



Regional Seminar Series  
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## Smart Grids

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SAP

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Empowering Business in Real Time.

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# About



- SAP
  - Mais de 43.000 empresas já adotaram o software SAP no mundo
  - A SAP dispõe de soluções para mais de 25 setores da indústria
  - A SAP tem um quadro com mais de 40.000 funcionários
- 12 milhões de usuários, em mais de 120 países utilizam soluções e aplicativos SAP para...
  - Integrar seus processos de negócios
  - Ampliar sua capacidade competitiva
  - Obter melhor retorno sobre seus investimentos (ROI) ao menor custo total de propriedade (TCO)
- Ecossistema único de parceiros
  - Mais de 3.850 parceiros
  - Mais de 180.000 certificados SAP para parceiros

## SAP Brasil

- Maior mercado da SAP na América Latina
- 15 anos no país  
- País estratégico para a empresa: sede de um dos sete centros globais de serviços da SAP
- Mais de 700 funcionários



## Posição no mercado

- Mais de 1000 clientes distribuídos em 16 Estados Brasileiros
- Líder do mercado de ERP Brasileiro (34,4% de participação no mercado de acordo com o IDC Brasil)\*
- Forte ecossistema: mais de 100 parceiros (serviços, tecnologia e software); Força de trabalho indireta: mais de 6000 consultores

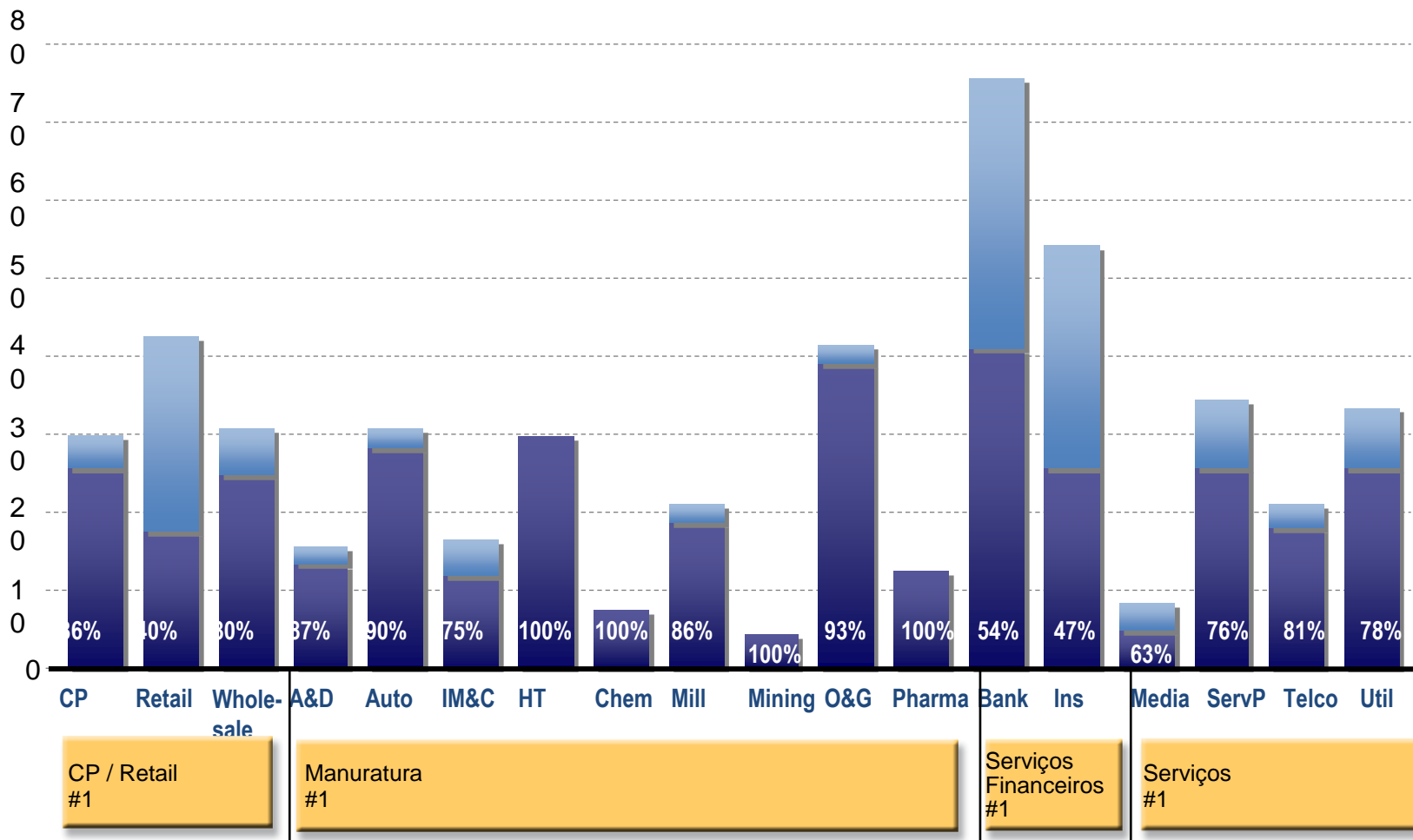
# Penetração por indústria das soluções SAP



**SAP entrega soluções com funcionalidades específicas por indústria baseadas na experiência captada dos líderes de cada segmento**

Número de empresas

Clientes SAP  
500 maiores do mundo



Source: Fortune Magazine, SAP Analysis

# Posicionamento de SAP no mercado de Utilities



Mais de 1500 Utilities tem implementado SAP

- 650+ clientes usam IS-U/CCS (Solução para Gestão Comercial)
- Gerenciando ~550 milhões de contratos de utilities
- Atuando em todos os segmentos:
  - Eletricidade: Geração, Transmissão, Distribuição
  - Gás
  - Água/saneamento, lixo.. etc)
- Em 70 países, 26 idiomas
- 110+ Clientes na América Latina
- 35+ Clientes no Brasil



# SAP no mundo de Utilities



... Alguns dos mais de 1500 clientes

# SAP para Utilities Vertical da Industria IS-U



A map of South America is shown in the background, with various utility company logos overlaid on it. The logos are arranged in a way that covers most of the continent, from the northern coast down to the southern tip. The logos include:

- COMAPA ZONA CONURBADA
- MaxiGas NATURAL
- SIAPA
- Empresa Eléctrica de Guatemala
- IBERDROLA
- AES El Salvador
- coelba Grupo Neoenergia
- cosern Grupo Neoenergia
- celpe Grupo Neoenergia
- escelsa energias do brasil
- enersul energias do brasil
- bandeirante energias do brasil
- La Electricidad de Caracas
- ENELVEN
- CPFL PIRATINGA
- CPFL PAULISTA
- CEMIG A Melhor Energia do Brasil.
- denorte
- ISAGEN ENERGIA PRODUCTIVA
- Eletropaulo
- Light
- PDVSA
- acueducto AGUA Y ALCANTARILLADO DE BOGOTÁ
- COMGAS Natural
- VESPUCIO NORTE EXPRESS
- METROGAS ES GAS NATURAL
- Lipigas
- ST. MAARTEN
- Autoridad de Acueductos y Alcantarillados
- Tractebel Perú
- CGE COMPAÑIA GENERAL DE ELECTRICIDAD
- autopista central
- aysa
- DPEC
- BG GROUP
- Shell
- edp energias de portugal
- IBERDROLA
- AES
- EDF
- GDF SVEZ

39 Utilities em  
América Latina  
usam SAP IS-U  
+50 milhões de  
contratos



# Os Clientes SAP Brasil em Utilities



CDSA  
Termofortaleza



# SAP for Utilities: The Utility Business Process Platform



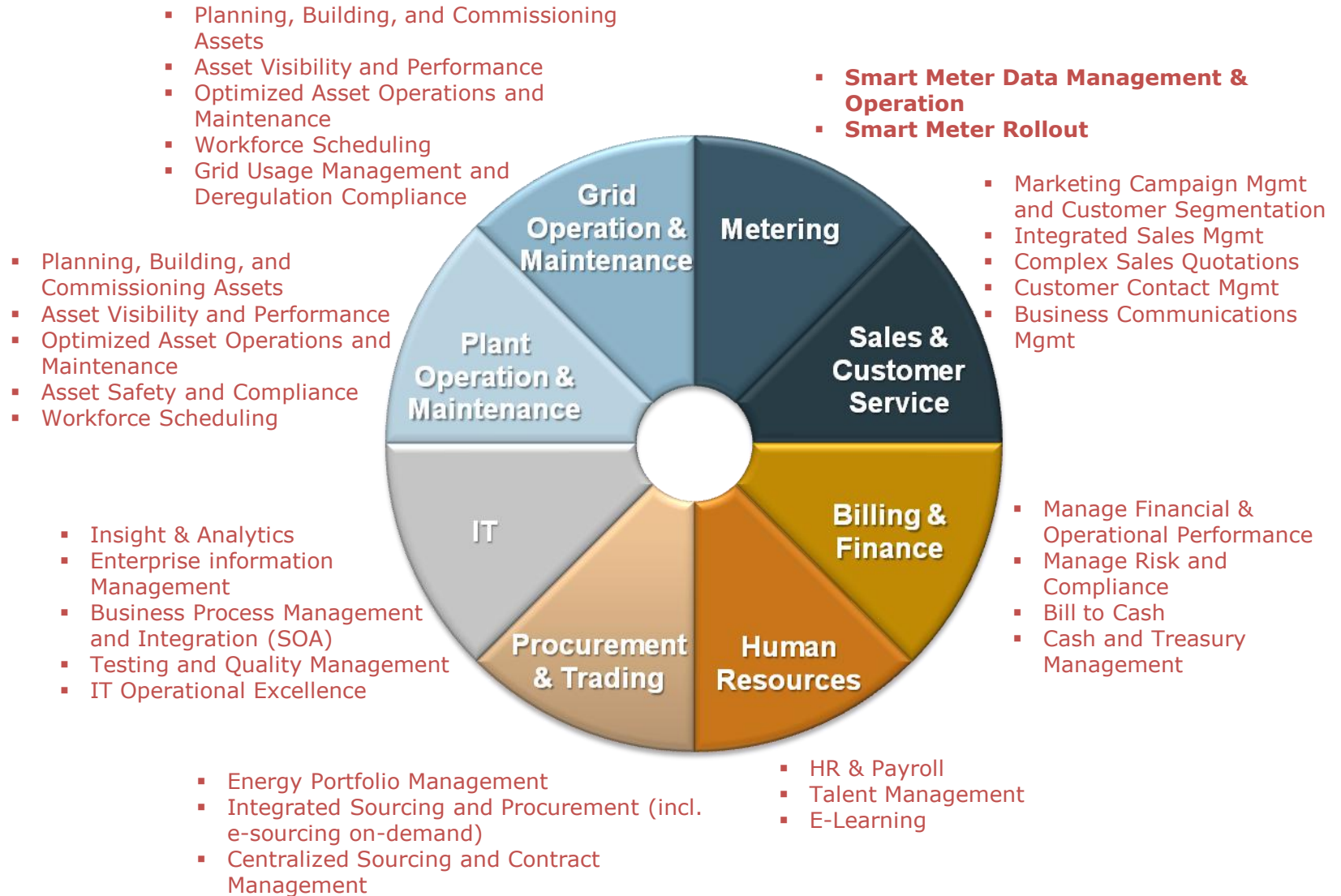
Enterprise Asset Management	Customer Relationship & Billing	Energy Capital Management
Plant Lifecycle Management	Selling of Energy & Services	Meter Operations
Network Lifecycle Management	Customer Service	Energy Data Management
Resource & Supplier Management	Billing of Energy & Services	AMI / Smart Grid Integration
	Customer Financials Management	Energy Portfolio Management
	Intercompany Data Exchange	Reconciliation & Settlement
		Energy Accounting

## Business Intelligence & Analytics

## Enterprise Management & Business Support

Performance Management	Financial Accounting	Human Capital Management	Corporate Services	Operations Support
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# SAP Products for the Utilities Industry



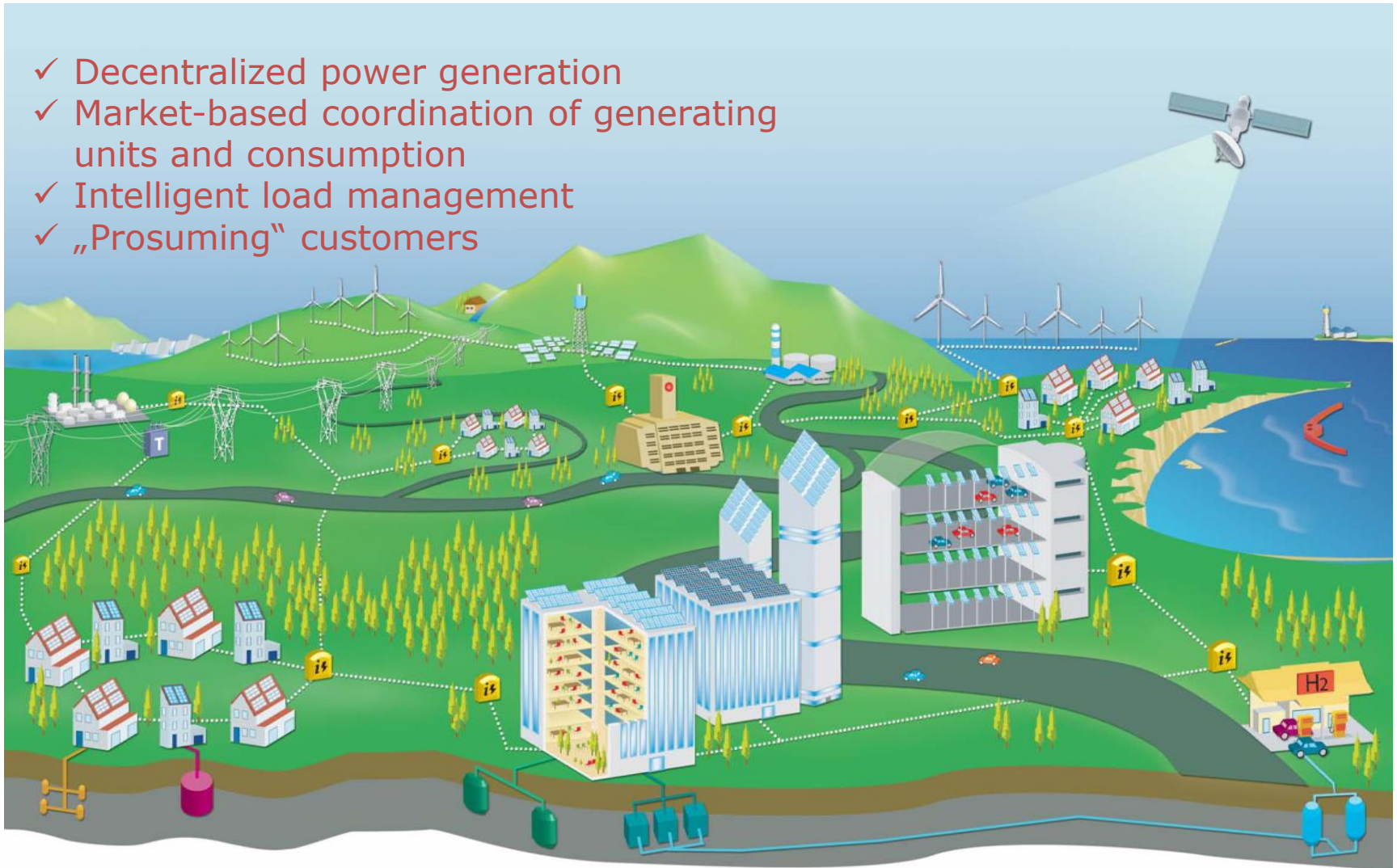
# Smart Grids





# The “Brave New World” of 2020 ...

- ✓ Decentralized power generation
- ✓ Market-based coordination of generating units and consumption
- ✓ Intelligent load management
- ✓ „Prosuming” customers



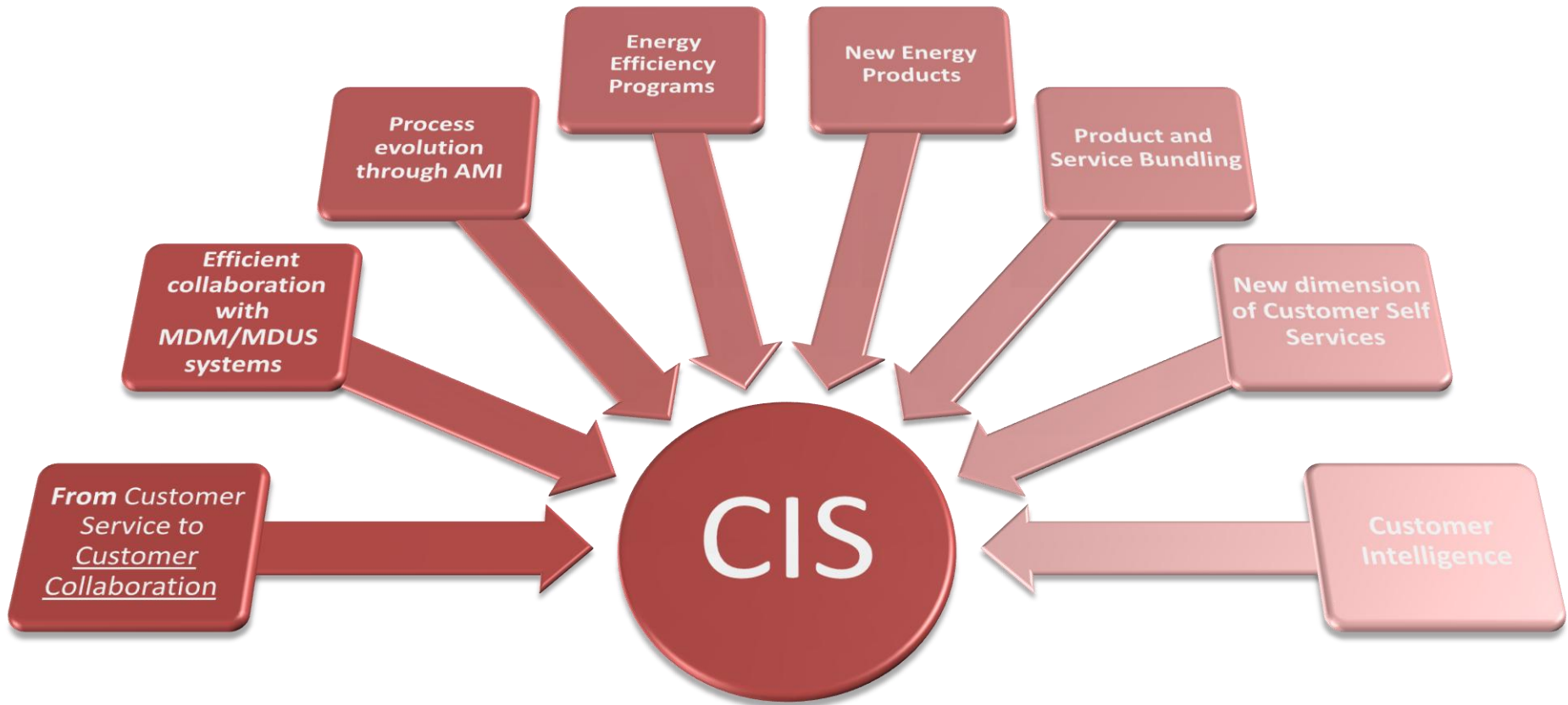
*Advanced Metering Infrastructure (AMI) is a communication network and meters providing usage information at regular intervals (at least hourly) and collected at least daily.” (Source Utilipoint, 2006)*

## Capabilities

- Measure electricity, record consumption, and meter event information electronically
- Remote connection and disconnection
- Tamper & Outage detection
- Quality of supply monitoring
- Demand response / limiting
- Communications interface to devices like
  - in-property display
  - direct load control equipment
  - link to a computer in the premises







# ... and Redefine Asset and Work Management Processes



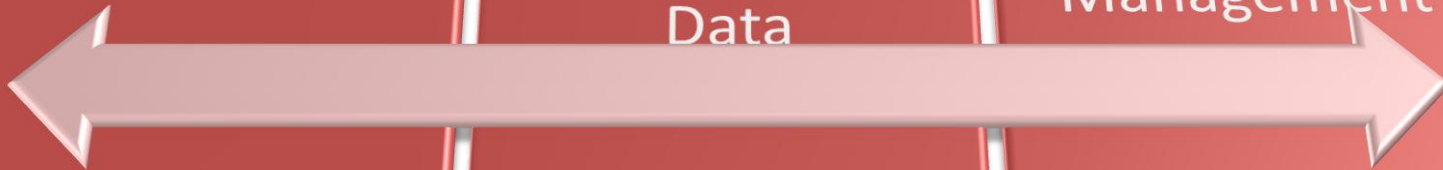
Renewables,  
Virtual Power  
Plants,  
Energy Storage,  
Energy & Emissions  
Management



Smart Grids,  
Transmission  
Optimization,  
Grid Reliability,  
Regulatory  
Compliance,  
Geospatial  
Data



Smart Meters,  
Meter Data  
Management,  
Realtime Data  
Analytics,  
Home Energy  
Management



# Que esta acontecendo respeito do Smart Grids no Mundo



## MUNDIAL

Smart Grid vai gerar investimentos em energia e serviços de USD 200 BI até 2015 (Projeção de Ernst & Young)

## EUROPA

A motivação foi a busca da eficiência no uso final de energia para atender as metas de reduções de emissões de CO2

## ESTADOS UNIDOS

Pacote de Recuperação econômica. Concessão de USD 4,5 BI para projetos de SmartGrid

## ANEEL

- Consulta pública sobre medição eletrônica → Troca de mais de 65 milhões de medidores
- Regulamentação do uso do PLC → Comunicações
- Publicação, em consulta pública, da primeira parte de um estudo da metodologia de tarifas de eletricidade no país. → Tarifas mais complexas
- CEMIG → Cidade do Futuro (Sete Lagoas), 100.000 consumidores, 80 Km de BH
- LIGHT → Medidores eletrônicos para redução das perdas (projeto 100.000 por ano)
- AMPLA → Medidores eletrônicos (50.000 em 2010)
- ELETROBRAS → USD 700 MI em automação de processos, substituição de medidores, etc.
- AES ELETROPAULO, CPFL, COPEL, EDB → todas tem projetos de AMI

# SAP for Utilities Enables the Integration of Smart Meters with Existing IT Systems



## Smart Meter Data Integration

- End-to-end coverage of technical and commercial systems
- On-time information
- Streamlined AMI processes

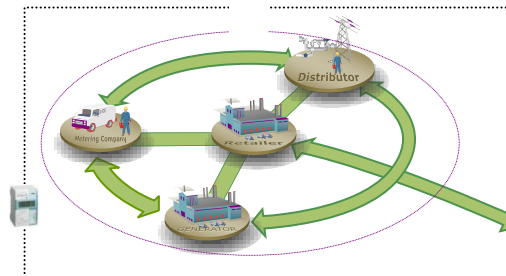
## Advanced Meter Integration

- Functional enhancements and enterprise services that support and streamline existing end-to-end processes
- Communication with Meter Data Unification System (MDUS) via enterprise services
- New processes – i.e. remote disconnection – based on a bidirectional communication with AMI systems
- Integration of AMI with enterprise asset mgmt, energy data mgmt, billing and customer service processes

## Key benefits

- Integration into existing system landscape with minimized project effort
- Lower operational costs due to high degree of automatization
- Advanced customer service processes
- Ability to implement energy efficiency programs

## Customer Examples



# Aligning stakeholders to achieve the highest level of energy efficiency



- **The maximum level of energy efficiency requires alignment between several stakeholders with differing objectives**



## Meter Operations

### Meter Operation Services

How do I streamline my meter procurement and installation process?

- Operating margin
- Purchase cost/cost control



## Energy Management

### Measurement Data Management

How do I deal with all data for any specific customer and market requirements?

- Compliance
- Customer satisfaction



## Customer Service

### Managing Energy Supply Products

How do I offer individual contracts that include new technical capabilities?

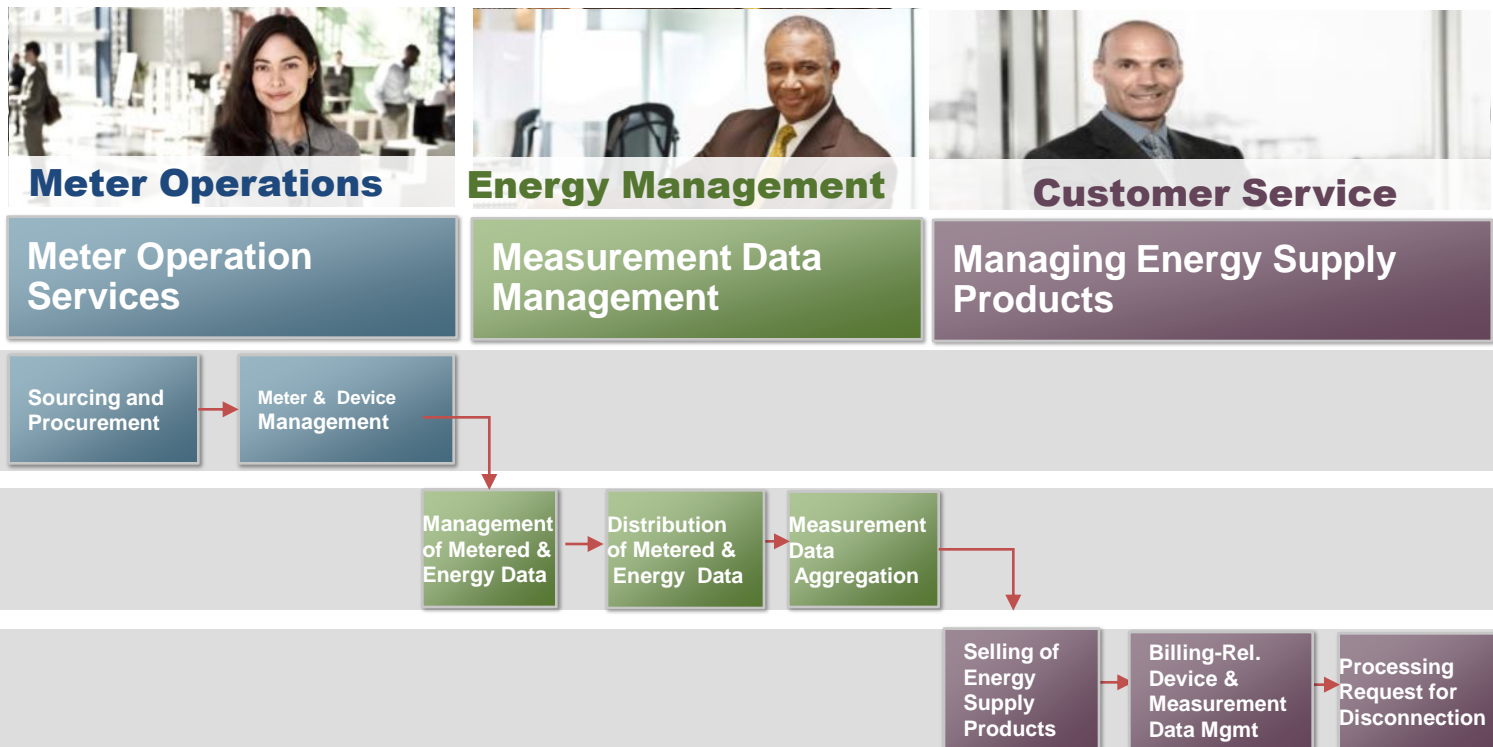
- Customer satisfaction
- Revenue



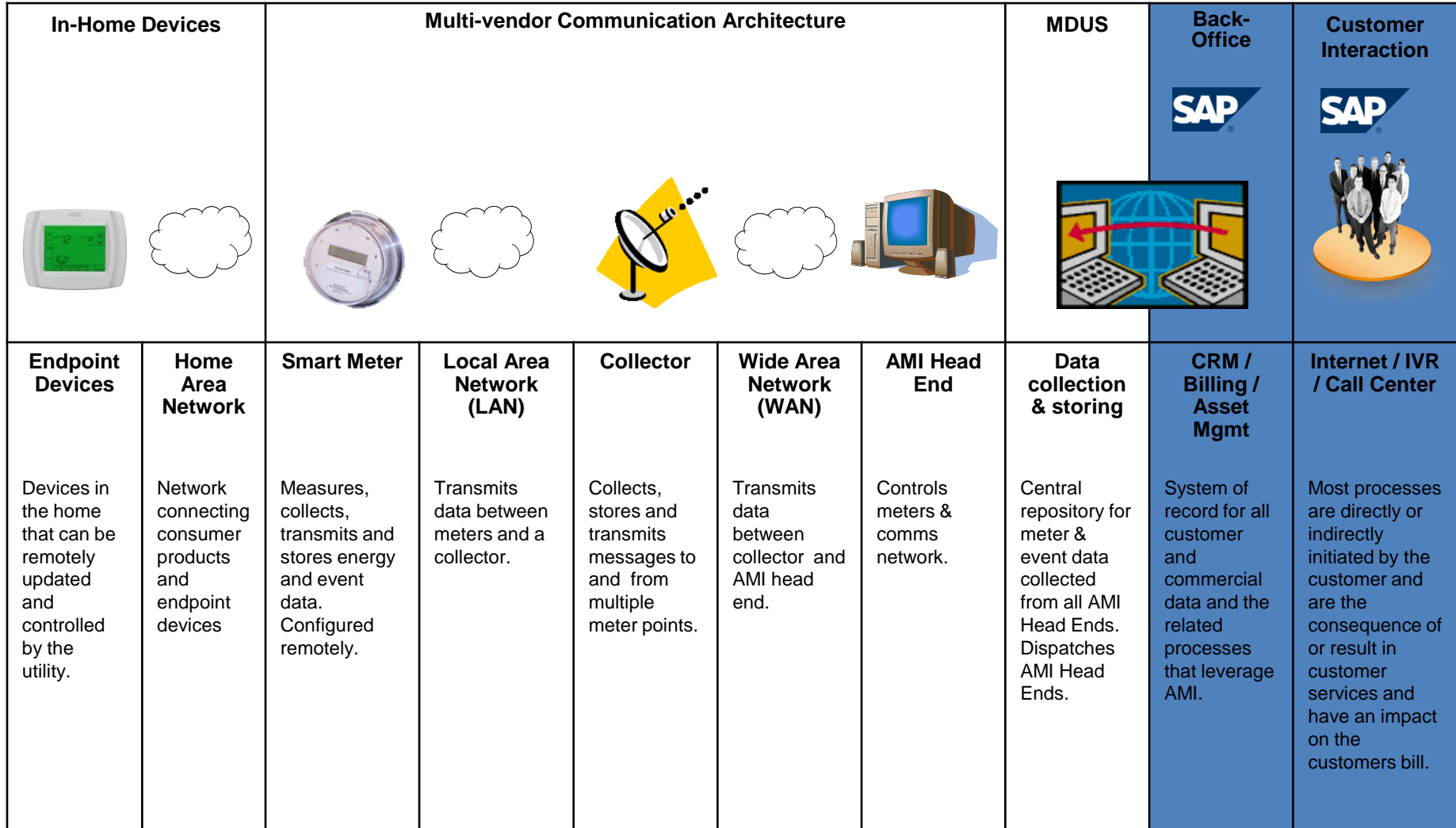
# End-to-end Smart Meter business process integration guarantees energy efficiency



• Increased energy efficiency requires connected processes across departments and guarantees an individualized product offering and risk mitigation for compliance



# Meter-to-Back Office Value Chain



## Examples for events sent from the AMI Infrastructure

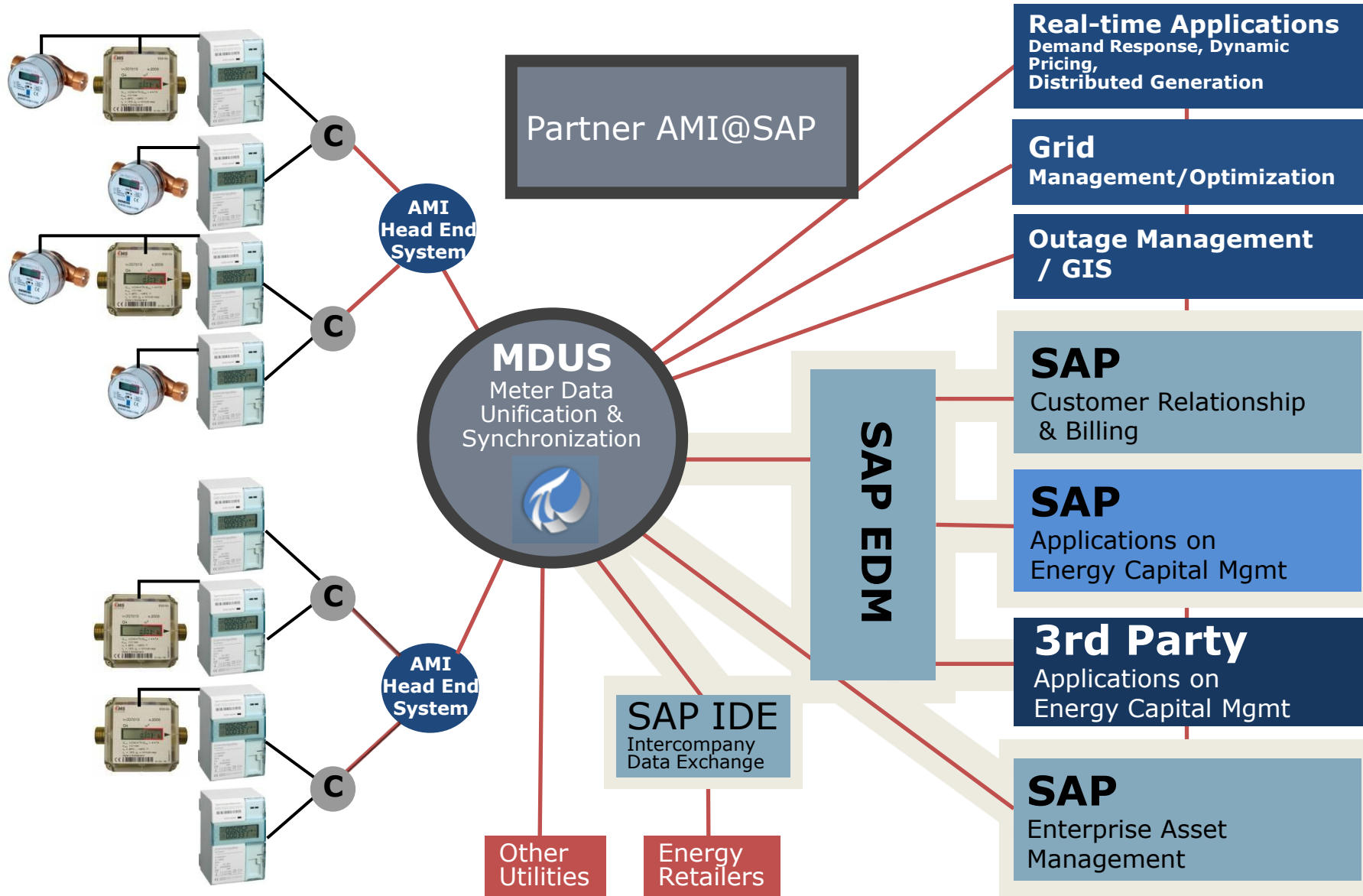
- Missing meter readings
- Validation error
- Meter error
- Meter change required
- Concentrator error
- Tamper event
- Actual meter reading outside of predefined range
- Overvoltage / Undervoltage



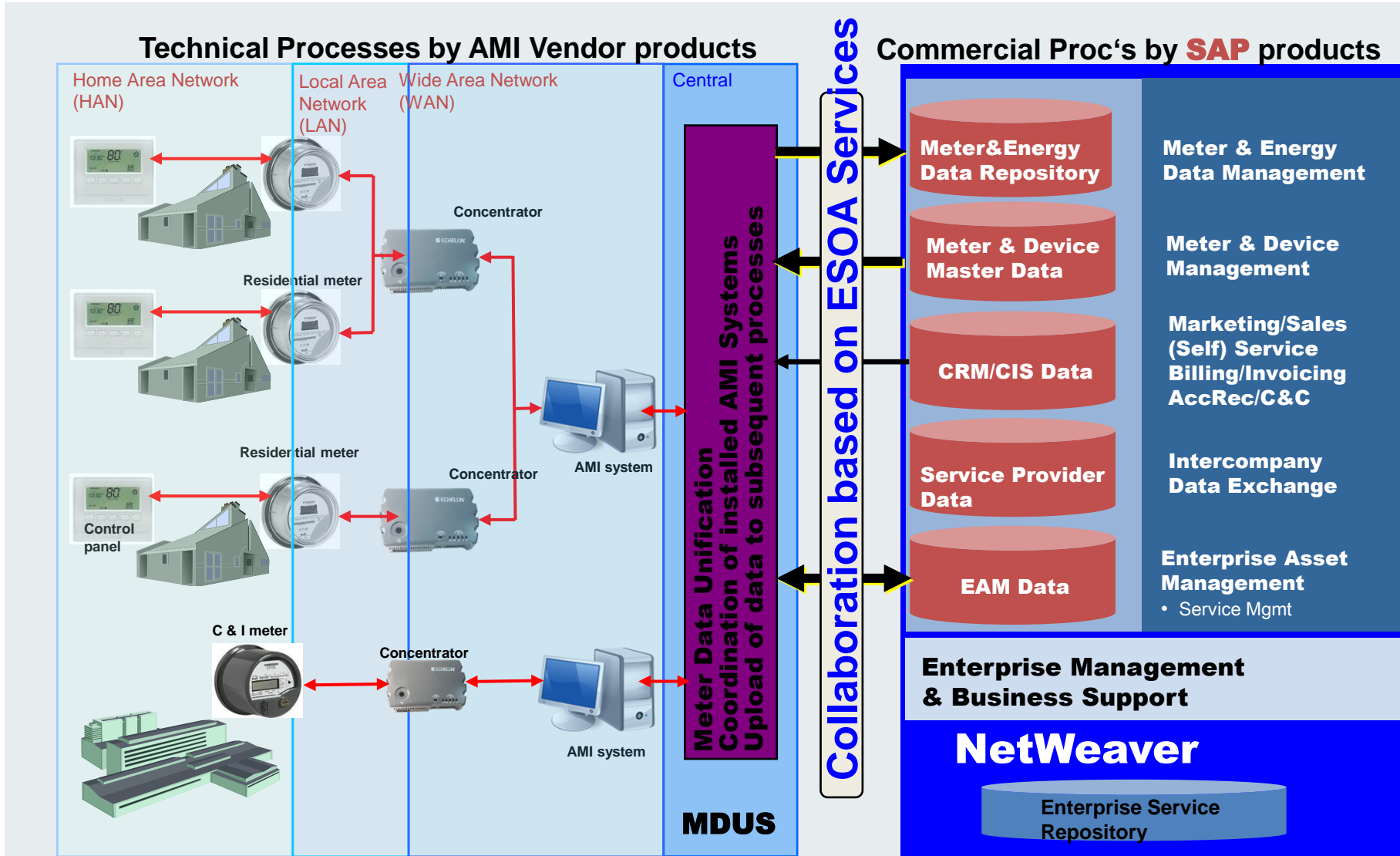
## Follow-up actions triggered by the AMI Event Management

- Create notification
- Create service order
- Create compatible unit order
- Create customer contact
- Start workflow, for example to notify a user
- Start customer specific follow-up actions

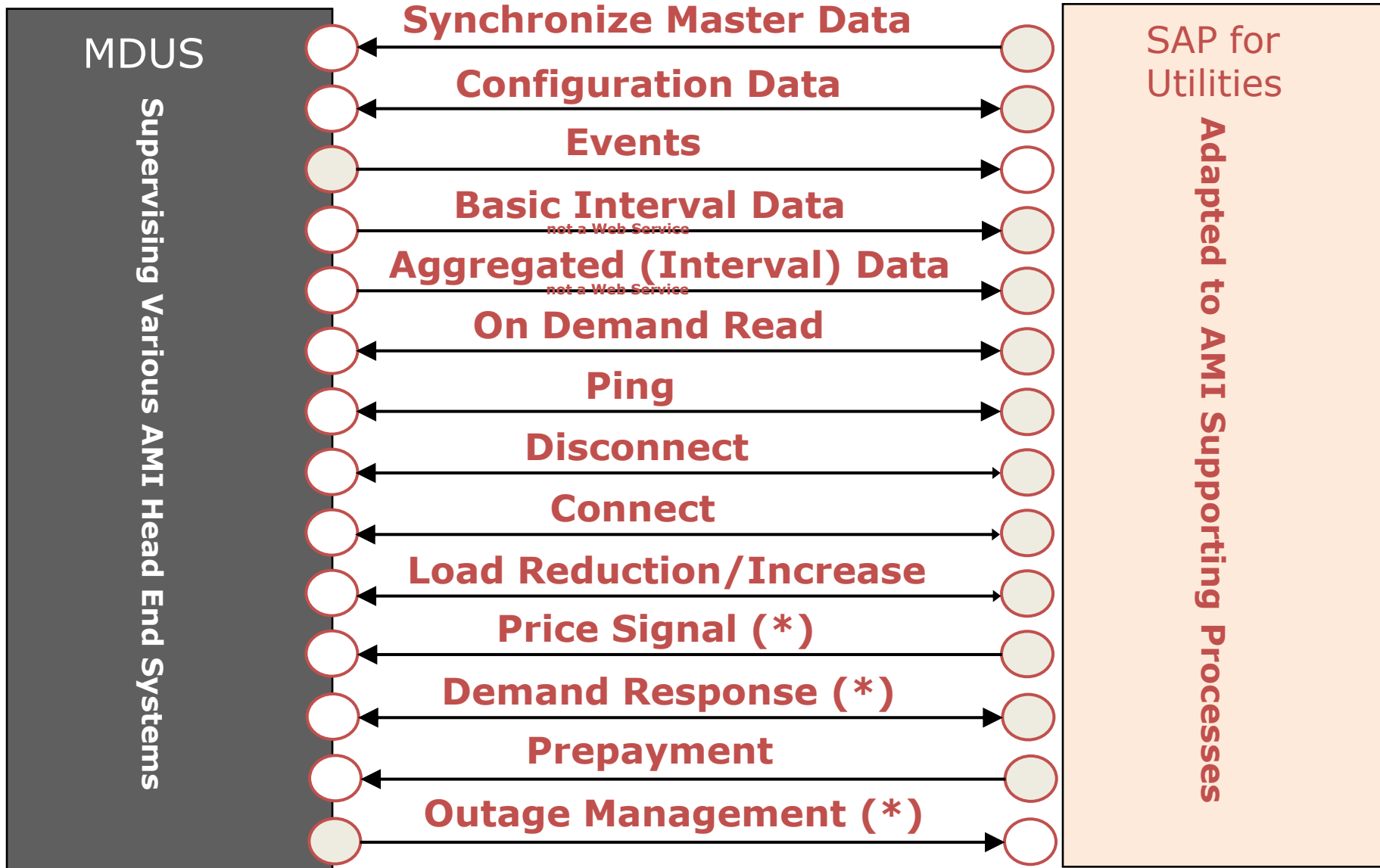
# Integrating AMI to SAP Business Applications



# AMI System Landscape



# Services Integrating MDUS and SAP





## Role of the MDUS

- ❑ a hub for metered consumption data (primarily Basis Interval Data) and for meter/premise originated event data thus making this data independent from the specific AMI Systems that collected the data
- ❑ a unifying gateway between various AMI system(s) and consumption & event data processing applications such as SAP for Utilities
- ❑ Enterprise Services-based 2-way communication channel between the AMI Systems and the commercial applications
- ❑ a solution that synchronizes configuration data for AMI Systems with those back office applications that are the System of Record for the respective master data and that synchronize selected status information between the AMI systems and the status processing application

SAP works with partners that provide leading AMI and MDM solutions in order to identify and implement the ideal cooperation between the AMI Systems, the MDM System and the SAP for Utilities System.

# Meter Data Unification Synchronization (MDUS/MDM)



## Development Partners



## SAP AMI Integration for Utilities

### AMI 1.0 (EHP4)

#### Business Suite 7

**Available**

- **Meter Reading**
  - Support of regular and on-demand reading
  - Monitoring
  - Status Administration
- **Device Management**
  - Exchange of Master Data
  - Business Warehouse Content
  - Integration to all Data Objects (e.g. Grid)
- **Customer Service**
  - Disconnection / Reconnection (also ERP)
  - AMI Capabilities for Product Value Help
  - Device Information in the Interaction Center
- **Broad Number of Enterprise Services**

### AMI 2.0 (EHP5)

#### Business Suite 7 Innovation 2010

**Ramp-up Dec 2010**

- **Joint Energy Data Management (MDUS Integration)**
  - Tight integration of MDUS with SAP for Utilities
  - Transfer aggregation rules dynamically to the MDUS
  - Support of the various billing scenarios
- **Monitoring**
- **Disconnection / Reconnection**
  - Scheduling, Monitoring of entire Process
  - Support of Approval and Reversal Process
- **Device Management**
  - On-Demand Request for AMI-Meter/Device status
  - Master Data Exchange

### AMI 2.0 (EHP5E)

#### Business Suite 7 Innovation 2010e

- **Sending of Text Messages to the Meter**
  - Possibility to send text message from CRM or ERP to specific meter
- **Management of non-Energy Data (Event Management)**
  - Receiving, prioritization and dispatching of event messages from MDUS
  - BI Content
- **Performance improvements (concept)**
- **Support Meter Mass Rollout (concept)**

### AMI 3.0 (EHP6)

#### Future Scope

- Load limitation incl. CRM
- Market communication for AMI processes
- Joint Energy Data Management (MDUS Integration) pt.II
- AMI Analytics
- Customer Feedback from first implementation projects
- Demand Response / Demand Side Management
- Integration to Outage Management Systems
- Integration to GIS
- Integration to external forecasting system

# Why Act Now?



## Why is this attractive now?

- Reduce operating costs
- Increase bill accuracy & customer satisfaction
- Adapt to new technologies and business functions
- Only end-to-end solution on the market
- SAP helping drive industry standards

## What are our competitive strengths in the marketplace?

- Strong differentiator against competitors
- Extensive and solid MDUS partnering concept
- Integrated, Comprehensive Solution
- Faster Time to Value
- Market Leadership
- Solution Agnostic

## Recent Wins

- Consumers Energy
- Middle Tennessee Electric
- Reliant
- Allegheny Energy
- First Energy
- BlueBonnet Electric
- SP AusNet
- MRSK
- Centrica
- + others ...

# Demo



Obrigado !



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Thank you

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