Integrierte Daten-Hubs als Basis vielfältiger Energie-Anwendungen

Münchner Kreis | Juni -28, 2017

siemens.com

Three major factors are driving the revolution of energy systems
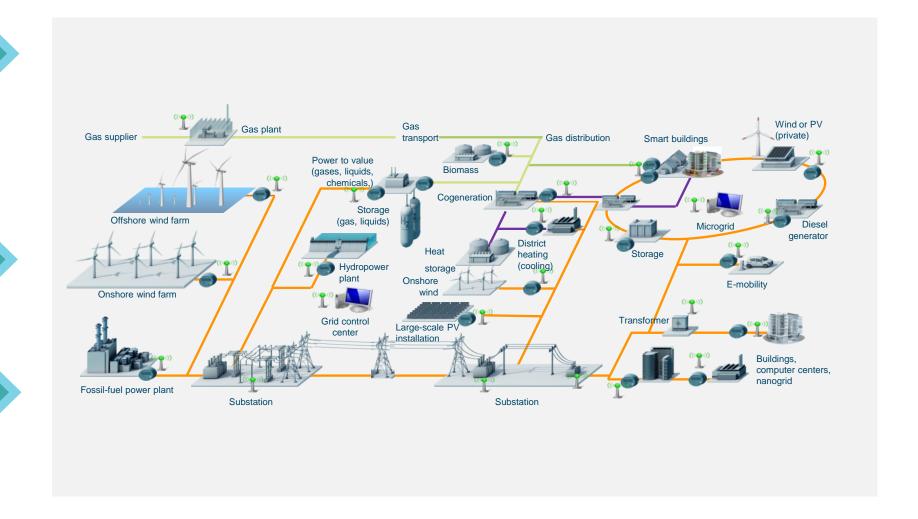
Breakthrough technology

- Sensors, analytical algorithms
- Small scale power generators
- Energy storage, e-Mobility
- Electrical heating/cooling,
- heat pumps , Power-to-x

Political targets

- Energy efficiency targets
- CO_2 reduction targets

Changing customer behavior

- From passive consumers to active participants
- Own energy generation systems

The disruptive changes are happening

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Ingenuity for life

Will new business models and new players eat our/your business?

Juni 2017   Siemens Digital Grid

Siemens' installed base – Tremendous amount of data that can be leveraged for new business models

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The amount of data produced by Siemens products in one day

25

gigabytes
per day

Siemens gas
turbine

30

gigabytes
per day

Siemens EnergyIP
smart grid platform

60

gigabytes
per day

Siemens computer
tomograph

100

gigabytes
per day

Siemens control-
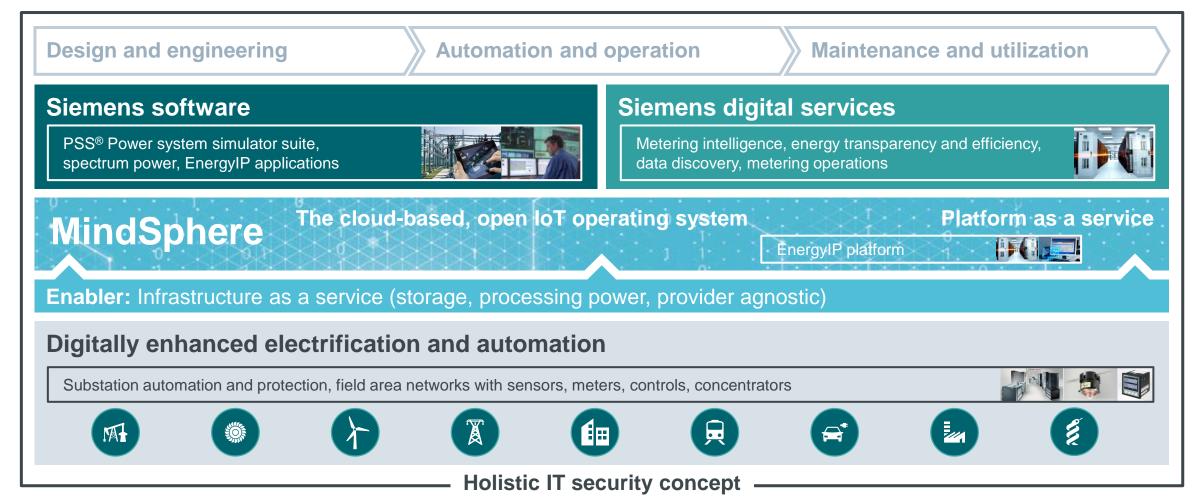lers in particle
accelerator CERN

6

terabytes
per day

Siemens traffic
management
system Potsdam

Electrification – Automation – Digitalization –
A strong and complete offering for our customers' needs

SIEMENS
Ingenuity for life

Design and engineering	Automation and operation	Maintenance and utilization

Siemens software

PSS® Power system simulator suite, spectrum power, EnergyIP applications

Siemens digital services

Metering intelligence, energy transparency and efficiency, data discovery, metering operations

MindSphere   The cloud-based, open IoT operating system   **Platform as a service**

EnergyIP platform

Enabler: Infrastructure as a service (storage, processing power, provider agnostic)

Digitally enhanced electrification and automation

Substation automation and protection, field area networks with sensors, meters, controls, concentrators

Holistic IT security concept

Source: Press and Analyst event "Shaping Digitalization. Innovation at Siemens" on Dec 7, 2016/http://www.siemens.com/press/en/events/2016/corporate/2016-12-innovation.php

The entry point
to develop applications and digital services

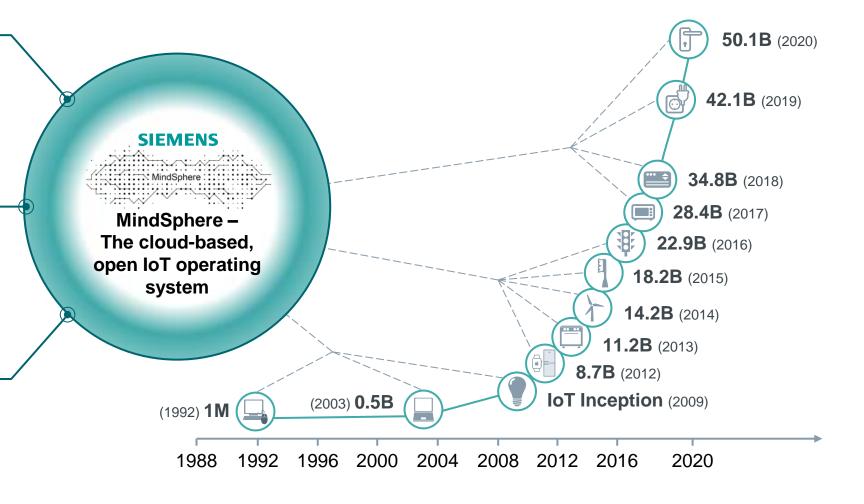## Enabler …

… for digital transformation

Foundation …

… for development of applications and digital services

Multiplier …

… for your digital business

SIEMENS
MindSphere

**MindSphere –
The cloud-based,
open IoT operating
system**

50.1B (2020)

42.1B (2019)

34.8B (2018)

28.4B (2017)

22.9B (2016)

18.2B (2015)

14.2B (2014)

11.2B (2013)

8.7B (2012)

IoT Inception (2009)

(1992) **1M**

(2003) **0.5B**

1988   1992   1996   2000   2004   2008   2012   2016   2020

MindSphere – The cloud-based, open IoT operating system from Siemens
foundation for a strong open ecosystem

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Ingenuity for life

Siemens Apps　　　**Customer Apps**　　　**3ʳᵈ Party Apps**

MindApps

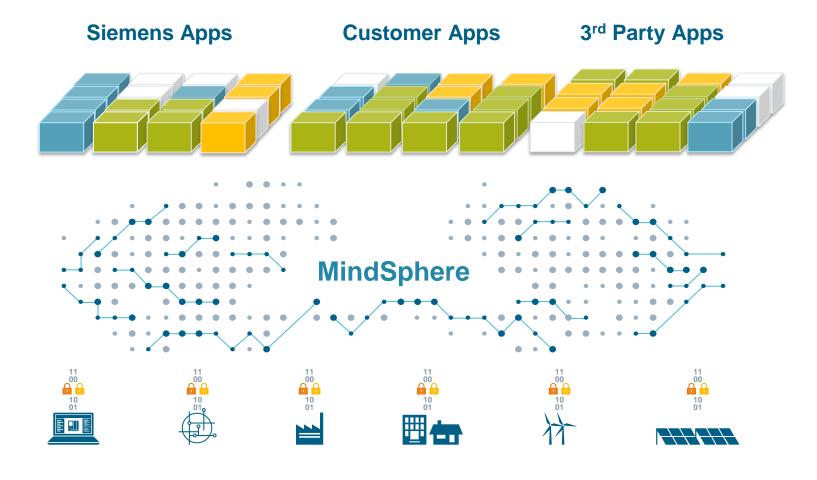**Developed by Siemens, OEMs,
end customers and app developers**

MindSphere

**Various cloud infrastructures:
Public, private or on-premise**

MindSphere

MindConnect

**Secure plug and play connection
of Siemens and third party products**

1) Domain-specific: Data model, APIs for apps, microservices / components
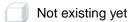2) EnergyIP will be running on MindSphere

Application owner / developer:　Utility　　Siemens　　3ʳᵈ party　　Not existing yet

MindSphere to increase business value for equipment suppliers and operators

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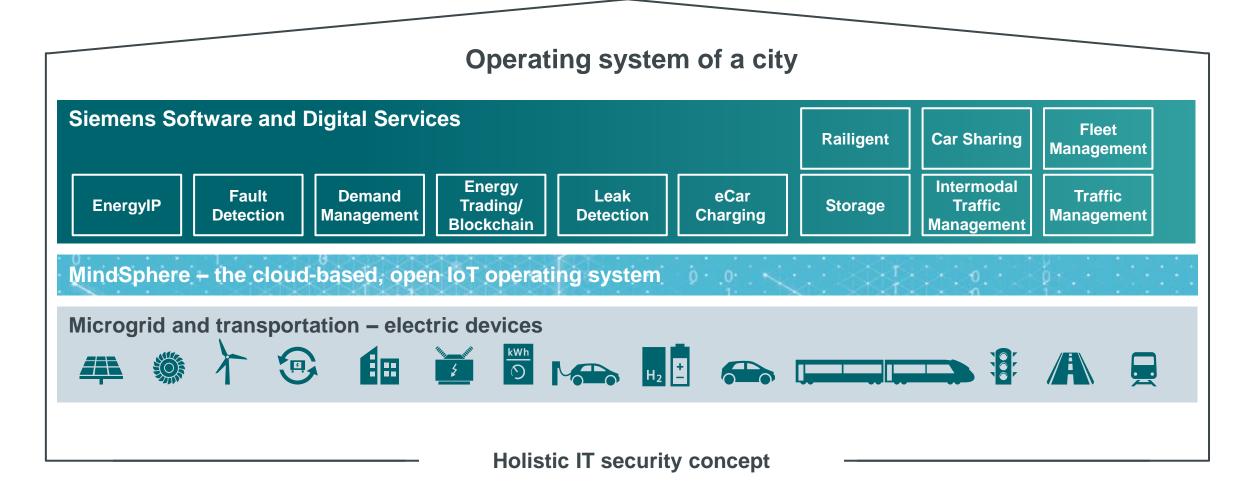
Business value

Equipment supplier

- Increase service efficiency/ lower warranty expenses
- Offer additional services and new business models
- Enhance products via feedback loop to R&D

Equipment operator

- Increase uptime/asset availability
- Optimize assets
- Increase maintenance efficiency

MindSphere combines solutions for infrastructure operations

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Operating system of a city

Siemens Software and Digital Services

					Railigent	Car Sharing	Fleet Management
EnergyIP	Fault Detection	Demand Management	Energy Trading/ Blockchain	Leak Detection	eCar Charging	Storage	Intermodal Traffic Management	Traffic Management

MindSphere – the cloud-based, open IoT operating system

Microgrid and transportation – electric devices

Holistic IT security concept

MindSphere – Highest IT security standards – Digital carefreeness

Data in motion is always at least 256 bit SSL/TLS encrypted

Data in rest is located on datacenters that comply to all required certificates e.g.
- Quality management DIN EN ISO 9001: 2008
- IS management systems Requirements ISO/IEC 27001
- IT service management ISO/IEC 20000: 2005

Data in use for analytics is handled by authorized personnel on secure software following standardized processes.

The customer controls these authorization levels and is the owner of this data. Siemens acts a data custodian.

Kontakt

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