OSIsoft® | UC 2010

Real Time Information — Currency of the New Decade

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OSIsoft® UC2010

Real Time Information — Currency of the New Decade

Sustainability and Efficiency through Advanced Business Integration

Dr. J. Patrick Kennedy
CEO & Founder, OSIsoft LLC

Klaus Heimann
Senior Vice President, SAP AG

SAP AG

Revenue 2009 . . . . € Bil 10,7

Employees 12/2009 47584

Market Capitalization 04/2010 . . . . € Bil 45

Customer Installations 04/2010 – SAP 31604

Customer Installations 04/2010 – BOBJ 48 958

Users . . . . Mio 20+

SAP Business Suite:

Lines of Code 392 000 000

Screens . . . . .200 000 +

Reports 3000

DB-Tables 70 000

Go To Market by Industry . . .

SAP for Utilities

SAP for Chemicals

SAP for Oil&Gas

..27 industry platforms

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Most used SAP application: Financials

			Database	In Memory Computing
BKPF	107 Fields	8,5 Mio Rows	6,4 GB	0,24 GB
BSEG	315 Fields	27 Mio Rows	60,2 GB	2,8 GB
. . . . .				
Bxxxx	several tables required for calculation and aggregation		83,4 GB	Aggregation no longer needed
TOTAL			150 GB	~ 3 GB

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Strategic Alliance OSIsoft - SAP

OSIsoft Partner Since 1996:

➢ SAP Production Planning-Process Industries (SAP PP-PI) module

➢ SAP Plant Maintenance (SAP-PM) module

➢ SAP Quality Management (SAP-QM) module

➢ The OSIsoft Business Package for SAP Portal

➢ Member of ES Community

➢ Member of Value Network for Chemicals, Mining, and Utilities

➢ Enterprise Services for SAP Enterprise Service Repository

➢ AMI MDUS Solution and participant in SAP Lighthouse Council since 2007

➢ *SAP Certified ESOA – AMI Integration*

➢ *Endorsed Business Solution (EBS) OSIsoft MDUS*

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What we have in common

Many of our customers (5000+)

Leaders within our respective market areas

100% complimentary products *

Dedication to a particular business area

Platforms that mesh into others

A Corporate Culture that fosters software engineering

Partner Microsoft

SAP for Industry Platforms integrating into OSIsoft

The following industries use the OSIsoft® PI System® to provide the real-time data infrastructure and collaboration tools they need to meet key challenges:

Utilities
- **Maximizing asset performance**
- **Optimizing production**
- **Mitigating risk**
- **Enabling the Smart Grid**

Oil and Gas:
- **Maximizing asset performance**
- **Optimizing production**
- **Centralizing process and enterprise knowledge and experience**

Manufacturing:
- **Manufacturing Synchronization**
- **Performance Management**
- **Energy Management**

Chemicals:
- **Optimizing production**
- **Increasing energy efficiency**
- **Mitigating risk and achieving regulatory compliance**

Mining:
- **Increasing energy efficiency**
- **Managing water consumption**
- **Maximizing asset performance**
- **Mitigating risk and achieving regulatory compliance**

Cross Industry:
- **Increasing energy efficiency**
- **Improving capacity planning**
- **Reducing IT and facilities costs**

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Linking Real Time Data into Business Apps

Data Sources	Data Services	Data Collect/Mgmt	Operations	Enterprise
Transformers			Rating/Billing	Buildings
Pumps	Historians		Customer Service	
Meters				Utilities
Sensors	Mobile Devices	Integration Layer / Real Time Event Connector & High Volume Data Performer / Gateway	Preventive Maintenance	
Motors	SCADA		Monitoring	Mining
Valves	LIMS		Analytics	Manufacturing Pharmaceuticals Chemicals
Actuators			Supply Chain	
RFID	PLC/Instrument Systems		GeoSpacial	Oil & Gas
Other				
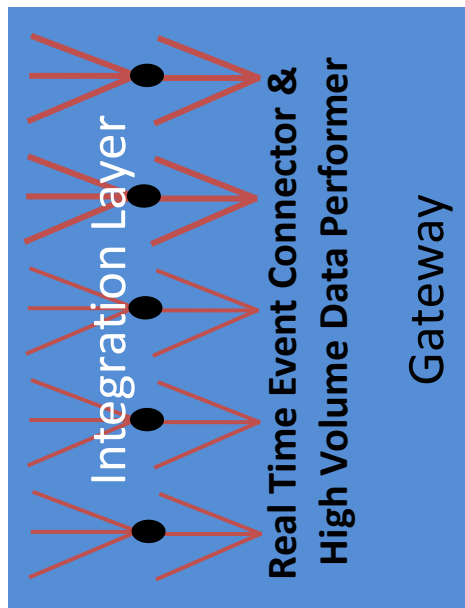
OSIsoft. **SAP**

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The Smart Asset Infrastructure is the basis for the Smart Grid

C → CS → Plant Operation Apps

C → CS → Grid Operation Apps

C → CS → Customer Service Apps

C → CS → Enterprise Energy Mgmt
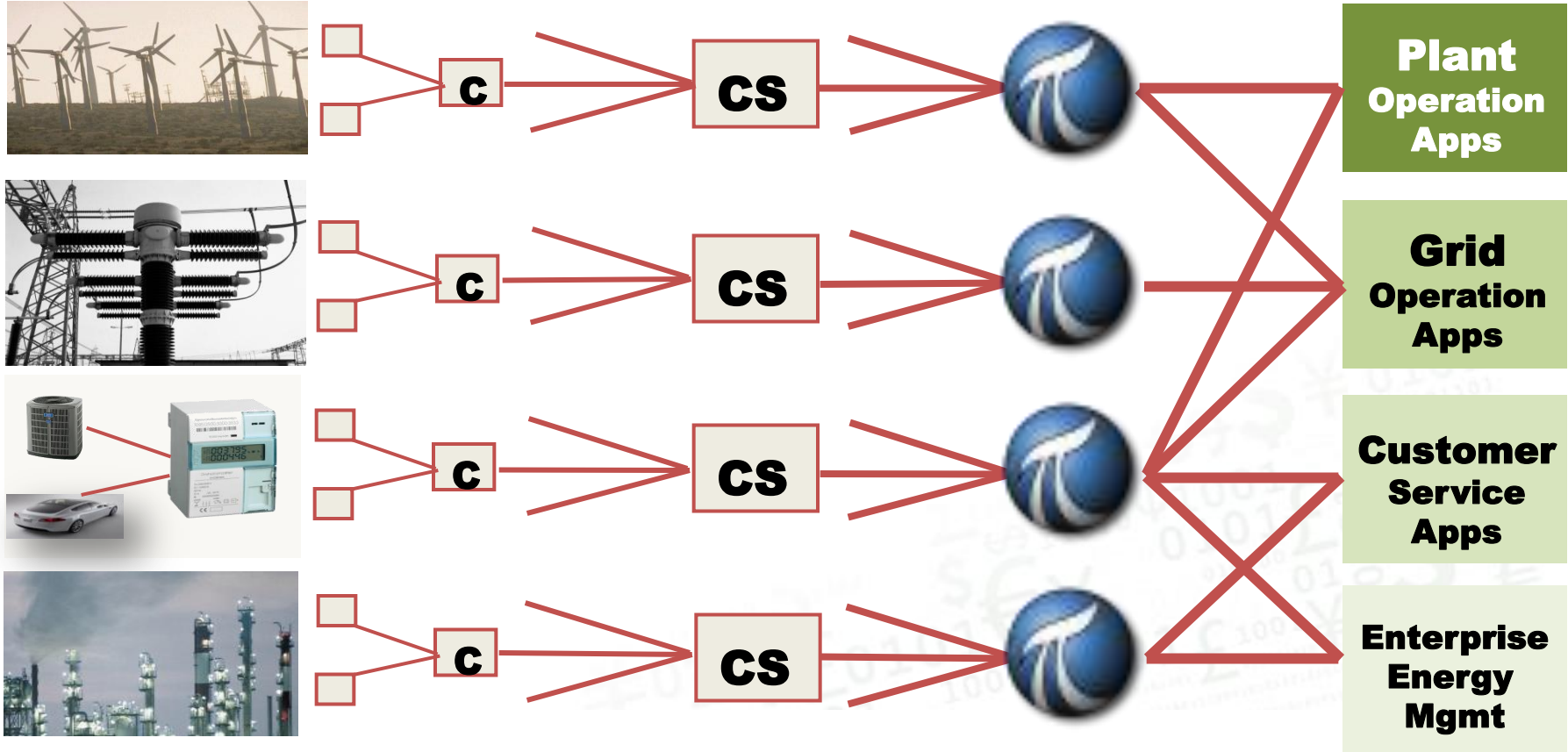
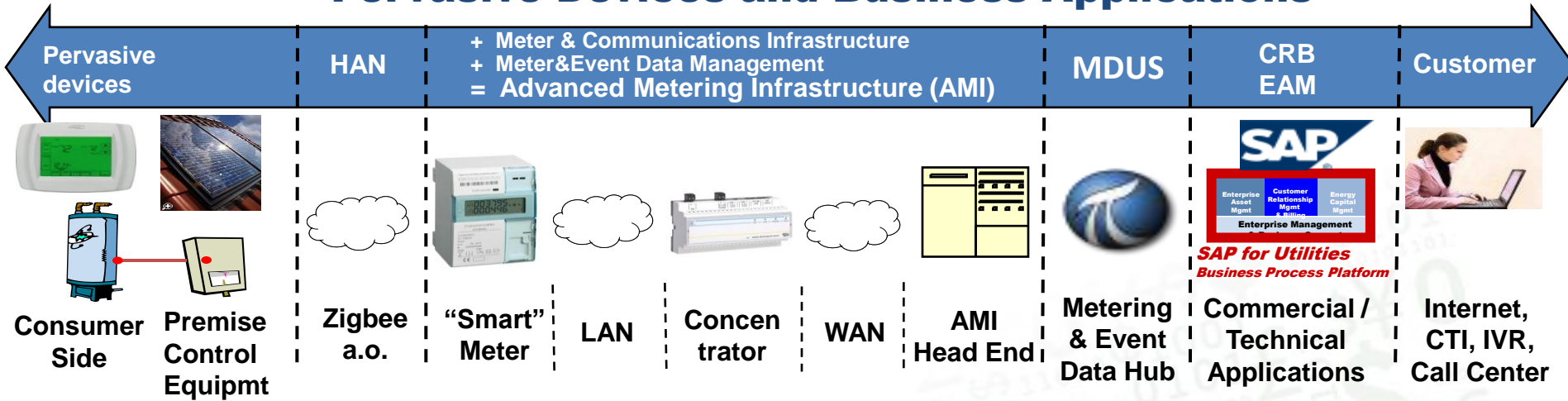# The "Brave New World" of 2020 …

- Decentralized power generation
- Market-based coordination of generating units and consumption
- Intelligent load management
- Cooperative End-Consumers
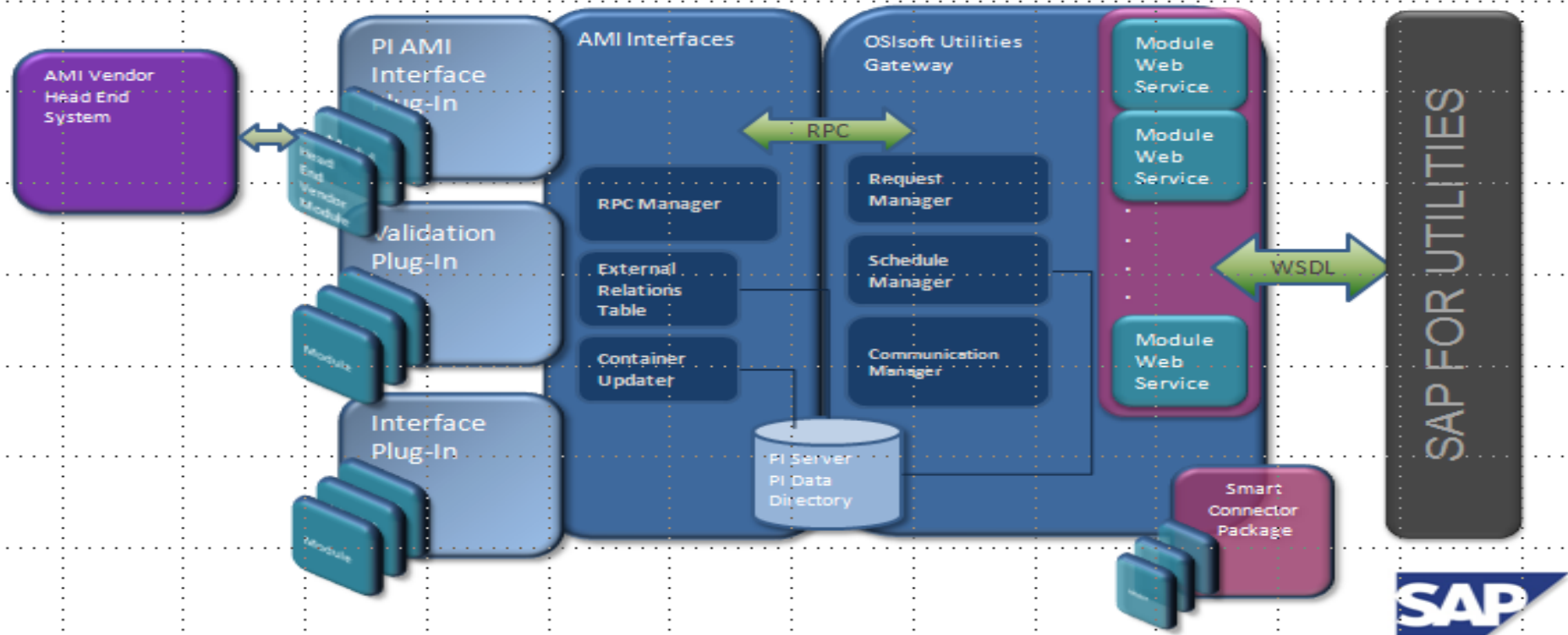
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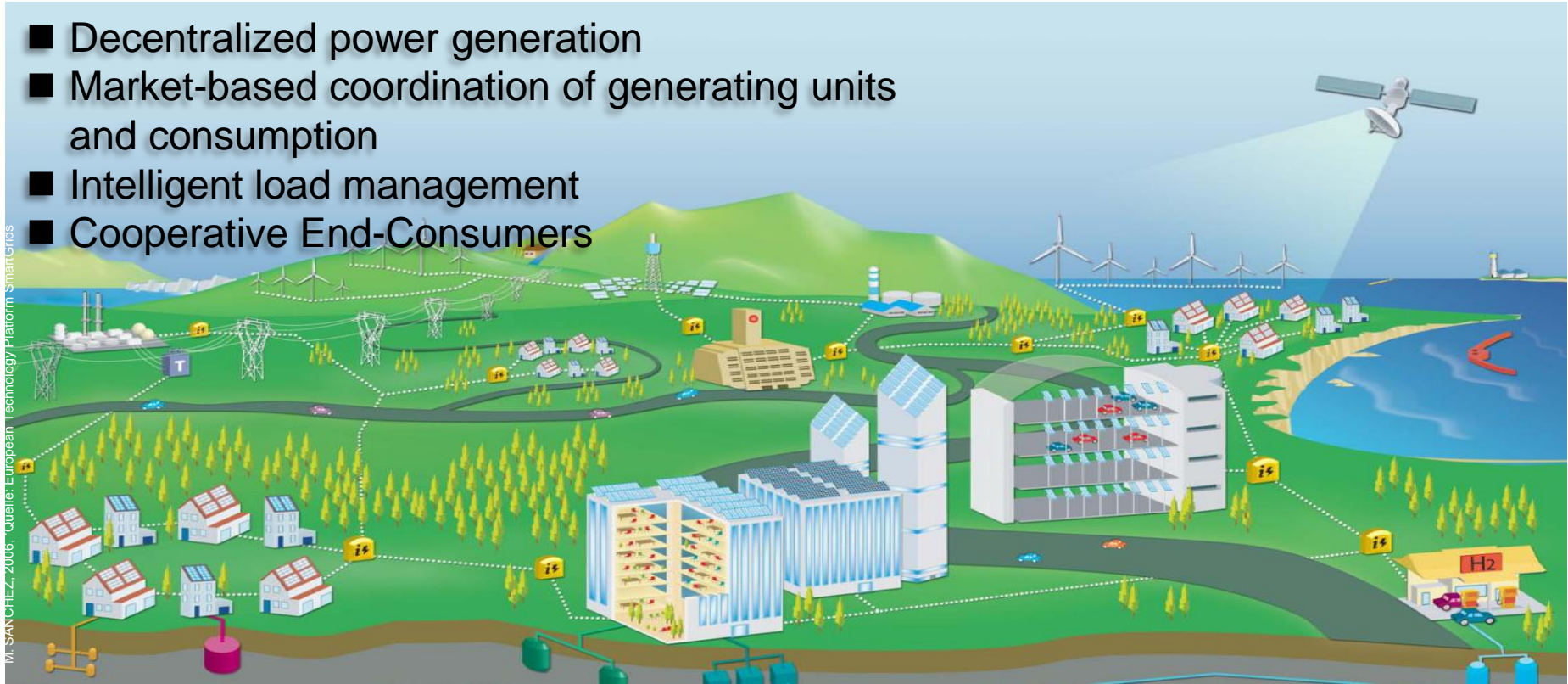
Osisoft and SAP managing the backend of an Advanced Metering Infrastructure

Mediating between asset-monitoring Real Time Systems or Pervasive Devices and Business Applications
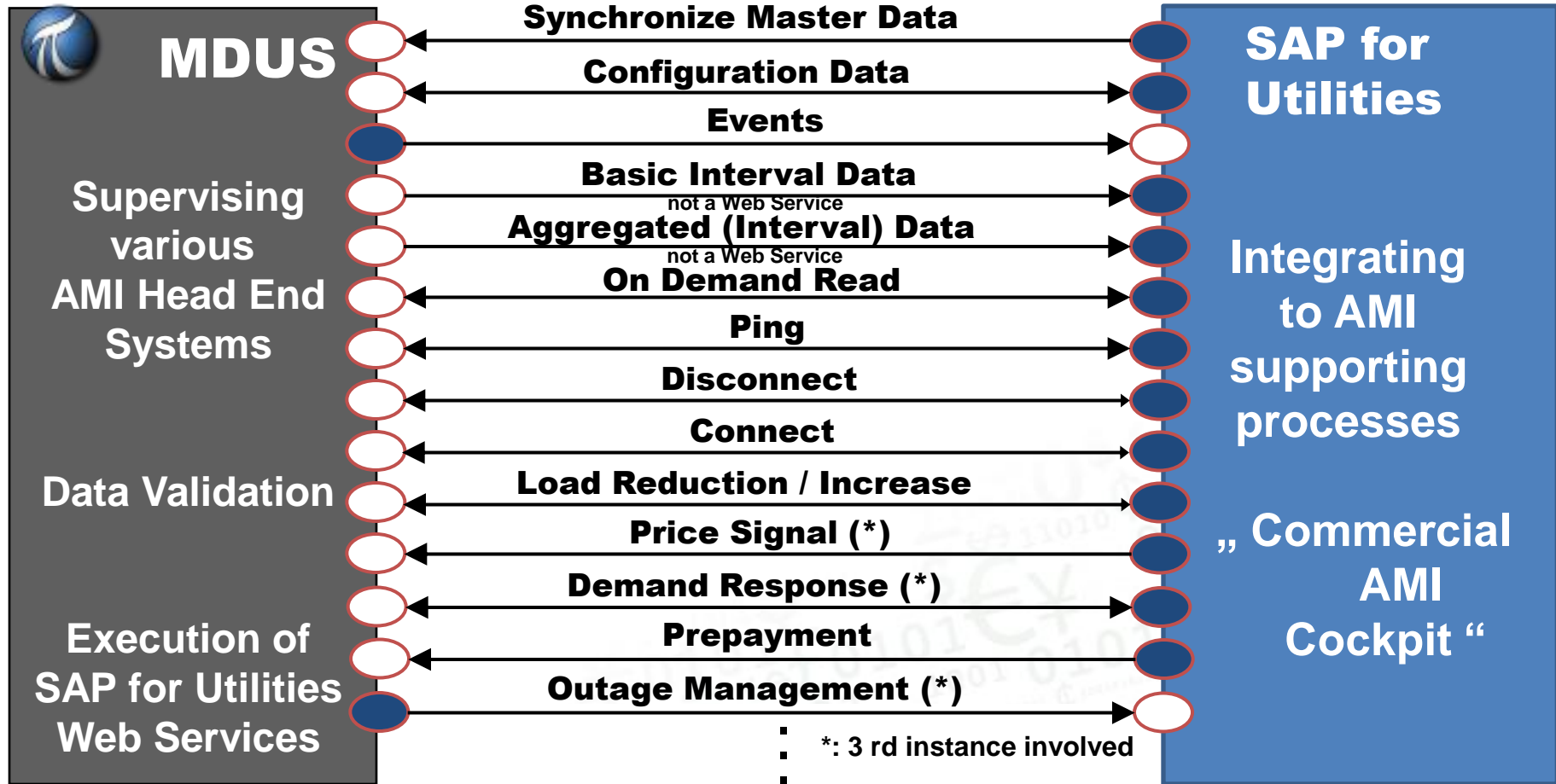

Pervasive devices	HAN	+ Meter & Communications Infrastructure + Meter&Event Data Management = Advanced Metering Infrastructure (AMI)			MDUS	CRB EAM	Customer

| Consumer Side | Premise Control Equipmt | Zigbee a.o. | "Smart" Meter | LAN | Concen trator | WAN | AMI Head End | Metering & Event Data Hub | Commercial / Technical Applications | Internet, CTI, IVR, Call Center |

The roles of the **MDUS:**

- **Collecting Meter Data**
- **Unifying**
- **Synchronizing**

OSIsoft MDUS

Value now. Value over time.

AMI@SAP System Architecture

MDUS

Supervising various AMI Head End Systems

Data Validation

Execution of SAP for Utilities Web Services

SAP for Utilities

Integrating to AMI supporting processes

„ Commercial AMI Cockpit "

Synchronize Master Data

Configuration Data

Events

Basic Interval Data
not a Web Service

Aggregated (Interval) Data
not a Web Service

On Demand Read

Ping

Disconnect

Connect

Load Reduction / Increase

Price Signal (*)

Demand Response (*)

Prepayment

Outage Management (*)

*: 3 rd instance involved

The AMI@SAP Lighthouse Council

The Consumer of the Future

5 x 1,2 MW max capacity

Operations/maintenance done by service company

Solar Energy
50 m²; 7,5 KW max capacity

Consumer

50/10000 share

Call Center

Customer Self Service

Energy Mgmt

Appliances

Smart Meter

AMI

¼ hour intervals

Competitive Energy Retailer

Market **Communication**

Service Provider
- Distribution
- Meter Operation
- Meter Reading

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The "Smart Bill"

ECO 1 Ltd - Your Invoice

Name: Michael Green

Address: 21, Sunny Lane; 64883 New Town

Billing Period: 28.09.2020 00:00:00 – 29.10.2020 24:00:00 (32 days)

Charges/Payments in Total: € 919,85 CR

Direct Debit / Payment: Account Nr xxxxx321 at City Bank

Charges/Payments in Detail:

Dynamic Pricing Peak Rebate
▪ Consumption	2135 KWh		
▪ Distributed Generation	898 KWh		
– Self-consumed	235 KWh		
– Grid feed-in	663 KWh	€	165,43 CR
▪ Supplied Renewable Energy	1900 KWh	€	423,23
▪ Demand Response/Peak Rebate	134 KWh	€	27,02 CR
Sub Total		€	230,78

E-Mobility Roaming	648 KWh	€	195,45
Private Power Trading	7824 KWh	€	1712,28 CR
A/C Product Bundle	rate 12	€	139,00
Customer Self Service	32 days	€	48,00
Reliant Service	32 days	€	6,40
Water Billing Service	123,4 m³	€	172,80
TOTAL		€	919,85 CR

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Thank You

Klaus Heimann
SVP, Service Industries
Industry Solutions
SAP AG
Dietmar-Hopp-Allee 16
69190 Walldorf, Germany
T +49 6227 7-41366
F +49 6227 78-19981
M +49 171 3363402
mailto:klaus.heimann@sap.com
www.sap.com

Martin Otterson
VP EMEA