Machine-2-Machine and the Internet of Things

Prof. Dr. Uwe Kubach
Vice President M2M/IoT Engineering, SAP AG

Public

Machine-to-Machine
Trends

12 – 50 bn

Devices connected
by 2020*
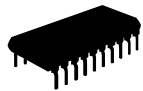
40 – 50 %

CAGR for
M2M market
until 2020**

1/5

Price of
communication
module today
vs. four years ago

*Source: EIU "The rise of the machines"
**Source: Gartner

Machine-to-Machine
Terms

Embedded Systems

ABS Brake System

Networked Embedded Systems

Navigation system & ABS brake system

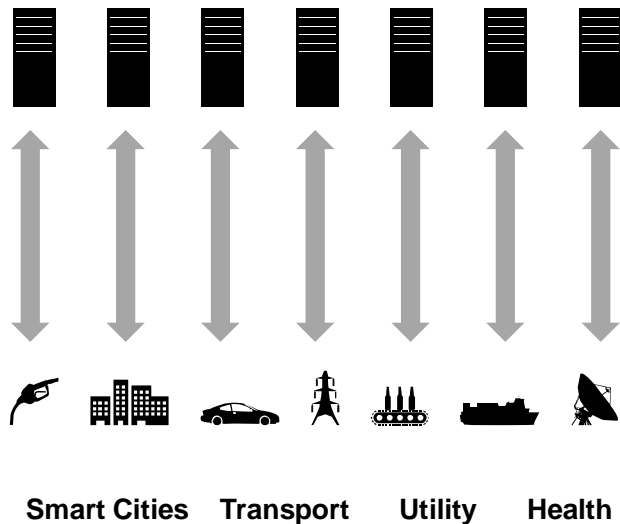**Cyber-Physical Systems and Cellular Systems**

Car2X

Internet of Things

Smart City

Machine-to-Machine
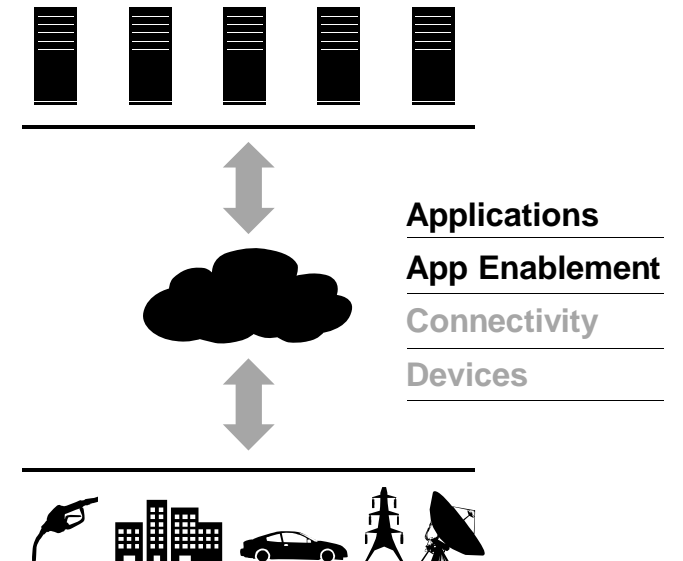
Towards the Internet of Things

Transformation

- Multi-purpose devices
- Service enablement
- Web paradigm
- Apps migrate to cloud
- Standardization driven

Benefits

- Cost efficient devices
- Viable device deployments
- Large developer community
- New roles in the value network
- Reaching the long-tail
- Business inter-connect
- Open market place of data and info

Smart Cities   Transport   Utility   Health

Applications

App Enablement

Connectivity

Devices

Machine-to-Machine
SAP Strengths

Smart House   Smart Vending   Smart Logistics   Smart Equipment   Smart Automobile   Smart Cities
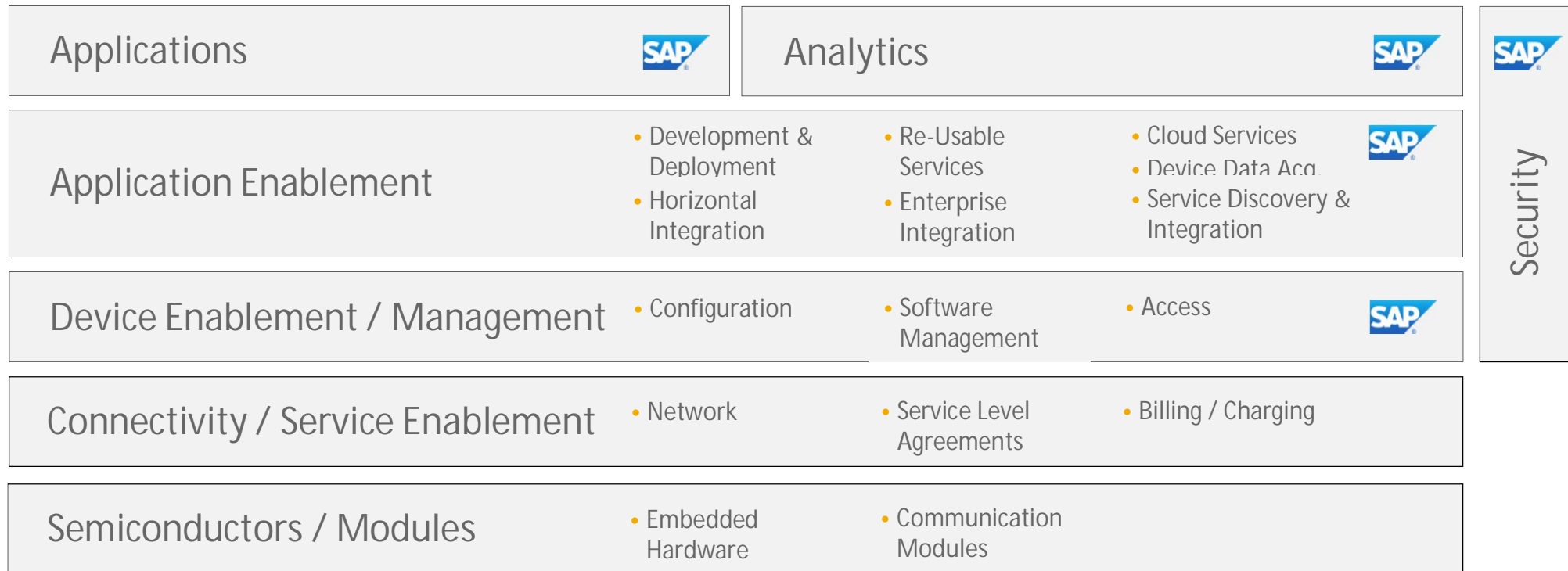
Requires

Mobile   Big Data   Cloud

Machine-to-Machine Technology Stack

Applications	SAP	Analytics	SAP	SAP
Application Enablement	• Development & Deployment • Horizontal Integration	• Re-Usable Services • Enterprise Integration	• Cloud Services • Device Data Acq. • Service Discovery & Integration SAP	**Security**
Device Enablement / Management	• Configuration	• Software Management	• Access SAP	
Connectivity / Service Enablement	• Network	• Service Level Agreements	• Billing / Charging	
Semiconductors / Modules	• Embedded Hardware	• Communication Modules		

Source: IDC's Worldwide Machine-to-Machine Taxonomy

Selected Applications

Remote Service Management

- Asset Monitoring
- Condition-based Maintenance
- Predictive Maintenance
- Utilization-based Billing

Tracking and Tracing

- Real-time Location Information
- Cold Chain Tracking
- Container Management and Security
- Product Authentication/Fraud Detection

Thank you

Contact information:

Prof. Dr. Uwe Kubach
Vice President M2M/IoT Engineering, SAP AG
uwe.kubach@sap.com