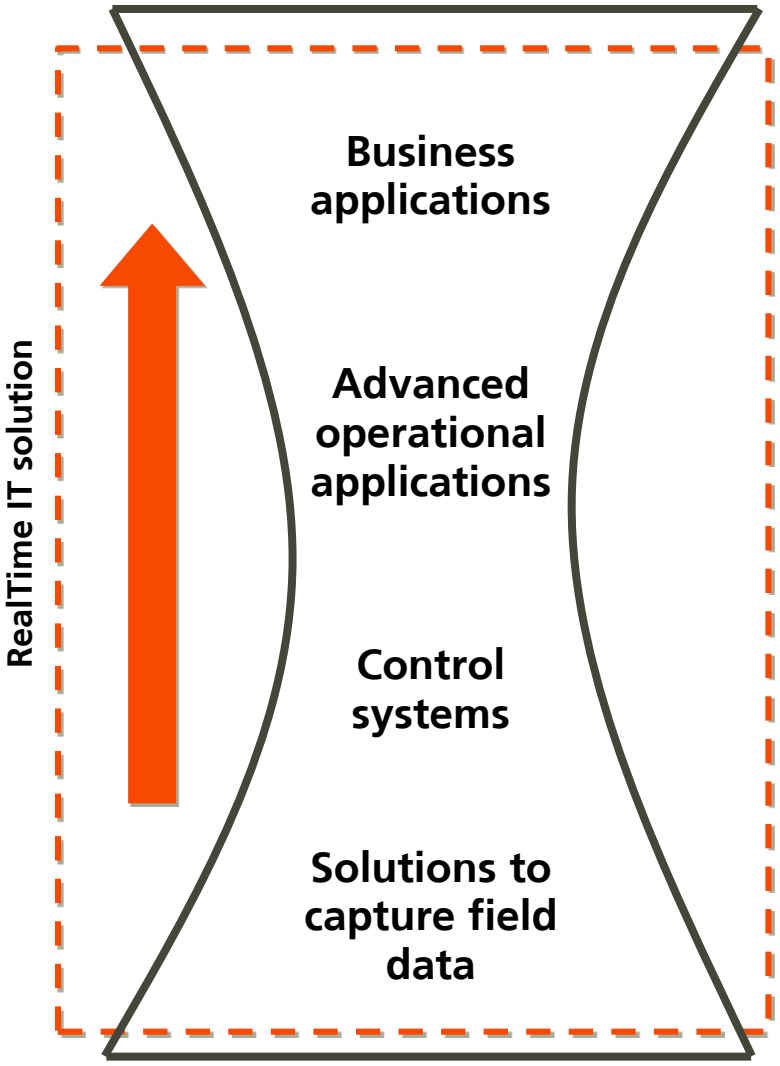
Seville

North America

Calgary

Houston

Telvent's Solutions Today



- Applications that enhance RealTime business decision making → Business decisions
- Applications that use operational data to better manage industry-specific processes → Process knowledge
- Data collection and control systems that manage field operations → Operational information
- Remote instrumentation and solutions to capture raw data → Raw data

Case Study I:

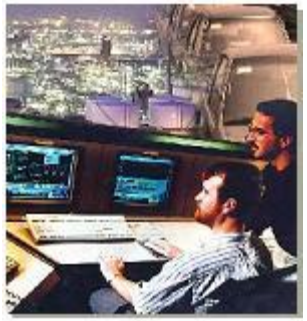
Telvent provides a global oil company with a complete solution to operate its pipeline network

Business applications

Advanced operational applications

Control systems

Solutions to capture field data



- **Polaris application** manages corrected volume and revenue accounting based on information received from the other applications
- **LMS application** detects leaks in the pipeline and defines delivery scheduling accordingly
- **OASyS RealTime infrastructure system** remotely monitors and controls 35 crude oil and refined products pipelines
- **Remote Terminal Units (RTU)** capture, validate and transmit data from a network of crude and liquid petroleum products pipelines (more than 10,500 miles)

Case Study II:

Telvent´s traffic control system to better manage the traffic of a 1 million people city

Business applications

Advanced operational applications

Control systems

Solutions to capture field data

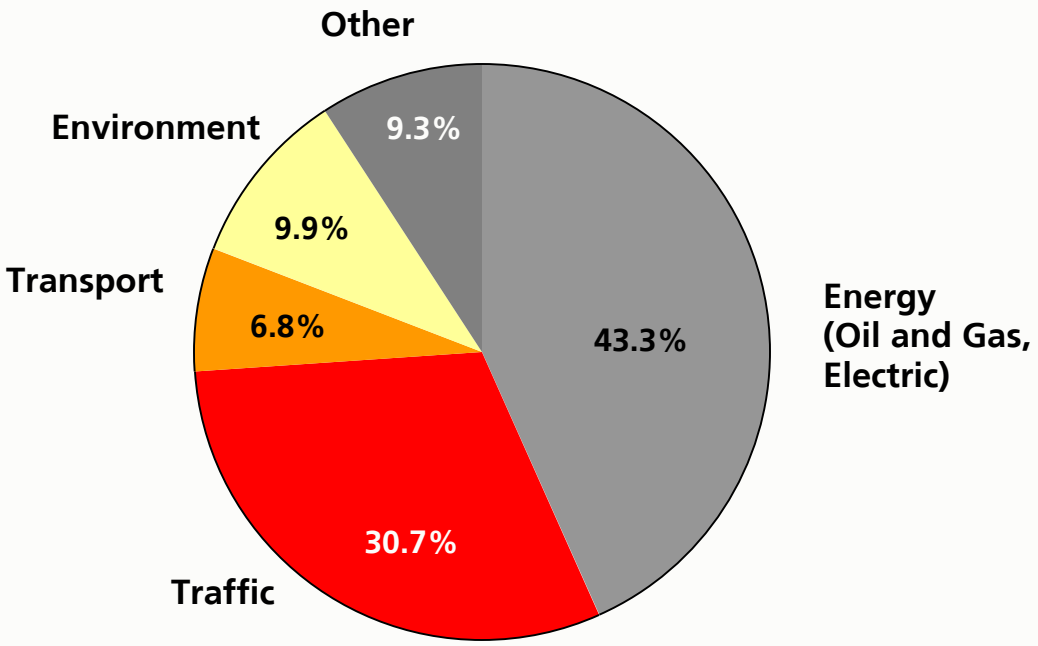
- **Enforcement Processing System** generates and processes traffic violation reports
- **ITACA** dynamically determines signaling sequences to optimize traffic flow
- **Traffic control system** remotely monitors 800 intersections, generating and recording traffic light violations (location, date, time and speed data)
- **RMY controller** collects raw data at intersections where traffic optimization is needed

Financial Strength. M€

Key financial facts	2004
Revenues	312.6
EBITDA	38.8
Net income	10.1
Cash flow from operations	25.1
Shareholders' equity	136.0
Net debt	24.0
ROIC after taxes (%)	27.5%

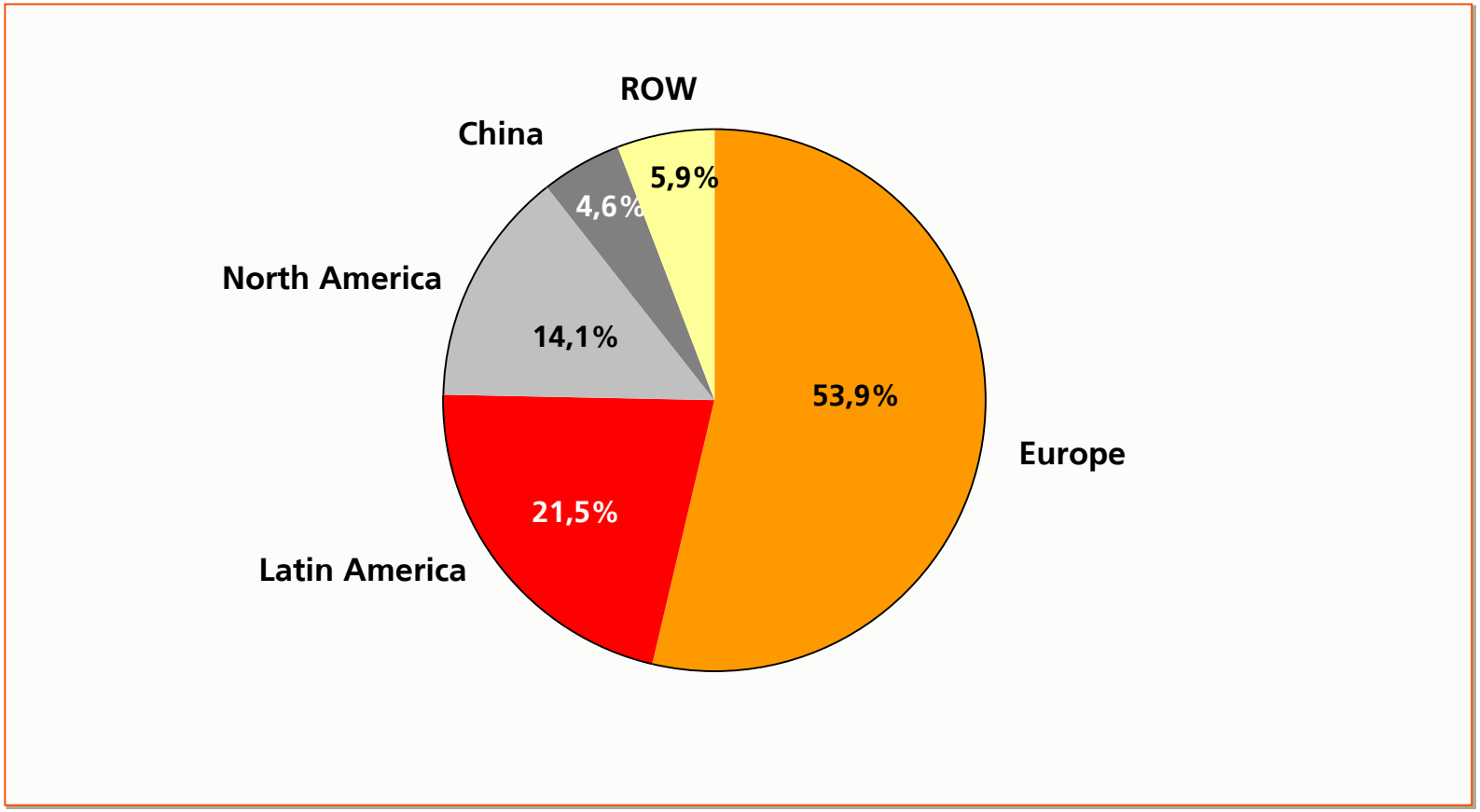
Focused on Specific Sectors . . .

Revenues by Sector 2004



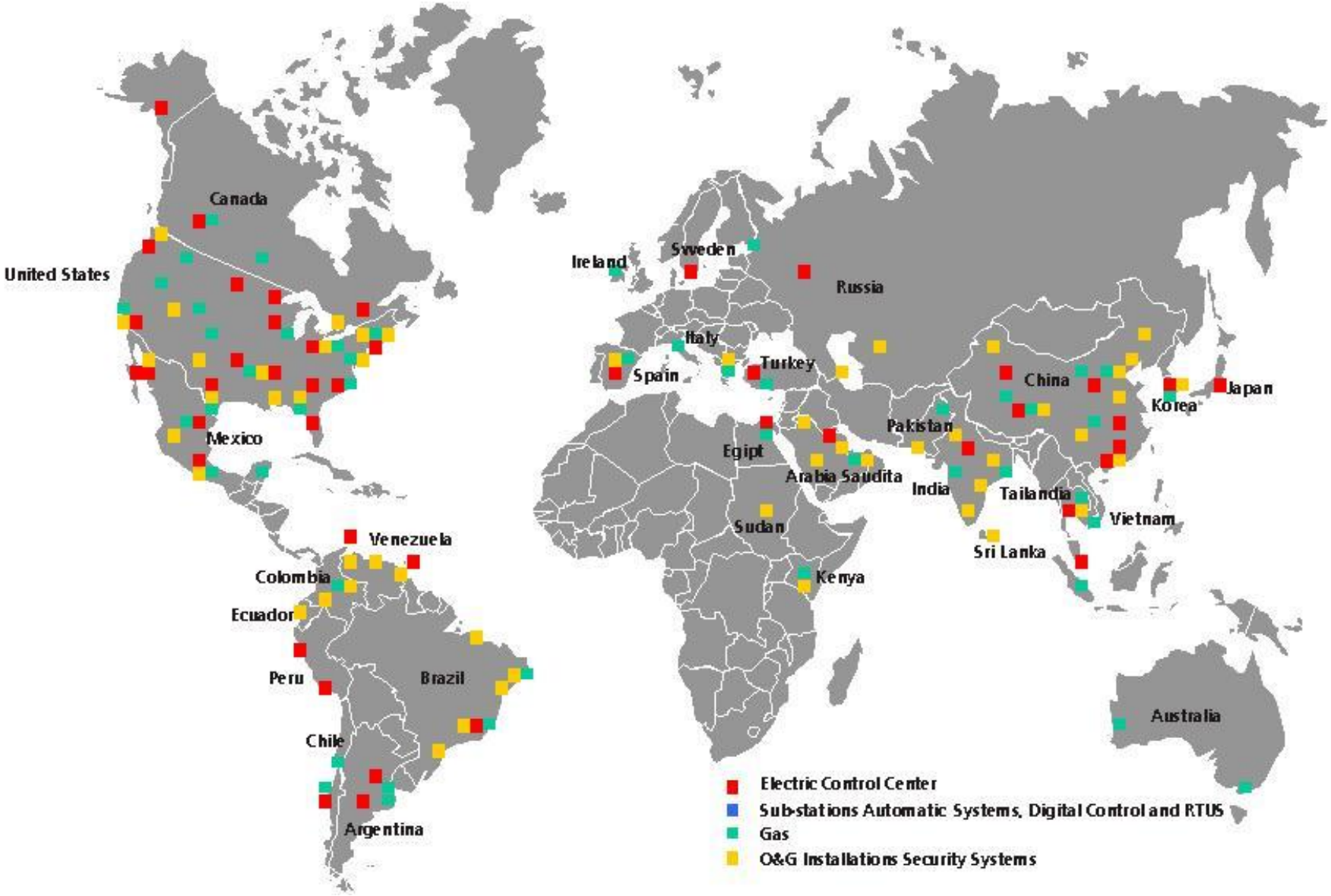
. . . in the Americas, Spain and China

Revenues Geography 2004



Geographical Presence

Energy Installations



Blue Chip Client Base

Energy

repsolypf.com
bp
conoco
endesa
IBERDROLA
Duke Energy
EXXON
PDVSA
Light
ارامكو السعودية
Saudi Aramco
PEMEX
PETROBRAS
ChevronTexaco
EDISON
PetroChina 中国石油

Traffic

Dirección General de Tráfico
Ministerio del Interior
Ayuntamiento de Madrid
Municipal Public Security Bureau
BCHD
Beijing Capital Highway Development

Transport

New York City Transit
天津地铁
www.tjdt.cn
Metro
CBTU
Companhia Brasileira de Trens Urbanos
Shenzhen Expressway

Environment

MINISTERIO DE MEDIO AMBIENTE
THE CITY OF CALGARY
Austin WATER
Austin Water Utility
Aena
Aeropuertos Españoles y Navegación Aérea

Telvent's Solutions Help to . . .

- Manage more than **60% of hydrocarbon movements** through North and Latin American pipelines

- Transport and distribute more than **140,000 GWh**, providing electricity to more than **80 million people**

- Control vehicle traffic at more than **6,600 intersections** handling more than **170 million drivers** per day

- Manage the transportation of more than **two billion train and subway passengers** every year

Telvent's Solutions Help to . . .

- Manage the flow of more than **5 millon people** per day, over more than **5,400 miles of motorways,** divided highways and tunnels

- Manage the distribution of more than **12 billon cubic feet of natural gas,** supplying more than **94 millon people**

- Generate more than **12,500 Gigawatthours** of electric energy

- Manage the safe and efficient departure and arrival of more than **60 millon passangers** per year at more than **70 airports**

Press Releases

News Room Contacts
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OSIsoft Extends Value of RtPM Integration Through Global Agreement with Telvent

5/16/2005
Collaboration to Provide Enhanced Interfaces and Improved Functionalities to Optimize Business Efficiency

San Leandro, Calif., (May 16, 2005) OSIsoft, the leader in performance management software, today announced that it has signed a global agreement with Telvent (NASDAQ – TLVT), the Global RealTime IT Company and leading supplier of industry automation and information management systems. The addition of Telvent to the company's growing partner ecosystem further extends the value of integrating OSIsoft's Real-time Performance Management (RtPM) Platform with existing systems to best meet the needs of their customers.

Together, OSIsoft and Telvent will provide global enterprises with enhanced interfaces and rich functionalities that combine OSIsoft's RtPM Platform and Telvent's industry-leading technology platform, OASyS DNA (Dynamic Network of Applications), as well as selected best features of Telvent's legacy SCADA solutions, which include the OpenVECTOR platform. Telvent's OASyS DNA provides the building blocks for flexible data management, while the RtPM Platform drives

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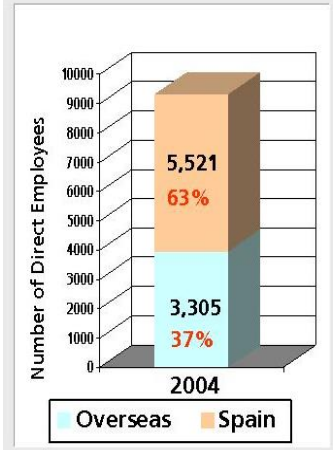
Abengoa (I)

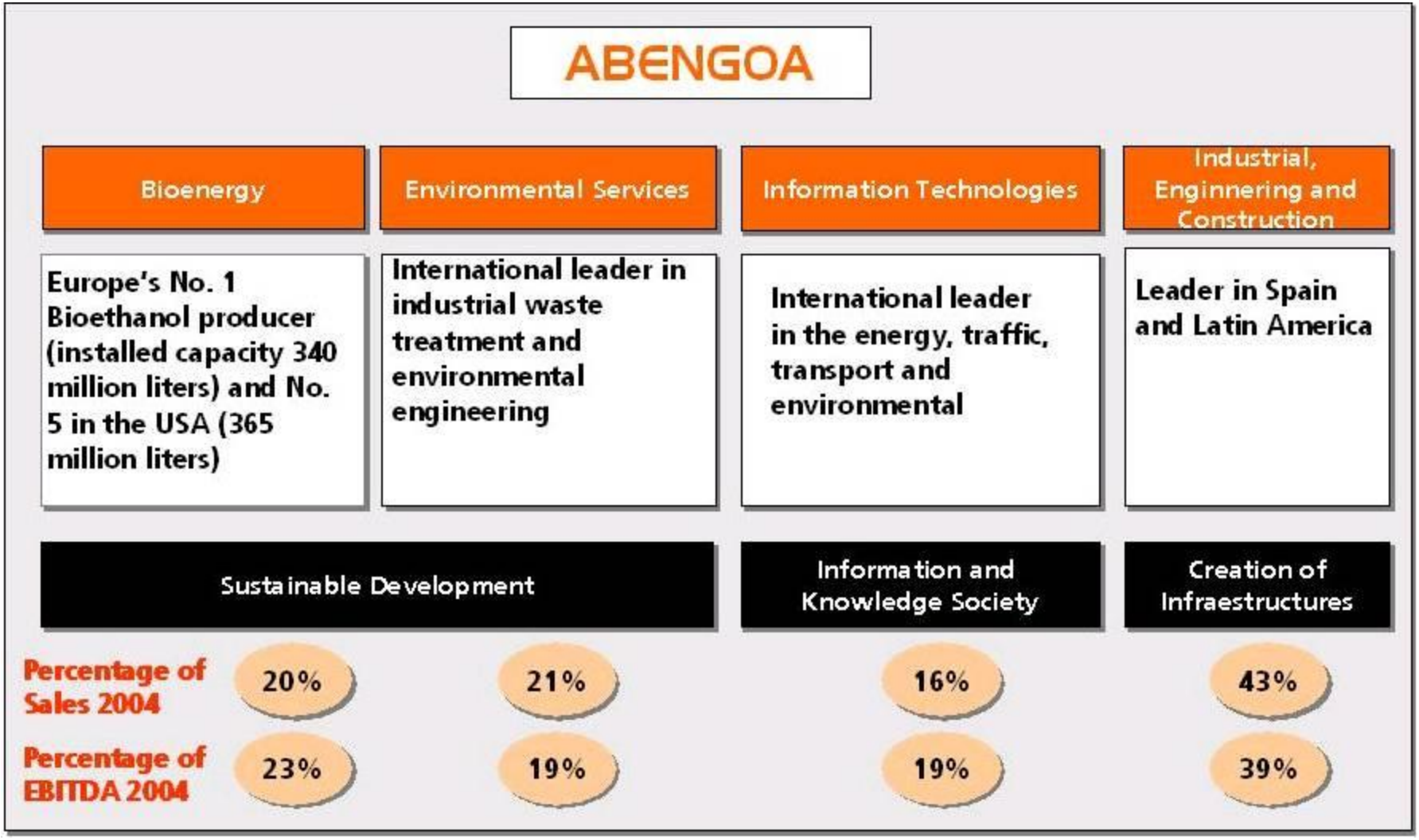
Incorporated in 1941 in Seville (Spain), Abengoa is an industrial and technological company that provides solutions for sustainable development, the information and knowledge society and the creation of infrastructures.

- Sales and EBITDA in 2004 equalling 1,687.1 and 202.3 millions euros, respectively.
- Operations in more than 70 countries.
- Innovation drive as a springboard for sustained growth.



Total 9,318 (100%)		
Workers	5,526	59%
Administrative/ Clerical	1,286	14%
Technical Personnel	719	8%
Engineers And Technicians	1,787	19%

Abengoa (II)


ABENGOA
Bioenergy
Environmental Services
Information Technologies
Industrial, Enginnering and Construction
Europe's No. 1 Bioethanol producer (installed capacity 340 million liters) and No. 5 in the USA (365 million liters)
International leader in industrial waste treatment and environmental engineering
International leader in the energy, traffic, transport and environmental
Leader in Spain and Latin America
Sustainable Development
Information and Knowledge Society
Creation of Infraestructures
Percentage of Sales 2004
20%
21%
16%
43%
Percentage of EBITDA 2004
23%
19%
19%
39%

Abengoa Bioenergy (I)

Abengoa Bioenergy is a subsidiary of Abengoa S.A.

Abengoa Bioenergy is the fifth largest producer of ethanol in the United States, the largest international producer of ethanol, and the only producer of ethanol in Spain.

Abengoa Bioenergy owns and operates five facilities throughout the United States and Europe with a total production capacity of 175 million gallons; one additional plant (50 Mgal.) is under construction in Spain.

Abengoa Bioenergy Facilities (Europe)

Bioetanol Galicia
Crta. Nacional, Km 634
15310 Teixeiro-Curtis (La Coruña), Spain
126 million liters (33 million gallons) of fuel ethanol

Ecocarburantes Españoles
Crta. Nacional, Km 343
Valle de Escombreras
30350 Cartagena (Murcia), Spain
100 million liters (26 million gallons) of ethanol

Biocarburantes Castilla y León
Carretera Alba de Tormes, km. 1
Carbajosa de la Sagrada
37188 (Salamanca), Spain
200 million liters (52.8 million gallons) of ethanol

Abengoa Bioenergy Facilities (USA)

York
1414 Road O
York, NE 68467 USA
189 million liters (50 million gallons) of fuel alcohol

Colwich
P.O. Box 427
523 East Union Ave.
Colwich, KS 67030 USA
95 million liters (25 million gallons) of fuel alcohol

Portales
1827 Industrial Dr.
Portales, NM 88130 USA
60 million liters (16 million gallons) of fuel alcohol

Frequently Asked Questions (I)

What is "bioenergy"?

- Bioenergy is **energy produced from renewable biomass,** including not only grains, but also cellulosic materials such as corn and milo stalks, grass clippings, and wood and paper waste.

What is Bioethanol?

- **Bioethanol is an alcohol product produced from corn, sorghum, potatoes, wheat, sugar cane, even biomass such as cornstalks and vegetable waste**. When combined with gasoline, it increases octane levels while also promoting more complete fuel burning that reduces harmful tailpipe emissions such as carbon monoxide and hydrocarbons.

Frequently Asked Questions (II)

What are the advantages of Bioethanol?

- **Domestic, renewable fuel source.**
- **Reduces reliance on foreign oil.**
- **Cleaner fuel source.**
- **Increases fuel octane for little cost.**
- **Useable in virtually all vehicles.**
- **Easily produced and stored.**
- **Biofuels emit 40-80% less greenhouse gas emissions than fossil fuels.**
- **Bioethanol is environmentally superior to all other major fuels.**
- **Other environmental benefits include:**
  - Acid rain reduction
  - Improved urban-air quality
  - Less water pollution
  - Less waste

Frequently Asked Questions (III)

What is Distillers Grains Coproducts?

- **Distillers Grains Coproducts are obtained after the extraction of ethanol by fermentation and distillation of grain feedstocks.** When fed to livestock such as beef and dairy cattle it is a valuable source of protein and energy. Recent research shows there are also opportunities in the swine and poultry feeding market as well.

Who are their typical customers?

- **Bioethanol** is **typically sold to refiners, blenders and marketers of gasoline for use as a fuel additive** which allows gasoline to burn more completely and with fewer emissions, and reduces our dependence on imported oil.
- **Distillers grains** and solubles **are sold as animal feed,** and carbon dioxide is used in many applications, from carbonating beverages to flash freezing of foods.

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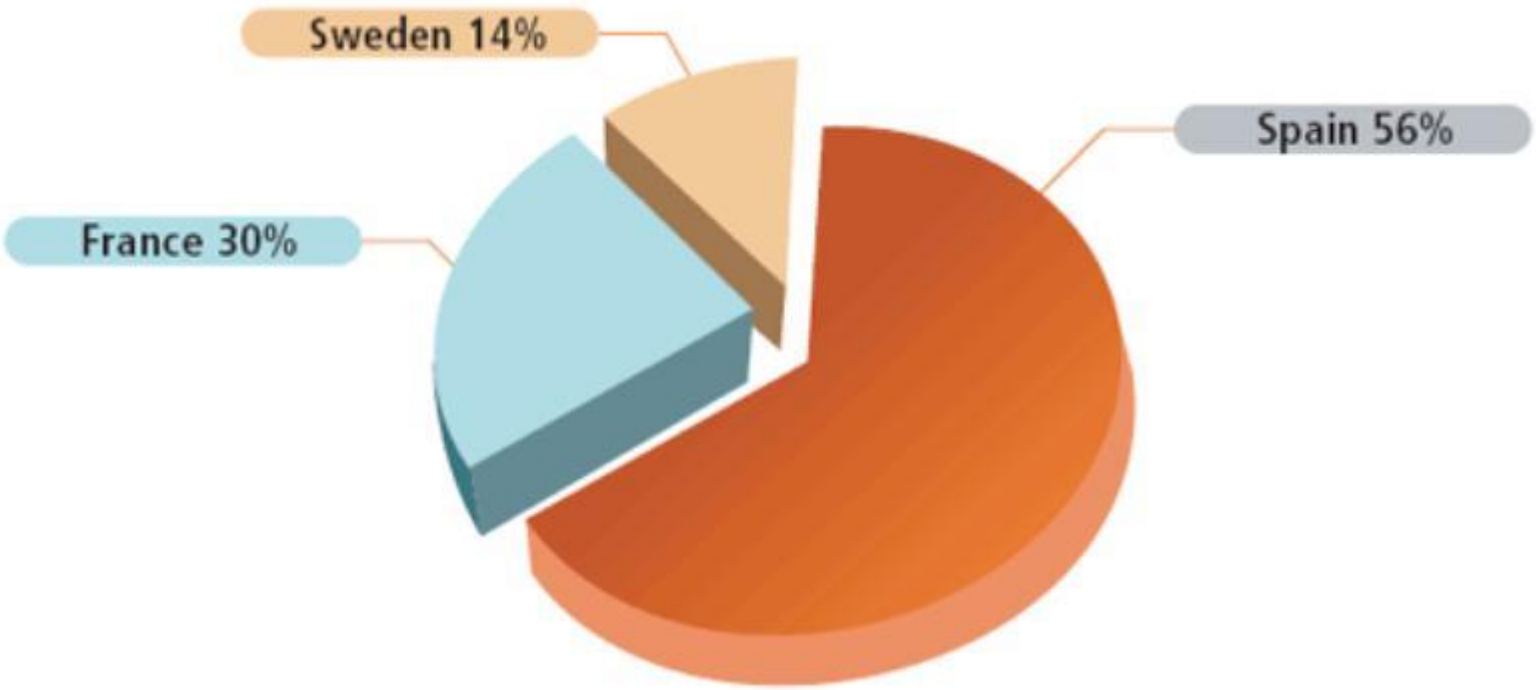
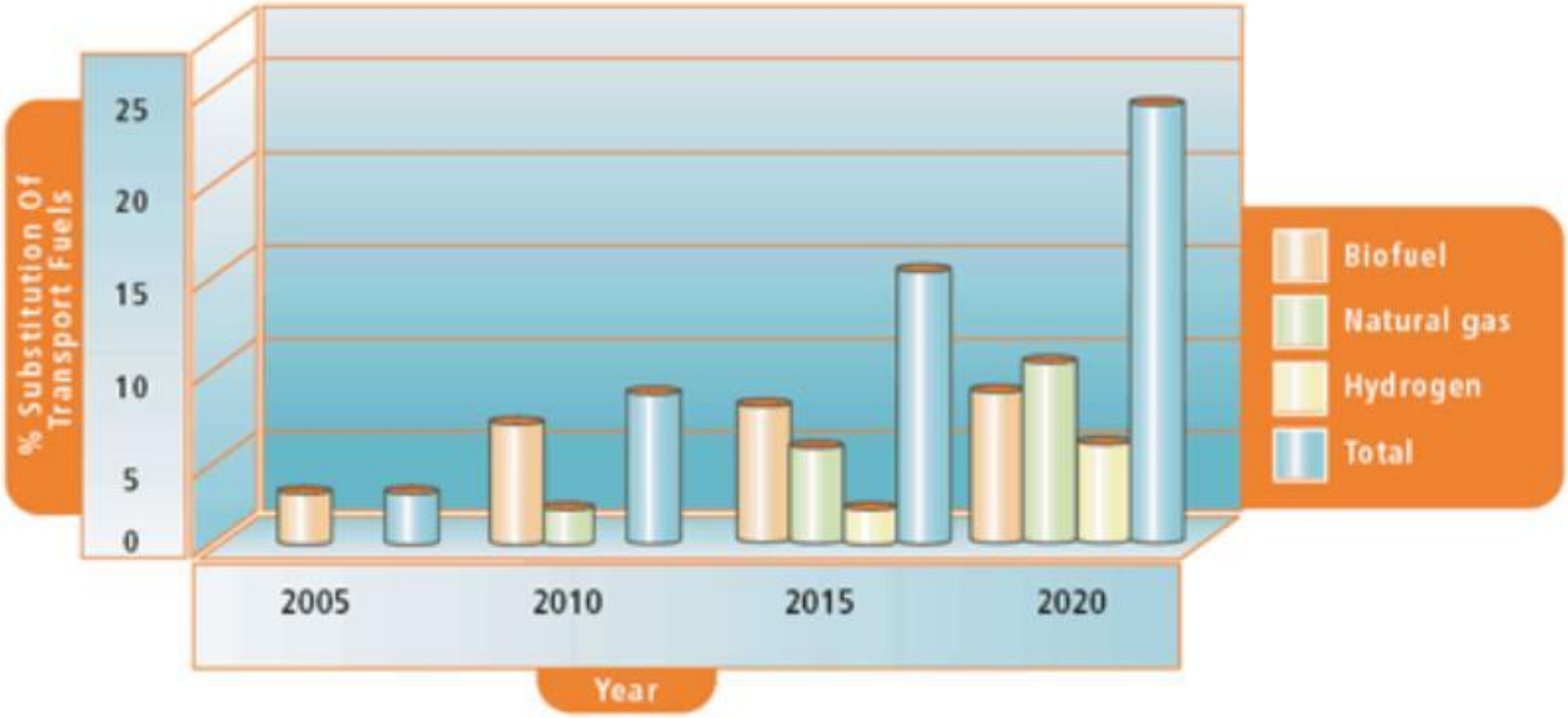
EU Market Overview (I)

- In the last decade fuel ethanol production increased 6.5 times, from 60 M liters in 1993 to 400 M liters in 2003.
- 2003 EU fuel ethanol production and demand.



EU Market Overview (II)

- Future growth in demand will result from the EU long-term alternative fuels target of 20% substitution by 2020.
- EU "optimistic development scenerio"



Business Challenges

Abengoa Bioenergy can produce up to 120,000 m3 annually. A key element of the Abengoa Bioenergy business plan is to cover the EU demand for bioethanol exports for the next five years.

- **To be competitive in the supply of alternative fuels, it is essential for a producer to:**
  - be reliable and flexible.
  - have the capacity to pump a large volume of high-quality, fuel-grade bio-ethanol into the market.
  - improve the production process.
  - increase the operating efficiency of its plants.

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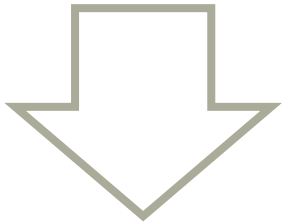
Key Drivers in Implementing PI (I)

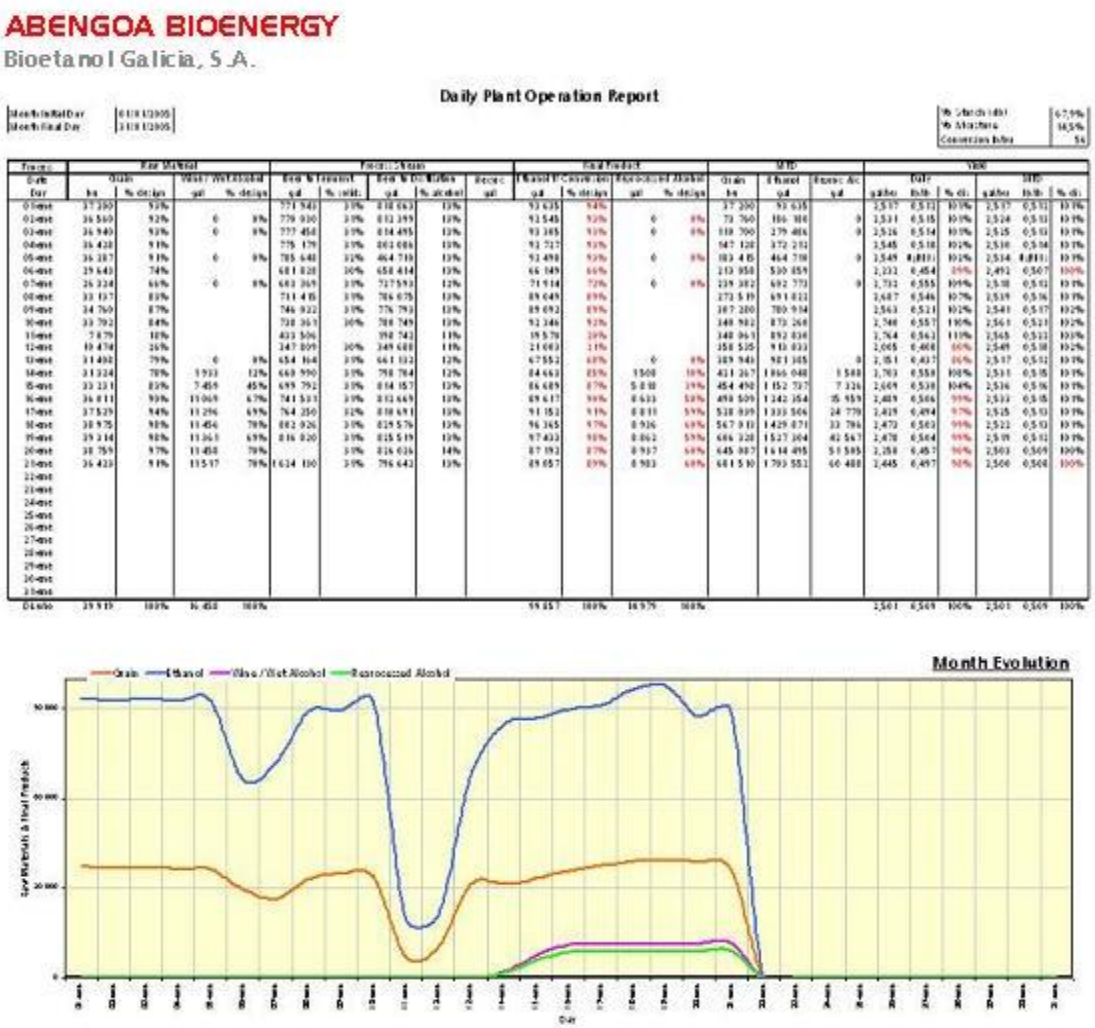
- **In order to:**
  - be reliable and flexible.
  - improve the production process.
  - increase the operating efficiency of its plants.
- **Abengoa Bioenergy needs:**
  - to have access to the information.
  - to know what information is really important.



The Power of Information

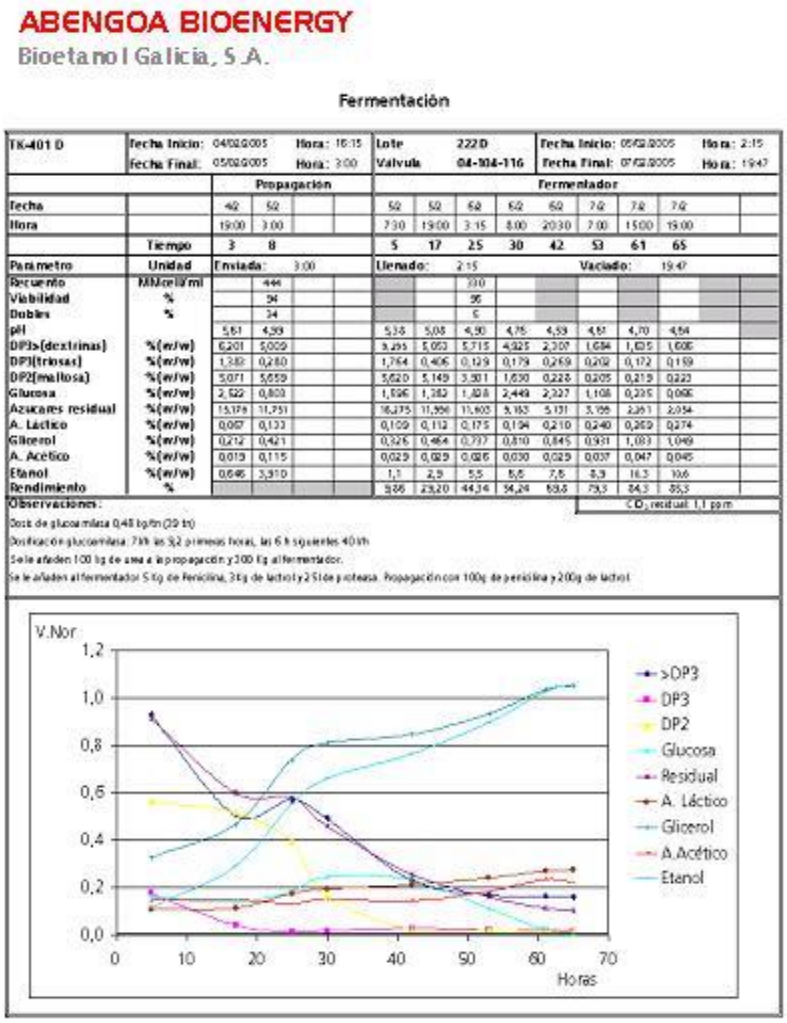
Key Drivers in Implementing PI (II)

- **Typical Reports:** complex, lots of data and manual entries.


ABENGOA BIOENERGY
Bioetanol Galicia, S.A.

Daily Plant Operation Report

Month Evolution


ABENGOA BIOENERGY
Bioetanol Galicia, S.A.

Fermentación

TK-401 D	Fecha Inicio: 04/08/2005	Hora: 16:15	Lote	222D	Fecha Inicio: 05/08/2005	Hora: 2:15
	Fecha Final: 05/08/2005	Hora: 3:00	Valvula	04-104-116	Fecha Final: 07/08/2005	Hora: 19:47

		Propagación		Fermentador							
Fecha		4/8	5/8	5/8	6/8	6/8	6/8	7/8	7/8	7/8	
Hora		19:00	3:00	7:30	19:00	3:15	8:00	20:30	7:00	15:00	19:00
	Tiempo	3	8	5	17	25	30	42	53	61	65
Parámetro	Unidad	Enviada:	3:00	Llenado:	2:15			Vaciado:		19:47	
Recuento	Millones/ml	444		330							
Viabilidad	%	94		95							
Dobles	%	24		6							
pH		5,61	4,99	5,38	5,08	4,90	4,75	4,59	4,61	4,70	4,64
DP3>(dextrinas)	%(m/w)	6,201	5,009	3,295	5,053	5,715	4,925	2,307	1,684	1,105	1,008
DP3(triosas)	%(m/w)	1,382	0,280	1,764	0,406	0,129	0,179	0,269	0,202	0,172	0,159
DP2(maltosa)	%(m/w)	5,071	5,659	5,620	5,149	5,301	1,630	0,228	0,205	0,219	0,223
Glucosa	%(m/w)	2,522	0,803	1,596	1,282	1,208	2,449	2,227	1,108	0,235	0,068
Azucares residual	%(m/w)	15,179	11,751	16,275	11,956	11,605	5,163	3,131	3,156	2,261	2,054
A. Lactico	%(m/w)	0,057	0,133	0,109	0,112	0,175	0,194	0,210	0,240	0,269	0,274
Glicerol	%(m/w)	0,212	0,421	0,326	0,464	0,737	0,810	0,845	0,931	1,083	1,049
A. Acético	%(m/w)	0,019	0,115	0,029	0,029	0,026	0,030	0,029	0,037	0,047	0,045
Etanol	%(m/w)	0,645	3,910	1,1	2,9	5,5	8,6	7,6	8,9	10,3	10,6
Rendimiento	%			9,66	23,20	44,14	56,24	68,6	79,5	84,3	85,3

Observaciones:

CO2 residual: 1,1 p.p.m.

Dosis de glucoamilasa 0,48 kg/tn (20 tn)

Dosificación glucoamilasa: 7th las 9,2 primeras horas, las 6 h siguientes 40 th

Se le añaden 100 kg de urea a la propagación y 200 Kg al fermentador.

Se le añaden al fermentador 5 kg de Penicilina, 20 kg de lactol y 2 5 de proteasa. Propagación con 100g de penicilina y 200g de lactol

Key Drivers in Implementing PI (III)

- **Easy information location and access**
  - For all users the way they see it - CEO, Planner, Operator,
- **Automation:** changes immediately sent to users
- **Visual**
  - Conveys significance of information instantly
  - Information in context, not just data
- **Easy to access & deliver**
  - Spans numerous back-end sources
  - Addresses unique needs of different users

Typicall users

- Need easy access to information in lots of systems
- Can't be trained on every system
- Can't have every system installed

Key Drivers in Implementing PI (IV)

- **Product Upgrades and Maintenance.** Solid company profile that warranties present and future upgrades, support and maintenance of the product.
- **PI System Product References.**

Oil & Gas

ADNOC
AEC West
AEM
Agrium
Air Liquide
Alberta Energy
Amoco Oil
Anderson Exploration
ARCO Products
Ashland Petroleum
Atat
Atheer
BAPCO
BEB
Beta Raffinerie
BHP Petroleum
BOC Gases Europe
BP Exploration
BP Oil
Bridgeline Gas Dist.
Britannia Operator
Buna GmbH
Carless Refining
Cenex Harvest States Cooperative
Chevron
CITGO
Clark Refining
Coastal Natural Gas
Columbia Gas
Columbia Gulf Tranmission
Conoco
CPC
Crown Central
DEA Mineraloel
Deutsche Shell
EDISON s.p.a.
Eg3
Elenac Production France
ELF
Engen
Enichem
Enron
Enterprise Oil
Enterprise Products
Equate
Equilon - Los Angeles Refining
ERG Petroli
Ergon Refining
ERN Neustadt
Esso Australia
Esso Norge
Euro-Gulf
Exxon
Farmland Industries
Fina Oil
Fuji Oil
Gas Naural
Genraf
GPM Gas
HAR - Greece
Hellenic Petroleum
Hong Kong TownGas
Huntsman
Hydro Agri
Ikrtatnafta
Imperial Oil
Intergen
Interprovincial Pipeline
Intesa
Ipiranga Petroquimica
IPLOM
ISAB Energy
Japan Energy
JSC - Omsk
KOA Oil
Koch
Koch HC
Koch Industries
Korea Gas
Kuybyshevskiy
Kyotuto
Kyung In Energy
Lindsey Oil
Lion Oil
Lukoil
Malaysia Refining
MAPCO
Marathon Oil
Maraven
Methanex NZ
Mider/ELF
Mobil Luberef II
Mobil Nigeria
Mobil Oil
MOL Hungarian Oil & Gas
Montefina
Mossgas
Murphy Oil
Nam
NCRA
Nigeria LNG
Nippon Petroleum
Noram Gas
Norsk Hydro
Nynaes
NZ Refining
Oil Refineries Ltd.
Oman LNG
OMV
Operada Cerro Negro
Paramount Petroleum
PCS
PDVSA
Petresa
PEMEX
Pemex Gas
Pertamina Refinery
Petchburi Terminal Co.
Petrobras
Petro-Canada
Petrochemica Plock
Petroindustrial
Petronas
Petroperu
Petroquimica Ensenada
Petrox
PGS Production as
Phillips Petroleum
Phillips Pipeline
Praoil
PT Caltex Pacific Indonesia
Qatar Fuel Additives
Qatar Gas
Raffineria di Roma
RasGas
Rayong Refinery
Real Time Eng.
Repsol Petroleo
RPC
Ruhr Oel
RVI
Sabah Shell Petroleum
SARA
SASOL
Saudi Aramco
Schlumberger
Scomagg
Seibu Oil
Shell
Shell Services Int'l
Shell Todd Oil Services
Siam Mitsui
Sinopec
Sonatrach
SsangYong Oil
Star Petroleum
Statoil
Sunoco
Syncrude
Taiyo Oil
Talisman
Tesoro Petroleum
Texaco
Tonen
Tosco
Total
Transamerican
Transco
Transpetrol
Ultramar
United Refining
UOP
US Oil & Refining
Veba Oel
Vencemos
Wintershall
YPF S.A.
Zhenhai Refining

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Technical Solution (I)

- **Pilot Installation – Bioetanol Galicia**

Bioetanol Galicia
Crta. Nacional, Km 634
15310 Teixeiro-Curtis (La Coruña), Spain
126 million liters (33 million gallons) of fuel ethanol

PI System

TELVENT OSIsoft.

PI Users

4 Normal Users
1 Advanced User

Reports

- Shift Reports:
- Cereal Plant Daily Report
- Cereal Plant Weekly Report
- AV Plant Daly Report
- AV Plant Weekly Report

Internal Reports:
- Cogeneration Data
- Reactives
- Proccess Data

Lab Report:
- Daily Lab Report

PI Server Osisoft

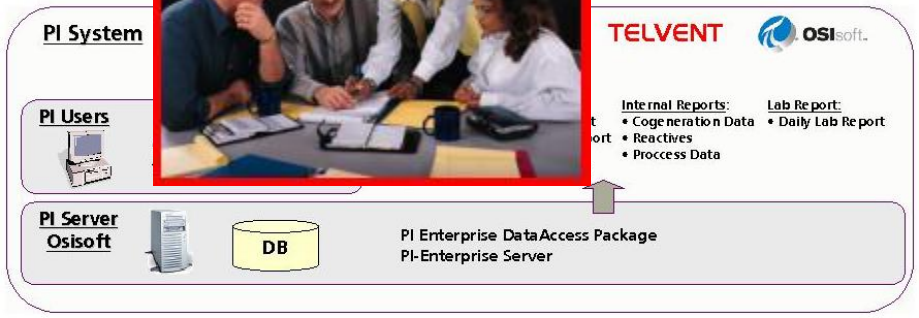
DB

PI Enterprise DataAccess Package
PI-Enterprise Server

DCS Tags (1)	Consumptions Production (2)	Costs Stocks (3)	Production Consumptions (3)	Analysis Results (4)	Consumptions Comments (5)
DCS	Electric/Gas Meters	ERP BaaN		Lab Agilent Technologies	Manual Inputs

Technical Solution (II)

- **Final Roll-Out**



Advantages:

- Aggregated Views
- Common KPI Indicators

York
1414 Road O
York, NE 68467 USA

Bioetanol Galicia
Crta. Nacional, Km 634
15310 Teixeiro-Curtis (La Coruña),
Spain

Colwich
P.O. Box 427
523 East Union Ave.
Colwich, KS 67030 USA

Ecocarburantes Españoles
Crta. Nacional, Km 343
Valle de Escombreras
30350 Cartagena (Murcia), Spain

Portales
1827 Industrial Dr.
Portales, NM 88130 USA

Biocarburantes Castilla y León
Carretera Alba de Tormes, km. 1
Carbajosa de la Sagrada
37188 (Salamanca), Spain

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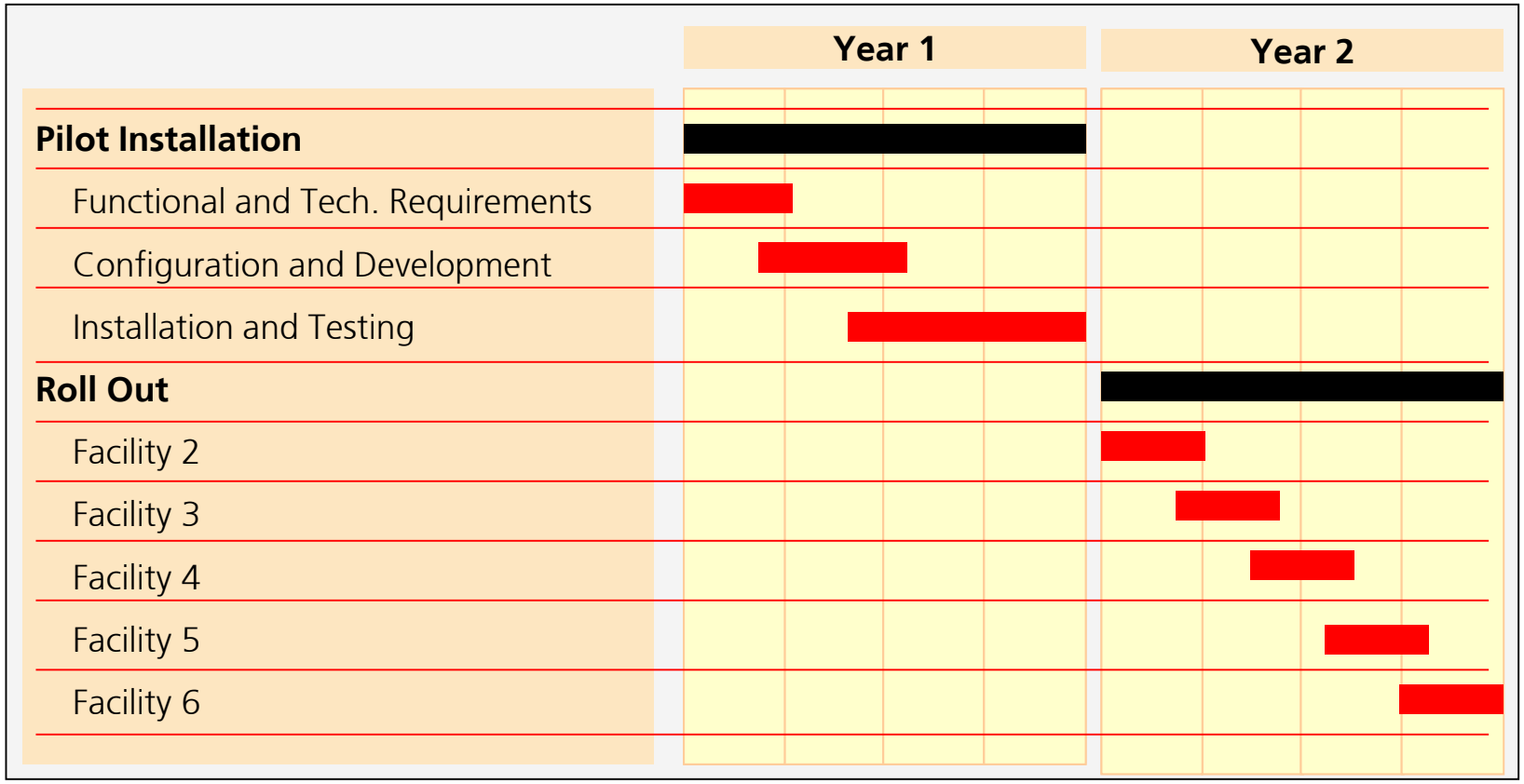
Project Plan

- **Phase I:** Pilot Project Configuration Installation and Testing
- **Phase II:** Roll Out



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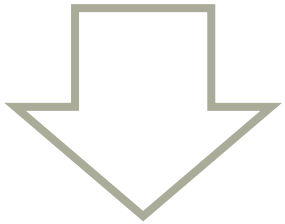
Expected Benefits

- Rapid return on data investment (e.g. improved quality of data, reliable reporting)
- Data accessible across enterprise
- Proactive problem identification
- Reduced decision-making cycles
- Improved benchmarking between facilities (KPI)
- Integrated decision-making environment



Strong ROI

Agenda

- Telvent's Company Profile
- Abengoa Bioenergy's Company Profile
- Business Challenges
- Key Drivers in Implementing PI
- Technical Solution
- Project Plan
- Expected Benefits
- Questions

Questions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