



IDFA

**International
Dairy Foods Association**

Digital Readiness for the “New Normal”

Thursday, June 18, 2020



IDFA
**International
Dairy Foods Association**

Welcome & Introduction



Tom Wojno – SVP, Innovation & Member Advancement

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- This Webinar is being recorded. The recording will be available at www.idfa.org, in the Knowledge Center, on the Webinars tab.
- For technical difficulties, please send a message through the Chat box or e-mail membership@idfa.org.
- Questions can be submitted via Chat throughout the webinar. Any unanswered questions will be addressed individually after the webinar. Only IDFA staff can view Chat questions and will answer questions without revealing their source.

➤ **Step 1:** Select the chat bubble

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Kevin Starr
Global Program Manager, Advanced
Services, ABB



Digital Readiness for the “New Normal”

Digital Trends in Automation Solutions

IDFA



Agenda

Growing in the Industrial Revolution 4.0!

- Value of Service
- The impact of the Industrial Revolution 4.0
- Expanding our sphere of influence
- Linking physical and digital service solutions
- Ensuring value with the right person at the right time with the right solution
- Digital tools and service solutions



How embracing digital can make your service operation more safe, reliable and optimized...

My personal relationship with the dairy industry

Starr's Hilltop Acres



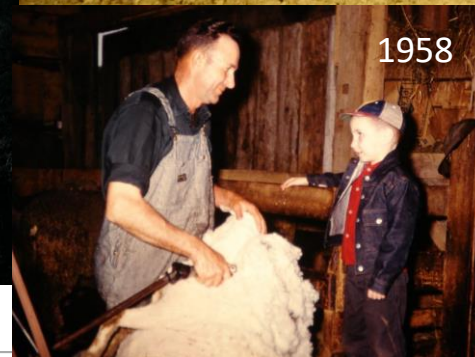
My Grandfather



1970



1968

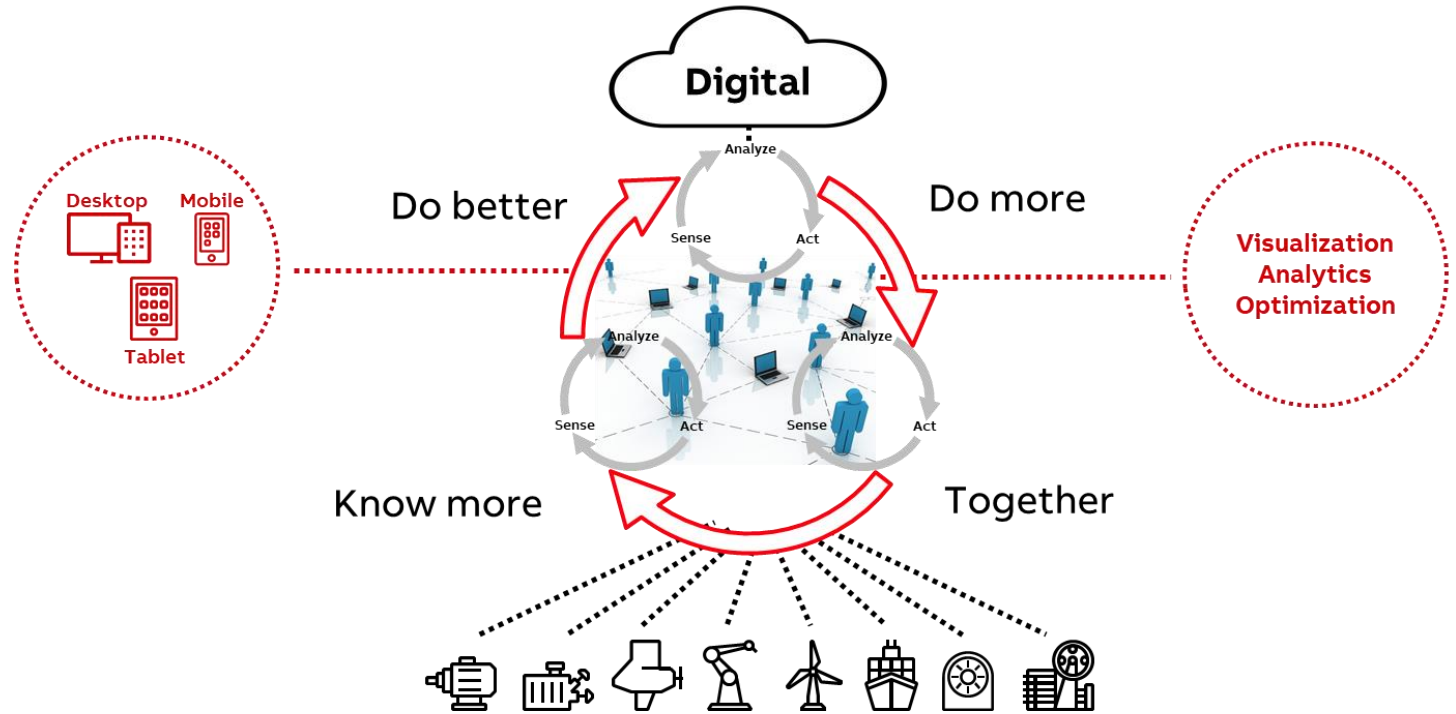


1958

Samuel Richard Starr 1911-1990, Nobel County, Ohio

ABB - This is what we do

ABB is a leading global engineering company that energizes the transformation of society and industry to achieve a more productive, sustainable future. By connecting software to its electrification, robotics, automation and motion portfolio, ABB pushes the boundaries of technology to drive performance to new levels. Our success is driven by 144,000 talented employees in over 100 countries.



2nd industrial revolution (19th century)

- + Electrification
- + Motion

3rd industrial revolution (20th century)

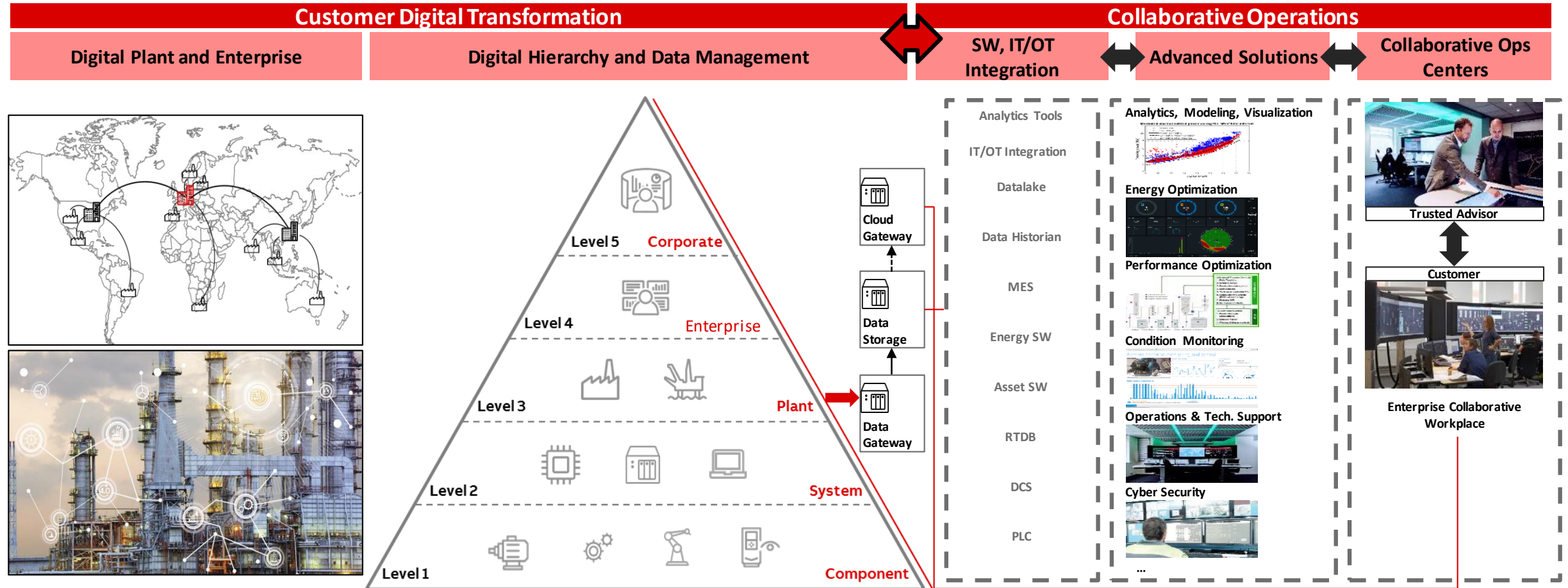
- + Industrial automation
- + Robotics

4th industrial revolution (21st century)

- + Digitalization
- + ABB Ability™

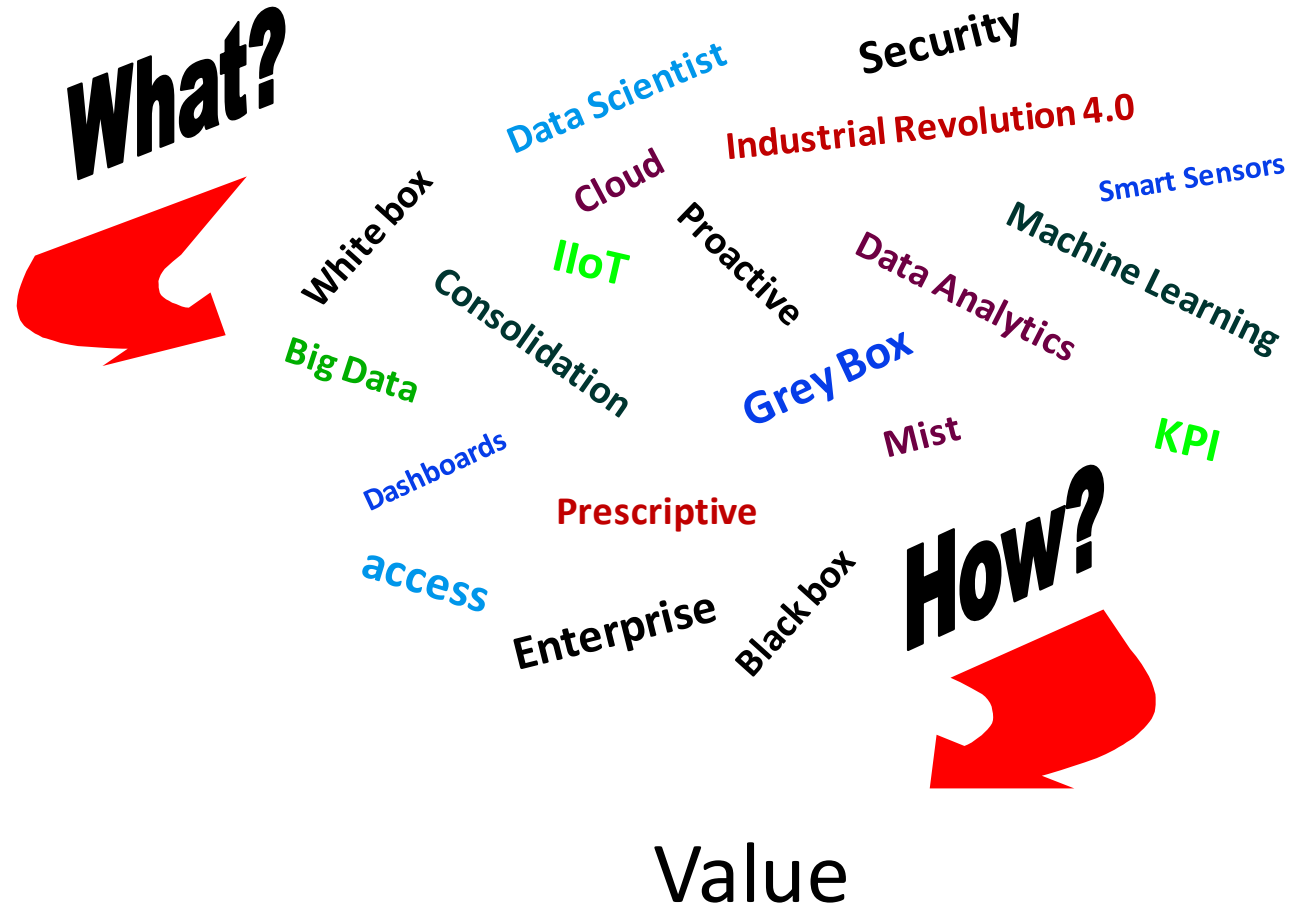
Future of Digital

The only mistake is not starting, but where do we start?



Value of a Digital Solutions

Dairy Applications

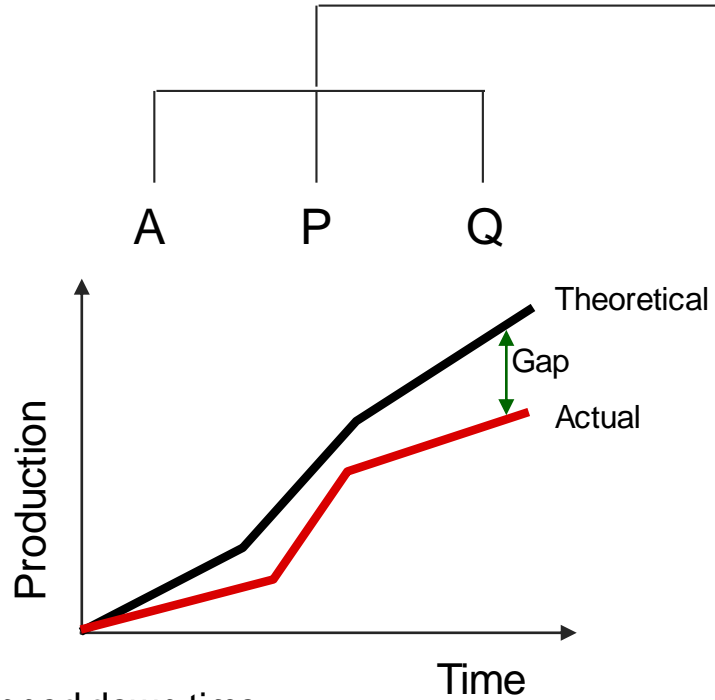


Performance impacts

Finding Value

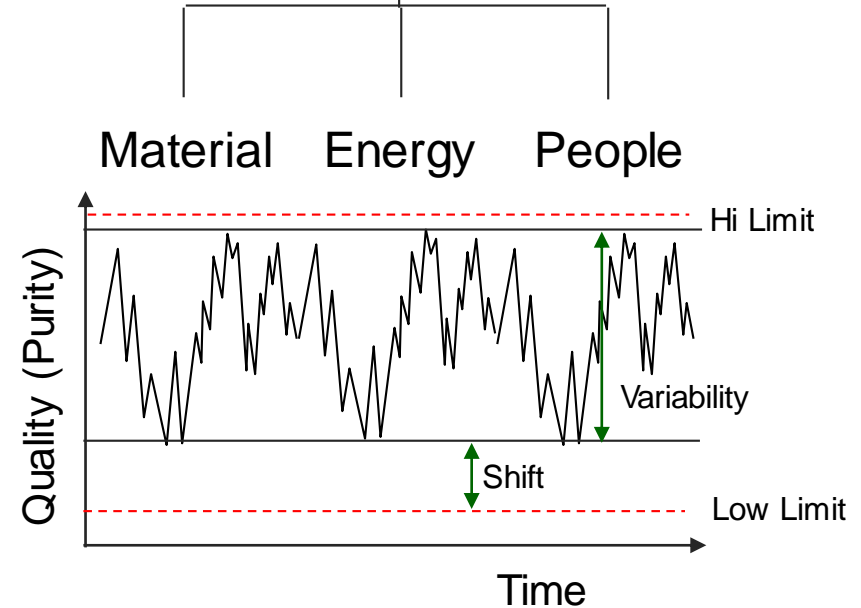
1. Find the GAP
2. Provide solutions
3. Close the GAP

Overall Equipment Effectiveness (OEE)



Customer

Cost to Produce



Map unplanned to planned down time

Reduce startup or recovery time

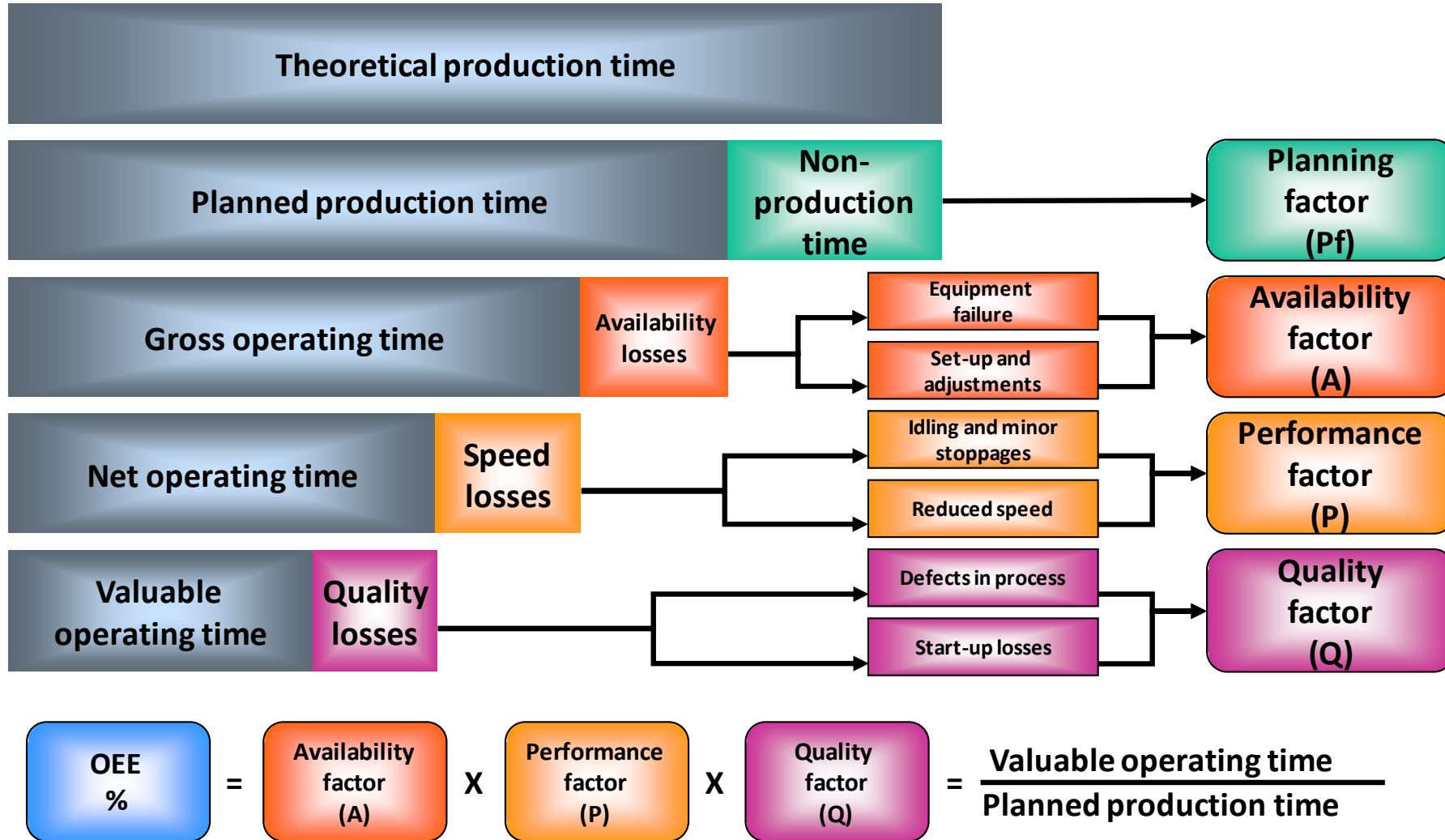
Improve quality

Reduce Variability

Target Shifts

Continuous Improvements

OEE calculation Methodology for Value benchmarking



Over time, small inefficiencies adds UP!

Dairy is critical!

What are the pain points?

- Automation
- Uptime
- Batch cooking
- Product mix

Reducing Down time

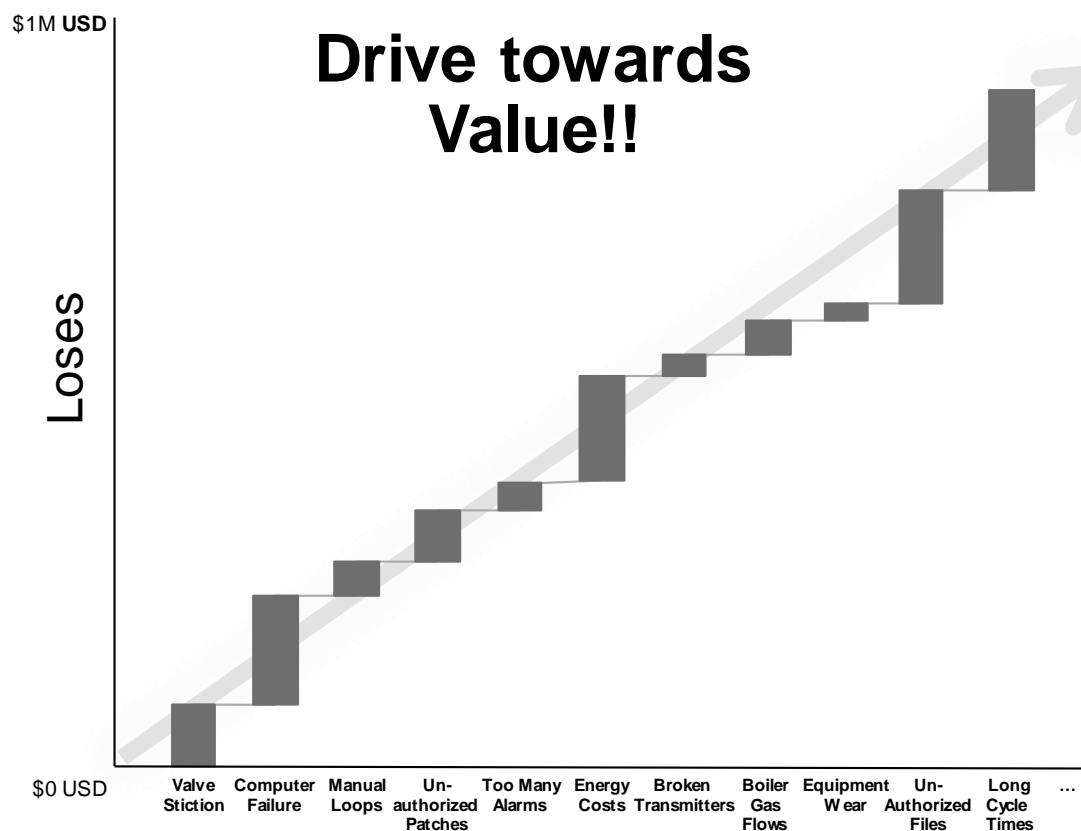
Limit exposure to workers

Process areas

Automation maturity

Variability and loop tuning

Skeleton crew running the site



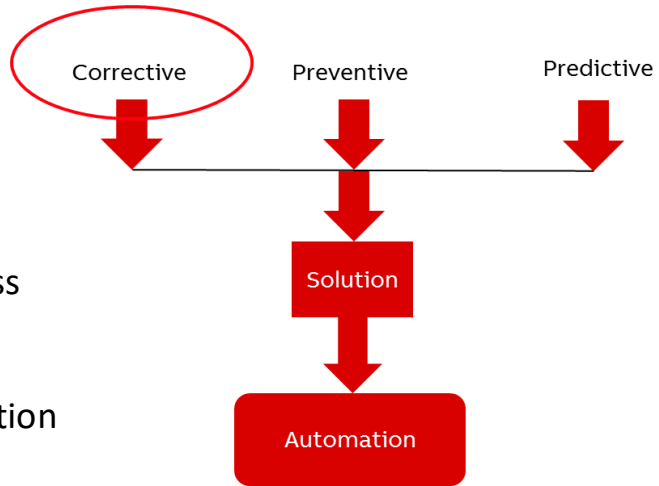
Driving Value
Requires
The right person
The right time
The right solution

Three step process:

1. Find the Gap - Diagnose
2. Fill the Gap - Implementation
3. Maintain the Gap - Sustain

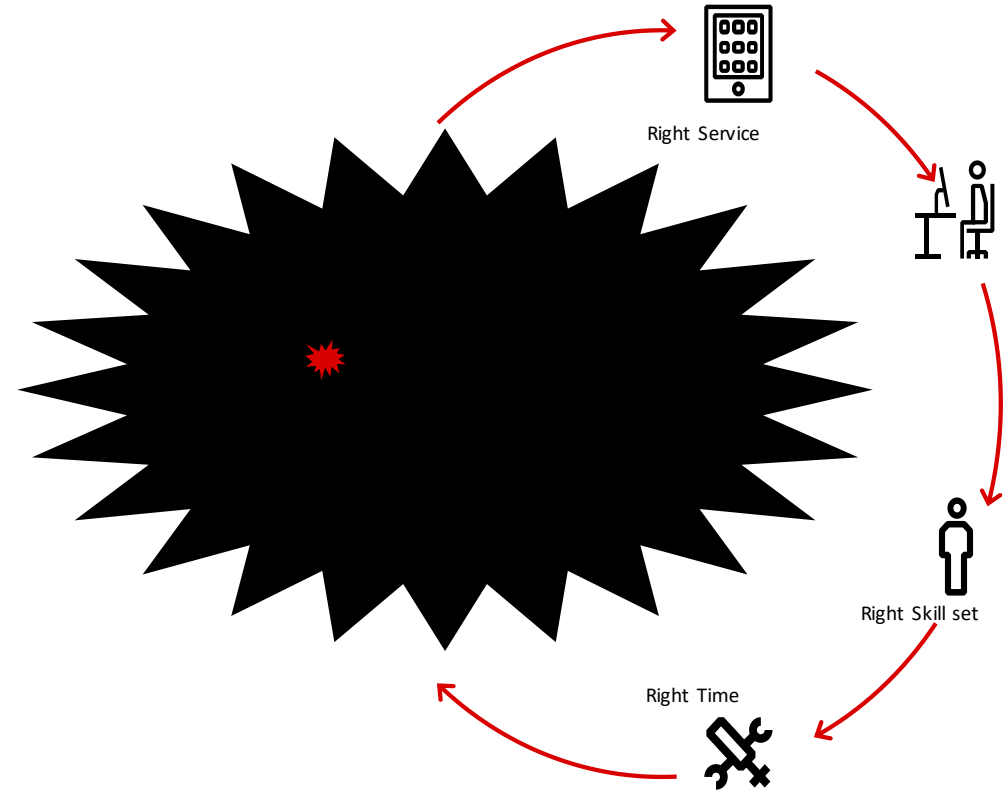
Corrective Maintenance

Break and Fix Reactive

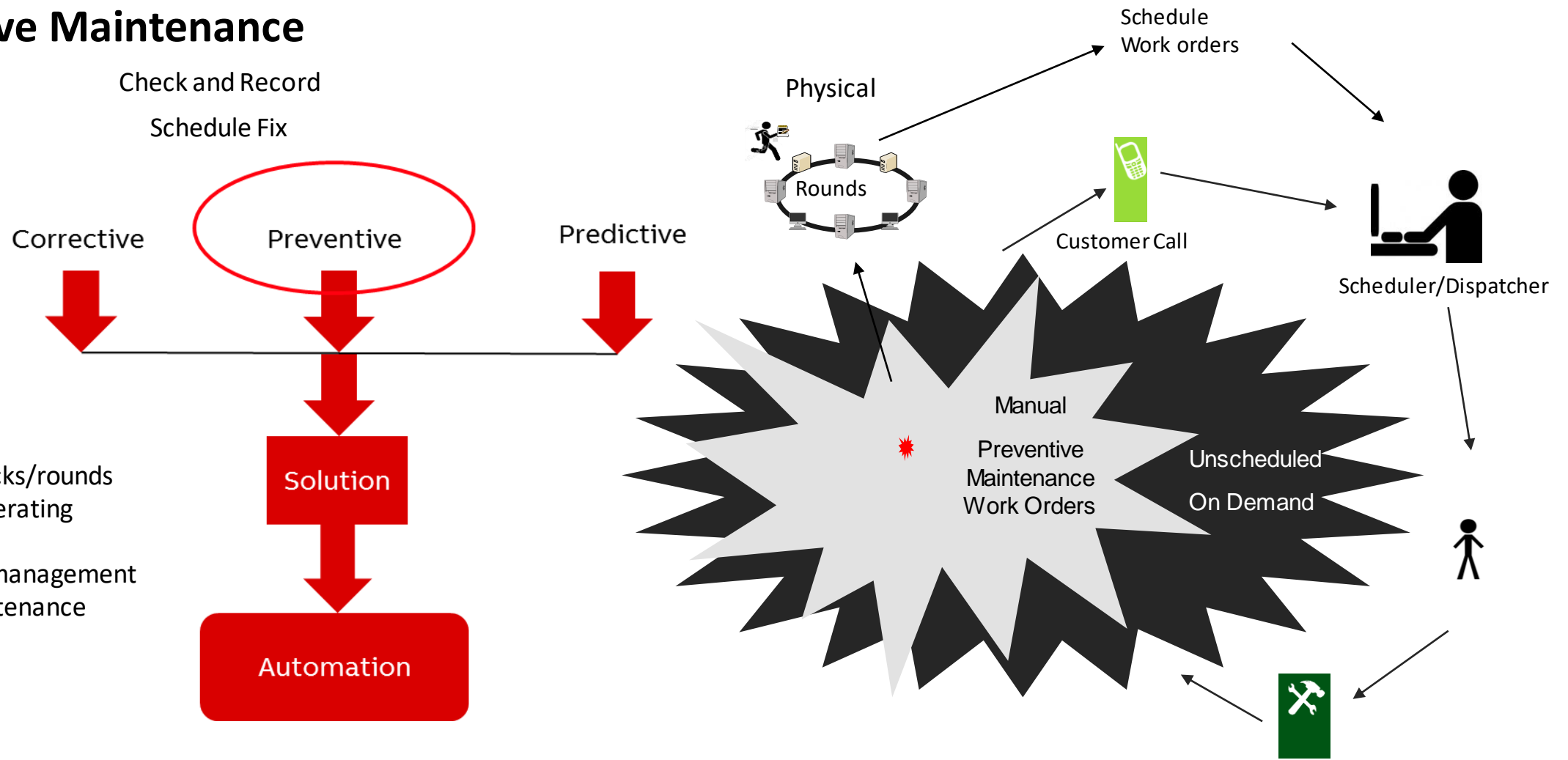


Corrective

- Response Time
- Call center access
- Parts availability
- Skill alignment
- Incident recognition



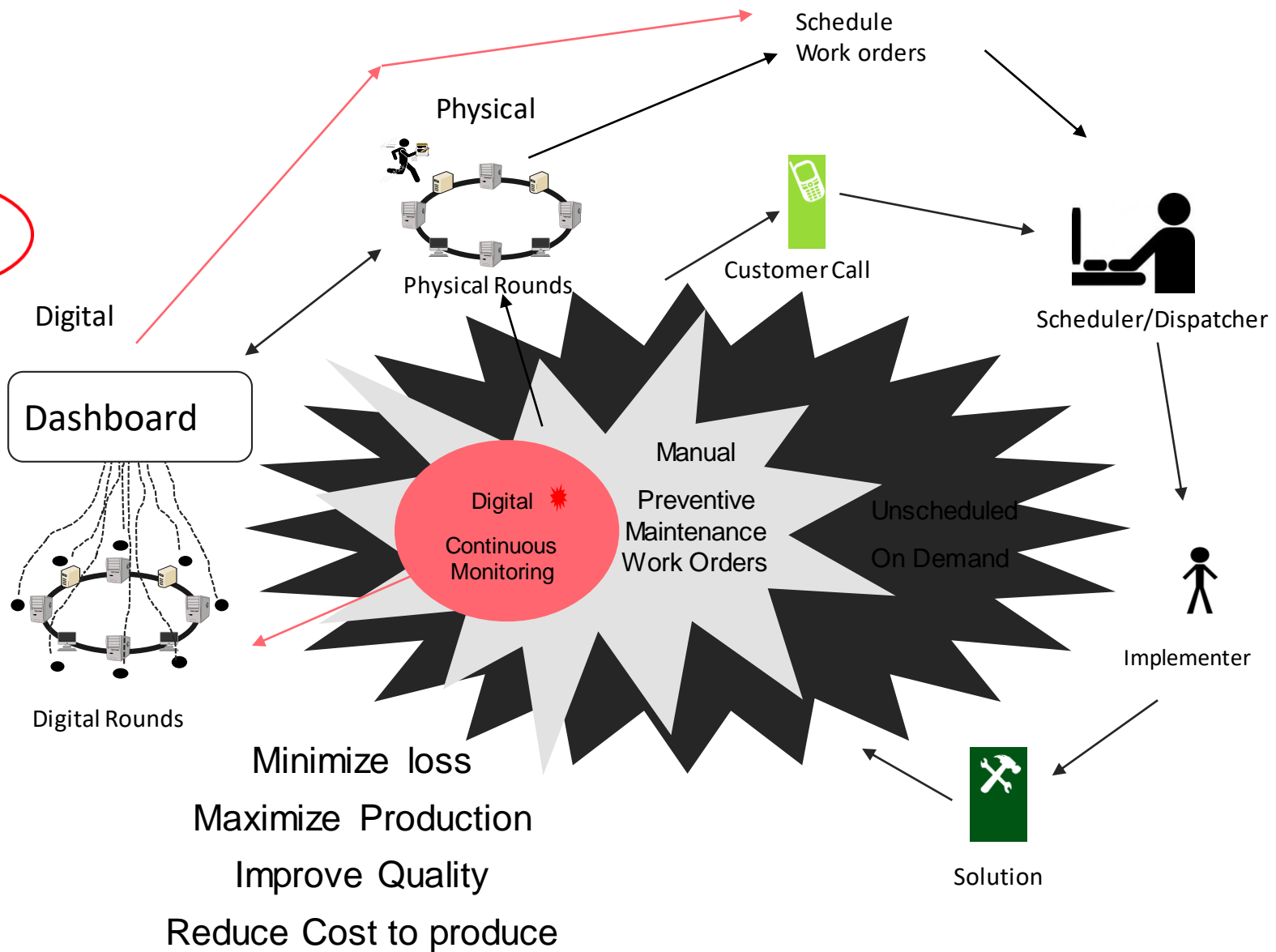
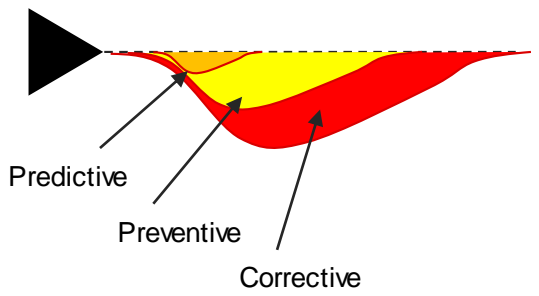
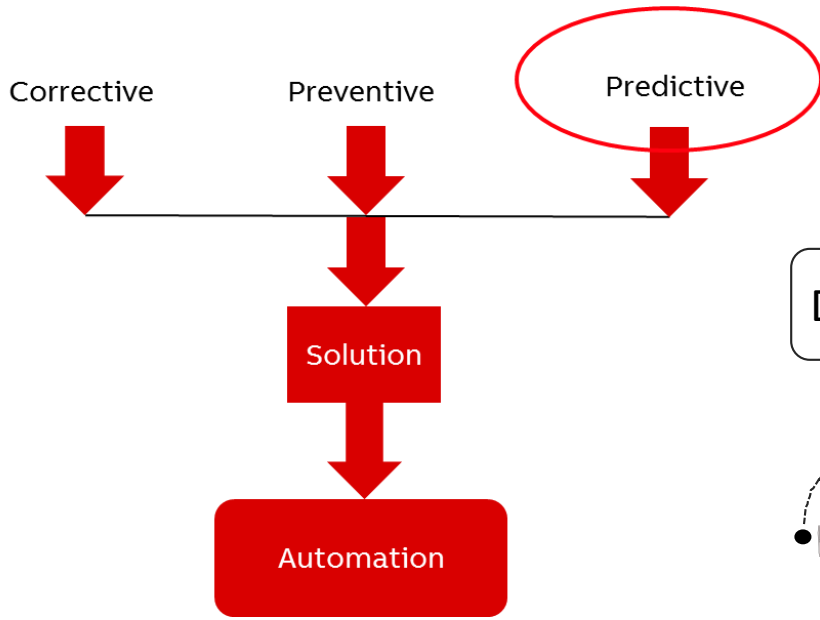
Preventive Maintenance



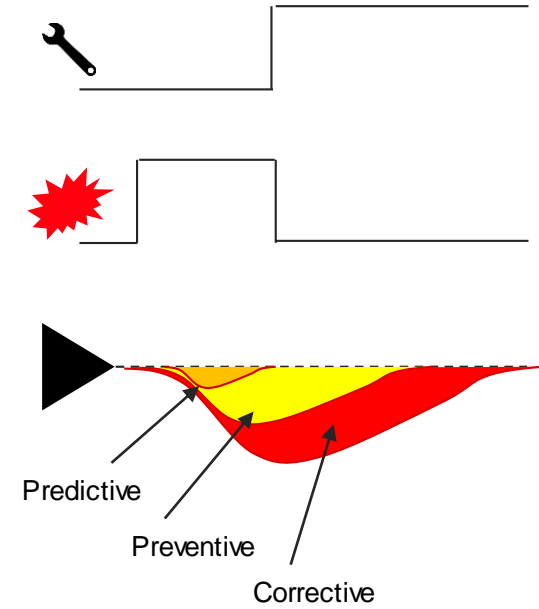
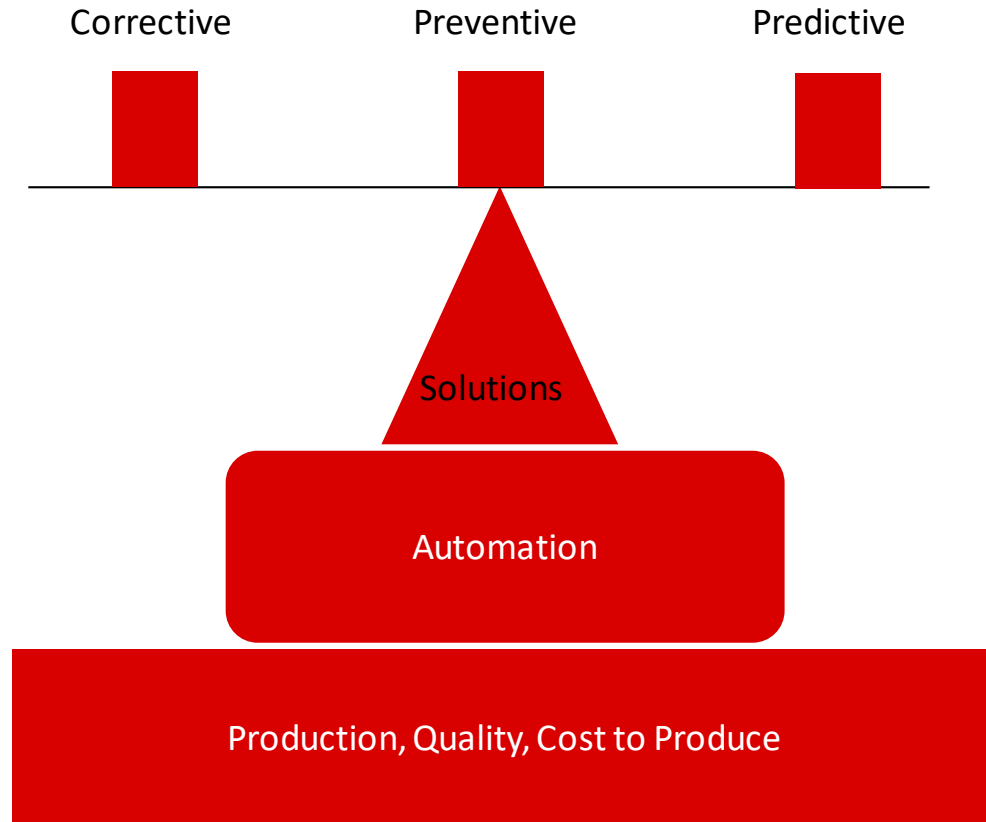
- Preventive
- Physical checks/rounds
 - Standard Operating Procedures
 - Work order management
 - Library Maintenance

Predictive maintenance

Solve before the issue



Are you Balanced?



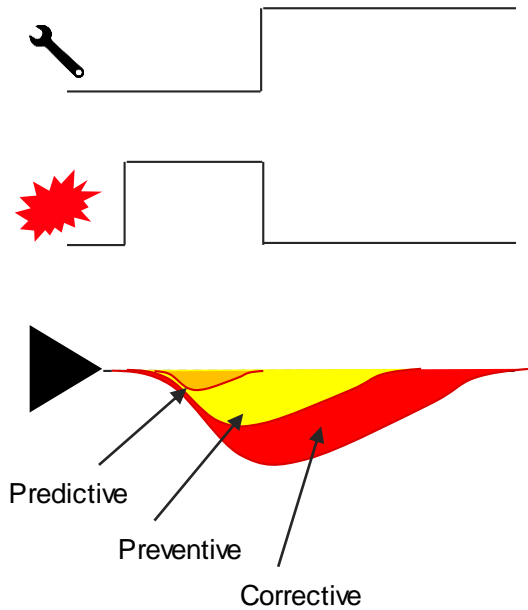
Minimize loss

Automation Space

Are you covered?

Instructions

- Please check the box that best describes your service strategy
- Please indicate your top three priorities



Maintenance Strategy	Corrective	Preventive	Predictive	Your Top Priorities
Upgrade/Evolution				
Parts Management				
Power				
Electrification				
Telecommunications				
Drives/Pumps				
Instrumentation				
Control Platform				
User Interface				
Loop Performance				
Alarm Management				
Batch Analytics				
Safety Management				
Cyber Security				
Mobility				
IT/OT integration				

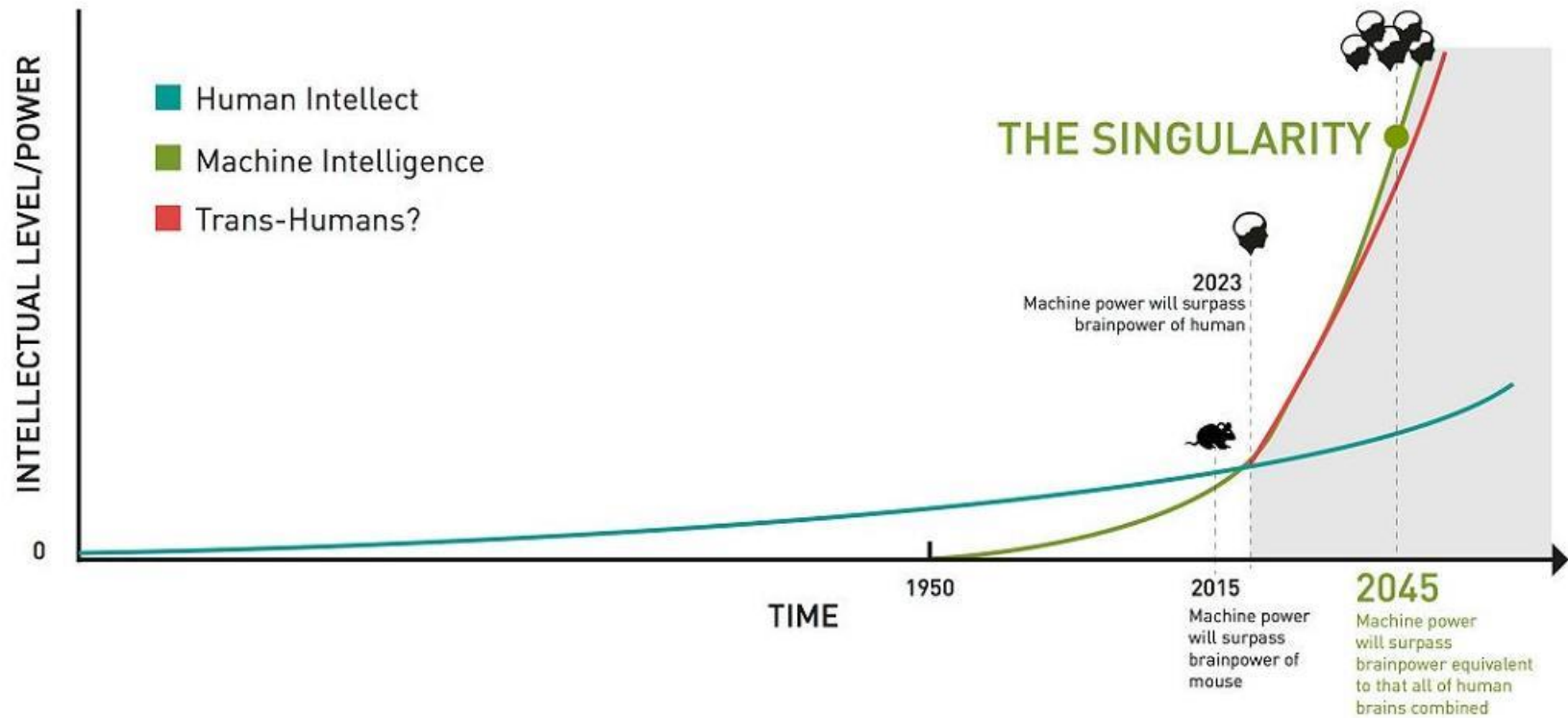
Defining the Industrial Revolution 4.0

The singularity

The accelerating pace of change and #exponential growth in computing power will lead to the #singularity.

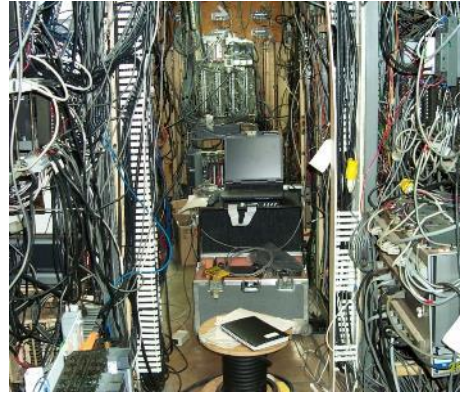
Charles Delancray

Rise in human intellect could be driven by integrating with machines in the future



Early days of automation

Physical checks and repairs was enough



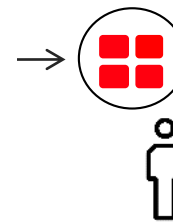
Data collection difficult

Range of control limited

Troubleshooting very hands-on

Space defines number of controllers

Few units



Less diagnostic
coverage needed

Yesterday we could get to the issues

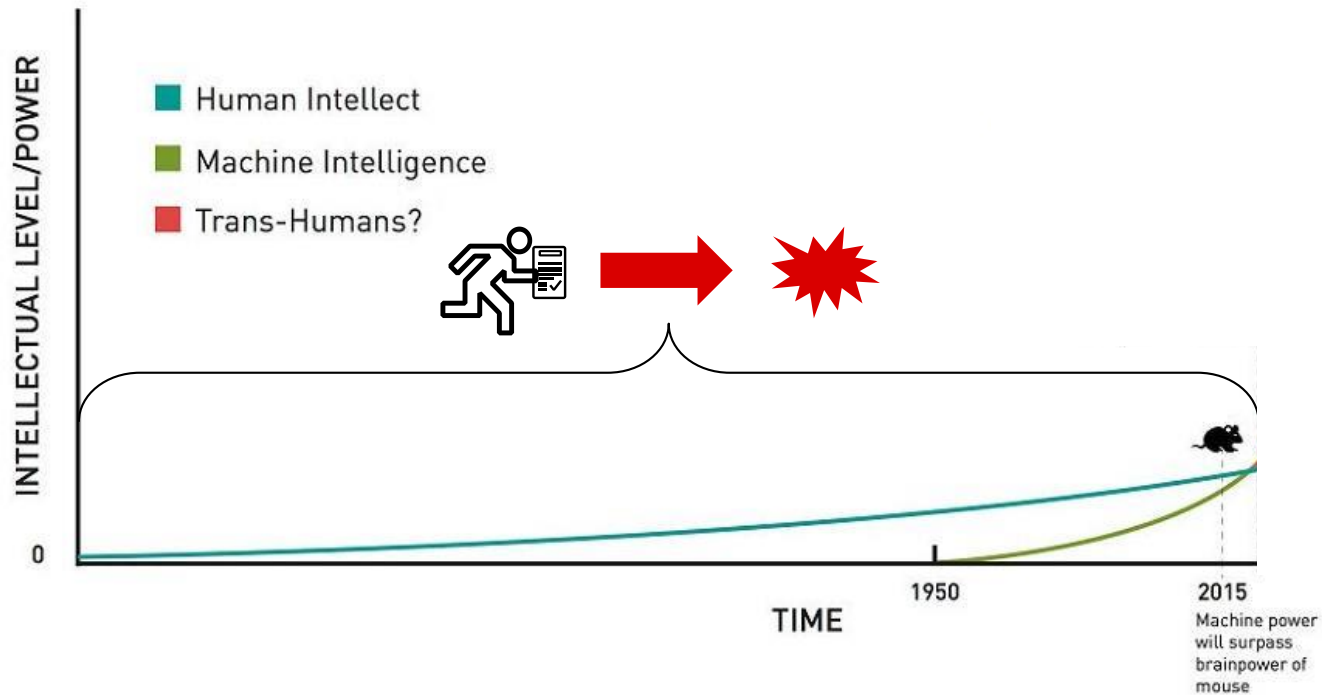
Our sphere of influence matched the technology space – Physical interactions were sufficient

Install Base

Single loop controller

Instrumentation/actuation

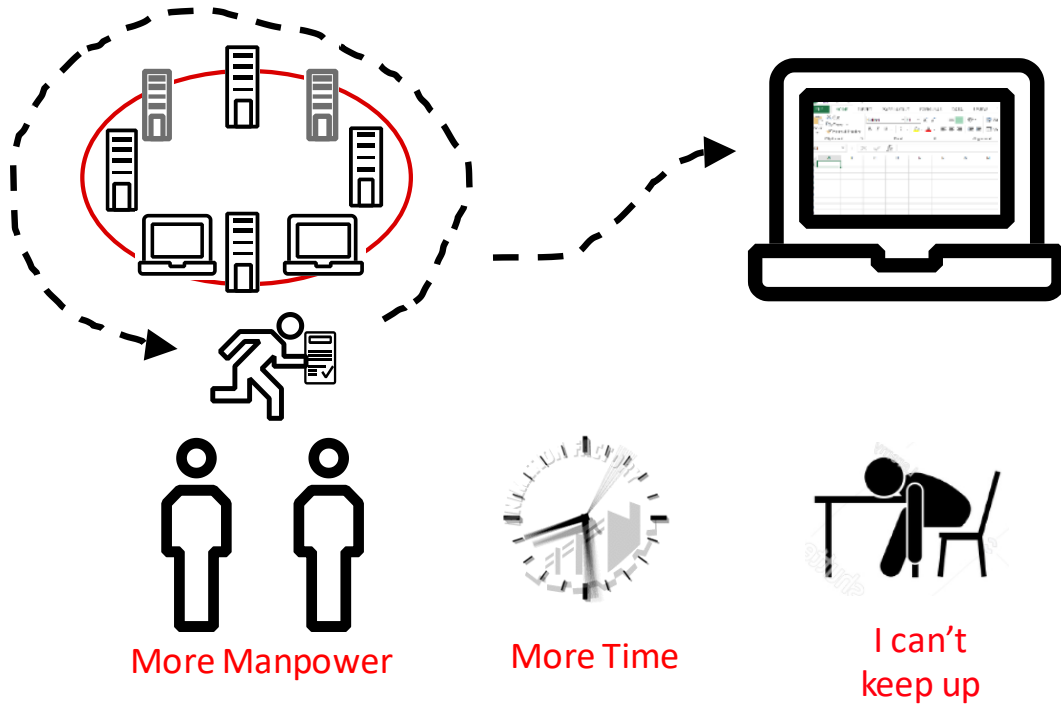
Rise in human intellect could be driven by integrating with machines in the future



Traditional services in a connected world

Performance gap developing

More People, More Time, More Money



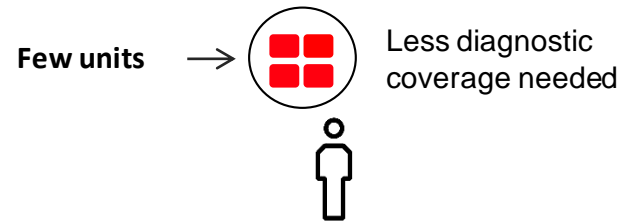
- Working harder does not improve performance
- Continuing to work as we did in a new environment, and expecting a different result, fails
- No one person can be an expert in the entire technology chain

Shift in automation is changing the way we work

More connected devices lead to more data points to troubleshoot

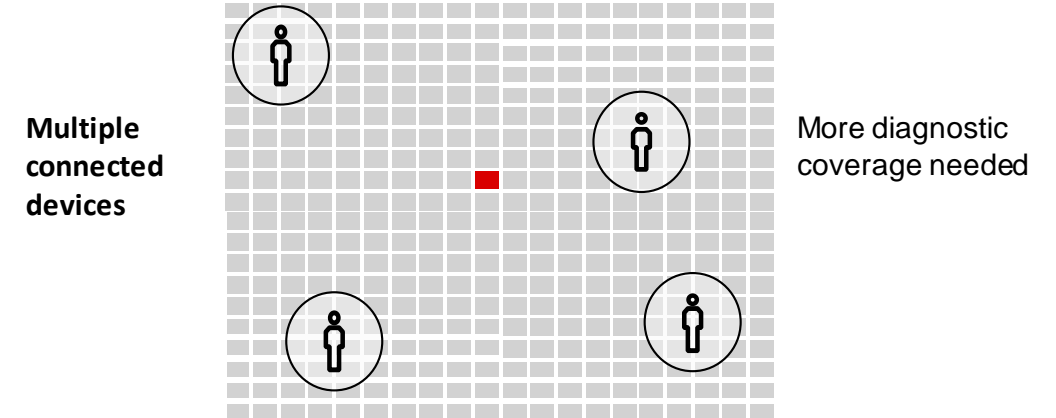
Early automation

- Data collection difficult
- Range of control limited
- Space defines number of controllers
- Troubleshooting very hands-on



Automation after Industrial Revolution 4.0

- Data easily accessible
- Range of controllers extensive
- Hard drive defines number of controllers
- Troubleshooting needs to be digitally supported



Increasing demands on staff requires digital support

Today the issues need to come to us!

Technology is growing and continues to grow – We have to expand our sphere of influence

Expertise

Upgrade/Evolution

Parts Management

Utilities & Energy

Actuation

Electrification

Drives/Pumps

Instrumentation

Control Platform

User Interface

Loop Performance

Alarm Management

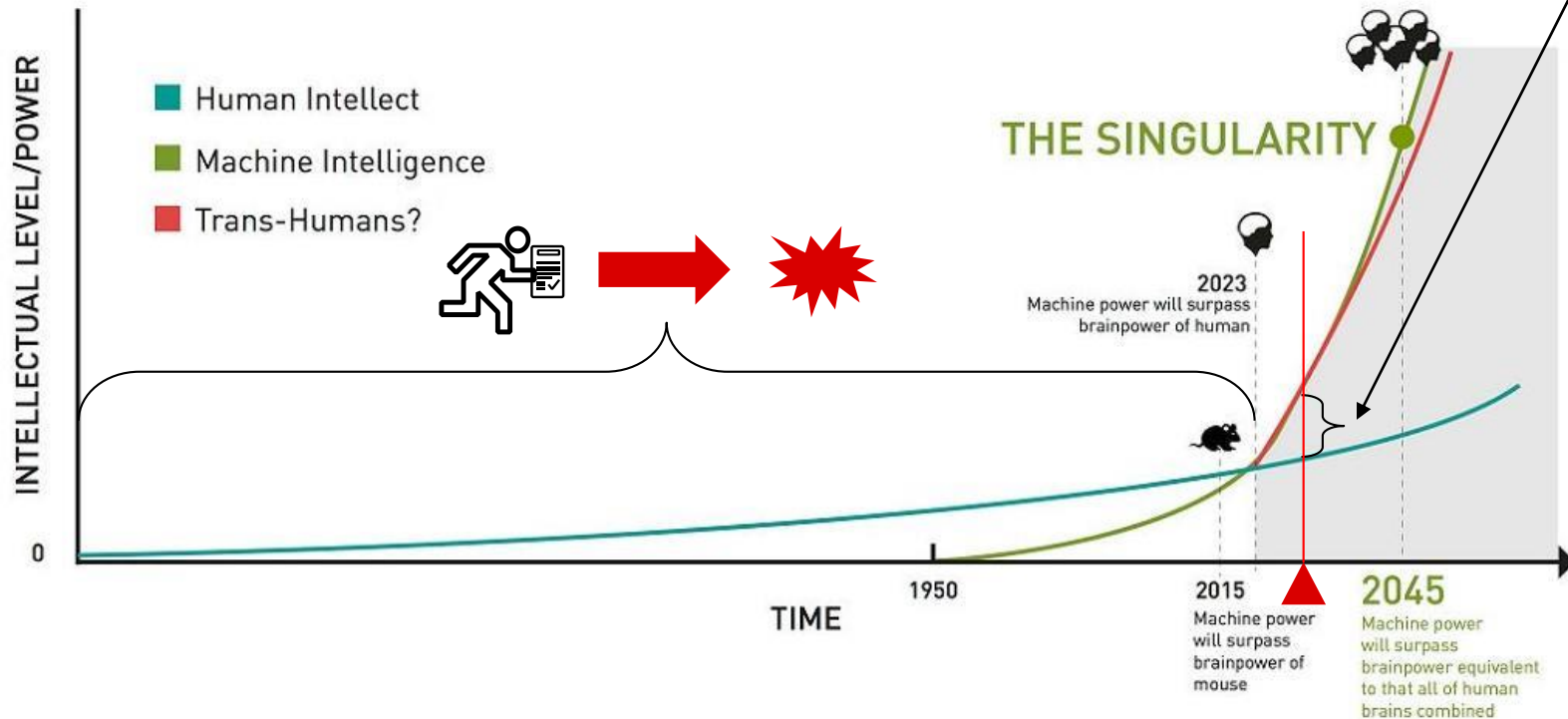
Safety Management

Cyber Security

Mobility

IT/OT integration

Rise in human intellect could be driven by integrating with machines in the future



Performance Gap developing:

- Working harder does not improve performance
- Doing what we did and expecting a different result fails
- No one person can be an expert in the entire technology chain.
- However with technology we can leverage the power of local talent and remote expertise!

Digital enables faster issue resolution

Expanding the Sphere of Influence

- Coupling “digital” rounds with traditional service means more effective use of time
- Connecting local resources to data, experts and solution details means the issue is remedied quicker or even before it becomes an issue



Less Time

I'm plugged in
I know what to do
I have backup
I have the right solution
I am in control of my system!

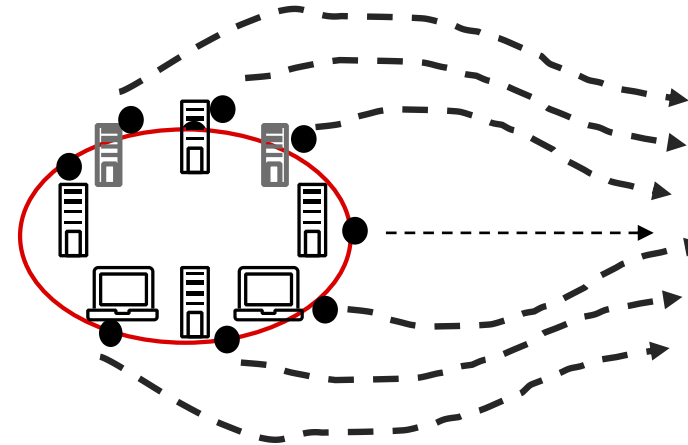


Focused Manpower



Experts

Transform data into Information



Performance Dashboards



Expertise

Upgrade/Evolution
Parts Management
Utilities & Energy
Actuation
Electrification
Drives/Pumps
Instrumentation
Control Platform
User Interface
Loop Performance
Alarm Management
Safety Management
Cyber Security
Mobility
IT/OT integration

Expand our Sphere of Influence

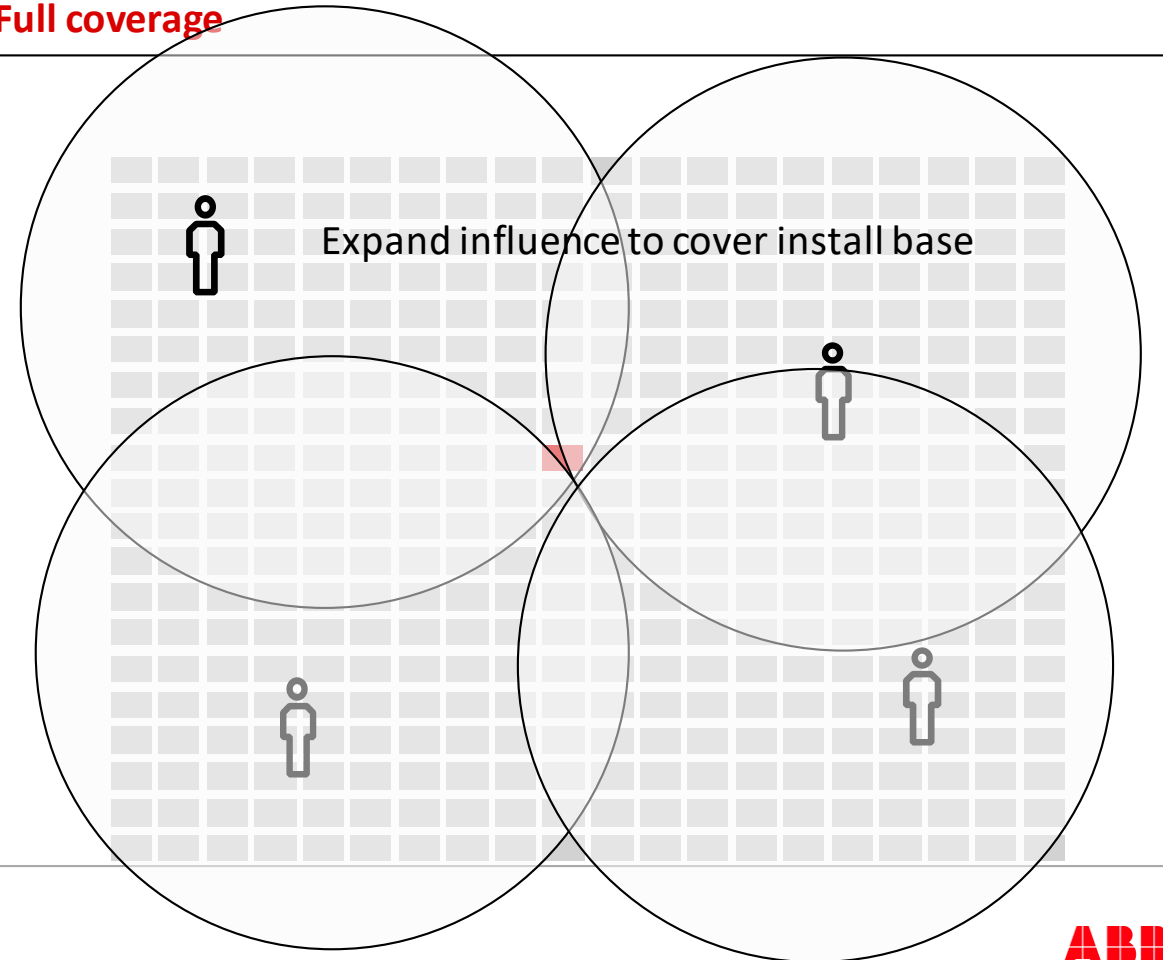
Field Service is in “Control” of all our clients assets, functions, and process

Leverage digital and physical



- Rapid Response
- Physical rounds
- Digital Rounds
- Implementation scheduled
- Digital Platform
- Expanded circle of influence

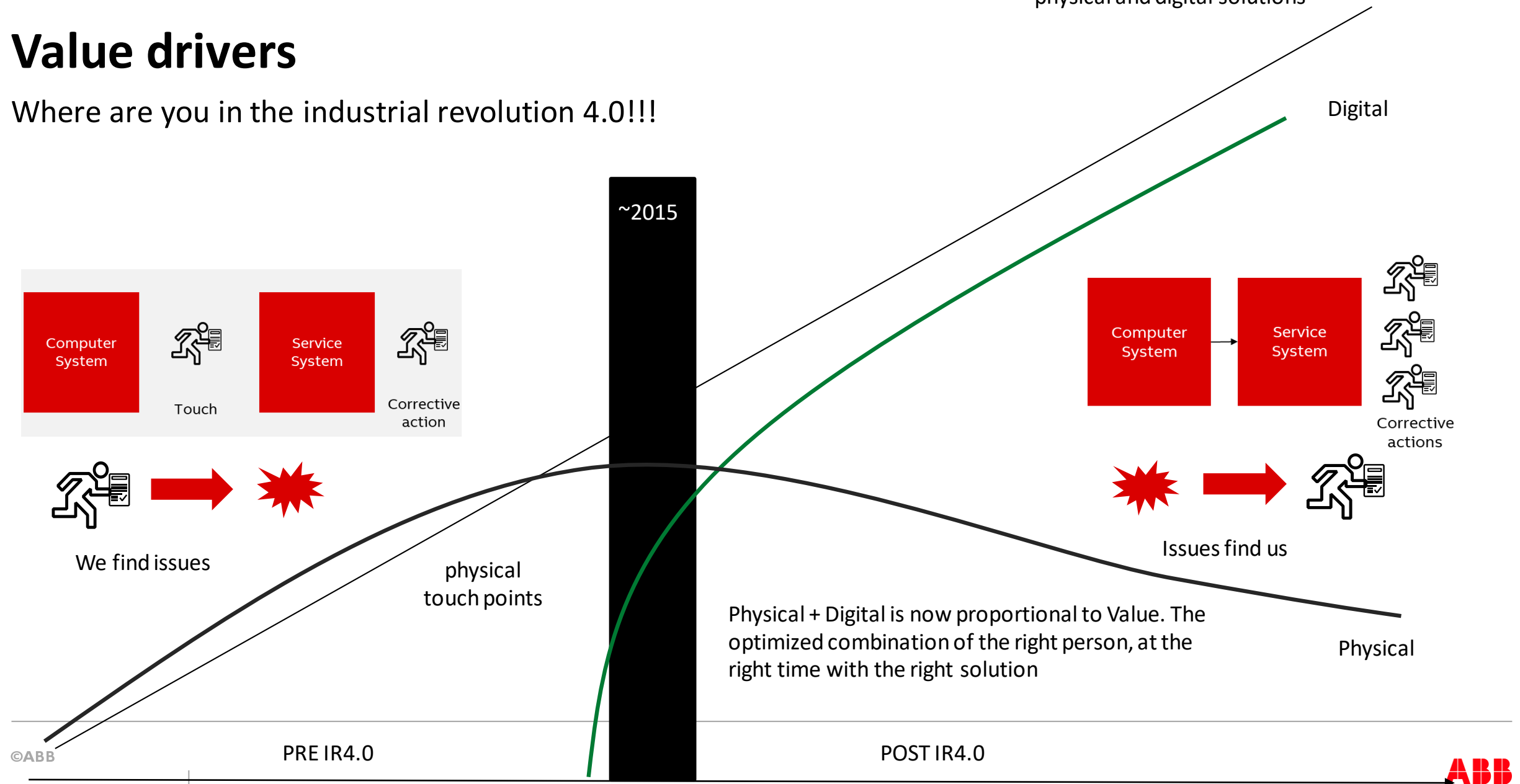
Full coverage



Value drivers

Where are you in the industrial revolution 4.0!!!

Value happens when we properly integrate physical and digital solutions



Refactoring: Linking Digital and physical solutions

When an issue is
or is about to
happen, what do
you do?



Solution hours, a smart
guy, and a bag of tricks

The right person,
the right time,
the right solution,
drives Value

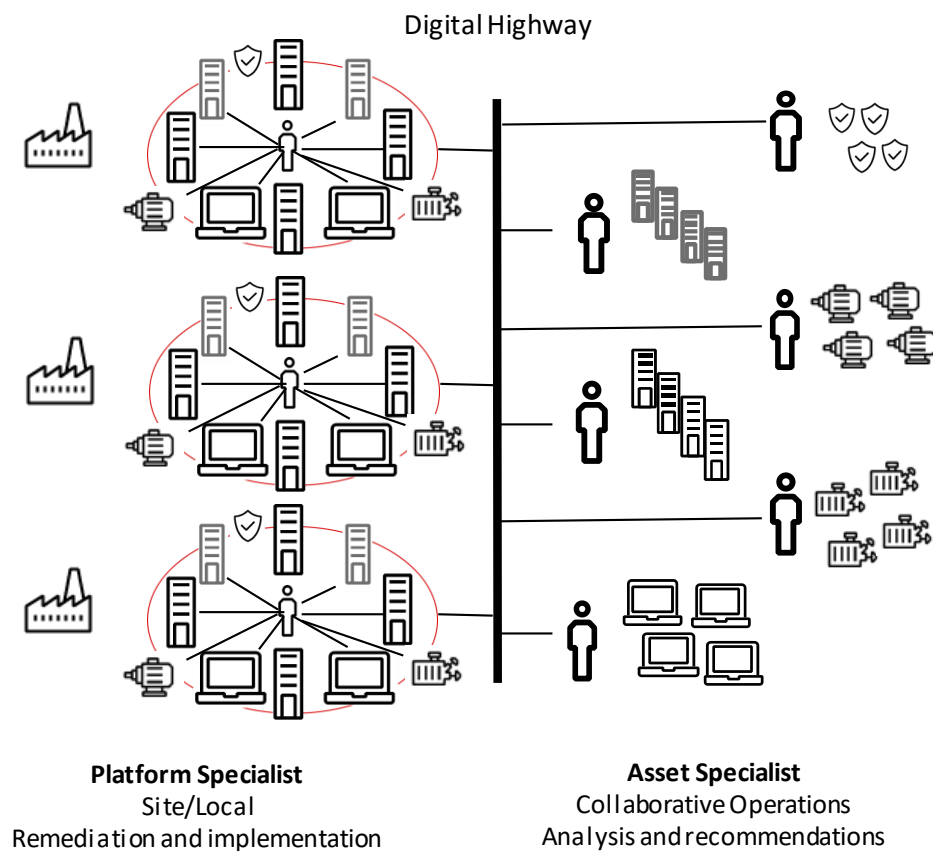
Digital transformation



Platform and a Process
Tribal Knowledge protection
Ease in recruiting

Getting on the digital highway

Getting on the Digital Highway -
Linking experts!

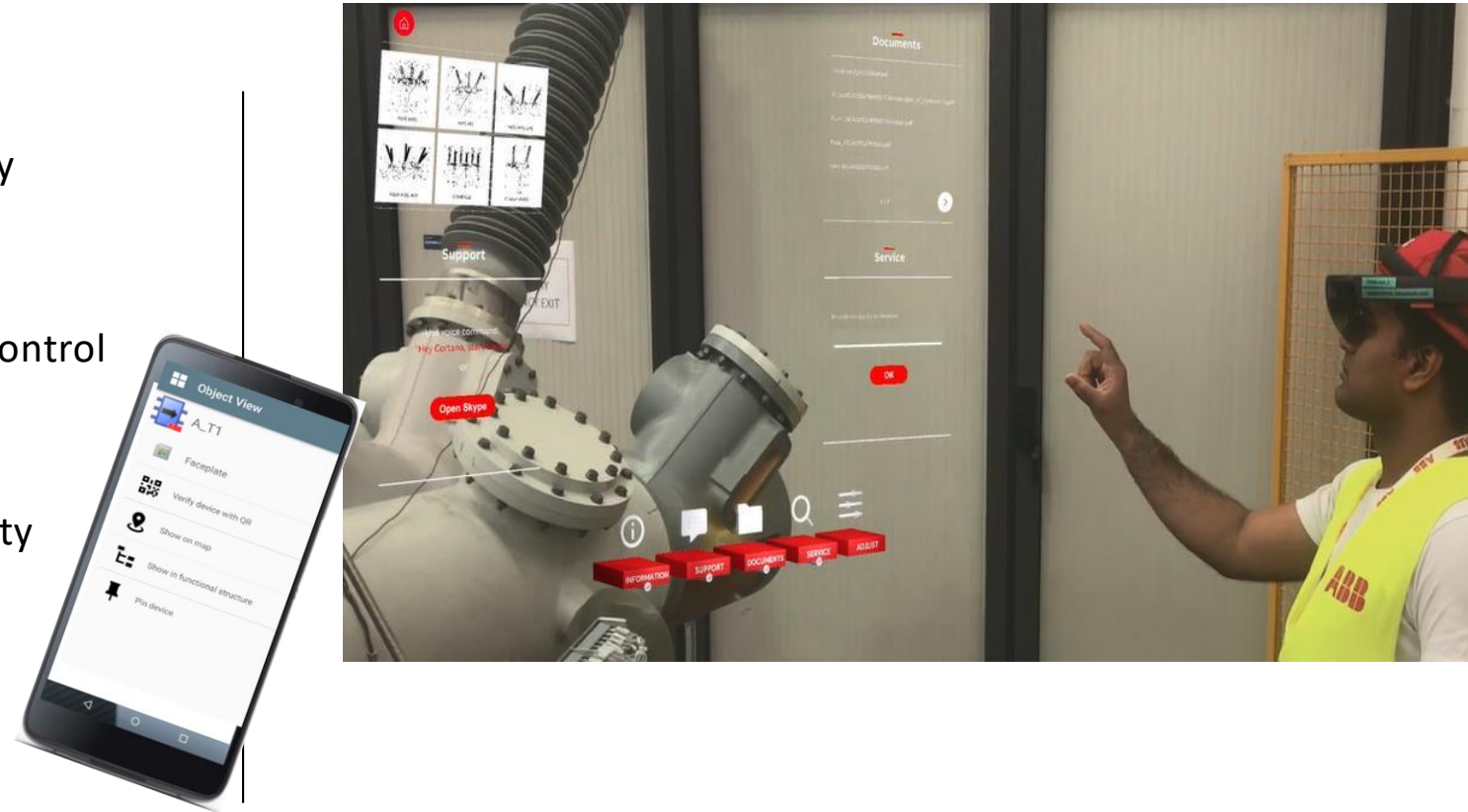


- Electrification
- Assessments
- Analytic Devices and engines
- Data Security
- Remote/Augmented Reality
- Mobility/Safety
- Machine Learning
- Performance Dashboards
- Maintenance Management
- Manufacturing operations management (MOM)
- manufacturing execution system (MES)
- Enterprise resource planning (ERP)
- Enterprise enablement

Remote and Augmented reality – Expanding the sphere of influence

Any time, Any where digital Connections

- Headset or handheld device with semitransparent holographic lenses and computer
- Remote visualization of real time information from any system anytime
- Risk mitigation to ensure Safety
- Cloud enabled Mobile Operator for Secure access to Control system
- Both on- and off-premise setup enabled
- Digital architecture to easily expand future functionality



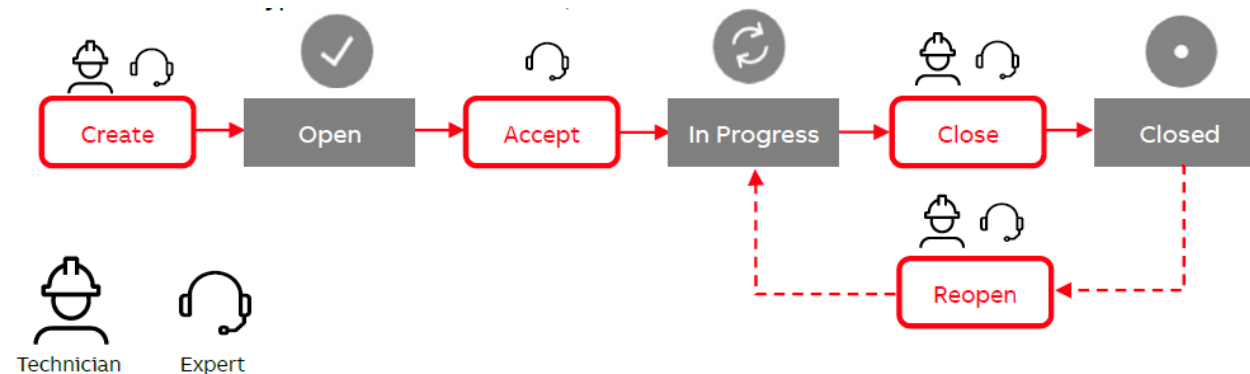
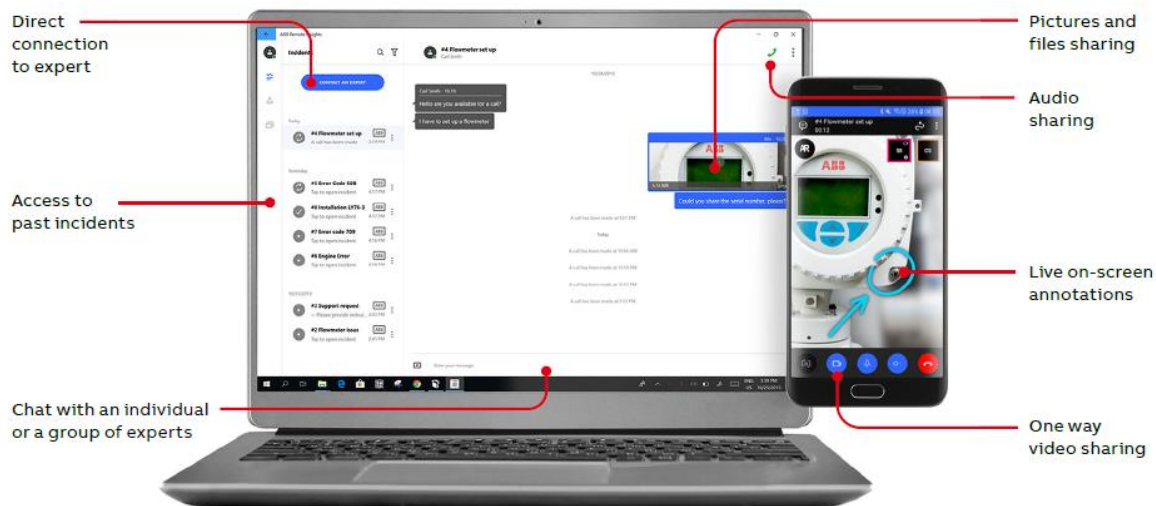
Collaboration - Linking plant experts with subject matter experts

Case Study – remote Connection

Truly connected

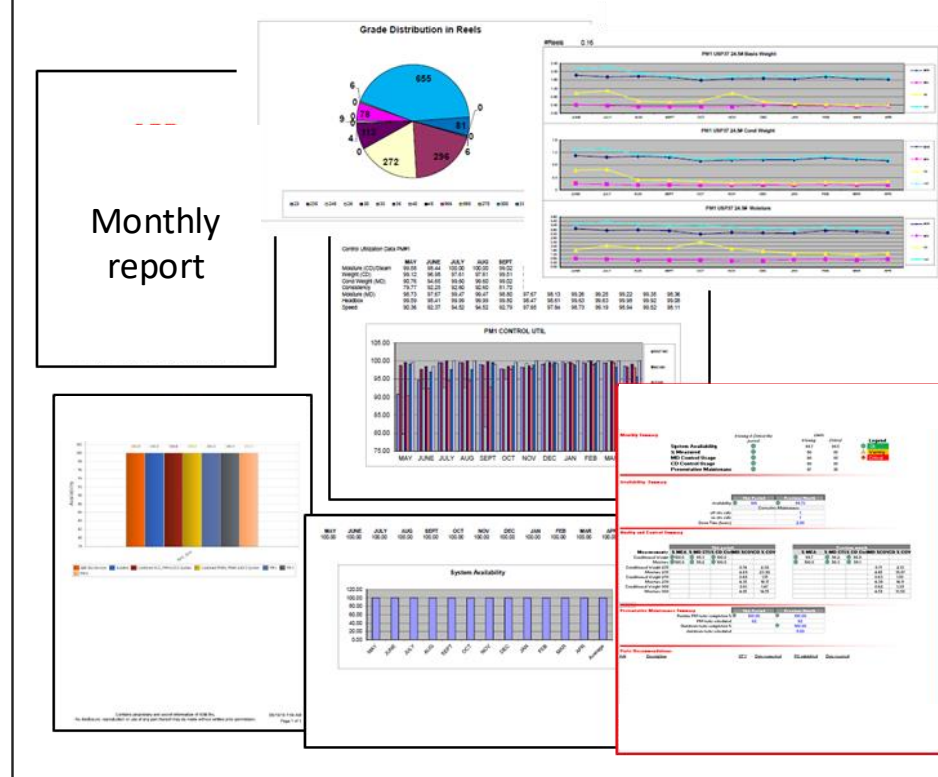
The Connected Engineer is now not only connected with digital data, we are connected with the right subject matter expert.

Digital Transformation enables the full power of automation to be at the fingertips of a connected Engineer!!!



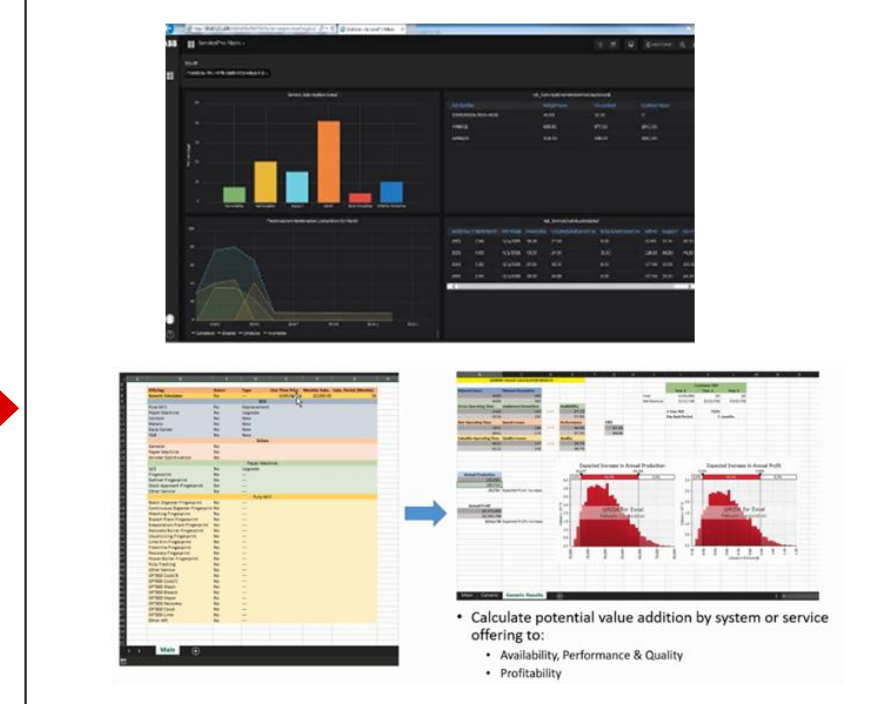
Align actions to value generation – Transform Reporting and Administration

Manual monthly reporting



Digital Transformation

Automatic digital reporting

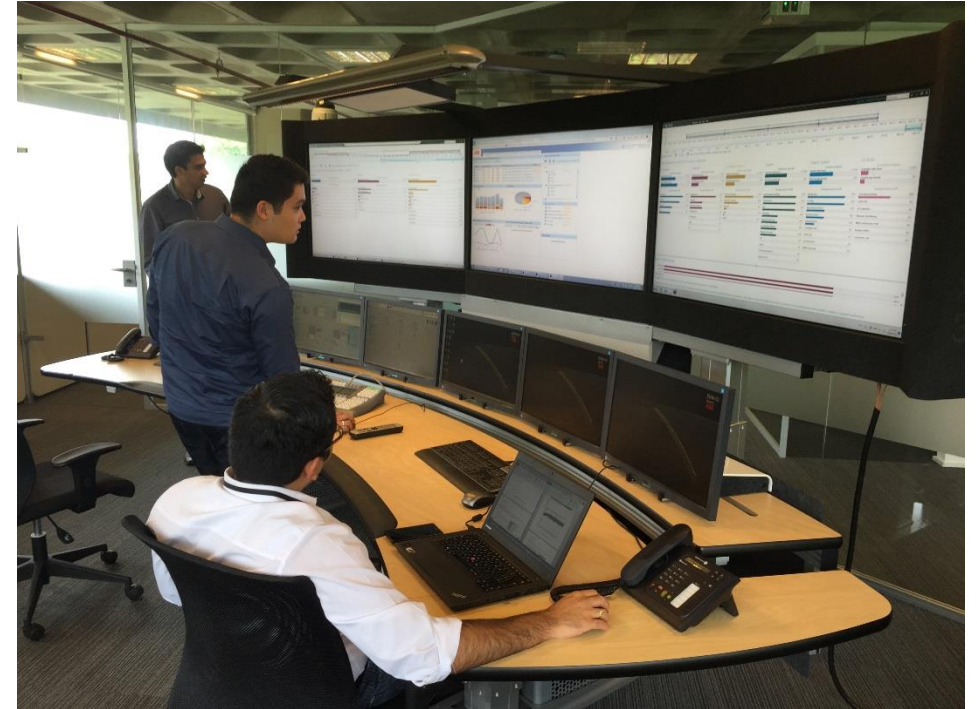


- Difficult to produce
- Often unstructured
- Many times out of date shortly after printing

- Automatic generation
- Well defined format
- Continuous update and notifications of deviations

Work Space

Digital Workplace Transformation



Modern work place - Collaboration

Solution Platform

Using technology to drive industry solutions

– People

- No one person can be an expert in every technology. Leveraging the digital highway to link expertise boosts confidence and performance.

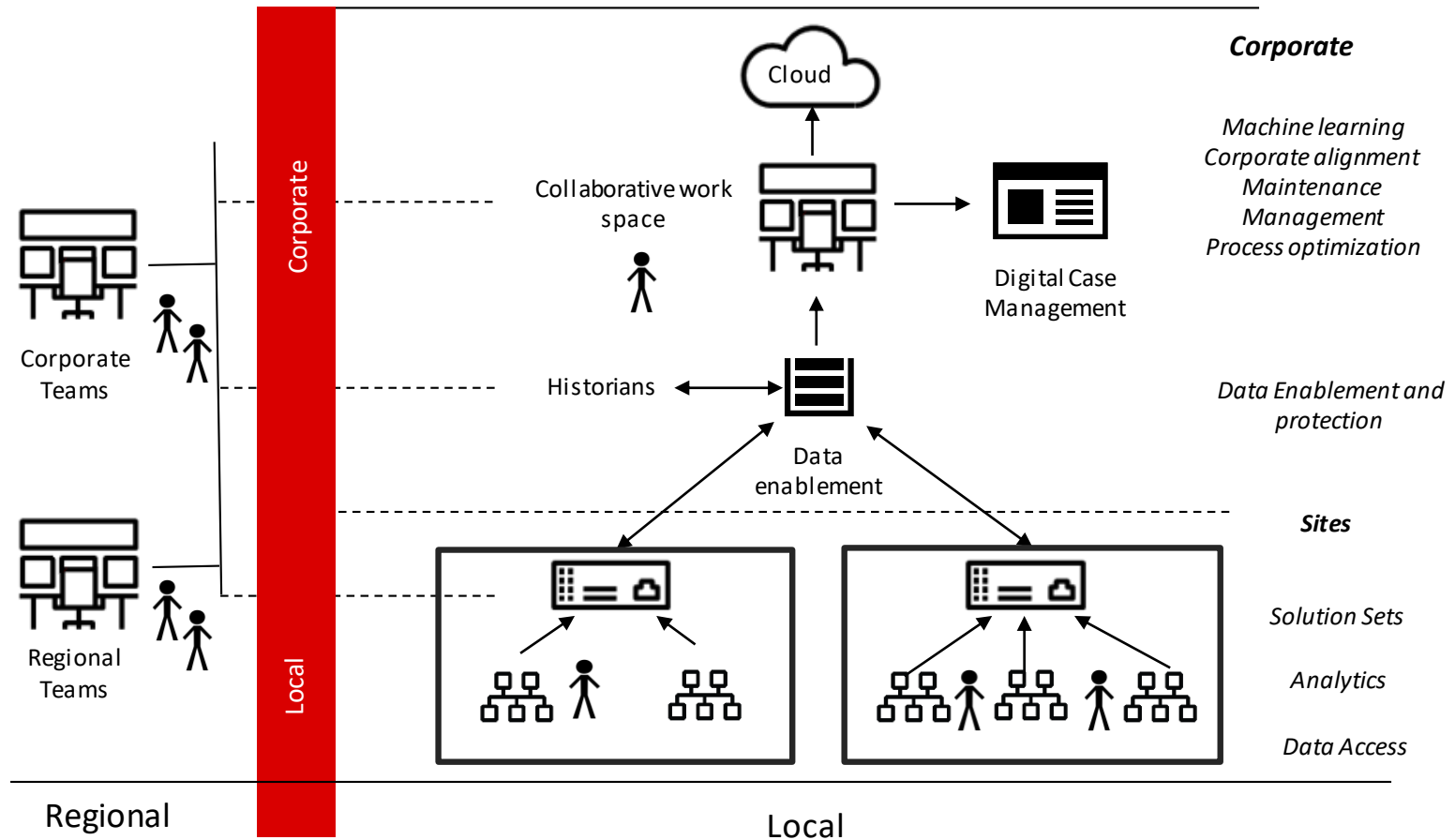
– Solution Process

- No one person can access the health of all technology components simultaneously. Evaluating pain points and then refactoring physical engagements with digital solutions paves the way to success.

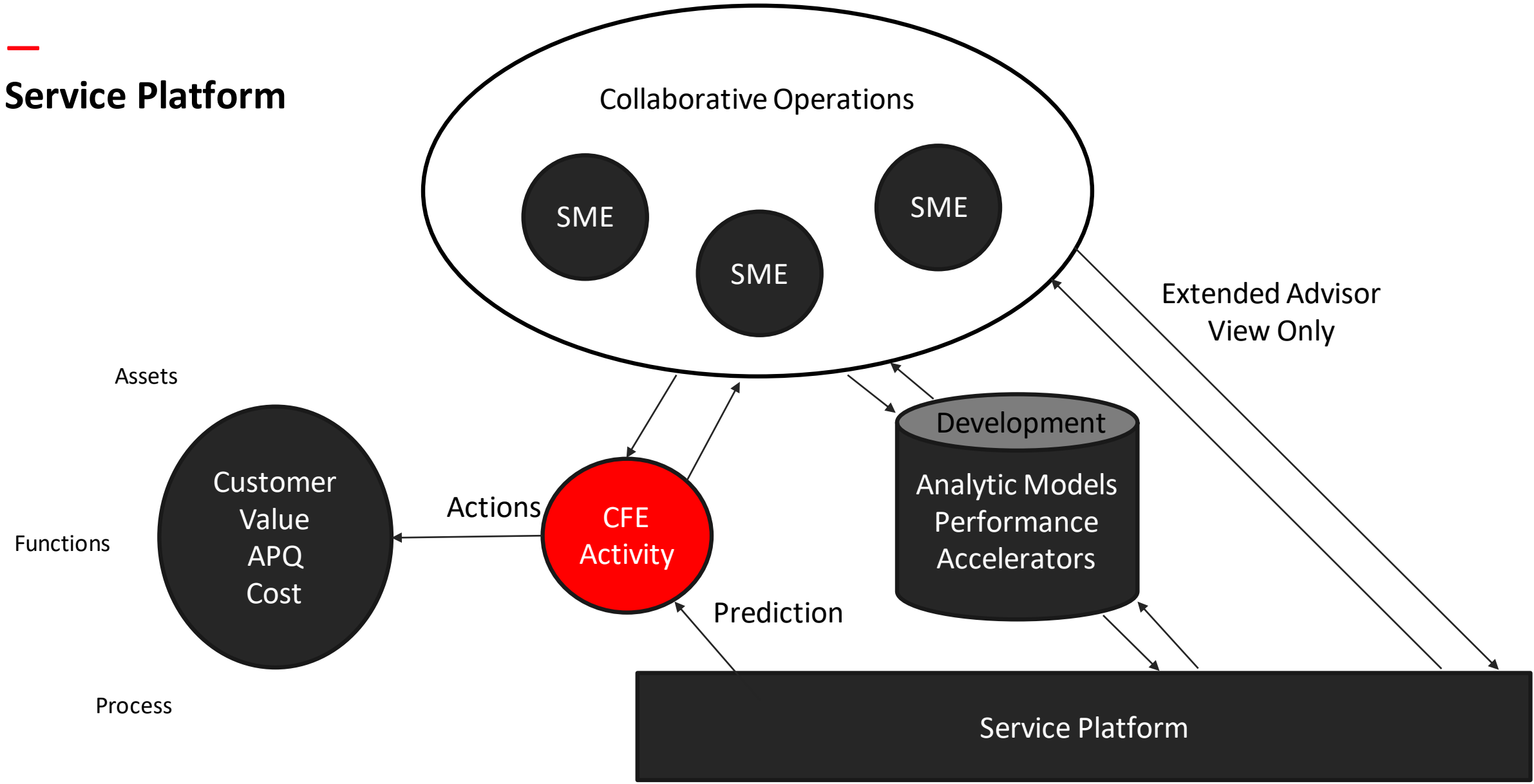
– Technical Tools

- No one person can perform detailed analysis on the 1000's of data points simultaneously. Integrating digital nets to harvest performance via data analytics expands the circle of influence of our people. Thus, preventing down time and accelerating performance

Digital Architecture Overview



Service Platform

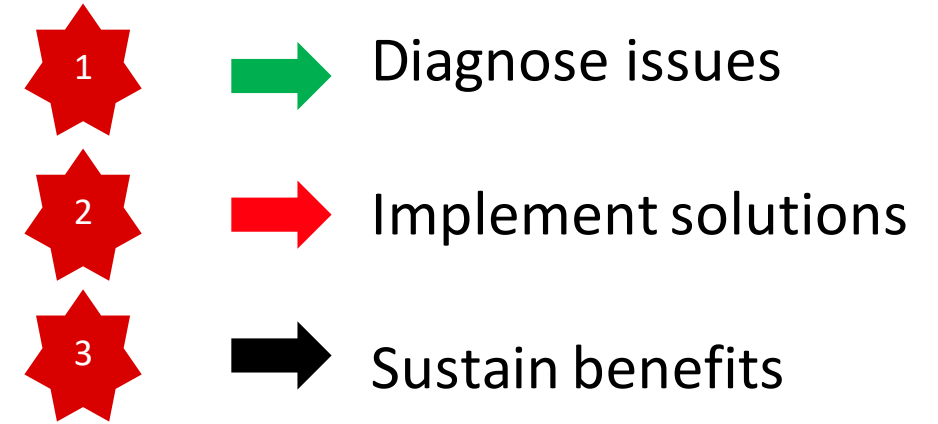
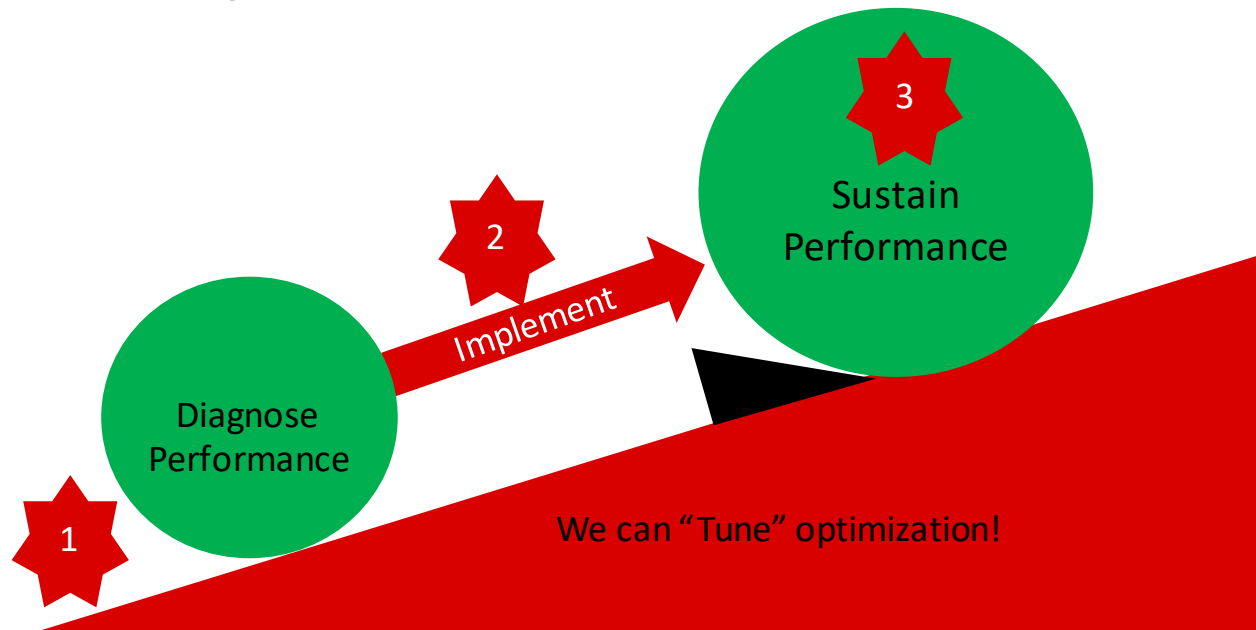


Where to start?

Optimization Management

Value:

- The Right Person
- The Right Time
- The Right Solution



Prevent results erosion with

- Digital rounds
- Implementation
- Performance platform

Optimize the solution process

Issues

- Production,
- Quality,
- Cost to Produce



Diagnose

Issues with Data driven analytic decision trees.

Solution Sets

Issue Catcher

The *right time*: Predictive, prescriptive, Preventive, and lastly Reactive

Implement

Solutions with Design, Tools, and Actions



Solution Matcher

The *right skill* with the *right solution* with the best practices

Sustain

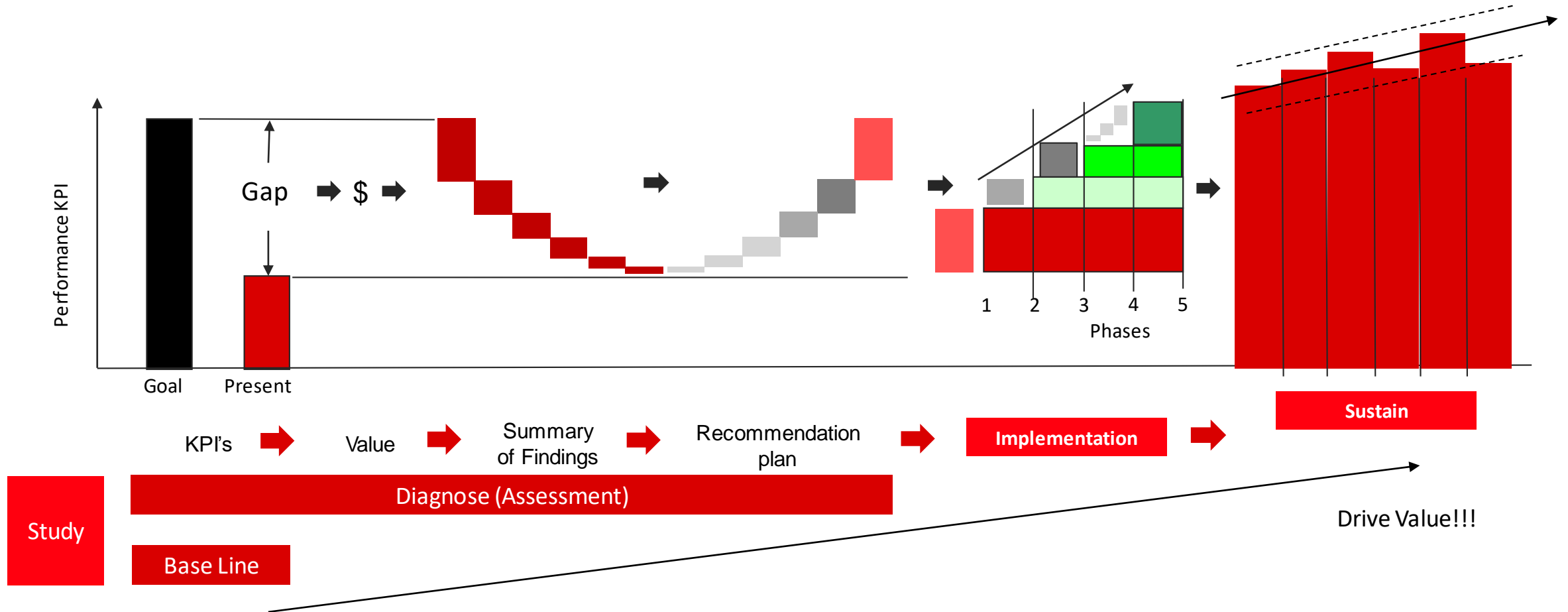
continuous improvement with Predictive data driven Case management, certification, and training

Solution Matrix

The *right value* driving stable and repeatable results with custom solutions aligned to Ability digital components

Proven methodology

1. Find the performance GAP
2. ROI based recommendations
3. Fix the issues
4. Continuous Improvement



Getting Started – Define the problem before you define the solution!

Barrier state analysis – Swiss Cheese Model

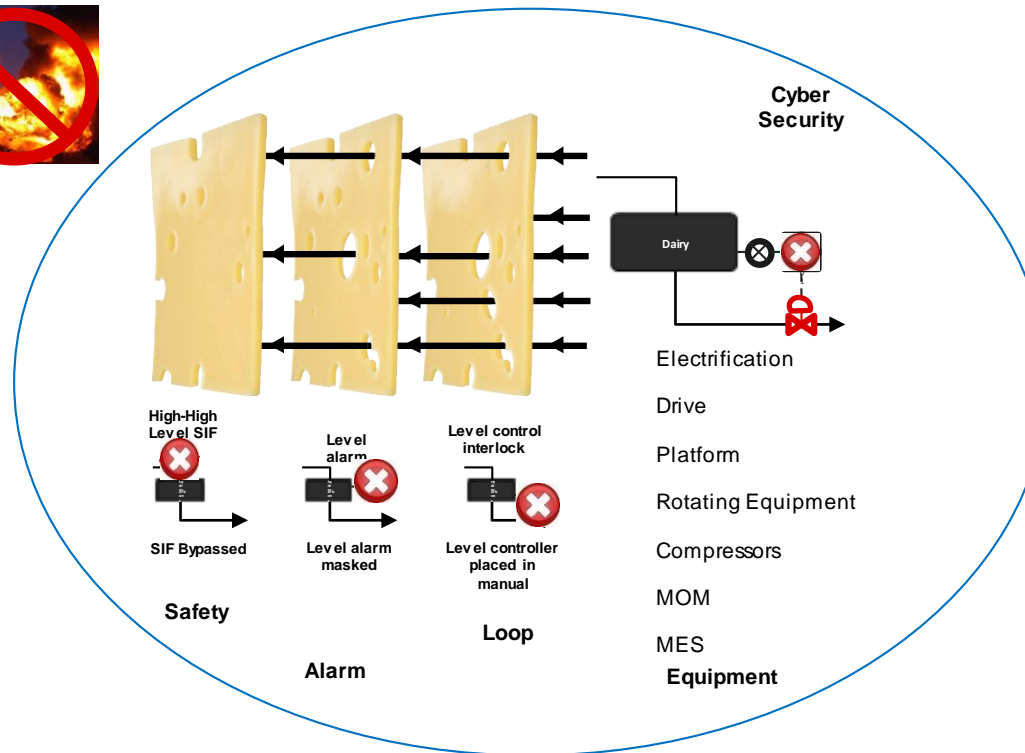
Advanced Services ensures a yes to all three questions:

- Are we **safe** and do we **know it**?
- Are we **reliable** and do we **know it**?
- Are we **optimized** and do we **know it**?

With a Yes – Together we can:

Balance Service:

- Corrective
- Preventive
- Predictive



Are you covered!

“Know it” means:

- What are the threats?
- Where are we vulnerable?
- Have we demonstrated compliance?

Improve Performance:

- Production
- Quality
- Cost to Produce
- Safety

Are you Safe, Reliable, Optimized, and can it be demonstrated

Expertise
Upgrade/Evolution
Parts Management
Utilities & Energy
Actuation
Electrification
Drives/Pumps
Instrumentation
Control Platform
User Interface
Loop Performance
Alarm Management
Safety Management
Cyber Security
Mobility
IT/OT integration



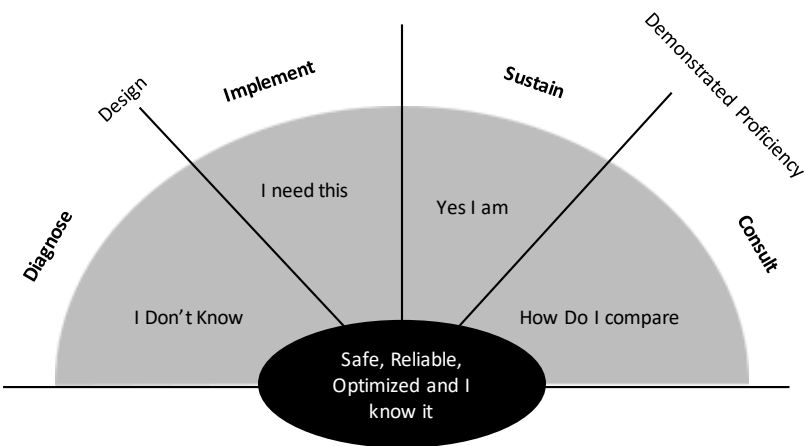
One Simple Question can get you started!

Digital status Worksheet to help get started

Start where you are

Instructions

- Please check the box that best describes your answer to the question “Am I safe, reliable and optimized, and can I demonstrate it?”
- Please indicate your top three priorities



Am I safe, reliable and optimized, and can I demonstrate it?	Where do I start	Need resources to help solve issues	How do I protect my results	Predicting Performance/ Prescriptive Maintenance	Number Your Top 3 Priorities
	I don't know	I would be if	I don't want to lose my results	How do I compare	
Instrumentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Drives Performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Control Platform	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Loop Performance	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Alarm Management	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Electrification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Product Transitions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
Cyber Security	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
	Diagnostic Evaluation	Corrective actions	A sustain program	Enterprise Management and Machine learning	

Optimization Plan – Value Tracking

Align solution based on Value:

- **Electrification Systems**
- **Process Improvement**
- **Utilities & Energy**
- **Automation & Control**

Example

Rotating
equipment
downtime



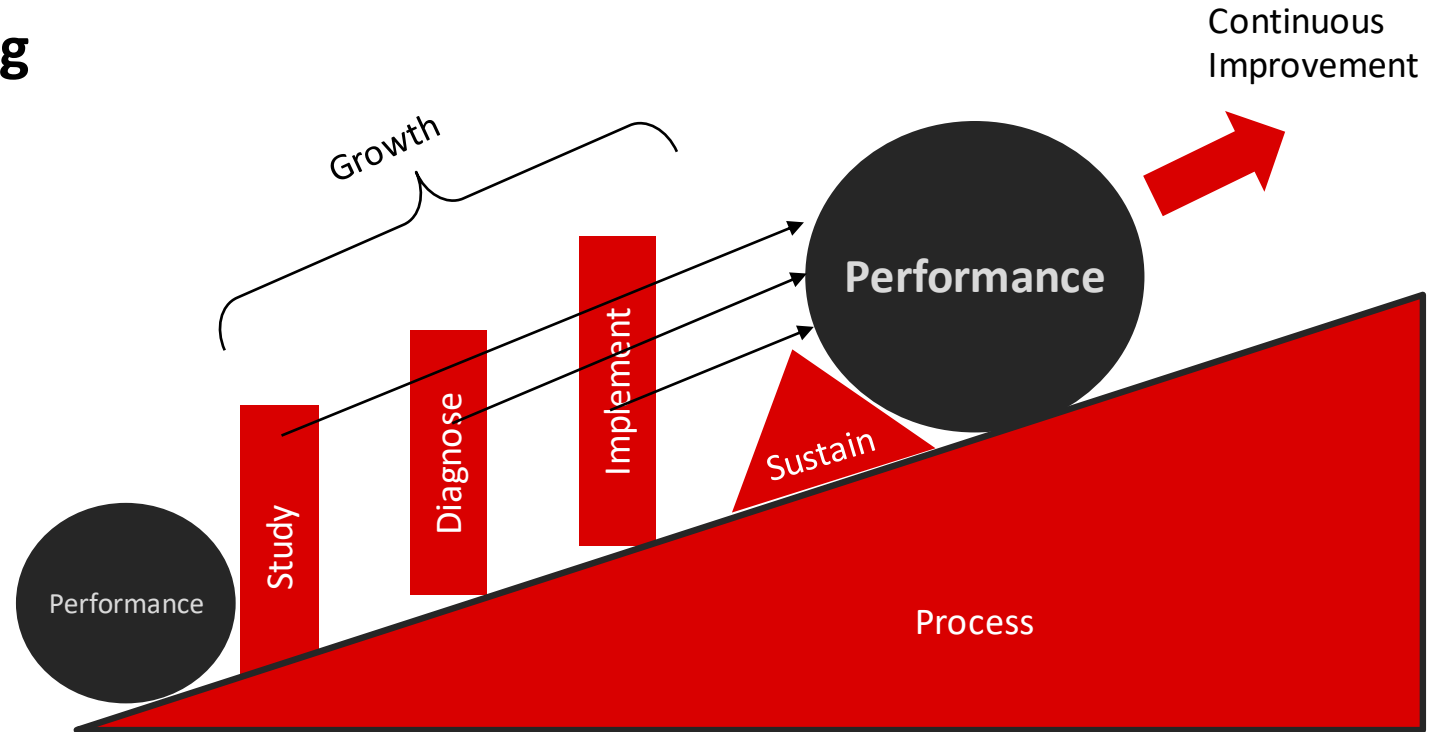
Cyber threats



Broken control
loops



Uncontrollable
alarms



**Start where you are and grow to
where you need to be!**

Digital Transformation

Start from
where you are!

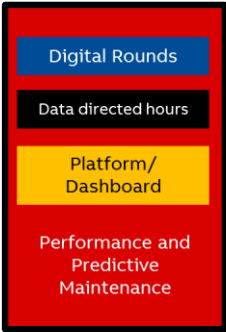
Corrective



Preventive



Predictive



Bridge the gap



Digital solution

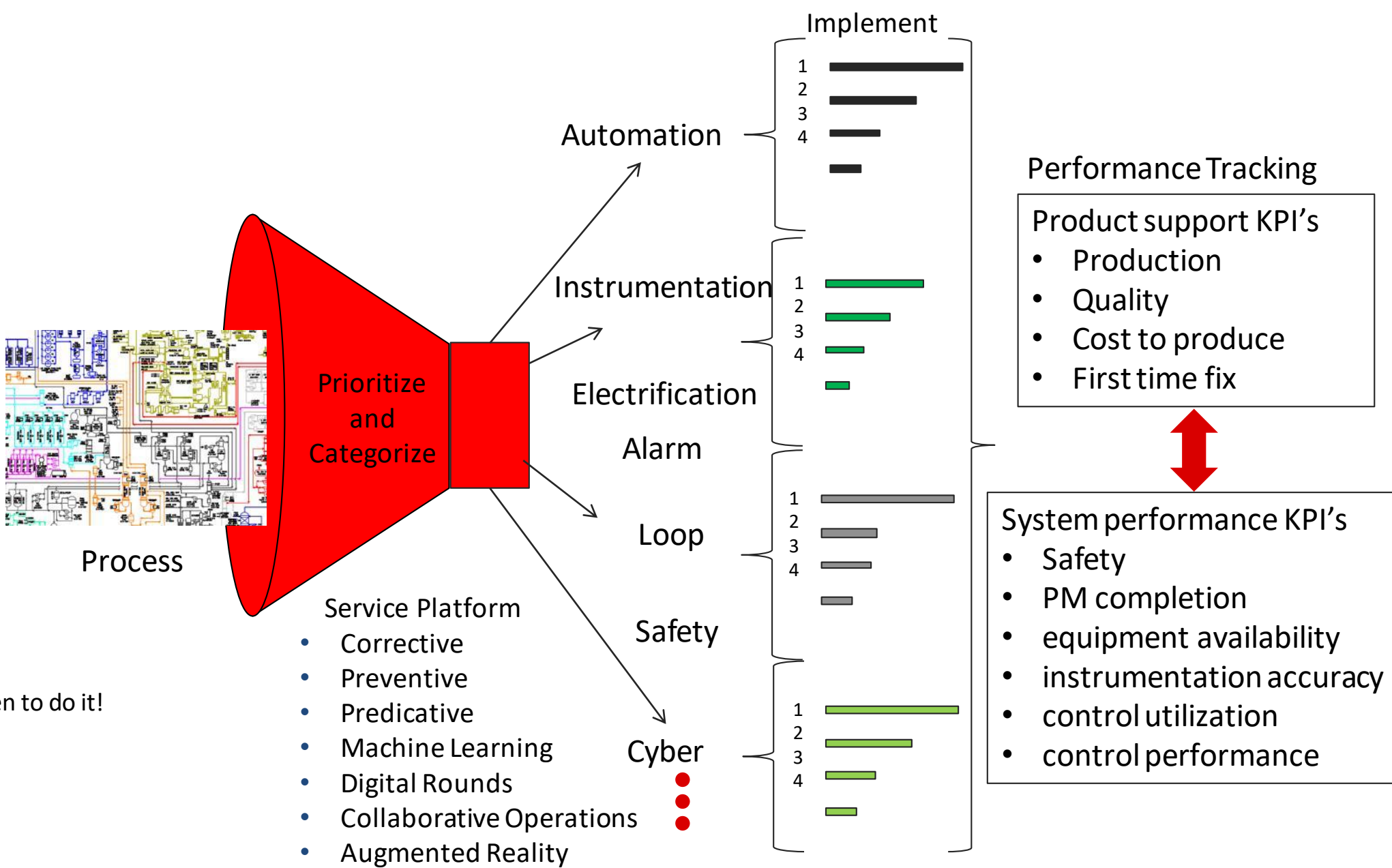
Data driven results

Dashboards

- The right time
- The right solution
- The right person

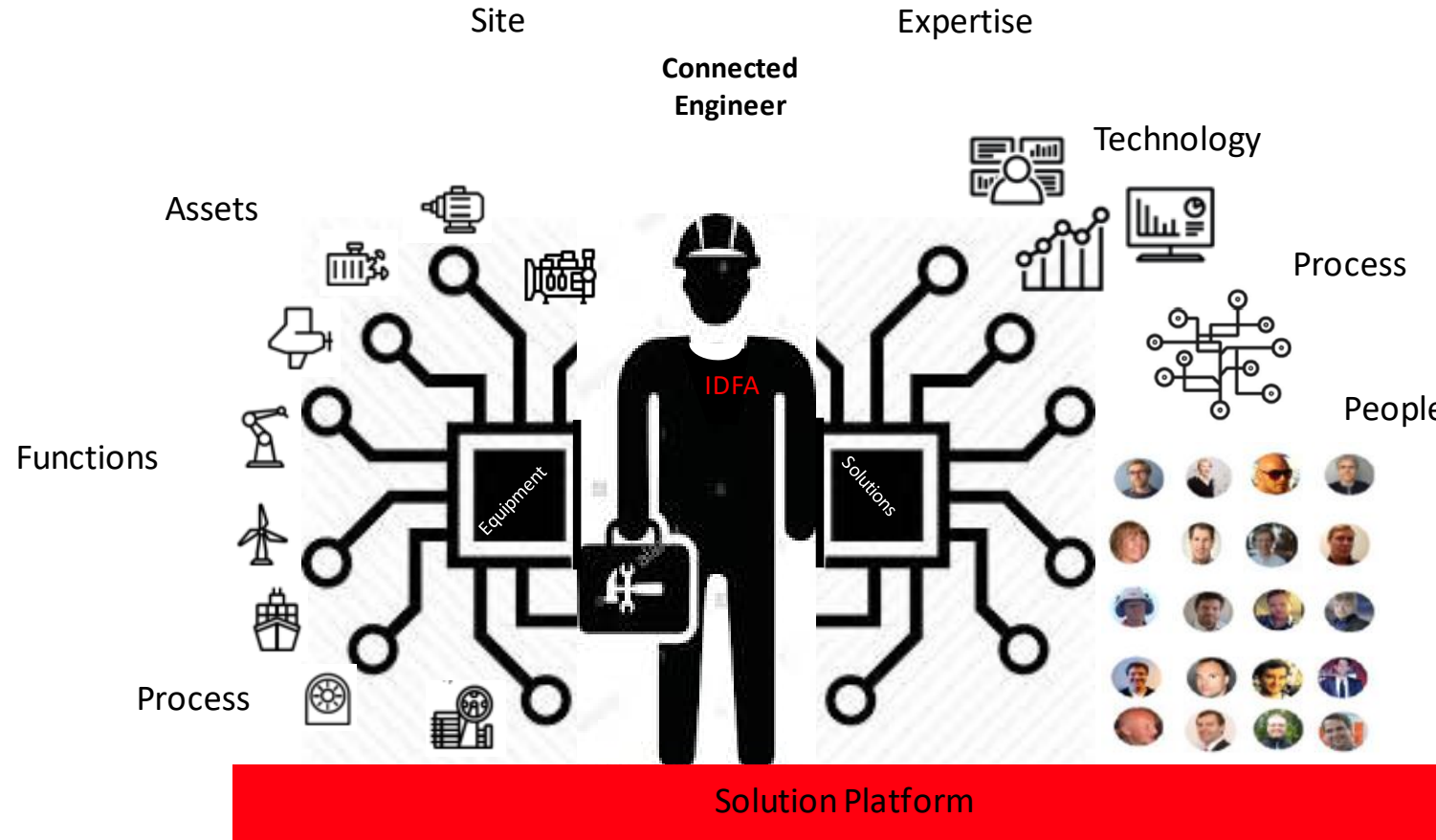
The right value!

You can know:
What to do and when to do it!



Stay Connected – Keep the person in the loop

The right person, the right time, the right solution drives the right value!



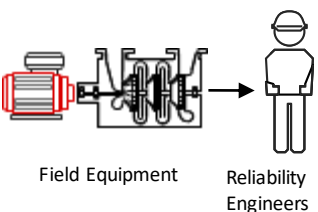
Stay Protected, Plug into Digital!

- Extended Advisor
- Performance Accelerator
- Optimal Implementation
- Maintenance Libraries
- Learning Paths
- Analytic Devices
- Extended Troubleshooting
- Augmented Reality
- Mobility/Safety
- Machine Learning
- Digital Performance Dashboards
- Maintenance Management
- Coaching/Training
- Collaborative Operations

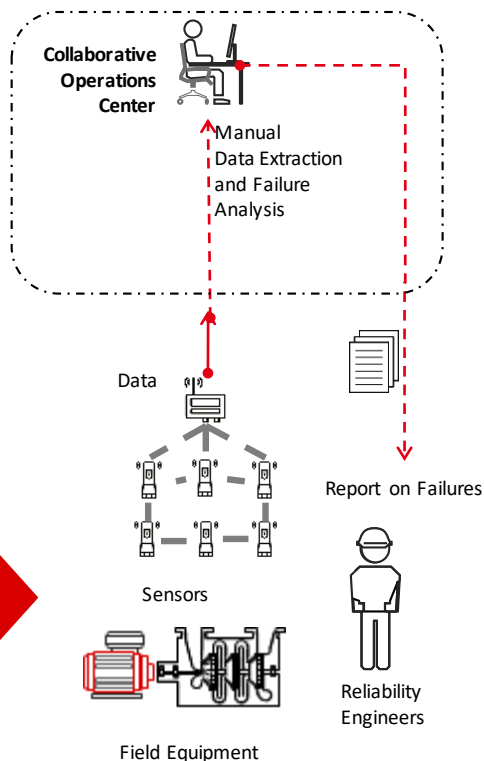
Digital Transformation: Case Study

Project roadmap for drives digital engagement

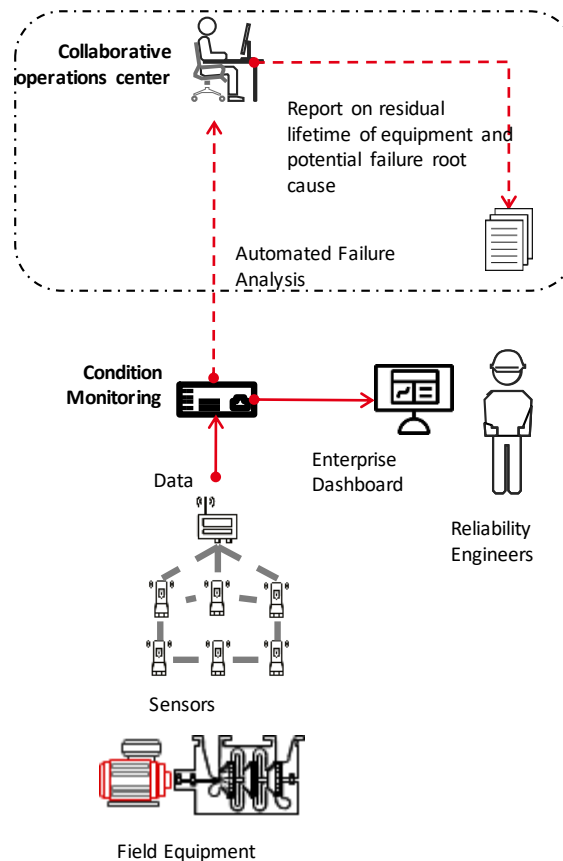
Start where you are and grow.



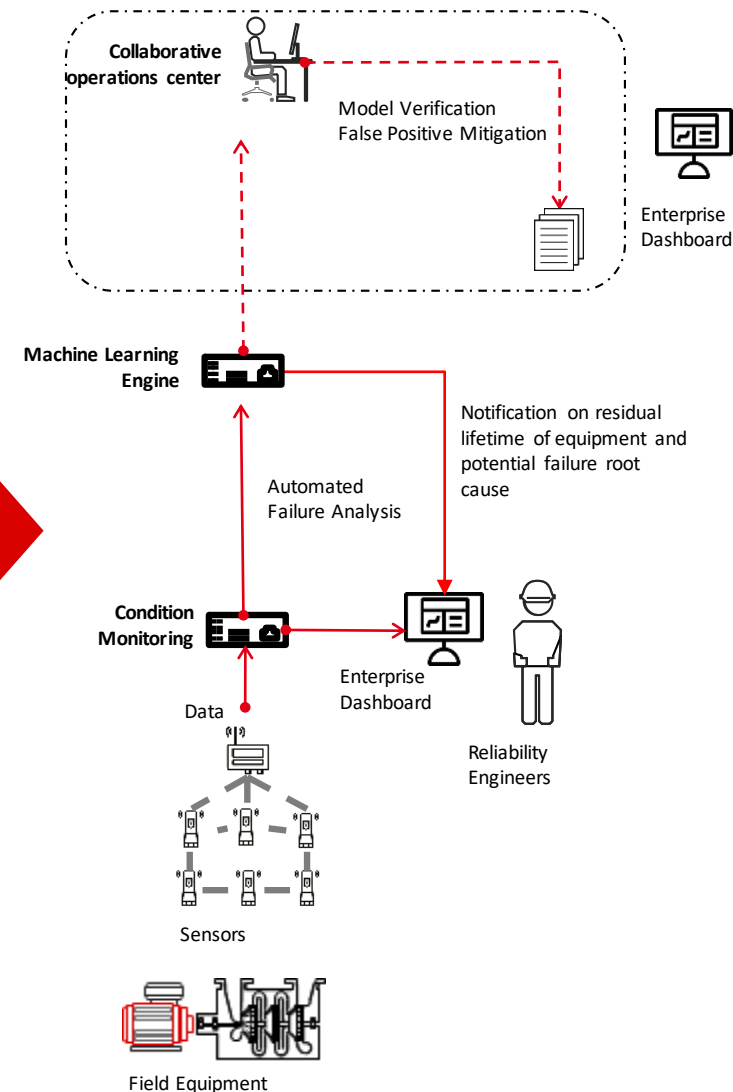
1-Corrective/preventive



2-Digital Rounds



3-Digital Platform



4-Cloud and Machine Learning

In Summary, Digital engagement success factors

Get Started

- Recognize pain points (We don't need cool)
- Productize solutions (A solution impacts the issue)
- Develop a realizable roadmap (Don't get painted in to a corner)
- Document success along the way. (Fish with a net, not a hook)

Service Digital Growth

- Include all assets, functions, and process areas (Reduce risk with repeatable success)
- Focus on driving value: plant production, Quality, Cost to produce (Align solutions with value)
- Provide on ramps for enterprise expansion and Machine Learning (Gain enterprise insights into overall performance)

This engagement model has you covered!

The Digital Solution!

Value

People + Process + Technology

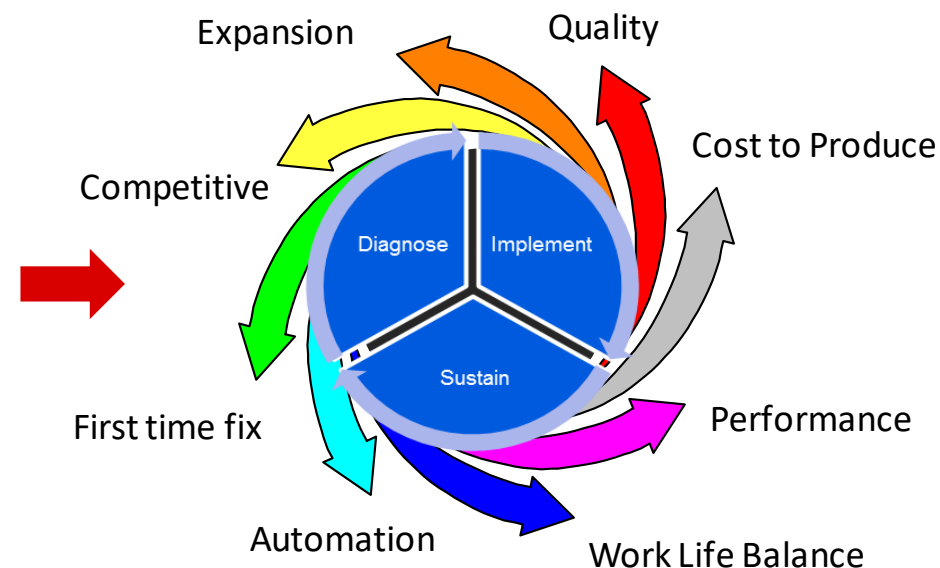
- Electrification
- Assessments
- Coaching/Training
- Collaborative Operations
- Analytic Devices and engines
- Data Security
- Remote/Augmented Reality
- Mobility/Safety
- Machine Learning
- Performance Dashboards
- Maintenance Management
- Manufacturing operations management (MOM)
- manufacturing execution system (MES)
- Enterprise resource planning (ERP)
- Enterprise enablement



Breakthrough!

IR 4.0

Plug in to digital, Drive Performance!





ABB

Abstract

Digital Readiness for the “New Normal”

The digital revolution is opening up worlds of optimization potential for all industries, especially for dairy producers. Deliverables that were once thought impossible are now possible. Companies can no longer wait, as the next normal is rapidly becoming our new normal.

- Are you digitally ready?
- What does that even mean?
- How can you use what you already have to get there?
- What else do you need?

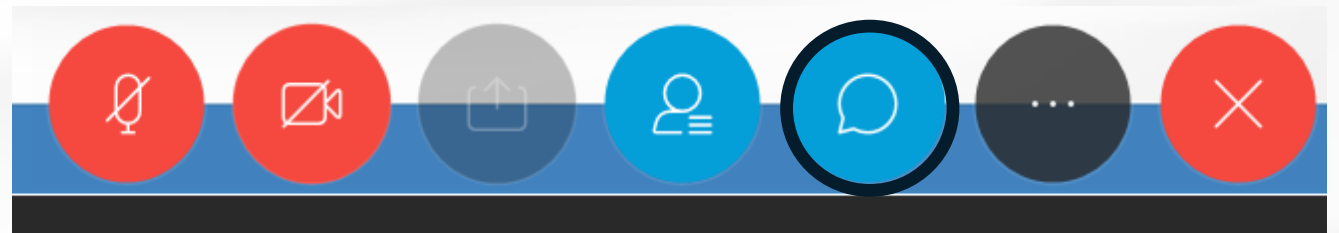
Physical thinking with regards to production, Quality, and cost to produce have set the stage for acceleration on to the digital highway to protect and enhance performance, even in these uncertain times. Connectivity and collaboration technologies ensure that instant access to the right person at the right time with the right solution drives the right value! Unraveling this riddle is the secret to successfully meeting today’s challenges, while looking ahead to growing your business tomorrow.

This webinar explores these digital trends and how best to navigate them for success! Today's solutions service build on the success of what we have done, but refactoring those deliverables to take advantage of the technology available is the key.



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Questions?



- **Step 1:** Select the chat bubble
- **Step 2:** Type your question into the chat box and click the “Enter” button



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Thank You!

