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MindSphere in action –
Our open IoT operating system

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Notes and forward-looking statements

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This document contains statements related to our future business and financial performance and future events or developments involving Siemens that may constitute forward-looking statements. These statements may be identified by words such as "expect," "look forward to," "anticipate" "intend," "plan," "believe," "seek," "estimate," "will," "project" or words of similar meaning. We may also make forward-looking statements in other reports, in presentations, in material delivered to shareholders and in press releases. In addition, our representatives may from time to time make oral forward-looking statements. Such statements are based on the current expectations and certain assumptions of Siemens' management, of which many are beyond Siemens' control. These are subject to a number of risks, uncertainties and factors, including, but not limited to those described in disclosures, in particular in the chapter Risks in the Annual Report. Should one or more of these risks or uncertainties materialize, or should underlying expectations not occur or assumptions prove incorrect, actual results, performance or achievements of Siemens may (negatively or positively) vary materially from those described explicitly or implicitly in the relevant forward-looking statement. Siemens neither intends, nor assumes any obligation, to update or revise these forward-looking statements in light of developments which differ from those anticipated.

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Due to rounding, numbers presented throughout this and other documents may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.

MindSphere –
The cloud-based, open IoT operating system from Siemens

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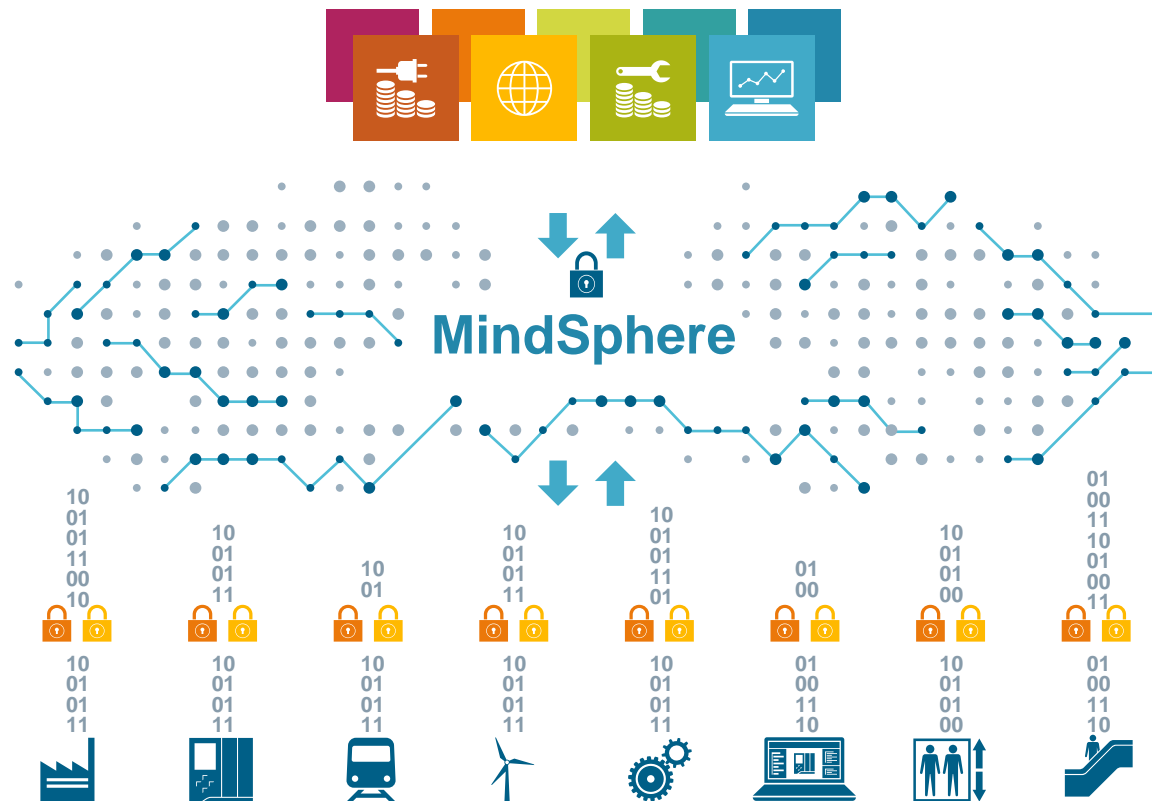
MindSphere

MindApps

– Use **apps from Siemens, partners or develop own** apps
– Gain **asset transparency** and **analytical insights**
– Subscription based **pricing model**

MindSphere

– Open interface for development of **customer specific apps**
– **Various cloud infrastructures: SAP, AtoS, Microsoft Azure** offered as public, private or on-premise (planned)

MindConnect

– **Open standards** for connectivity, e.g., OPC UA
– **Plug & play connection** of Siemens and 3rd party products
– **Secure** and **encrypted** data communication

Only two easy steps to get started – MindSphere to create new data-driven services

Step 1
Connect

Get MindSphere user-account, receive and integrate Connector Box into machine/equipment
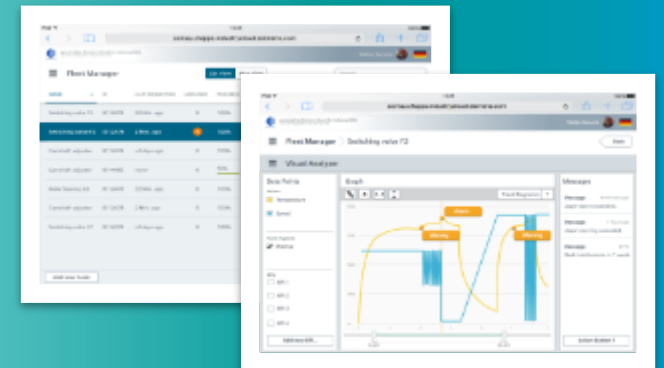
Step 2
Configure

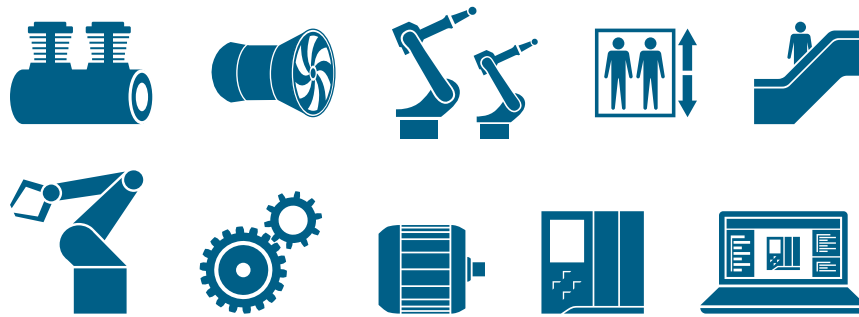Configure data acquisition, connectivity and Visual Analyzer via MindSphere

Run Service

Monitor e.g. health status of all assets in MindSphere with Fleet Manager and drill into details using Visual Analyzer

MindSphere increases business value for equipment suppliers and operators

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Equipment supplier

Equipment operator

Business Value

- **Increase Service efficiency/** lower warranty expenses
- Offer **additional services** (e.g. availability)
- **Enhance products** via feedback loop to R&D

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

MindSphere customer success stories

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Major soft drink producer

Machine monitoring

- **Affordable IoT solution** for **predictive maintenance** of 150 motors
- **Increased asset uptime** through accurate failure prediction
- Global **accessibility of data**

Major OEM for Honing Machines

Machine uptime and quality

- **The honing stones** must be replaced before either critical threshold values
- **Reduced downtime** and guaranteed quality
- **Differentiated** service offerings & revenue stream for OEM

Major international airport

Failure prediction for baggage carts

- Identification of all potential **failures in baggage trail**
- **On-time maintenance of defective baggage carts**
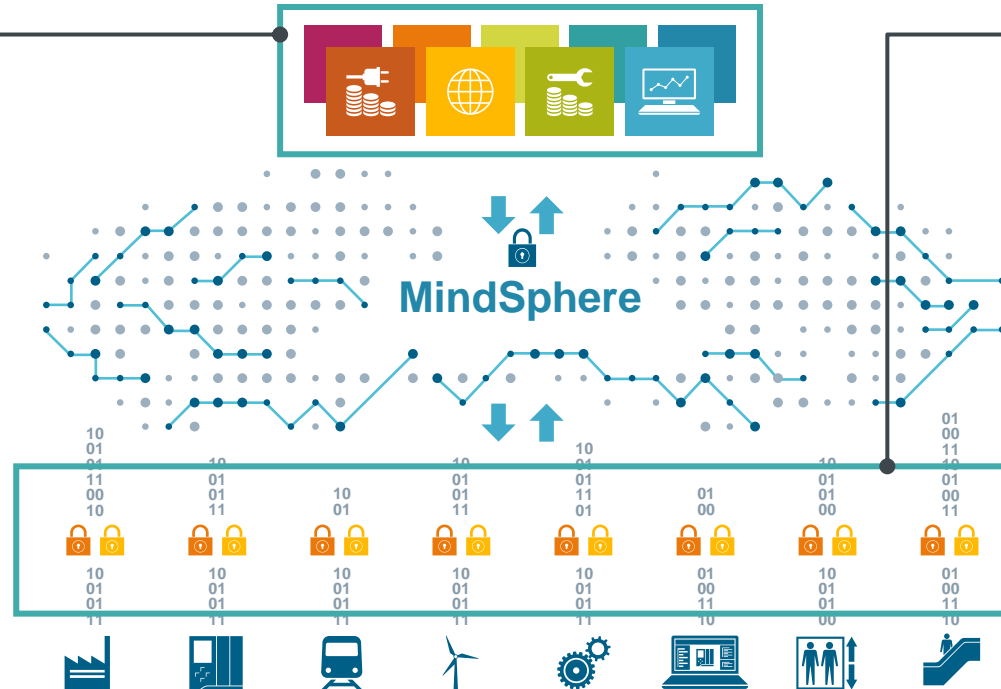- Visualization of **system failures**

MindSphere APIs –
Scalable application and connectivity development

MindApps API
characteristics

– **Application Programming Interface (API)** of MindSphere for development of customer owned analytical apps (MindApps)

– Optimized for **industrial IoT App development** with additional reusable supporting modules (e.g. parsing, analytics and visualization modules)

– Upcoming MindSphere **App Store** will provide ready to use Applications

MindSphere

MindConnect
characteristics

– Dedicated IoT Gateways with **MindConnect Nano** and **MindConnect IoT 2000**

– MindConnect **embedded** in standard Siemens industrial products also with engineering via TIA Portal (v14), with e.g. SIMATIC, Sinumerik

– Upcoming **MindConnect Software** and **APIs** for own integration into assets/ devices

API beta release planned for beginning of 2017

Ecosystem with strong partners being established …

MindSphere
The cloud-based, open IoT operating system

	App developer	System integrator	Technology partner	Infrastructure provider
Atos	☑	☑		☑
Microsoft	☑		☑	☑
SAP	☑		☑	☑
IBM	☑	☑	☑	
accenture	☑	☑		
evosoft	☑			
amazon web services	☑			☑

… and more to come!

MindSphere offers key strengths as cloud-based, open IoT operating system

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MindSphere – The cloud-based, open IoT operating system

Ecosystem

Applications and Digital Services

MindSphere IoT operating system

MindSphere

Unique MindSphere strengths

– Global Siemens **installed base of millions of devices** (30 million automation systems, 70 million contracted smart meters, 800 thousand connected products, e.g., trains)

– **Transfer of domain know-how into vertical-specific analytical apps**

– Integrated operational data with **Digital Twin to optimize simulation and engineering** (model-based analytics)

– **Plug and play connectivity** for quick connection of assets without coding

– Ecosystem with **broad domain expertise and horizontal IT capabilities**
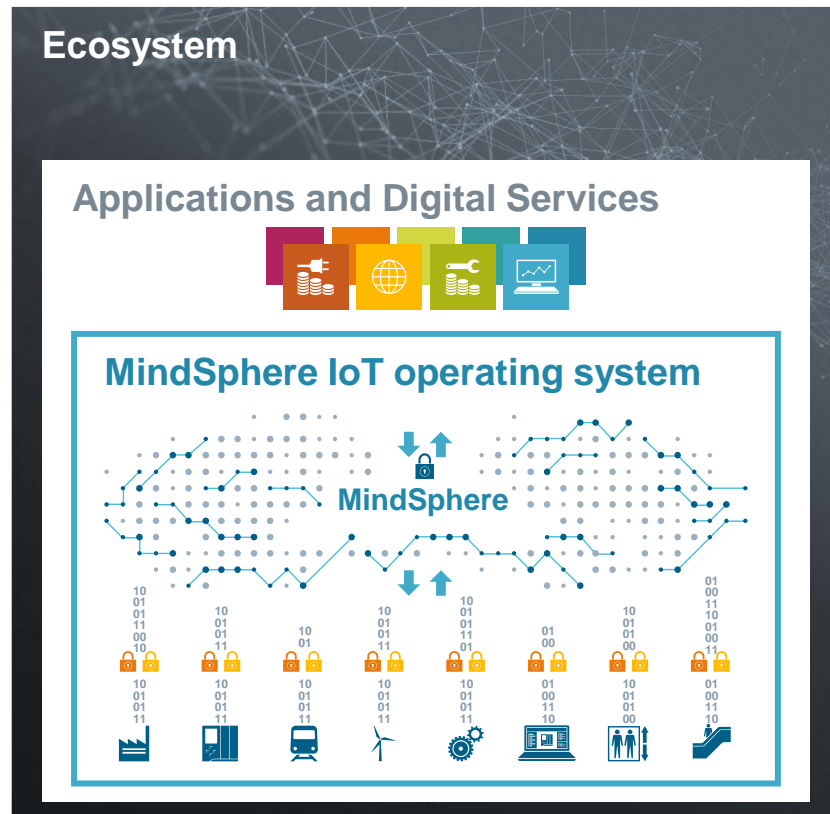
We support our customers in developing digital business based on MindSphere

- Deep-dive workshop to identify use cases
  with our proven MindSphere ideation approach

- Implementation of one of the identified use cases
  with a technical proof of concept (PoC)

- Ongoing support after the PoC
  to maximize benefit from MindSphere

　　　　March 27, 2017　　　　　　　　　　　　　　　　　　　　　Jagannath Rao