The (R)Evolution of Digital Business Models in Industry with MindSphere

IoT Week 2019

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Digitization of industries

The world is changing faster than ever before
New business models in the internet age are disrupting complete markets

- From bookstore to e-book
- From record store to streaming
- From Yellow Pages to marketplace
- From taxi to ride-sharing
Paradigm Shift

From a product-focused to a user-centric mindset
Turning long term investments into running costs?

The Total Care service approach of Rolls Royce sells power by the hour

Source: Internet
An industrial (r)evolution

A global and cross-industry development
Business and technical drivers are accelerating the digitalization of industries

1. Technical Drivers
   Digitization, Sensors, Connectivity, Bandwidth, Data Capturing and Storage, Clouds, Analytics, etc.

2. Business Drivers
   New Business Models, Ecosystem concept and Paradigm shift: From product-focused to user-centric mindset, etc.

Degree of maturity of digital business models

Based on “Smart Service Welt” report/Accenture visualization

Less complex industry

More complex industry

Tipping-Point!
Industrial Internet of Things (IIoT) increases business value for equipment suppliers and operators

**Business Value**

- **Increase Service efficiency** / lower warranty expenses
- Offer **additional services** (e.g. availability)
- Enable **new business models**
- Enhance products via feedback loop to R&D leveraging Digital Twins

**Equipment supplier**

- Increase Service efficiency / lower warranty expenses
- Offer additional services (e.g. availability)
- Enable new business models
- Enhance products via feedback loop to R&D leveraging Digital Twins

**Equipment operator**

- Increase uptime / asset availability
- Optimize assets and increase maintenance efficiency
- Enable new business models
Enabling industrial companies to implement new data-driven Services and business models

MindSphere - the cloud-based, open IoT operating system from Siemens
MindSphere
The Cloud-based, Open IoT Operating System

Applications
Asset transparency and analytical insights into machines, plants, fleets and systems

MindSphere
Open Platform as a Service (PaaS) for scalable, global IoT connectivity and application development with native cloud accessibility

MindConnect
Secure plug and play connection of Siemens and third-party products as well as Industrial Edge
MindSphere IoT solutions

Rittal GmbH & Co. KG

- Predictive maintenance management driving higher quality, efficiency, and services offerings
- Increase machine availability
- Demand-driven maintenance
- 30% savings on service & maintenance
MindSphere IoT solutions

Gebr. Heller Maschinenfabrik

- Reduction of unplanned downtime
- Global data access
- Optimization of systems productivity with increase in quality for end-customer
- Greater end customer collaboration
- New business opportunity for pay-per-machining time
MindSphere IoT solutions

Siemens – Bad Neustadt

• Predictive analysis of motor failures

• Increased machine uptime

• Improved maintenance processes

• Efficient maintenance schedule planning

• Showcase factory for digital applications in metal working
MindSphere enables the creation of a powerful Digital Twin through the entire value chain

Digital Twin of the product
Digital Twin of the production
Digital Twin of the performance

Collaboration platform: Teamcenter

Suppliers and logistics
Digital Twin of the Performance – Konecranes Inc.

MindSphere – Digital Innovation Platform
Accelerates Product Development Process

Challenges
• Minimize or Eliminate Non-Optimized Product Designs that are Frequently Over Engineered
• Speed up Product Development Process by Reducing Prototypes, and Increasing Traceability
• Integrate Design, Simulation and Prototype Testing Organizations from Operating in their Own Silos
• Improve Quality and Reduce Development Cost

Transformation Results
• Siemens Digital Twin Innovation Platform including MindSphere, Teamcenter and Simcenter Portfolio
• Realtime data collection to validate Testing And Operational Reliability
• Closed-feedback with Virtual Engineering Assets; Engineering Design, Analysis And Simulation

Value
• Continuous Product and Process Optimization
• Increase Collaboration across Organizations
• 360-degree View of Prototype Performance
MindSphere
The Cloud-based, Open IoT Operating System

Develop robust industrial IoT solutions faster
Open PaaS with native cloud accessibility
Extensive device and enterprise connectivity
Powerful industry solutions with advanced analytics
Global partner ecosystem
The future: Output- and performance oriented business models

Payment for **Usage and Performance** of industrial products?

**X as a Service** – Selling of torque, machine usage, compressed air, pumped oil ...