Bringing the Connected Enterprise to Life through Smart Machines and Smart Connected People

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Agenda

1. Connected Operations
2. Smart Machine
3. Digitalization: the next opportunity
Macro Trends and PRESSURES in Operations

Market
Global Competitiveness

Workforce
Talent Shortages & Skills Gap

Risks
Changing Risk Patterns

Technology
Industrial Internet of Things

Opportunities and challenges in changing global landscape

Global challenge hiring and retaining

Highly publicized and expensive incidents worldwide

IoT value at stake and growth of internet enabled assets

220,000 New engineers every year until 2022 to connect the unconnected
The World Bank Studies

70% Suffered a security breach in the last year
2014 Ponemon Institute survey

11% Of worlds economy in 2025 will be provided by IoT
McKinsey & Co 2015
Manufacturing and Industrial Enterprises are becoming **DATA ENABLED**

Intelligent devices that are able to:

- **ANALYZE**
- **PREDICT**
- **ADAPT**

**SMARTER OPERATIONS**
Smart Machines in the Plant of the Future

- Faster Time to Market
- Improved Asset Utilization
- Enterprise Risk Management
- Lower Total Cost of Ownership

**FINAL CUSTOMER**
Exceed Productivity & Efficiency Goals

**MACHINE BUILDER**
Innovation to Drive Differentiation

- Flexibility
- Integration & Standardization
- Performance/OEE
- After Market Service & Support
- Total Cost to Design, Develop & Deliver

**PLANT OF THE FUTURE**
**SMART MACHINES**
SMART Machine
What IS a Smart Machine & what is its value?

Technology
The technology of so called SMART Devices is enabling you to make your machine;
- Operationally more Efficient
- Allow for Integrated Safety
- Information Enabled
- Simplified Integration
- Connected for Real Time Diagnostics & Analytics

Process
In the journey to a Smart Machine, Smart Manufacturing relies on Machine- & Equipment builders;
- Evaluate current technology
- Leverage new technology to bring greater value
- Identify opportunities, threats & challenges
- Create actionable intelligence
- Drive Process Improvement with the collected data

People
Including the people in your journey to a Smart Machine will allow for a successful outcome & can have an impact on;
- Project Management
- Equipment Optimization
- Workforce Training & Solutions
- Local delivery, expertise & support
- Safety: conformity on audits, hazards & risk assessments
Smart Machines & Equipment

- Operational Efficiency
- Integrated Safety
- Information Enabled
- Simplified Integration
- Real Time Diagnostics/Analytics
Journey to a Smart Machine
Smart Manufacturing relies on Machine & Equipment Builders

**EVALUATE**
- Evaluate current technology
- Optimize the current solution and processes
- Many times there is functionality available that will bring greater value and/or operational efficiency

**UPDATE**
- Is there new technology available that should be applied
- How can this newer technology be leveraged to bring even greater value?

**IDENTIFY**
- Commercial opportunities that could be met by leveraging data and technology?
- Biggest issues in the field impacting uptime and efficiency?
- What customer challenges could be better addressed?

**CREATE**
- Leverage existing data to drive actionable intelligence
- Identify any additional data or information needed
- Contextualize the information, display where it's needed in the format required by the viewer.

**OPTIMIZE**
- Drive process improvement through the available information and analysis
- Identify next areas of opportunity (restart the journey...........)
Inflection point for unprecedented productivity in INDUSTRY

30B

Number Of Devices On The Internet By 2020

Safe, Collaborative Robots & Equipment

Merging Physical & Virtual Worlds

AI & Machine Learning Predictive and prescriptive analytics to Reduce Downtime

Wearables & Mobile Devices Transform Work Flows

ALERT!
What’s Getting in THE WAY?

COMMISSIONING TIME CONCERNS
Meeting customer expectations while trying to innovate & stay competitive is challenging.

NEW WORKFORCE SKILL GAPS
Tribal knowledge is getting ready to walk out the door.

SECURITY & DATA PROTECTION
As more devices come online, who owns & maintains these growing networks? IT vs OT
What’s Getting in THE WAY?

**ADDITIONAL REVENUE STREAMS**
A perceived lack of ROI requires a need to provide value beyond the machine.

**ORGANIZATIONAL DISCONNECT**
Sales force should focus on technology & value, not throughput.

**TECHNOLOGY ADOPTION**
It’s time to rethink how you use new technologies effectively.
Digital Transformation
Operational Benefits

TIME TO MARKET
- Faster prototype for new product introductions
- Shorter cycle times
- Mass customization: make to order vs make to stock

PRODUCTIVITY
- Shorter setup and change over times
- Improved quality
- Reduction in downtime
- Reduction in energy consumption

SUPPLY
- Reduced inventory & waste
- Improved planning & forecasting

COMPLIANCE
- Reduction in human errors and risk of product recall
- Automated digital monitoring ensures accurate records

- Reduced Downtime
- Anomaly Reduction
- New Product Introduction
- OEE Improvement
- Improved Inventory
- Energy Use Reduction
So...How Smart Are Your Machines?
Assess Your Capabilities and Resources

- Utilizes intellectual property protection
- Implements contemporary machine safety techniques
- Processes are compliant & optimized
- Designed for connectivity to the end-user’s production line
- Adaptive & “Self Healing”
- Enables improved operational efficiency for the end user
- Produces operational information for the end user
- Provides Real-time diagnostics to improve uptime & simplify maintenance
- Simplifies integration with other production assets of the end user
- Designed for connectivity to the end-user’s production line
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What are your 5 highest contributors to unplanned downtime or stoppages?

Is your competition offering features or value that you can’t or aren’t offering today?

Do you see any additional revenue opportunities? Is your competition chasing after these already?

What one thing could bring you new customers or significantly increase your sales?

Are your customers challenged by the skill level of their operators? How might you help?

What equipment situation do you receive the most complaints from customers about?

What conditions or influencers keep your machine or equipment from operating at its full potential?

Do your customers want to interact with your equipment differently than in the past? How?

What are your 5 highest contributors to unplanned downtime or stoppages?
TIPS for SUCCESS

Implementing a Connected Enterprise will bring **POSITIVE** impact to your business

- **Don’t Wait**
- **Identify** Opportunities
- **Start** Small
- **Work** with Technology Partners
- **Continuously** Improve
Thank you!

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