Cordys for Energy & Utilities

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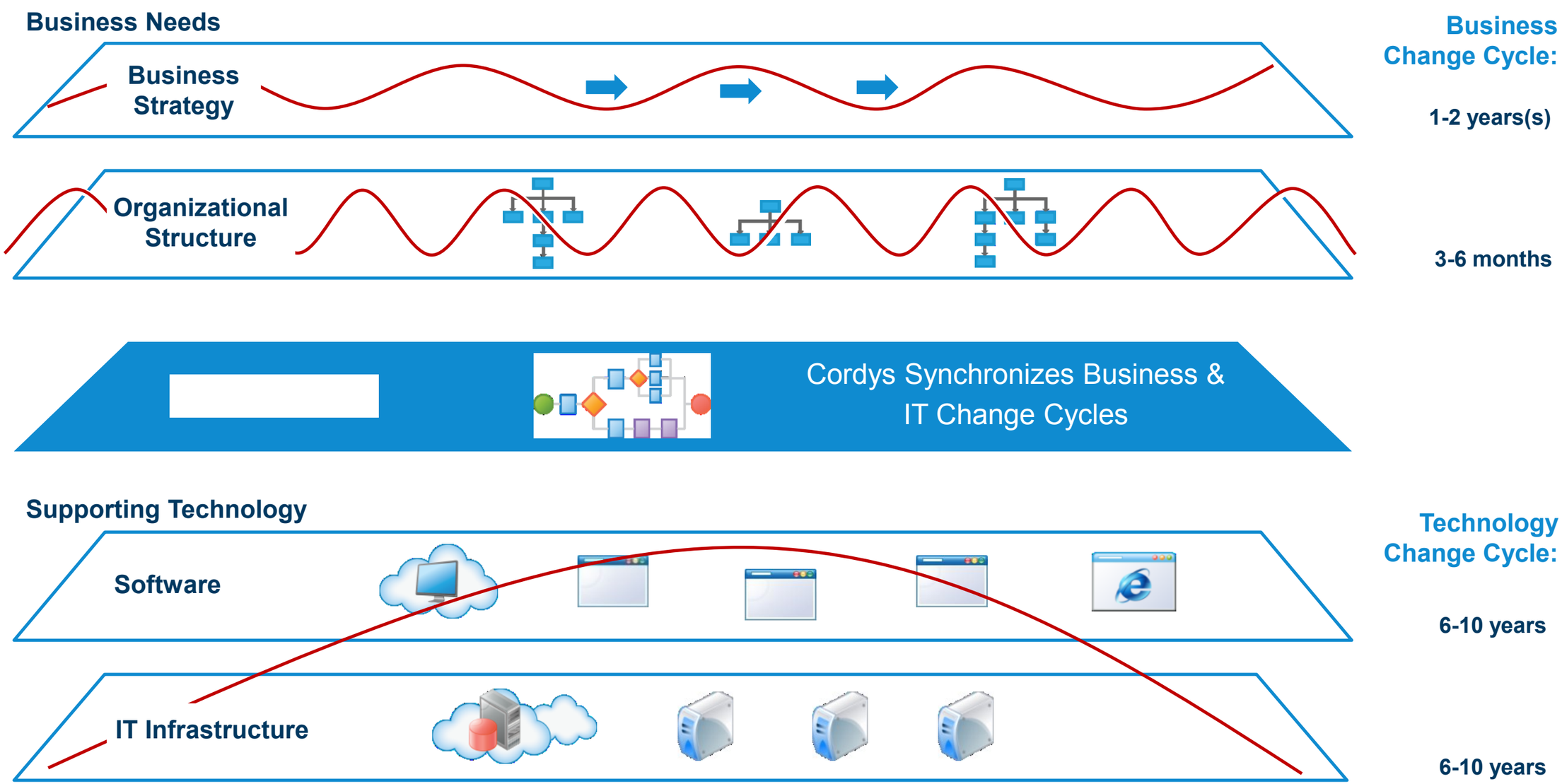
Add agility to IT and accelerate Time to Value



Enterprises – Energy and Utilities

Energy Management Processes

Businesses processes of energy suppliers, energy traders, energy grid operators and energy retailers can easily be connected to existing trading systems, monitoring systems, etc.

Cordys provides SOA-based BPM platform with centralized control, automated workflow and a high degree of flexibility and scalability for automation of work processes, real-time monitoring activities, and easily integration of legacy systems.

Smart Meter Event Portal

End-to-end business process control and visibility from Meters to Enterprise Applications.

Customer Successes

Extending SAP for operation efficiency, reduced cost and improved customer experience

BPM adoption enabling significant operational benefit, 47,000 man hours saved

Energy grid processes, improved customer service and improved order management

Smart meter data collection and process agility

Orchestration of core operational processes

Energy Utilities Value Chain

Power Generation & Water Management

- Long-term price and load predictions
- Short-term demand forecasting
- Production revenue maximization
- Production scheduling
- Water management

Transmission & Distribution

- Efficient and secure grid operations
- Mobile operations optimization
- Project development
- Investment planning
- Strategic and operational decision support
- Smart Grid

Energy Metering & Trading

- Trading and bid management
- Energy balance management
- Reporting
- Settlement
- Load management
- Data collection
- Fault analysis
- Metered data management
- Call center information resource

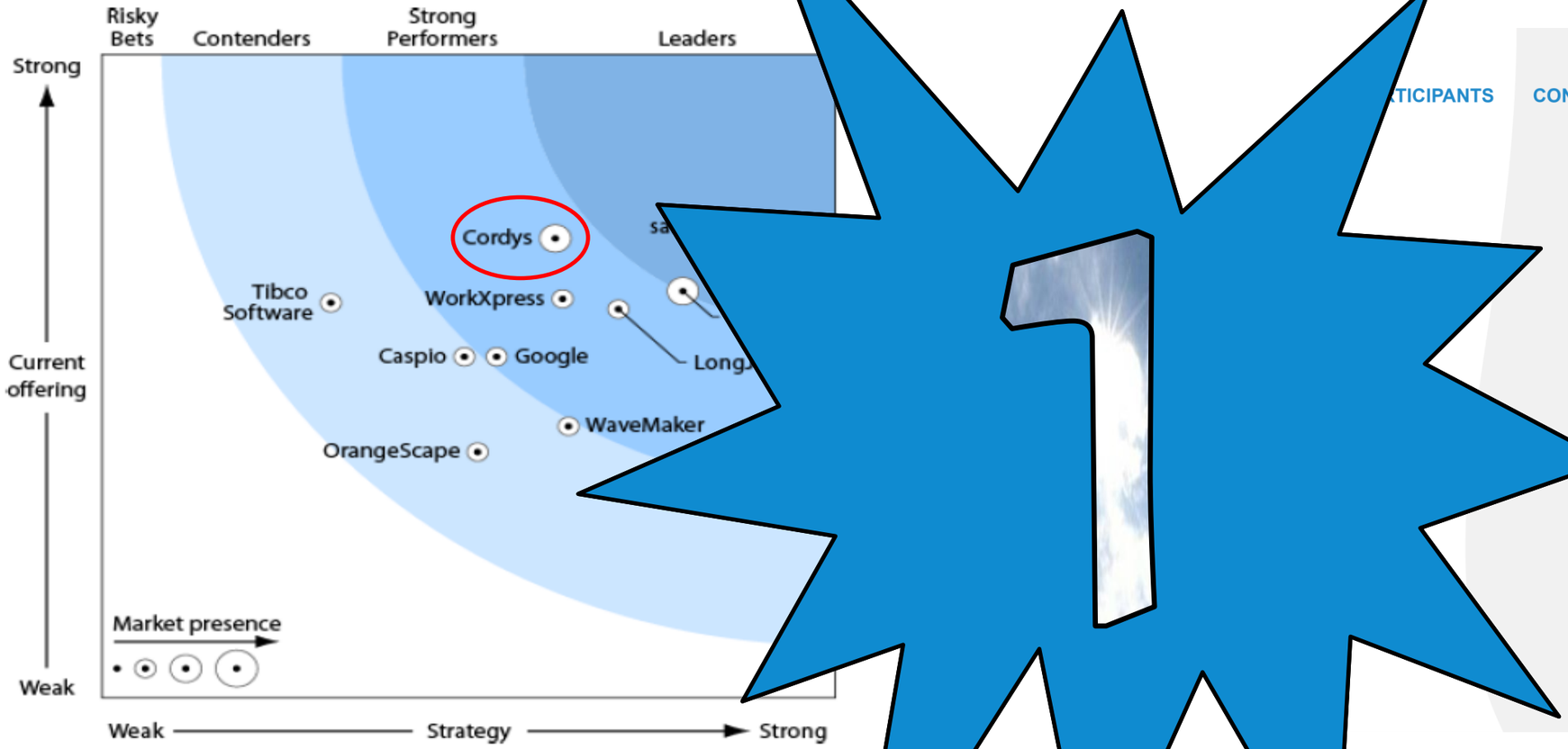
Energy Supplier & Retail

- Efficient billing operations
- First-time-right processing
- Improved customer service
- New customer services
- Self service energy portals
- Consumer insight in consumption
- Market processes Move, Switch…
- Meter data reconciliation

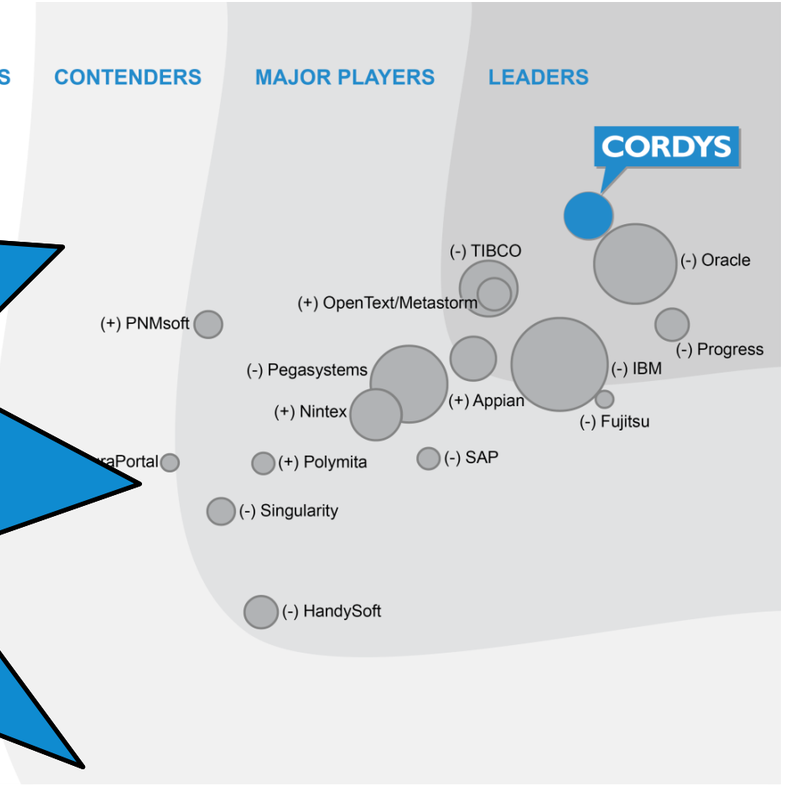
Customers of Energy & Utilities Solutions

	Generation	Grid Operators	Energy Trading	Energy Retail
Energy Market Process Management	Ertan HydroPower, Thames Water	RENDO, ALPIQ, MälarEnergi, UK Power Networks Services	RWE, essent	EDF luminus
Smart Meter Event Portal	powel			
Smart Meter Rollout Orchestration	powel, Founter			

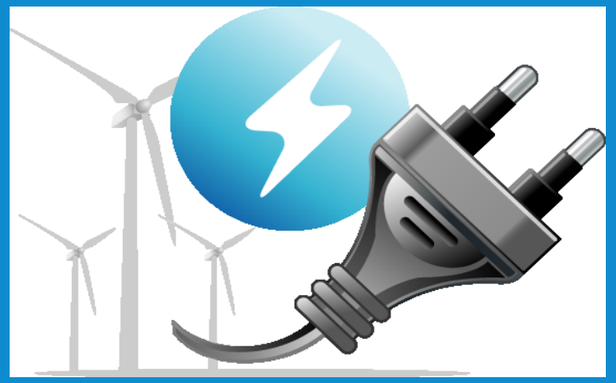
Combining PaaS & Process Platform puts us in pole position



The Forrester Wave™
Platform-As-A-Service, 2011



IDC MarketScape
Business Process Platforms 2011



RENDO

Customer Case Study: Rendo

Industry: Energy & Utilities

Rendo is an energy grid operator in the Netherlands with a mission to deliver safe, reliable and efficient transport of gas and electricity.

Country:	The Netherlands
Key Figures:	• Around € 34 million revenue per annum • 100,000 customers • 122 employees

Customer Case Study: Rendo

Industry: Energy & Utilities

Business Challenges:

- **No end-to-end monitoring** and control in daily operations
- Key information systems couldn't communicate with each other, resulting in **redundant data and separate, inconsistent islands of data**
- The processes are **data-driven rather than process-driven**, which makes it difficult to control and improve them
- **Lack of overall transparency** in operations
- Problems with timeliness (**Regulator's scorecard**)

Business Needs:

- **Operations should be driven by KPI's**: work-in-progress, quality of billing, and timeliness can now be viewed in operational dashboards
- **Improve operational processes** for **Customer Care** as well as **Back office**
- **Comply with regulatory and market requirements**, while reducing costs

Customer Case Study: Rendo

Industry: Energy & Utilities

Cordys Solution:

- Implementation of Cordys BOP for **20 processes** (administrational and automated) such as **switch, move, billing**
- The **Cordys solution went live within five months**:
  - Process and workflow design
  - Implementation Cordys
  - Integration with back-ends (legacy systems, ws-enabled)
  - Deployment
- +100.000 completed process instances
- **Robust integration with current IT infrastructure**

Benefits:

- Rendo is now the **top-performing Grid Operator on the regulator's scorecard**
- Huge **increase in customer satisfaction related to core processes** such as Switch, Move and Processing of Meter readings
- **Exceed compliance standards with 100% performance timelines**
- **End-to-end visibility and control** in daily operations
- Fully **independent in-house process design and adjustments** (within 1 year)
- **ISO certification for Customer Care department** in 2010

"The Cordys Business Operations Platform has proven to be the best choice for implementing lean and agile BPM solutions and has helped us to become one of the best performing grid operators of gas and electricity in the Netherlands."

Marcel Altepost, Manager of Customer Care, Rendo

Customer Case Study: Rendo

Industry: Energy & Utilities

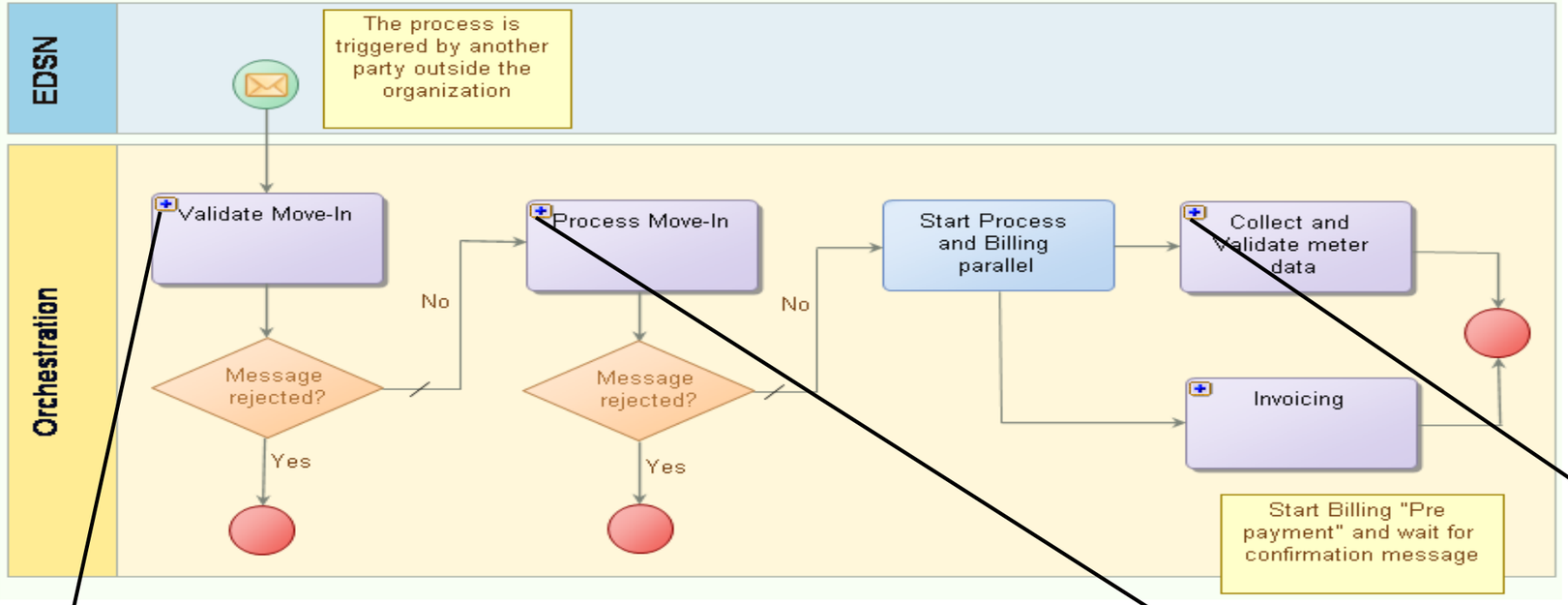
- Norm timeliness Dutch Office of Energy Regulation: 98%
- Internal Norm Rendo: 99.5%

Scores	Before Cordys	With Cordys
Processes Move and Switch Electricity	81 %	100 %
Processes Move and Switch Gas	78 %	99.9 %
Billing Electricity	0 %	100 %
Billing Gas	3 %	100 %

- Improved performance (timeliness): **Rendo is now Regulator Scorecard's Top Performer!**

Customer Case Study: Rendo

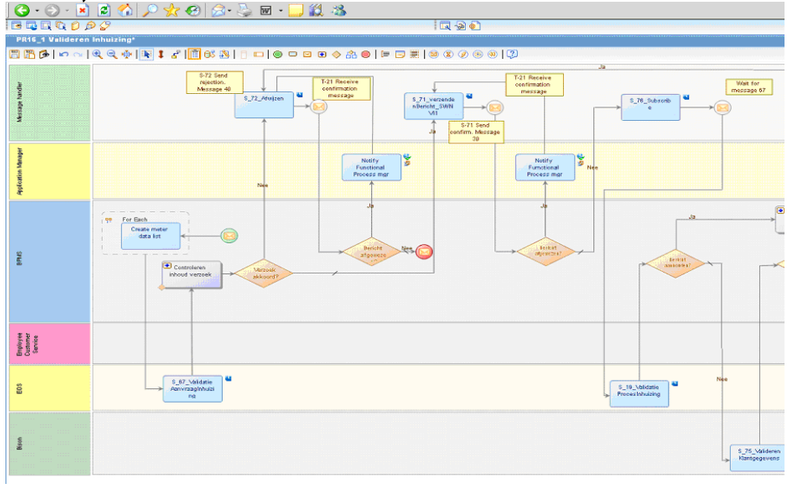
Industry: Energy & Utilities

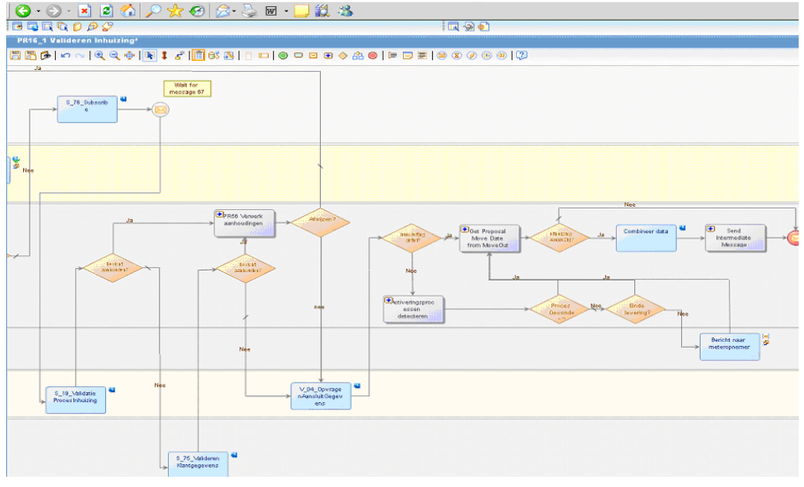


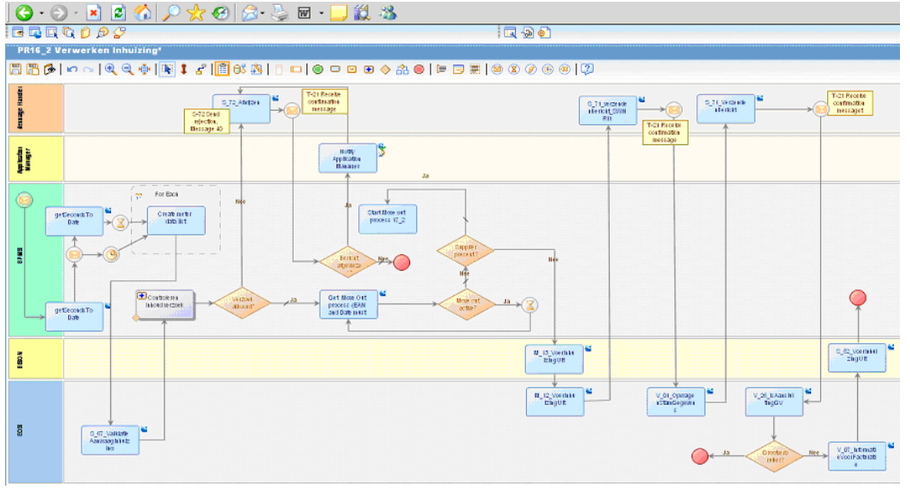
Example: Move-In Process & 3 sub-processes

Including real-time integration to:

- Energy Clearing Hub (EDSN)
- Connection Register
- Meter Data Management System
- Billing / Invoicing systems
- Other backend systems

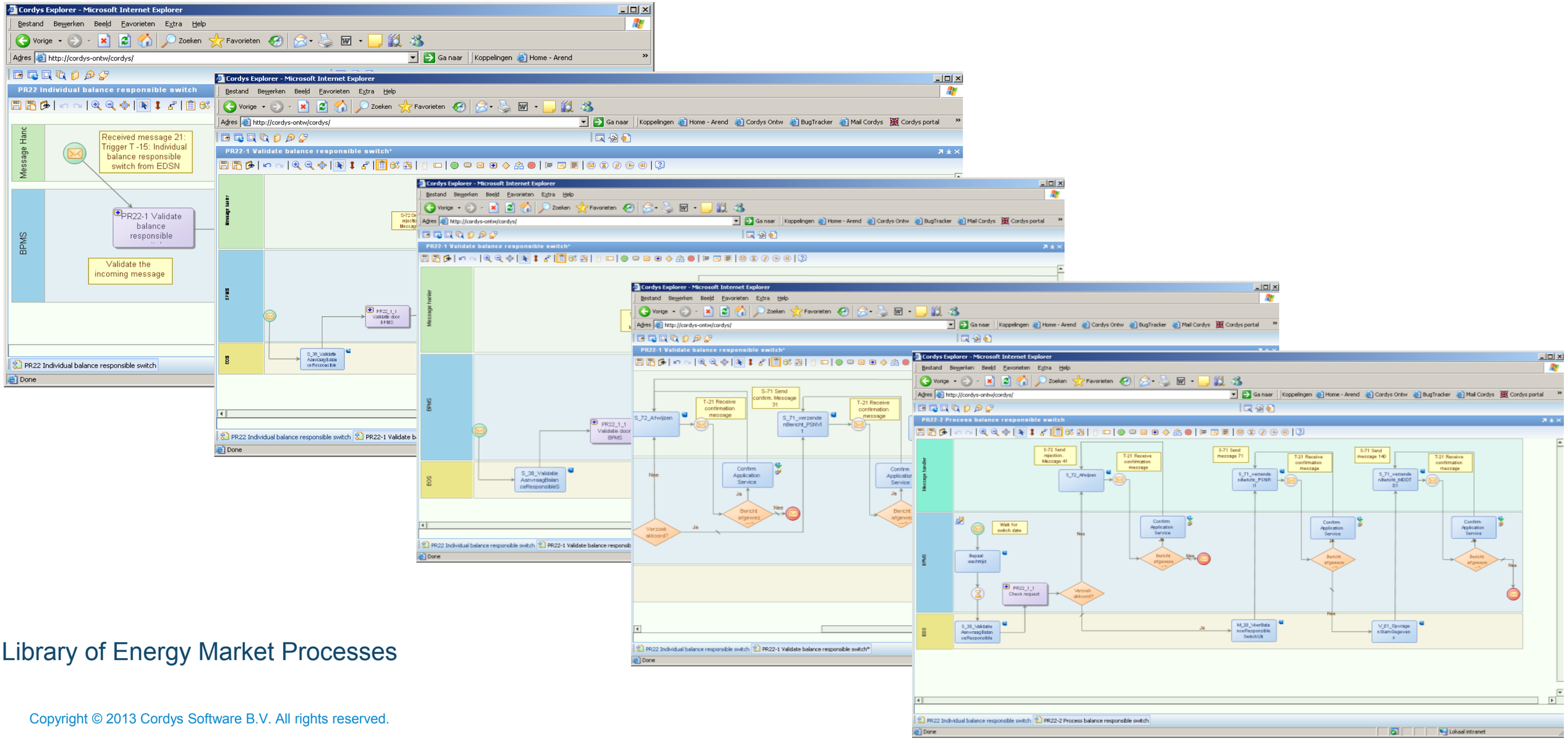




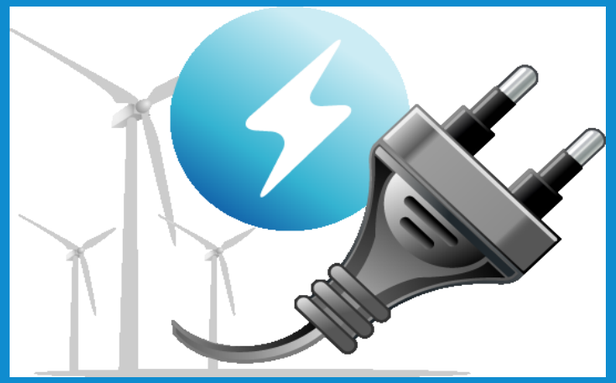


Customer Case Study: Rendo

Industry: Energy & Utilities



Library of Energy Market Processes



MÄLARENERGI

Customer Case Study: Mälarenergi

Industry: Energy & Utilities

MälarEnergi is the fifth largest utility company in Sweden and supplies heating, electricity, water, broadband solutions, and related services. MälarEnergi is primarily active in the Mälardalen region in Sweden, near Stockholm.

MälarEnergi's network exist out of 710 km district heating pipes, 5,850 km power grid, 1,680 km sewer and 20,000 km of fiber which corresponds to a half time around the world.

Country:	Sweden
Key Figures:	• Turnover: Around $459 million per annum • Over 200.000 customers • Electricity sales: 2243 GWh a year

Customer Case Study: Mälarenergi

Industry: Energy & Utilities

Business Challenges:

- **Slow customer service response time** for interactions such as move-in/move-out, reduced billing errors, usage tracking and management
- **Manual, time consuming business processes** and lack of visibility into process performance
- **Too many errors in processes** like customer move-in requests: only 80% is correct
- **Tightly coupled applications and inflexible infrastructure**

Business Needs:

- **Improve responsiveness** to customers
- **Automation of interactions and transactions** and ability to monitor, capture, report and analyze insightful data to facilitate better decision-making
- **Reliable and real-time information** from multiple systems to reduce operating costs and improve customer service
- Predict and resolve potential issues before they occur by **monitoring exceptions** on business and IT Key Performance Indicators (KPIs)

Customer Case Study: Mälarenergi

Industry: Energy & Utilities

Cordys Solution:

Powel's Smart Metering Suite embedded with Cordys:

- Cordys SOA and the ESB to seamlessly and **cost-effectively integrate business systems** for ERP, CRM, GIS and SCM
- Cordys BPMS to **design, execute, monitor and change** automated business processes around smart energy meters
- Cordys BAM to build **user-friendly KPI dashboards** for operational management, enabling smart energy meters to be automatically read on a daily basis

Benefits:

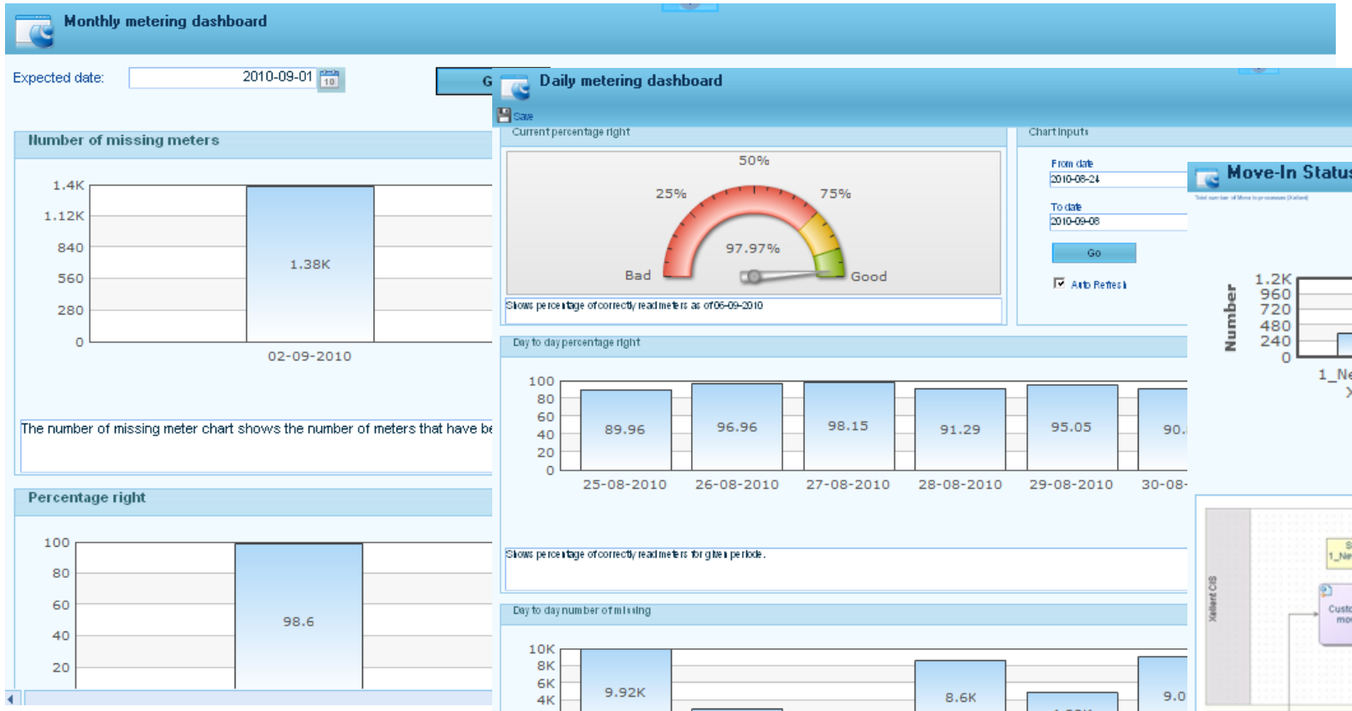
- Greater operational efficiency due to streamlined processes:
  - **Reduced manual handling by 90%** for customer move process
  - **20% less error messages**
- Significant reduction of **customer care headcount** due to automated orchestration of market communication processes
- Better insight into daily operations with **real time data access and process monitoring**
- Easier and timely implementation of changing **legal requirements**
- New **web and mobile options** for sales and customer service
- More **accurate and timely communication** to customers

"With the help of Powel and Cordys, we get a hub for our existing systems that can monitor all aspects of our grid processes. We can provide better service to our customers and avoid having information bottlenecks somewhere within our processes."

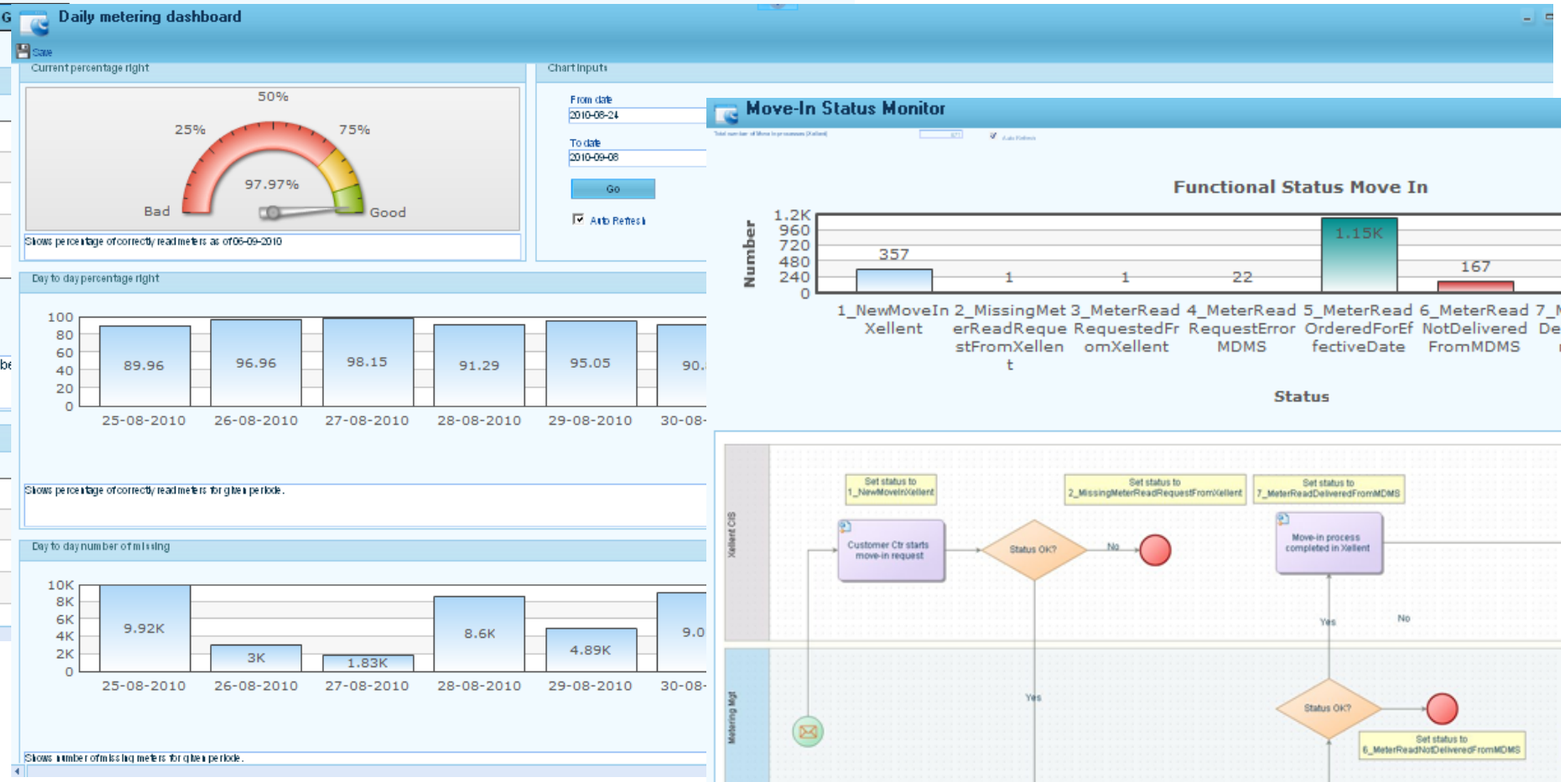
Jonas Persson, Grid Marketing Manager at MälarEnergi Elnät

Customer Case Study: Mälarenergi

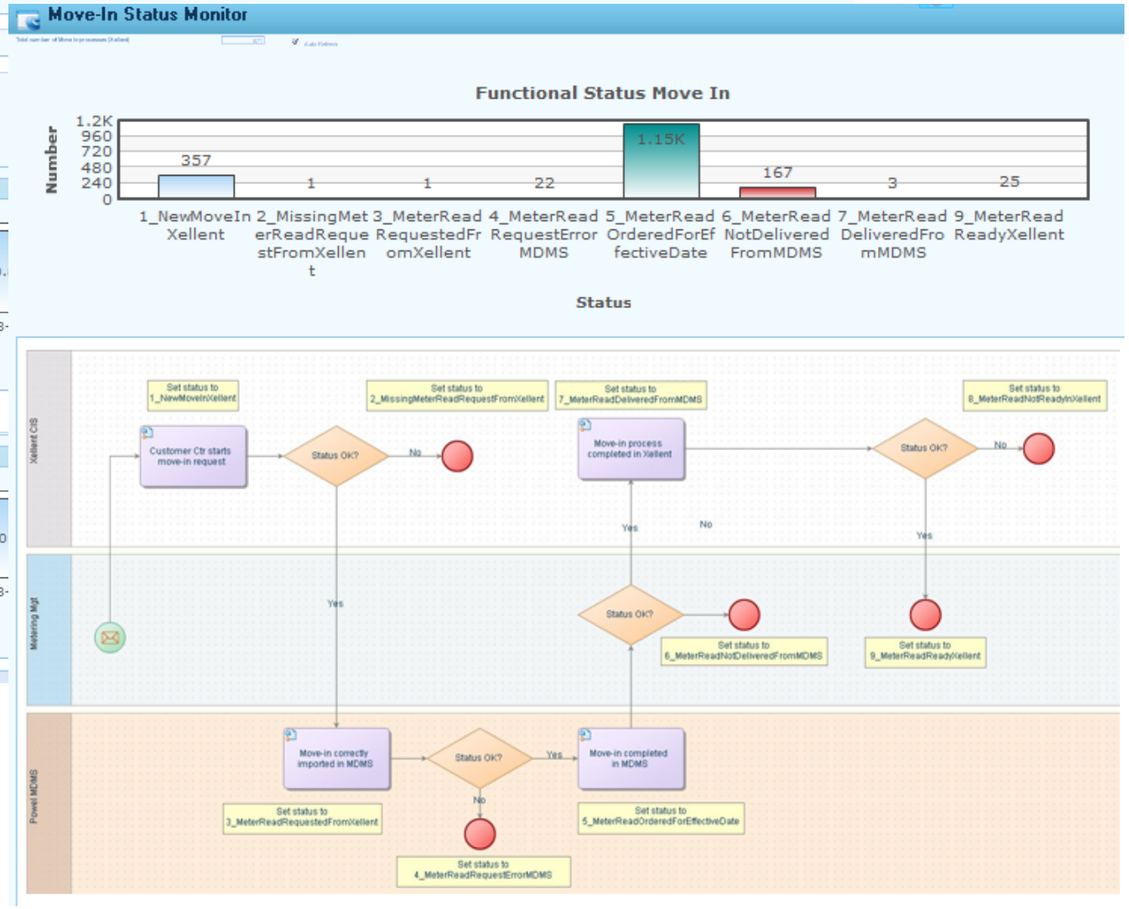
Industry: Energy & Utilities



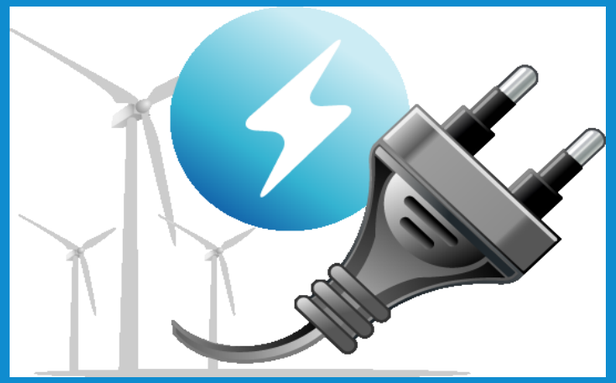
Online monitoring: Customers get the right information at the right time



Day-to-day status monitoring: Meter readings in central systems, with manual handling



Move-in status monitor



ERTRAN HYDROPOWER

Customer Case Study: Ertan Hydropower

Industry: Energy & Utilities

Ertan Hydropower Development Company

Ertan Hydropower Development Company, Ltd., (EHDC) is an enterprise engaged in development of hydropower projects and generation of hydroelectric energy.

Country: China

Key Figures:

- Gross capacity of the Ertan Hydropower Plant is 3,300 MW
- Second largest hydropower plant in China
- Total investment estimated - $3.4 billion
- The project has involved 700 technicians and specialists from 47 countries

Customer Case Study: Ertan Hydropower

Industry: Energy & Utilities

Business Challenges:

- **Complex applications** and evolving technology (**30+ disparate information management systems**)
- **Information is spread throughout the company** and cannot be accessed from other locations or by other systems
- **No centralized data management**, the same data had to be entered multiple times
- Lliberalization and privatization of the Chinese electricity resulted in **increased competition** and many new entrants *(*Ertan competes with 50+ other suppliers)

Business Needs:

- **One user interface (portal) with single login**, allowing an experience where by users perceive the different systems as one
- **Unified IT platform** for the whole corporation allowing sharing of information across multiple applications and business units
- Ability to **respond quickly to market changes and business demands**

Customer Case Study: Ertan Hydropower

Industry: Energy & Utilities

Cordys Solution:

Cordys implemented its Business Operations Platform as the core IT infrastructure across Ertan:

- **Integration of five Production Systems** into Cordys platform
  - CCS (Provided Sweden's ABB Company)
  - Energy Accounting (By Larson Group)
  - River Water Level Monitoring (By China River Monitoring Auth)
  - Dam Security (By GE)
  - BFS Facility Management (By Simense)
- **Enterprise portal offering a single-access point** for all employees on top of existing systems
- **Office automation system** based on IBM Lotus Domino, online conferencing services provided by WebEx, and a financial package from UFSOFT (the most popular financial package available in China)
- Custom web content management system monitors all stages of content development. **Data aggregated from a variety of sources can be visualized in the Web portal** and secured with role-based access permissions

Benefits:

Cordys enabled Ertan to create a single interface, information sharing, streamlined decision processes and strategic flexibility:

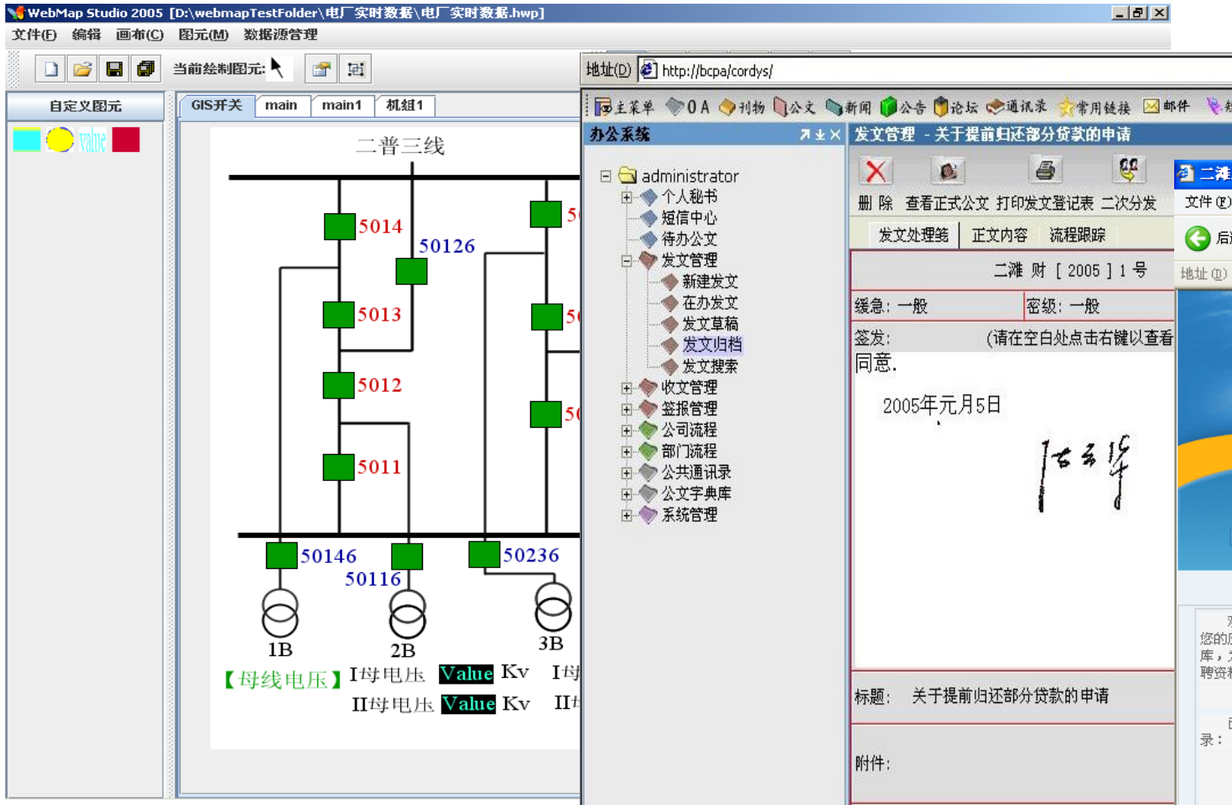
- The Ertan Hydropower Plant is completed **nine months ahead of schedule**
- **40% overall saving on IT investments and maintenance costs**
- **Improved decision making** due to **20-50% increase** in quality, accuracy, availability, and analysis of real-time information
- The **cost** of the support activities **reduced by 10% for procurement and 50 % for HR**
- Scalable system to control and manage the **roll-out of 19 new power plants over the next 15 years**

*"Thanks to Cordys, Ertan can now spend up to **70 percent of its annual IT budget** on new technology instead of infrastructure maintenance and support".*

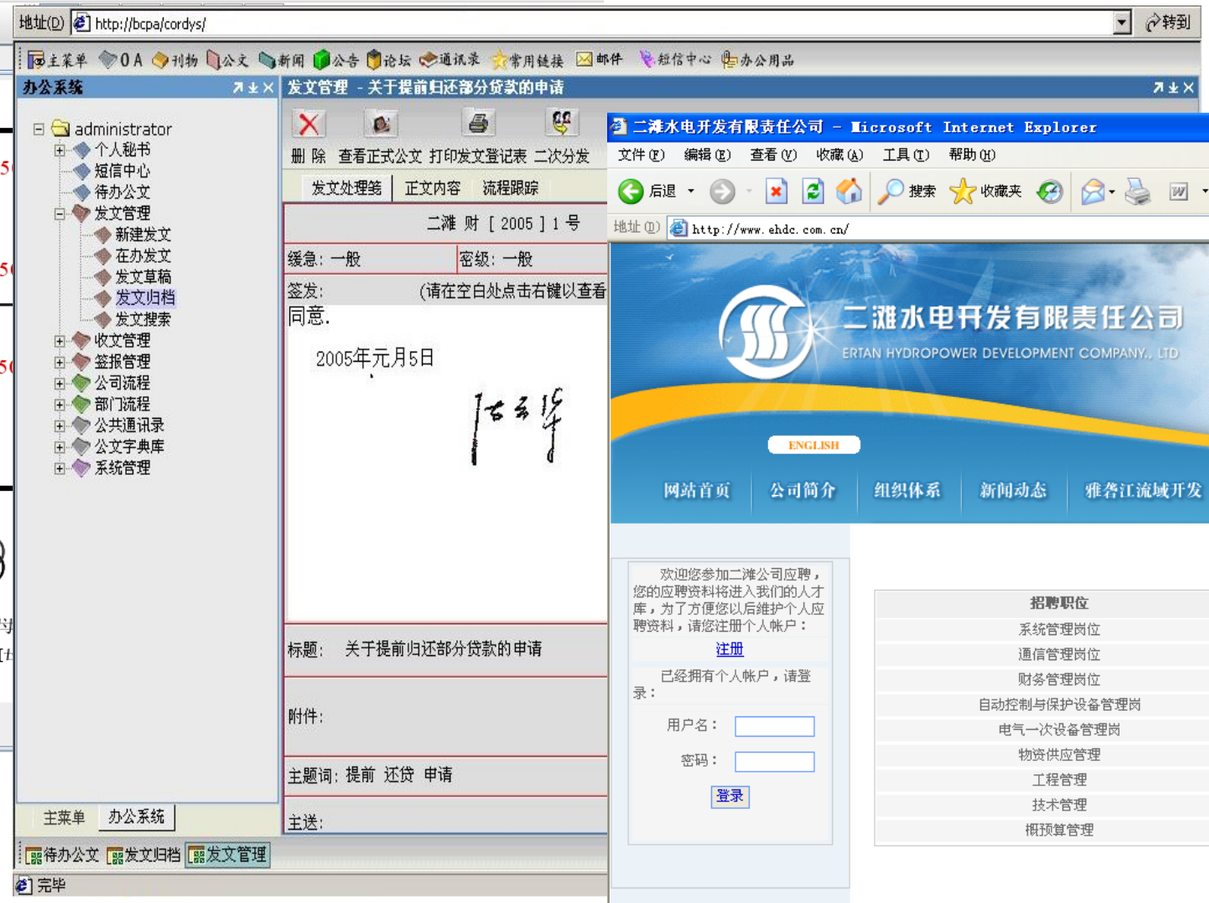
Qiang Zhou, Chief Information Officer, Ertan

Customer Case Study: Ertan Hydropower

Industry: Energy & Utilities

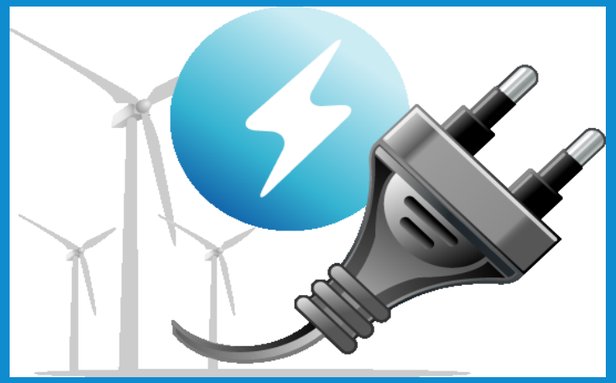


Plant Data Dashboard



Electronic Authorization

Ertan Recruitment



Cordys and Powel Solution

SMART METER EVENT PORTAL

Business Case: Smart Meter Event handling | an example

1 000 000 installations

×

0,5 % events each night

=

5 000 events

×

12 minutes avg. to resolve

=

1 000 man hours or **125 FTEs**

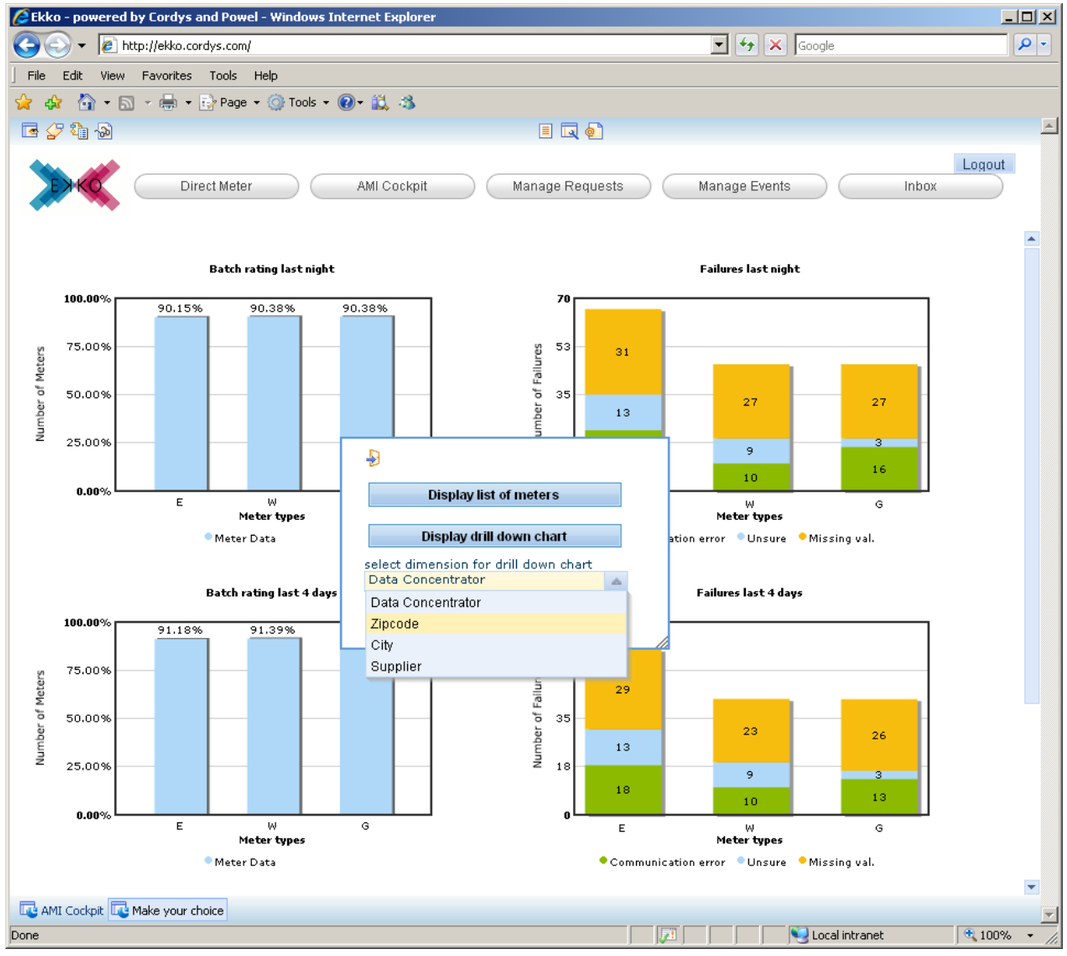
50% to 80% reduced effort through business process automation (BPM)

Cordys for Smart Metering & Smart Grids – “EKKO”

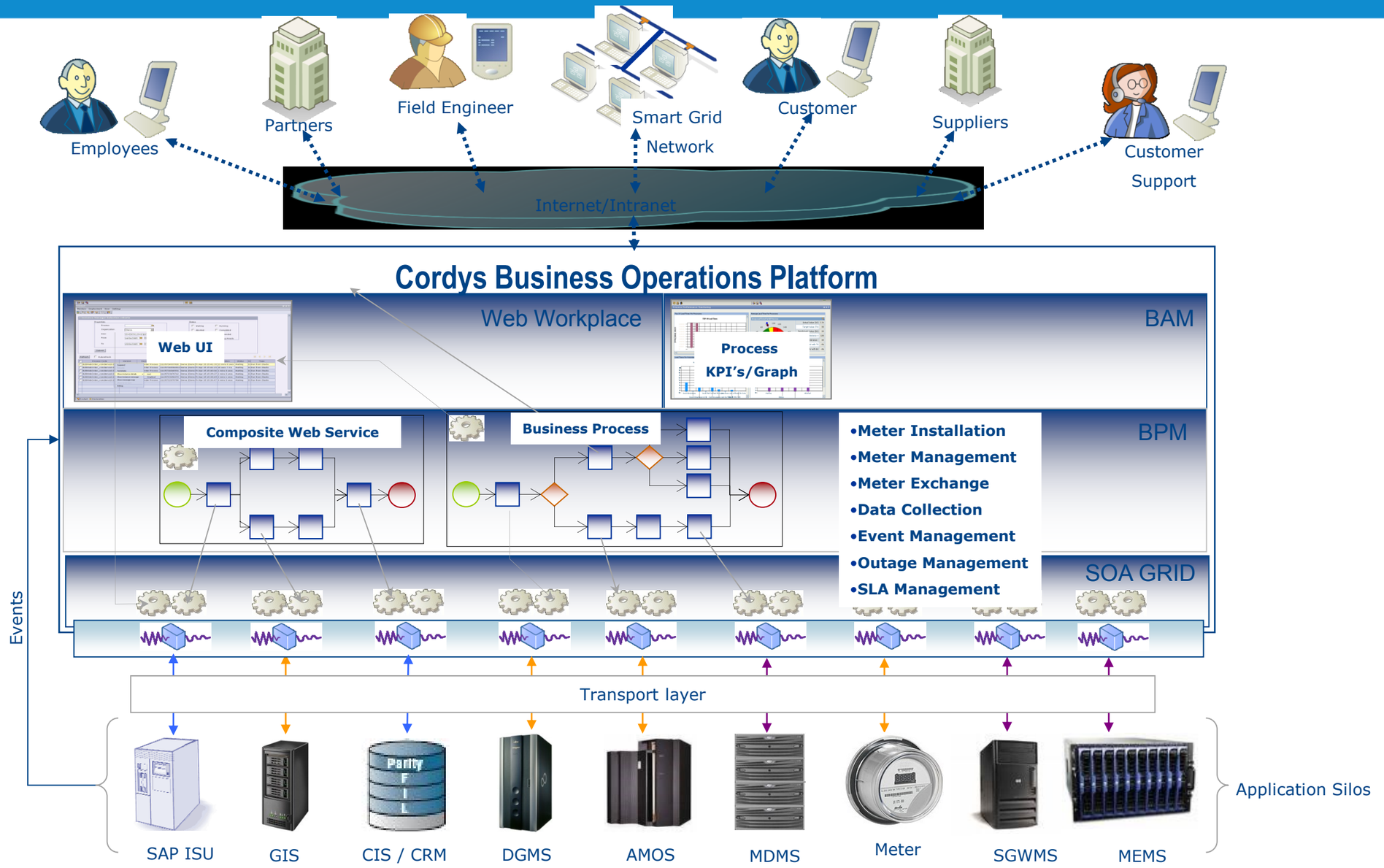
Cordys Central Access Server - Operational Monitoring & Management Portal for Smart Meters / Grid Portal facilitating remote, real-time access to meters and meter data

Key features:

- Orchestration, Monitoring & Management of Energy Meters / Grid
- Real-time communication with Meters through Meter Mgmt Systems
- Gateway to external parties (e.g. retailers) for additional services
- Full auditable authentication and authorization
- Online integration with multiple Meter Management Systems
- Key Performance Indicators (KPI’s) for Grid Operators
- Standard Back-end integration to core Grid applications
- Standard services to support Energy Retailers’ meter requests (connect, disconnect, etc.)



Cordys Reference Architecture for Smart Energy



Cordys for Smart Utility– **Business Values**

- End-to-end business process control and visibility from Meters to Enterprise Applications
- Flexibility: smooth and non-disruptive transition from existing business processes (e.g. in SAP ISU) to new and highly optimized AMR-based business processes.
- Unique visual orchestration of business processes such as Meter-to-Cash, leveraging existing IT landscape (e.g. billing engines) where needed
- Provide one flexible ‘hub’ for all corporate applications (e.g. ERP, CRM) that require meter-related processes and information
- Operational efficiency: integrate and optimize business processes across functional areas by using existing legacy applications; transforming legacy into Service Oriented Architecture
- Flexibility: leverages multi-meter vendor, multi-service, multi-ERP, multi-billing engine
- Future flexibility: ready for other service-oriented applications that will be needed due to market changes and regulations
- Reduces cost-to-serve, lowers both implementation costs and operational costs

Cordys for Smart Utility – **IT Values**

- Open industry-standards based secure and reliable data flows and process flows
- Based on open Service Oriented Architecture incorporating (smart) Meters from different brands and front-office/back-office applications as Business Services
- Filters and converts massive amounts of Meter-data into actionable information
- Transparent event-based architecture to send and receive data as Services to ERP's and/or Billing engines
- Decoupling of Business Processes, UI Services (e.g. for self-service), Application Services, Data Services and Device Services (unique SOA principles across all tiers, leading to usability, flexibility, stability and integrity)
- Meter-related and billing-related business processes are orchestrated, while optionally leveraging existing middleware and/or integration platforms
- Quickly create new Composite Utilities Applications, providing the right data to the right person at the right time (e.g. consumer energy self service portal)

Thank You

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BACKUP SLIDES

Customer Case Study: EDF Luminus

Industry: Energy & Utilities

EDF Luminus (formerly known as SPE Luminus) is the second largest energy provider in the Belgian market and belongs to the Top 30 Largest Belgian Companies. EDF Luminus has gas-fired electricity plants, wind farms and hydraulic power stations.

Country: Belgium

Key Figures:

- 1.7 million private and business customers
- 2nd largest electricity generator in Belgium
- 1000 employees
- 22 power plants

Customer Case Study: EDF Luminus

Industry: Energy & Utilities

Business Challenges:

- Fragmented energy market in Belgium with different parties for delivering energy and maintaining the network
- Many intercompany processes to handle different transactions between market players and clients
- Government rules forcing energy companies to comply with so-called Market Scenarios: standardized energy market processes
- Internal IT challenges: poor dataquality resulting in errors in billing and forecasting process
- Costly manual interventions needed to make corrections in data

Business Needs:

- Improve Organizational efficiency:
  - Improved and automated processes with clear ownership
  - Good dataquality linked to market communications
  - Proactive monitoring of customer information
- Flexible framework for validation and monitoring market communication – linked with automated business processes:
  - Setup automatic rectification of low quality messages
  - Validate information and automatic bounce back errors in data to Distribution Grid Operators

Customer Case Study: EDF Luminus

Industry: Energy & Utilities

Cordys Solution:

Message Handling Framework built with Cordys BOP to handle the message traffic between EDF Luminus and other parties in the energy market:

- Orchestration of internal customer processes to support changing market scenarios, including move-in/out, supplier switch, and meter handling
- Receive, transform, validate and process incoming and outgoing messages and relating them to the correct market scenario
- Automate a range of Utility business processes through the Cordys BPM engine
- On top of vanilla SAP implementation – all process logic in Cordys
- Cordys layer between website (which is driven by a .NET application) and SAP
- Scalable solution:
  - Peak load: 800,000 messages per day
  - Average load: 14,000,000 messages per year

Benefits:

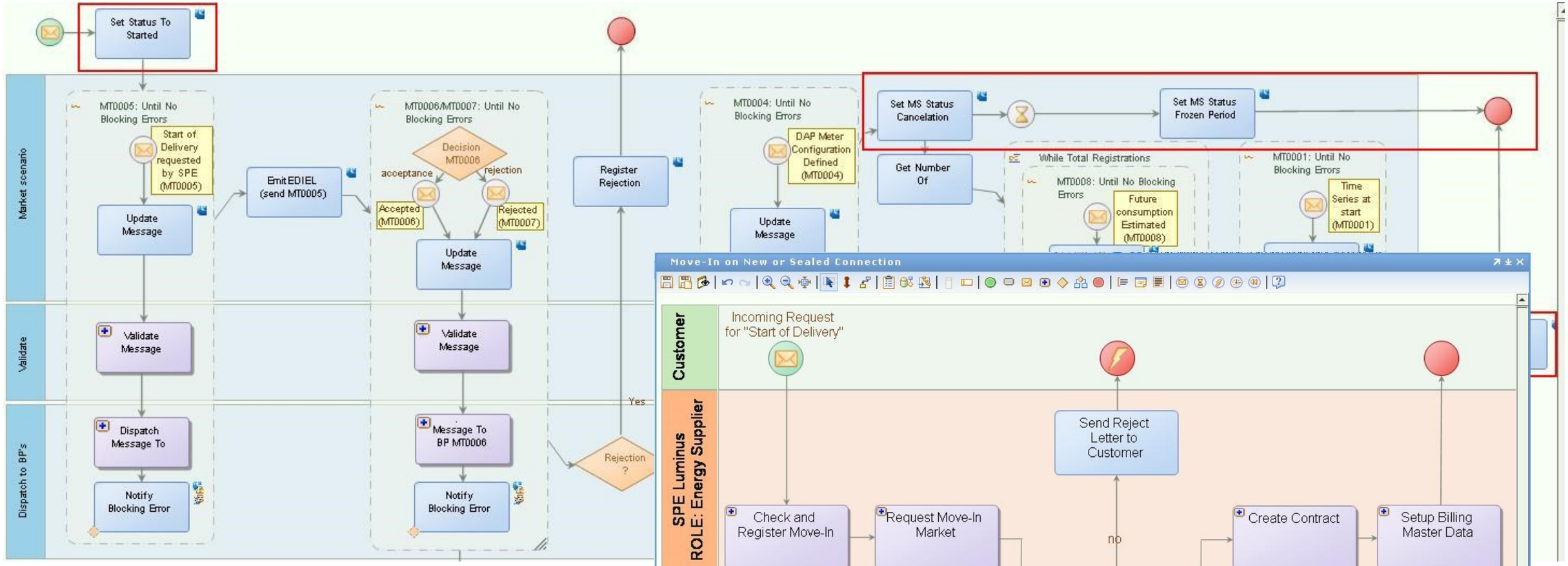
- **Cost improvement:**
  - Less manual work (less fall-out)
  - Shorter lead time
  - Less redundant work
- **Reduced settlement risk:**
  - Reduced difference between metering and allocation volumes
  - Reduced difference between forecasting, sourcing and allocation volumes
- Less volatility while reporting P&L figures and dashboard reporting on volumes (for example, settlement dashboard)
- Improved customer service:
  - Less rectification requests originated by the customer
  - Less questions, complaints on budget bill amounts
- Reduced system maintenance

"*Cordys BPMS ships as a **single product**, installable from a single CD, with a single point of administration - all leading **to lower cost of ownership**."*

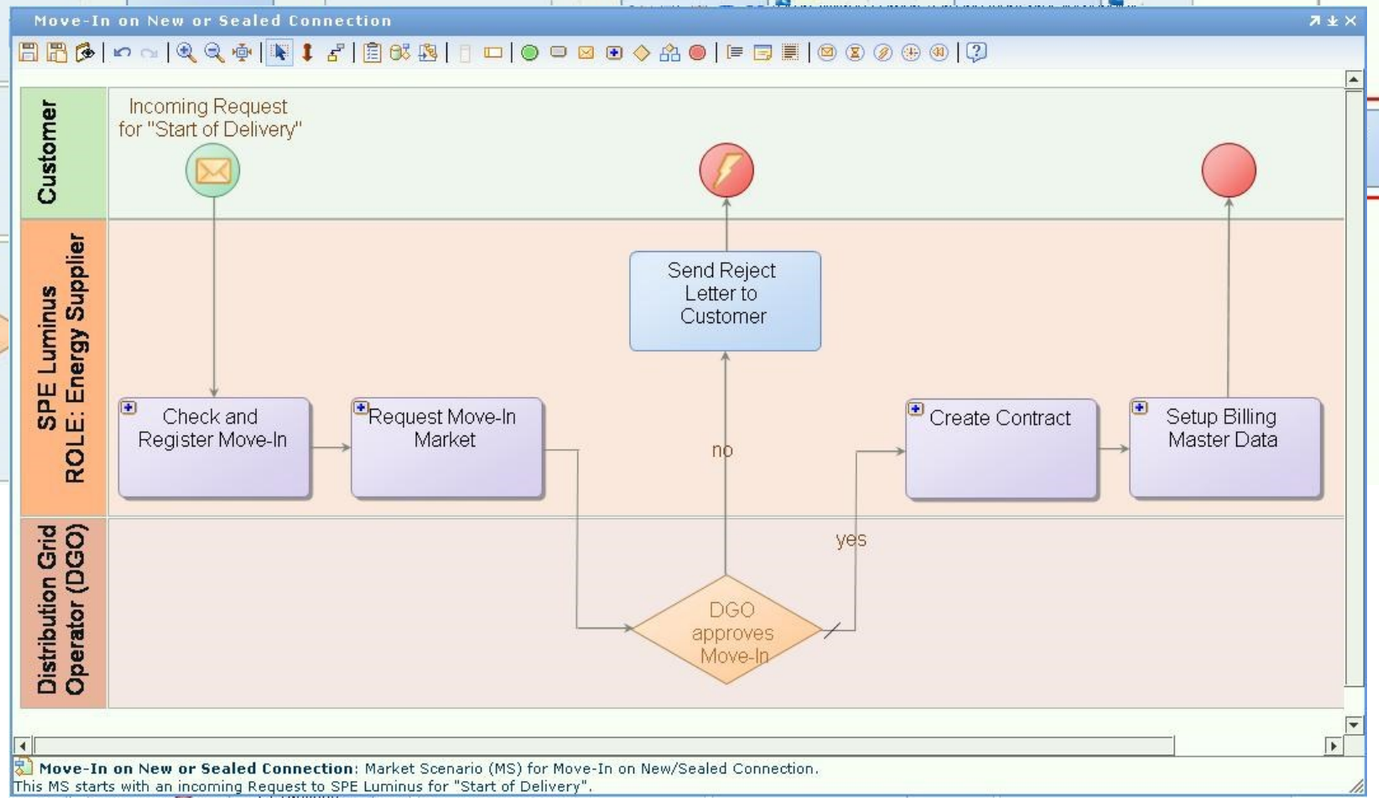
Piet Bastiaens, Architect, EDF Luminus

Customer Case Study: EDF Luminus

Industry: Energy & Utilities



Handling of Market Scenario statuses – for example, Started, Frozen Period, Cancellation Period, and Completed



Move-In Process