

Internet der Dinge –

Vice President HCP Internet of Things, P&I Technology, SAP SE

Public



Internet of Things (IoT)

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

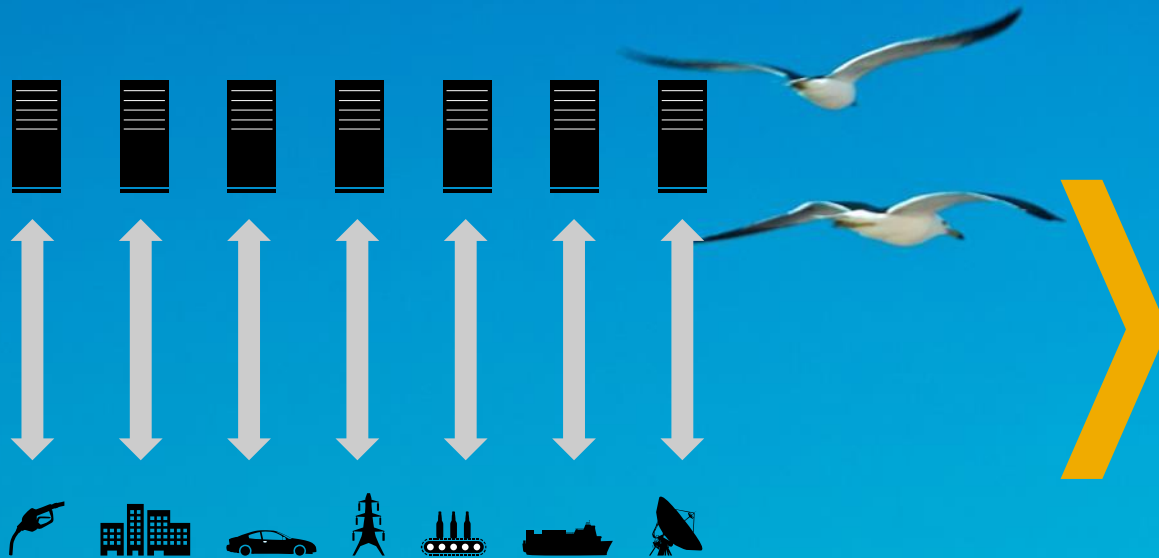
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Maturity and
reliability of
technology

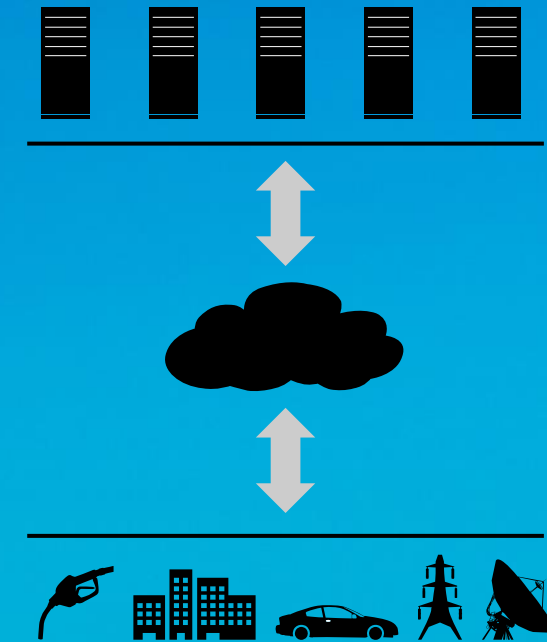
*Source: EIU "The rise of the machines"

**Source: Cisco

Towards the Internet of Things



M2M



**IoT
Device Cloud**

Internet of Things Transformation

Device Cloud

- Component Re-Use
- Uniform Data Access
- Pace-layered Architecture
- Fog Computing

Integration

- Horizontal: Cross-enterprise, Networked Economy, Social
- Vertical: Sensor-to-Action, IT-OT, Cyber-physical

Real-time Transparency

- Business Processes
- Business Models
- From Product to Service

* <http://www.gartner.com/newsroom/id/1923014>

IDC Top Ten Predictions 2015

IoT and the Cloud

Within the next five years, more than 90% of all IoT data will be hosted on service provider platforms as cloud computing reduces the complexity of supporting IoT “Data Blending”.

IoT at the Edge

By 2018, 40% of IoT-created data will be stored, processed, analyzed, and acted upon close to, or at the edge, of the network.

Source: <http://www.machinetomachinemagazine.com/2014/12/04/idc-report-worldwide-iot-predictions-for-2015/>

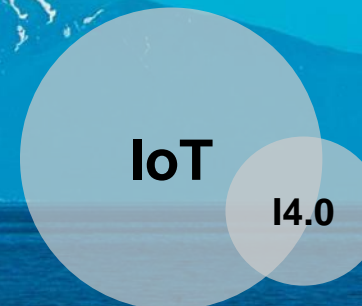
Industry 4.0

Definition

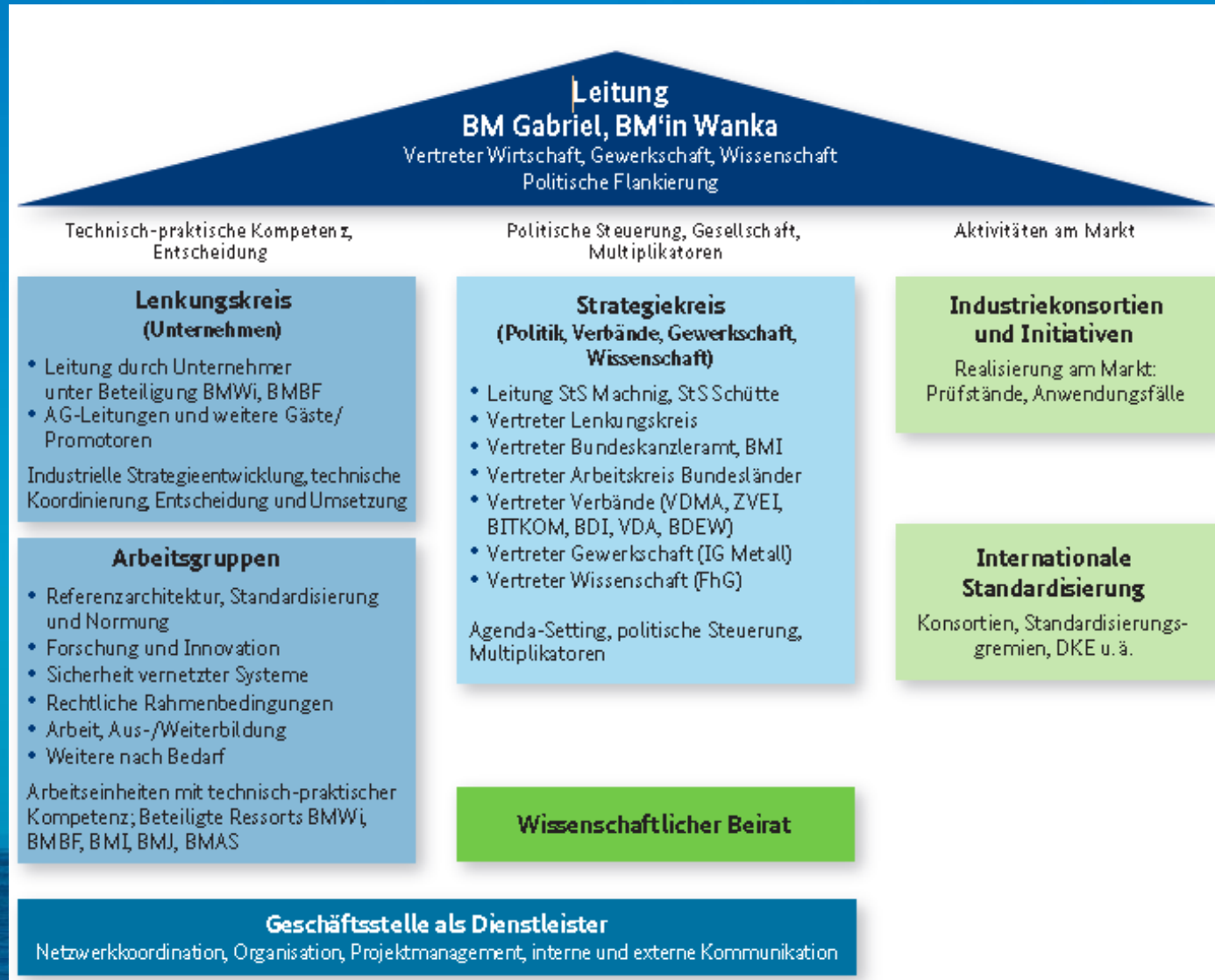


The integration of Cyber Physical Systems in production and logistics as well as the application of the Internet of Things and Services in industrial processes – including the resulting consequences for value creation, business models, services and organization of labor.*

*Source: acatech

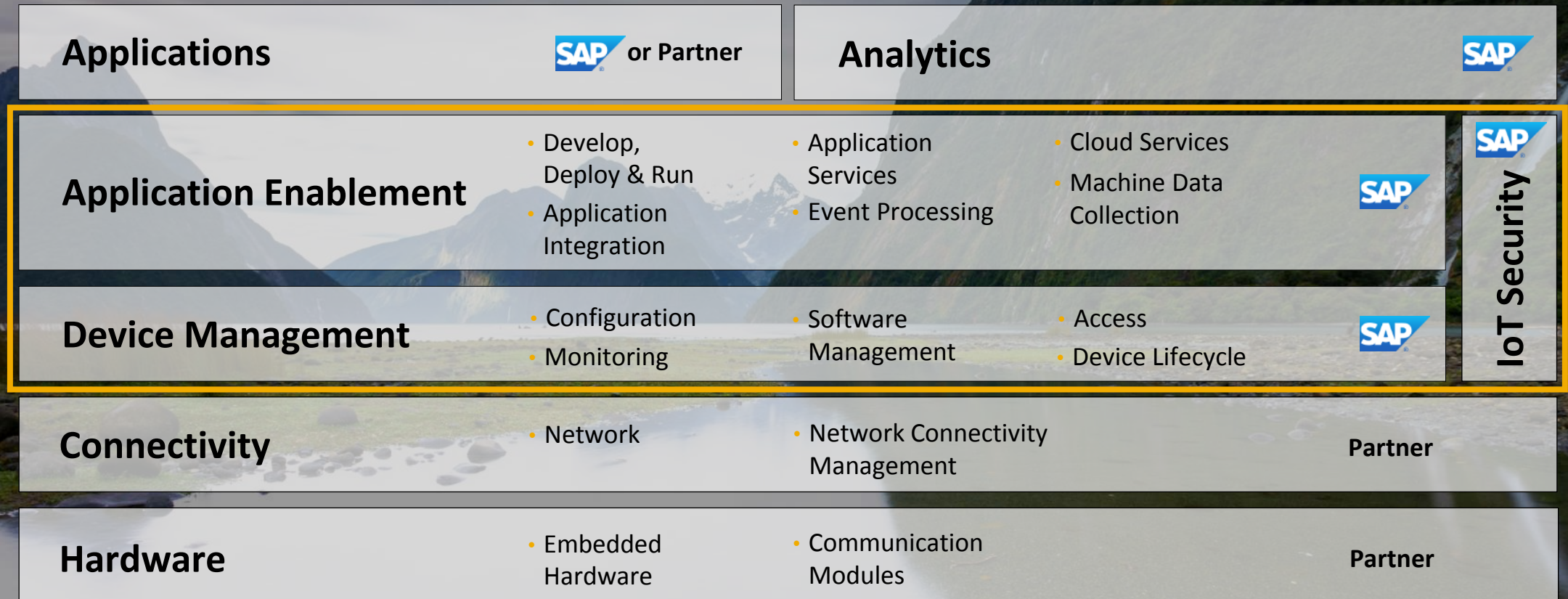


I4.0-Plattform



2011	Vorarbeiten
2012	Acatech AK, Handlungsempfehlungen
2013	Handlungsempfehlungen zur HMI
2014	I4.0-Plattform (ZVEI, VDMA, BITKOM)
2015	I4.0-Plattform (BMWi, BMBF)

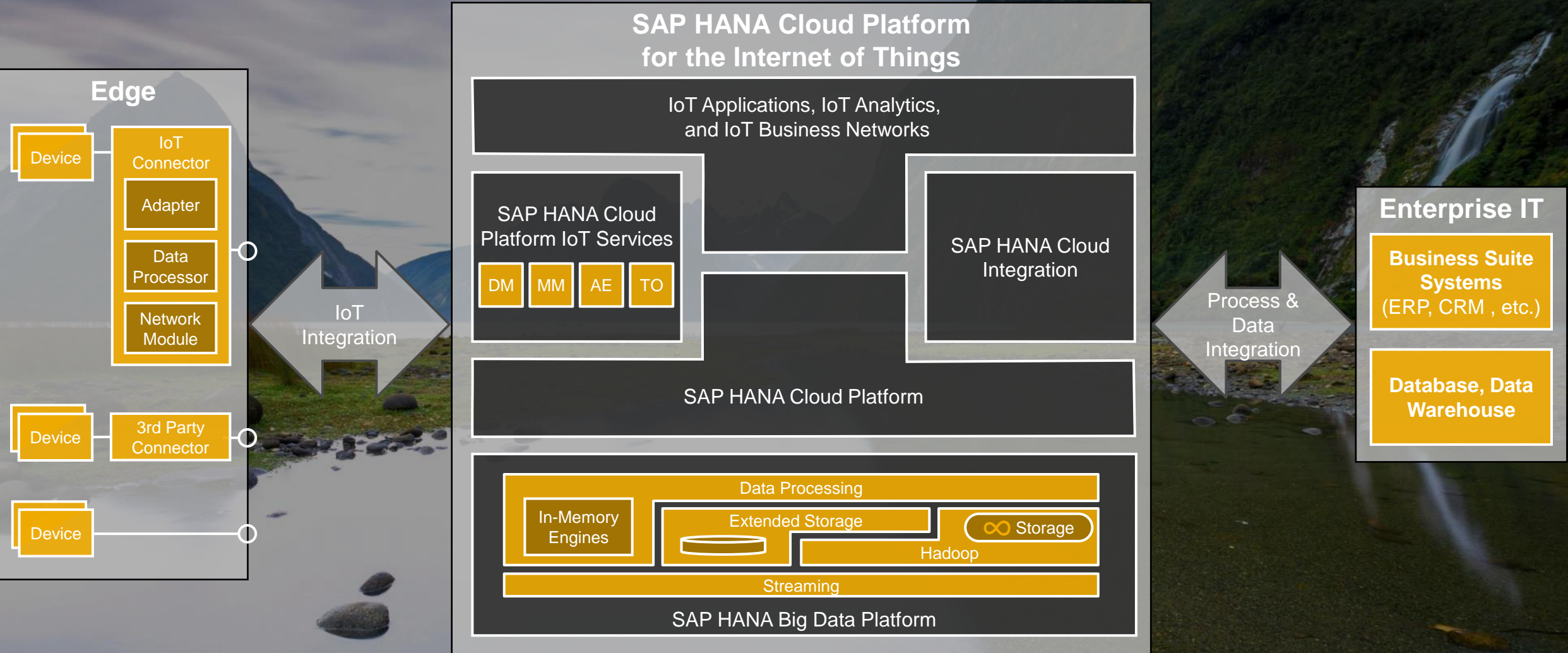
IoT Technology Stack



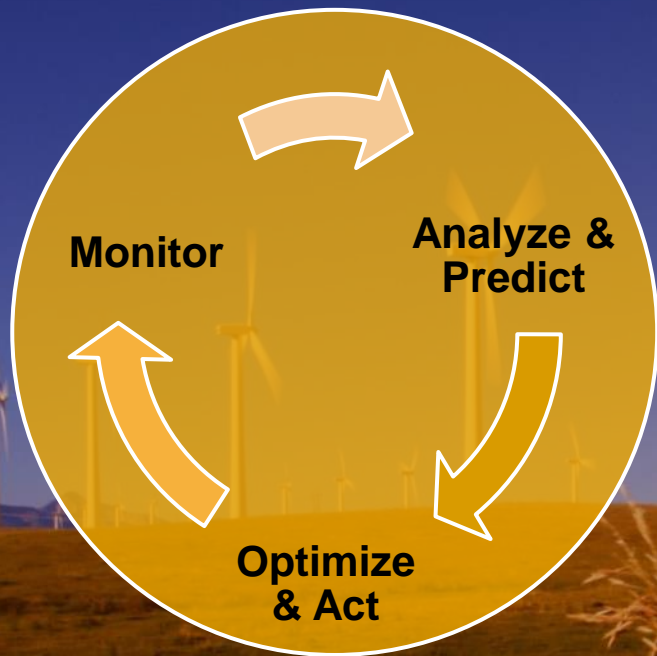
 IoT Services

Derived from IDC's Worldwide M2M Taxonomy

Architecture



IoT Applications



Connected Logistics

- Container Management
- Automatic Guided Vehicles
- Supply Chain Visibility

Connected Assets

- Remote Service Management
- Predictive Maintenance
- Usage-based Billing

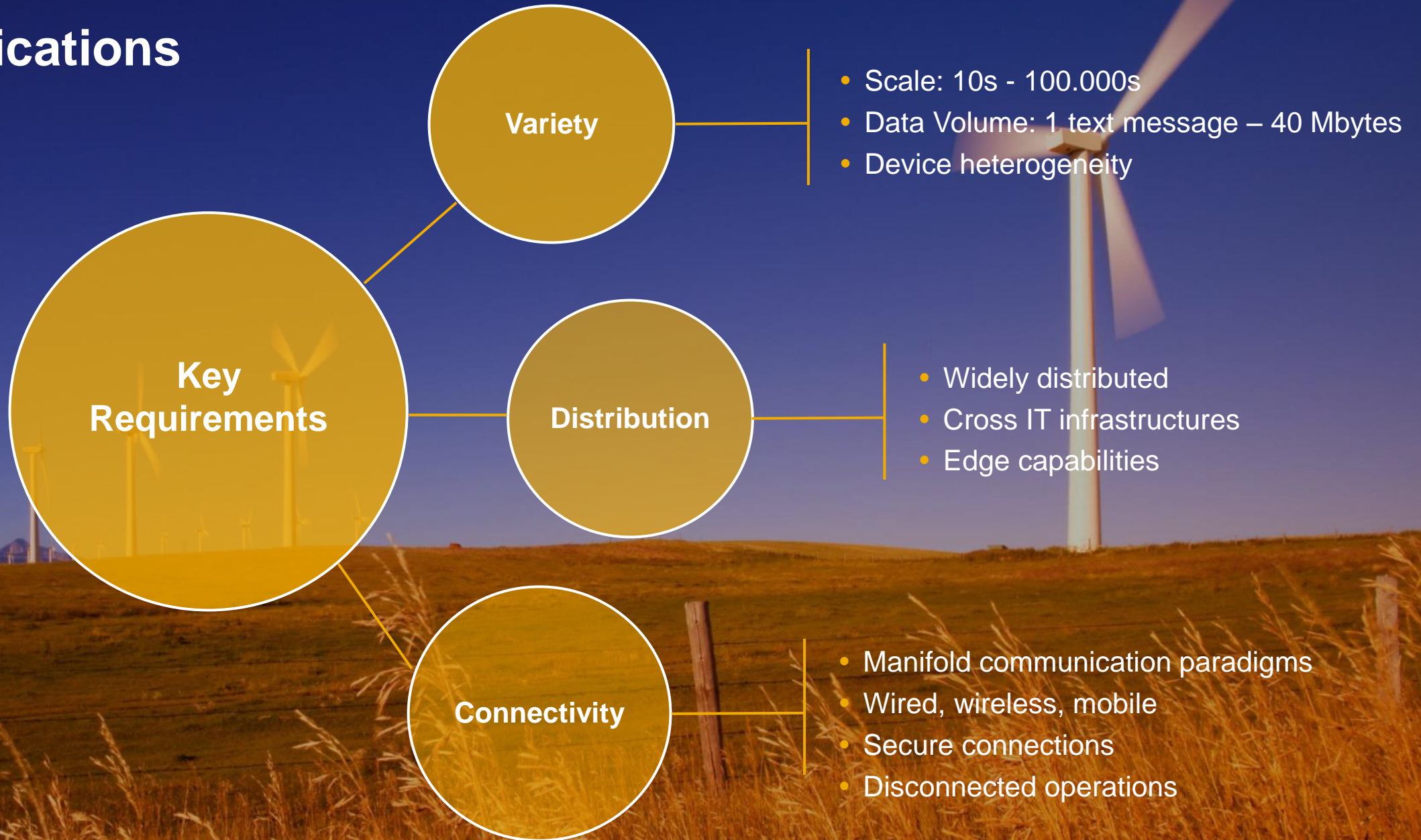
Connected Buildings

- Smart Meters
- Facility Management
- Home Automation

Connected Vehicles

- Fleet Management
- Electric Vehicle Charging
- Smart Parking

IoT Applications



Application Examples

GEA – Predictive Maintenance



- < number of service visits
- < mean-time to repair
- > first-time fix rate
- > remote fix rate

Still – Adaptive Logistics



- Connected Still Fork Lifters
- Automated Execution
- Dynamic Adaptation

BMW – Connected Cars



- Marketplace
- Mobile Couponing
- Smart Parking

BP – Safety Management



- Hazardous Goods
- Incompatible Goods
- Storage Limitations

Adaptive Logistics Video





Thank you

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LinkedIn: <https://www.linkedin.com/pub/uwe-kubach/3/694/710>

SAP IoT: <http://go.sap.com/solution/internet-of-things.html>

Starter-Kit: <https://github.com/SAP/iot-starterkit>

Blog: <http://scn.sap.com/community/internet-of-things/blog/2015/05/06/sap-hana-cloud-platform-for-the-internet-of-things-announced>