

# From STE to S1000D to IoT

## How Simplified Technical English, Combined with S1000D and IoT, Improves Profitability

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# Etteplan

## – a growth company

Rapidly growing and developing engineering services company

Our customers are global machine and equipment manufacturers

We stand out by the high-level competence and service attitude

Founded 1983 | Nasdaq Helsinki Ltd



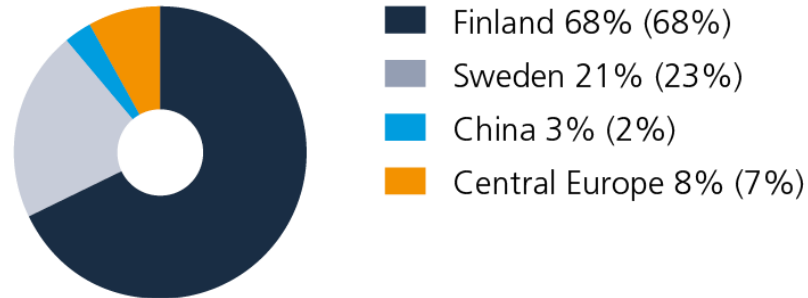
~250

REVENUE, USD MILLION 2017

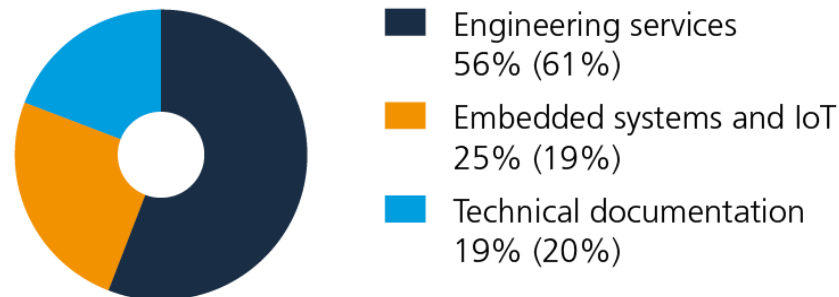
> 3,000

NUMBER OF PERSONNEL

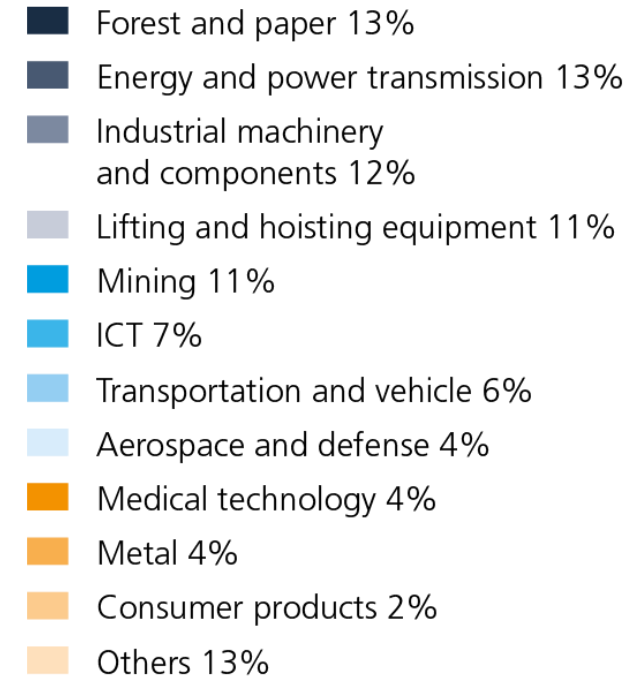
### Revenue by geographical area 2017 (2016)



### Revenue by service area 2017 (2016)



### Revenue by customer segment 2017

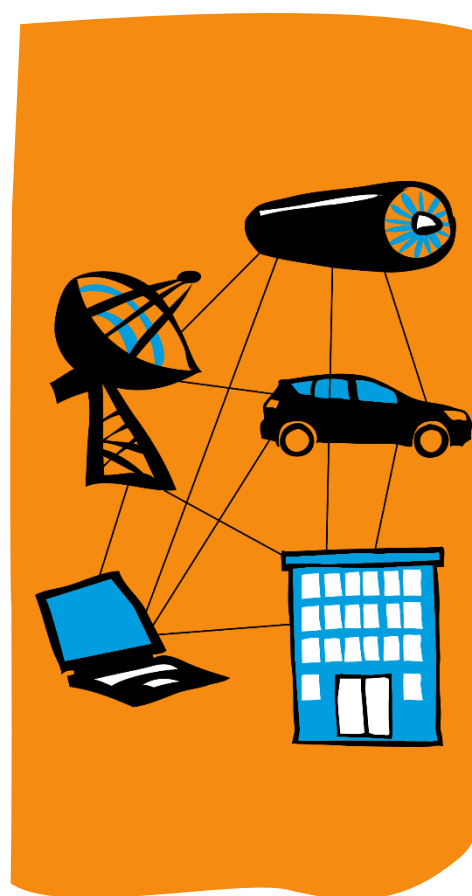
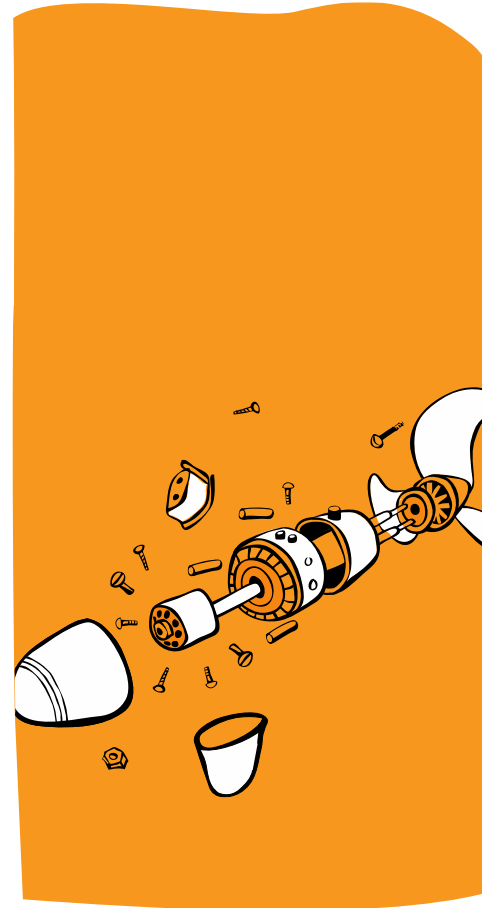


# Expertise and services

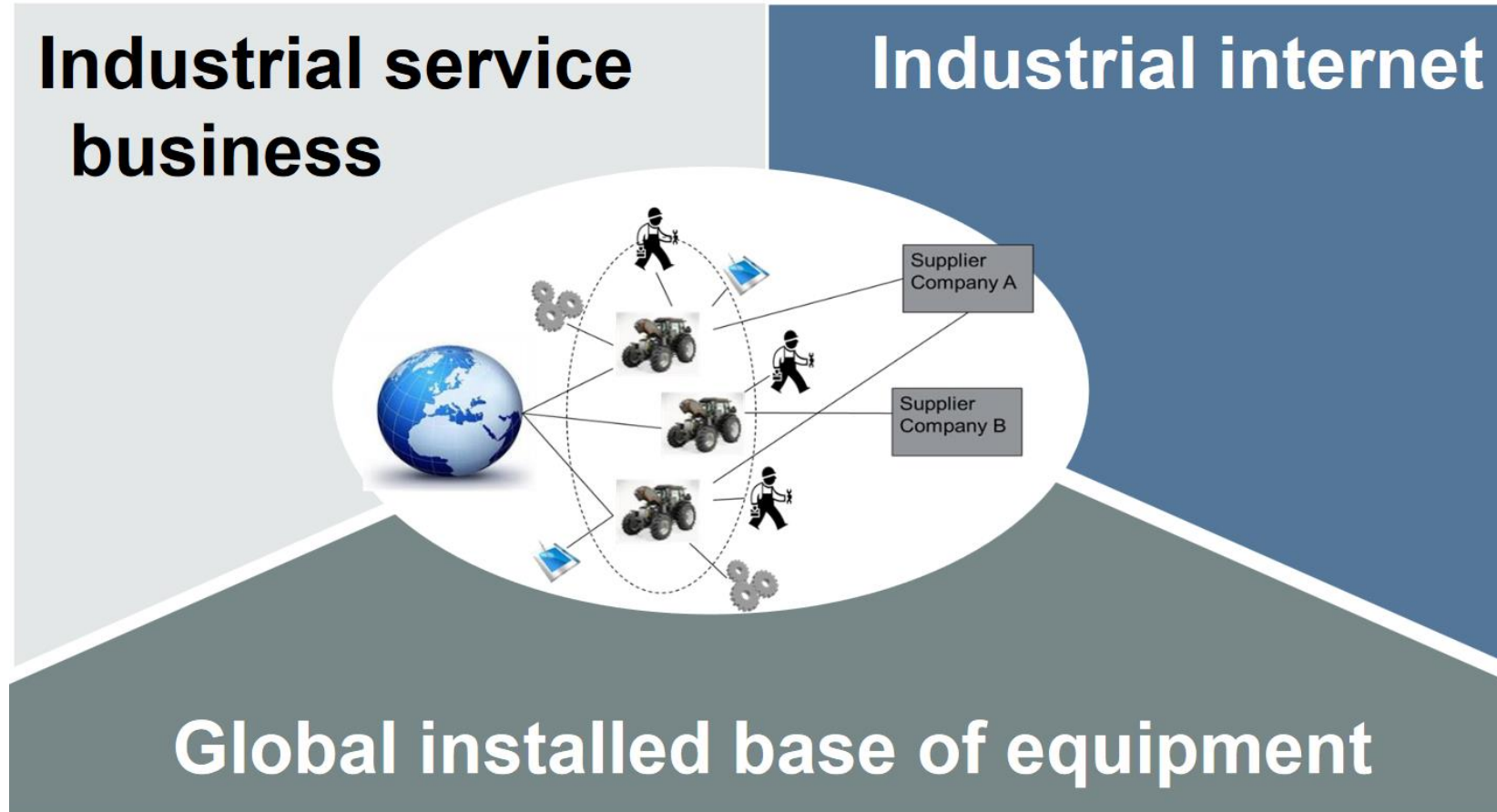
1. Engineering

2. Embedded systems & IoT

3. Technical documentation



# Industrial service business is a critical component of our competitiveness



# How IoT is transforming service

- Maintenance is increasingly seen as a strategic business function
- IoT isn't just about how assets and devices are connected
- It's how leading firms are improving service, building better products and boosting workforce productivity



# Impact on technical publications: Emphasis on the Service / Aftermarket Business

- Maintenance is increasingly seen as a **strategic business function**
- IoT isn't just about how assets and devices are **connected**
- It's how leading firms are **improving service**, building **better products** and **boosting workforce productivity**

**Traditional**



**Product Transaction Model**

- Warranty Support
- Replacement Parts
- Field Service
- MRO

**Future 2018 ->**

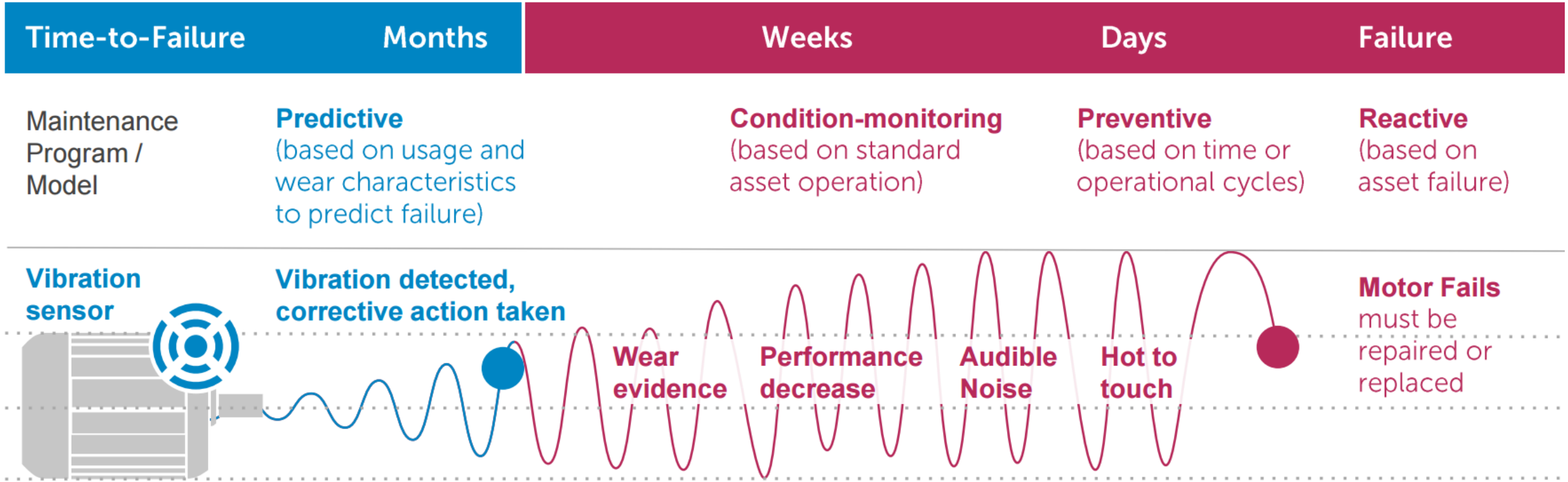


**Customer Relationship Model**

- Remote Monitoring & Diagnostics
- Predictive Maintenance
- Enhanced Services
  - Performance
  - SLA
  - Energy management
  - Etc.
- Hybrid Product/Service offering



# From reactive to predictive maintenance



# With IoT, service organizations can:

- Remotely diagnose and repair customer equipment
- Proactively address maintenance issues
- Improve first-time fix rates



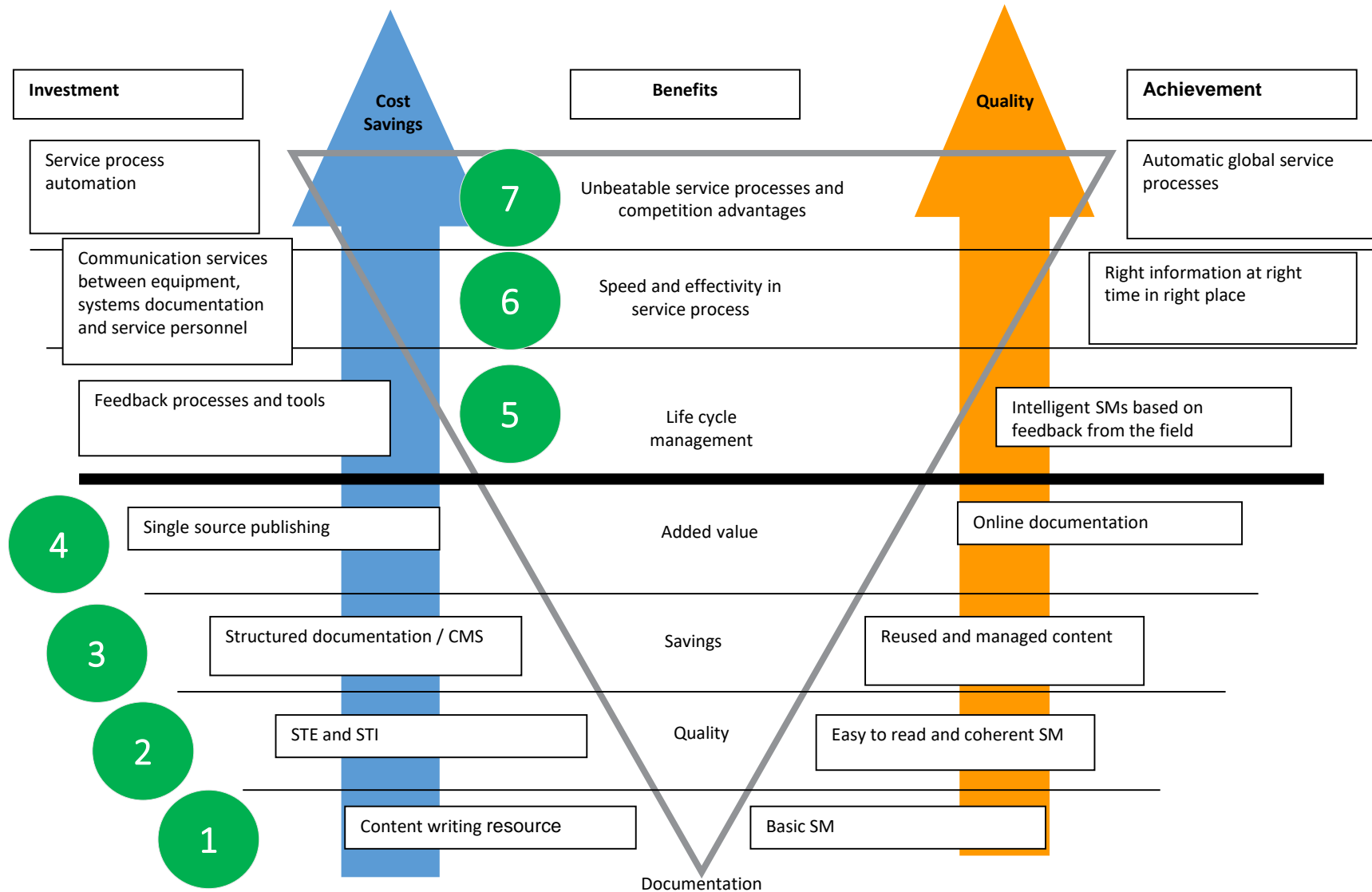


# What kind of challenges are we addressing?


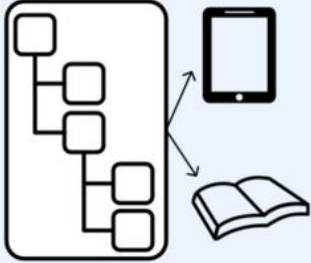
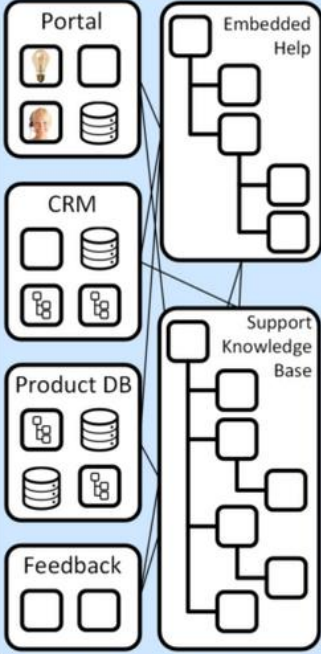
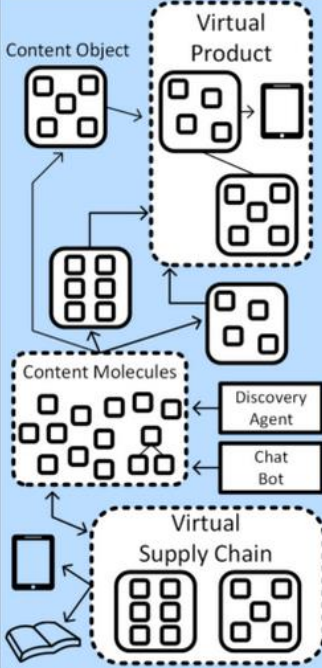


- Aging field service personnel
- Knowledge loss
- Information is becoming more complex
- Massive volumes of maintenance information
- Geographically separated service centers
- Non-native speakers or inexperienced maintenance personnel
- Various levels of technical skills
- Shorter response times

# Technical Documentation Maturity Model

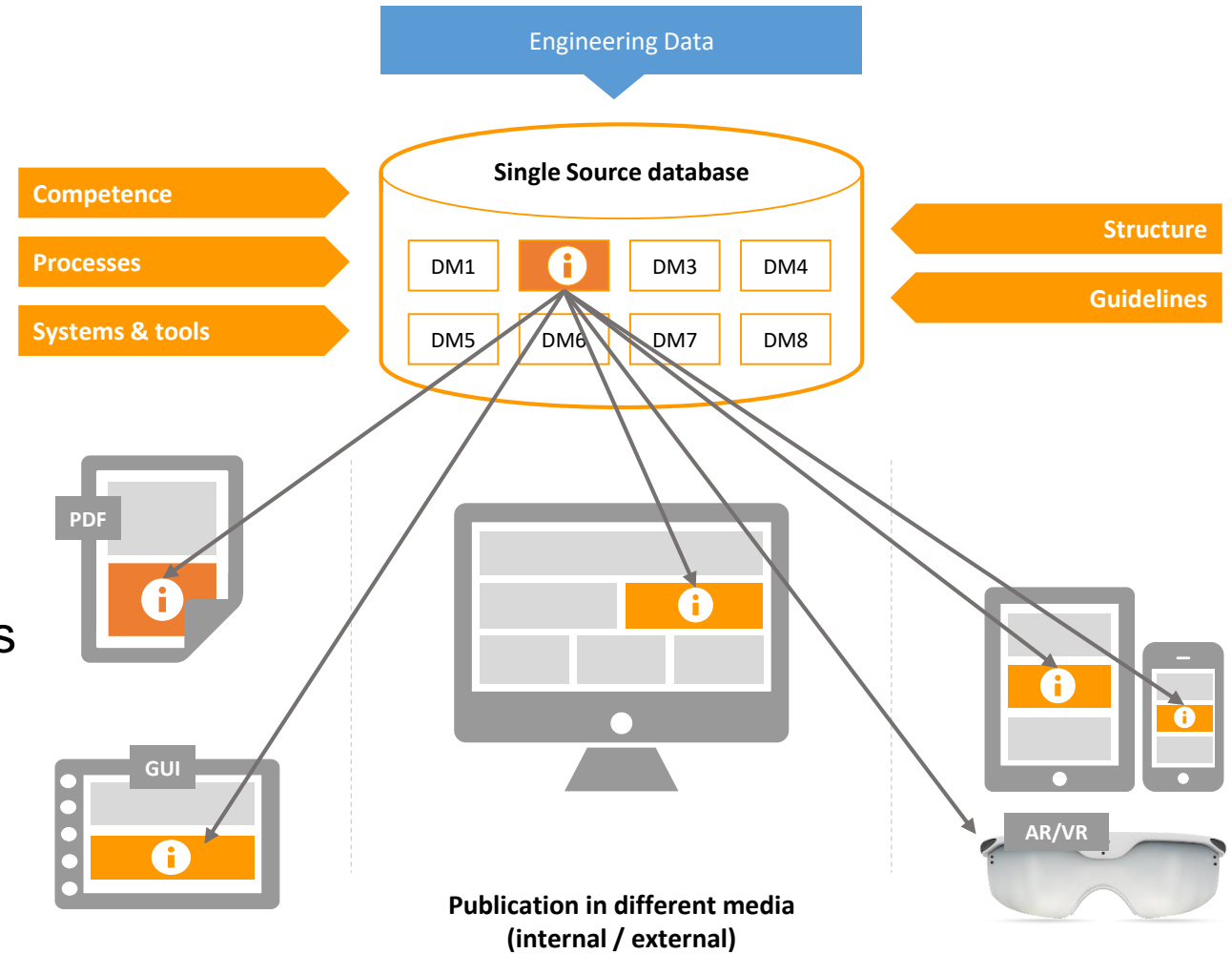


# Content 4.0

Information 1.0	Information 2.0	Information 3.0	Information 4.0
One Format One Owner One Delivery One Publisher	Many Formats One Owner One Delivery One Publisher	Many Formats Many Owners Many Deliveries One Publisher	Many Formats Many Owners Many Deliveries Many Publishers
The Emergence of Content 4.0 for Industry 4.0			
Content 1.0 Publications	Content 2.0 Topics	Content 3.0 Components	Content 4.0 Molecules & Objects
 <p>Illustration collaboratively produced by Marie Girard (IBM) &amp; Joe Gollner (Gnostyx)</p>			
Industry 1.0	Industry 2.0	Industry 3.0	Industry 4.0

# Model for TechDoc

1. **S1000D** for structure
  1. Reuse (single sourcing)
  2. Easier to manage
  3. Faster to find information
  4. Multiple publication formats
  5. Data exchange
2. **Simplified Technical English** for content
3. **Simplified Technical Illustration** for structure and simplification of illustrations – from 3D to reusable SVGs
4. **Experienced** documentation specialists



# Content starts with clarity at the source: Simplified Technical English

- Official Specification, ASD-STE100
- Issue 7 (January 2017)
- STE makes technical English easy to understand
  - **Writing rules**
  - Keep it simple, be specific, be consistent
  - **Standardizing terms**
    - One word = one meaning
    - Core dictionary (3000)  
plus company dictionary

## Writing Rules

Grammar & Style  
Approx. 60 rules

## Core Dictionary

approved words  
non-approved words

## Company Dictionary

Company specific terminology



# STE Implementation

1. Dictionary (and sentence database) building (4-6 weeks), based on cross-section of documentation
2. Checker software
3. Training of authors (optional but recommended)
4. Support
  1. Roadmap, define milestones (review, feedback)
  2. Technical and linguistic support (SLA)



# Survey Results

- Up to 30% in cost savings on translation and localization
- Up to 40% in reduced word count
- Quality improvement in writing and translations
- Up to 30% in reduced product cycle time
- Up to 40% reduction in overall documentation cost
- Efficient conversion of legacy documents
- Future proof content (publish concise content to mobile devices)

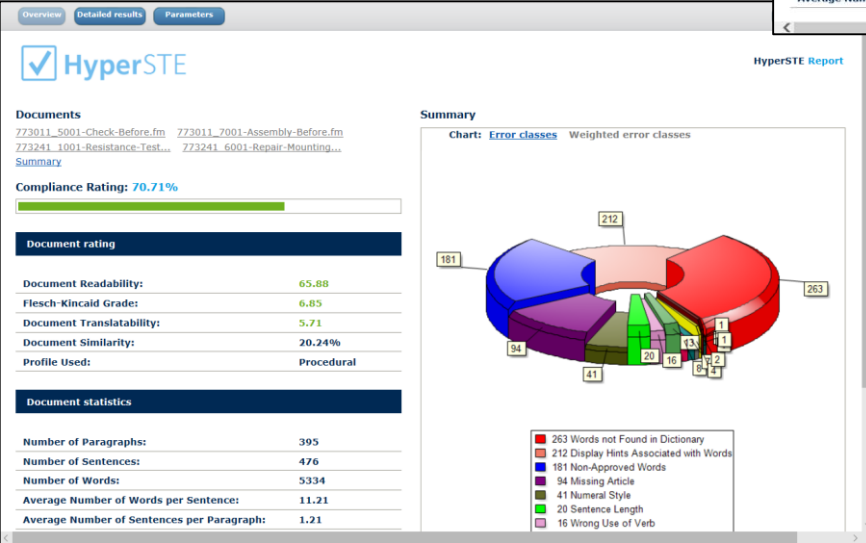


# Connecting STE to IoT

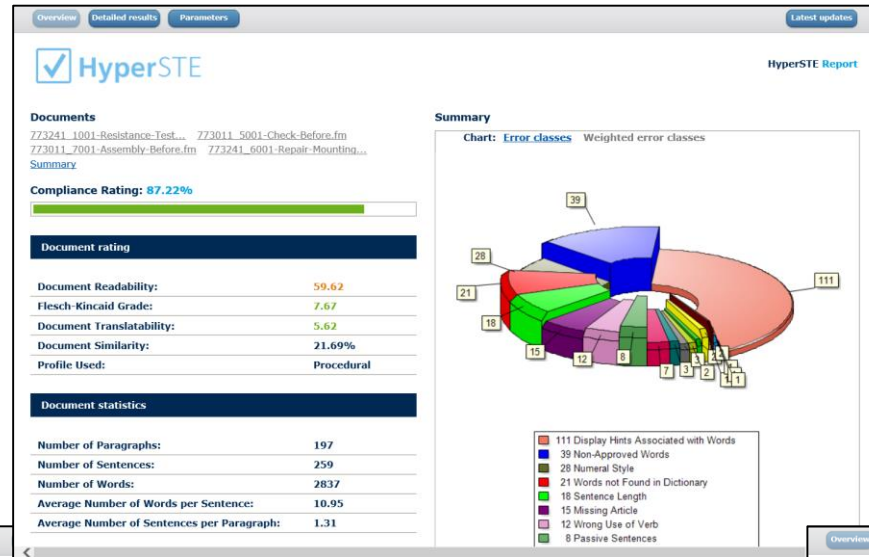
- IoT enables real-time data and context sensitivity / awareness, so information must also be responsive, molecular
- With STE you achieve clarity and a structure that better facilitates use in IoT thanks to clear and concise use of topics
- STE will support your digitalization and IoT strategies even better

# Complimentary Business Case Analysis

**Step 1:**  
**Baseline measurement.**  
**Compliance Rating: 70.71%**



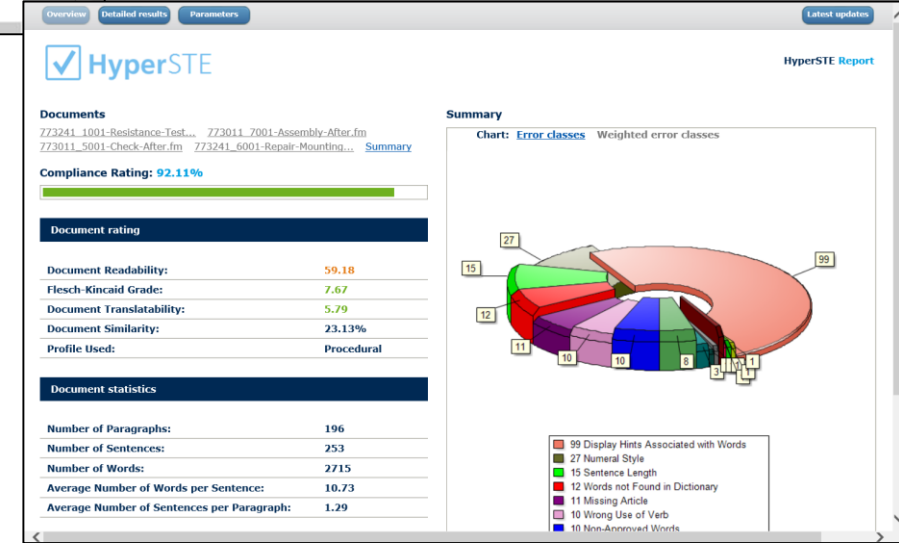
**Step 2:**  
**Standardize on terminology**  
 by expanding the Meggitt dictionary including approved and non-approved words.  
 New compliance rating: **87.22%**



**Step 3:**  
**Re-write the manual using STE rules and HyperSTE.**

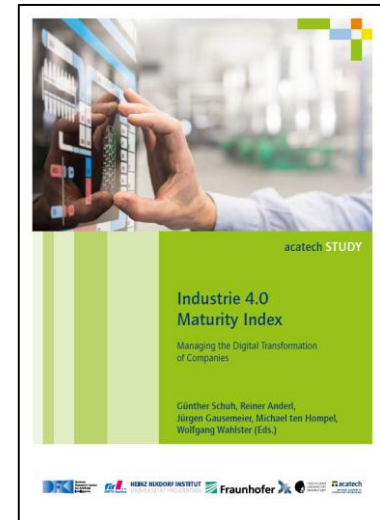
New compliance rating: **92.11% plus reduction of 40%.**

Before a document is released it should have a minimum compliance rating of 90%.



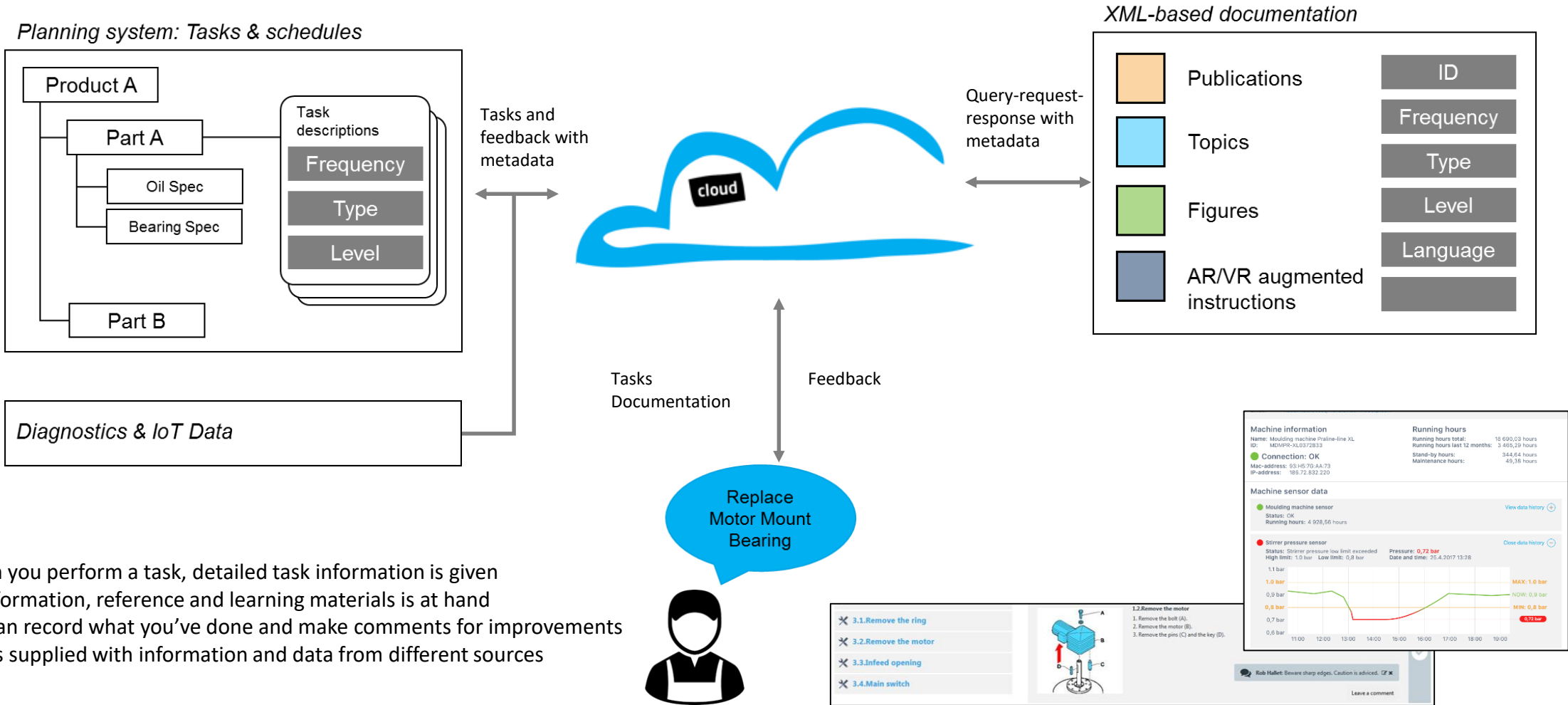
# How does this impact service information?

- **Applicability of content** – product identification and what to do next
- **Information modules** – less documents
- **Assembled** – human and non-human information integrated into valid “compounds”
- **Data types** – connect data (internet) with products (things)
- **Spontaneous** – triggered by context and events
- **Offered** – rather than delivered
- **Dynamic** – continuously updated
- **Online** – searchable and findable
- **Delivery mechanism** – delivery model to allow information to be published on mobile devices (PDF vs app vs experience)



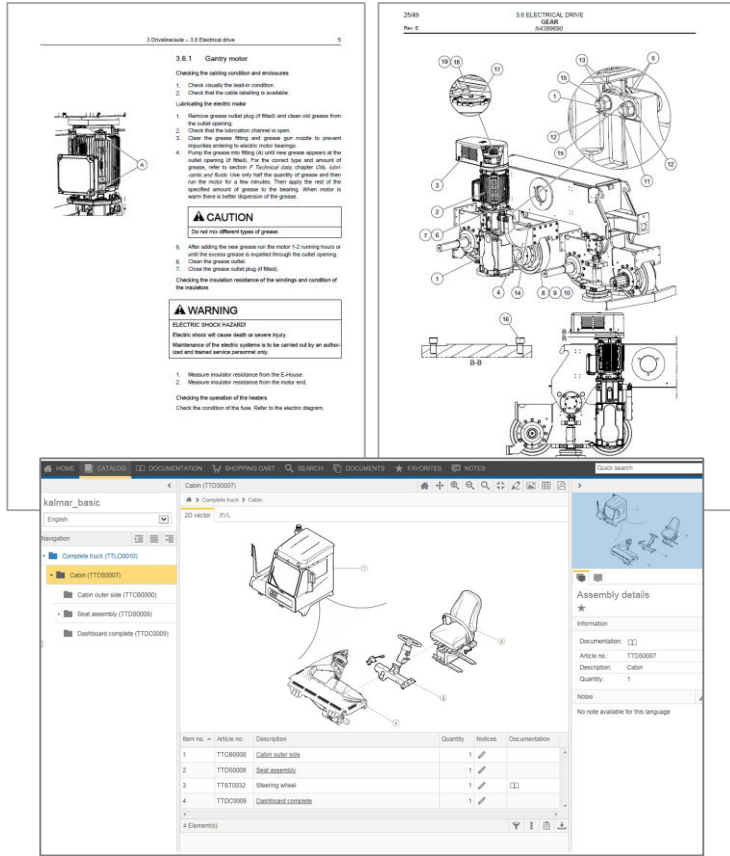


# Support maintenance using smart information



- When you perform a task, detailed task information is given
- All information, reference and learning materials is at hand
- You can record what you've done and make comments for improvements
- App is supplied with information and data from different sources

# Current vs future experience, example



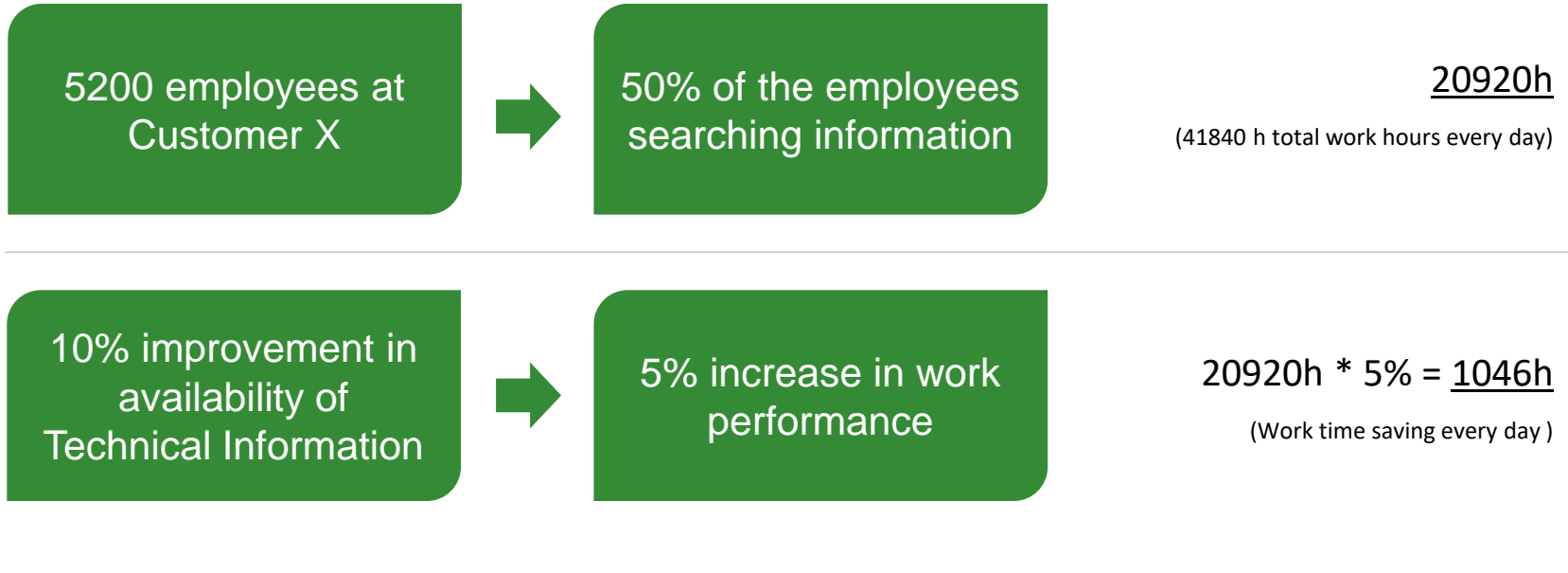
Structured service information published as paper/PDF format and as electronic service information portal.



Service information triggered by an event (service request in a maintenance system) and merged with service procedures and "thing data" like sensor readings and fault codes.

# Business Case Calculation

## Field operations excellence

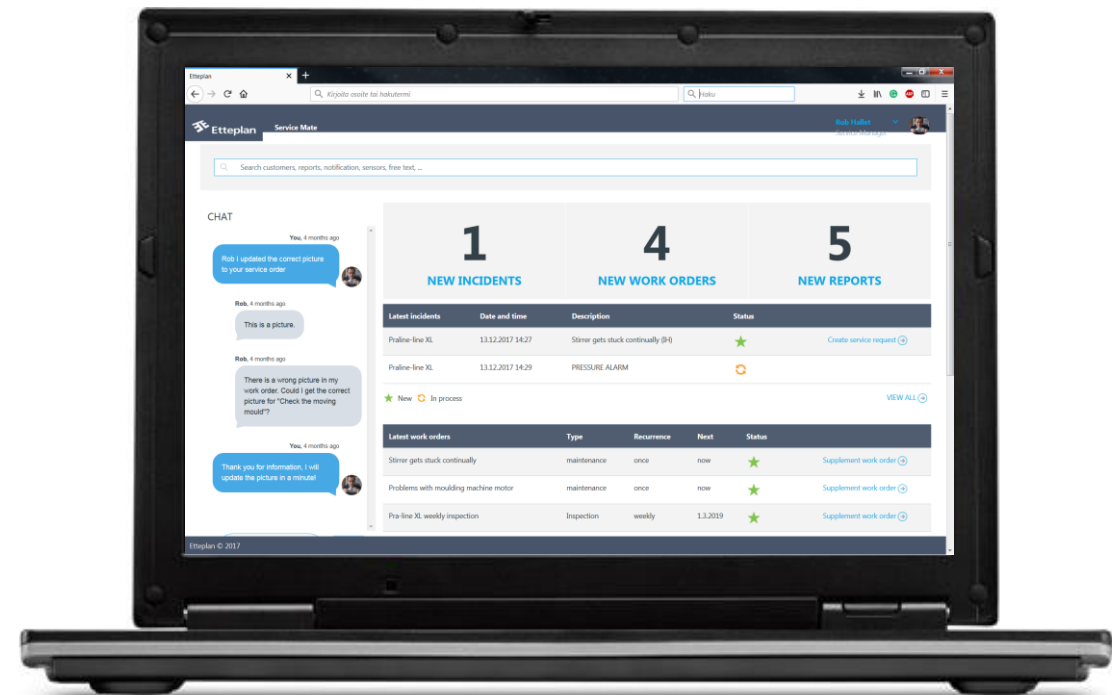


**130 full time employee time saving and business efficiency on annual basis**

It is realistic to say that 50% of the service people could save 5% of their work time by improving availability of Technical Information.

# Make your existing service business more valuable with digital inspection tools, intelligent IoT data and service information

- Access all client and job details, anywhere, anytime
- Use digital inspection tools and checklists to ensure jobs are done right
- View all parts & service documentation, technical bulletins and related information
- Provides real-time visibility into remote devices, check their status or view reports on the current operational performance
- Integrate with on-premises and SaaS (software as a service) applications via prebuilt integrations



# Job management & history

- Access all client and job details, anywhere, anytime
- Access a full service history, including notes, photos and messages
- Bring up past and future jobs instantly
- Search for anything from client name to job numbers
- Get directions and instructions to the job sites
- Easy to integrate with existing EAM and other enterprise systems

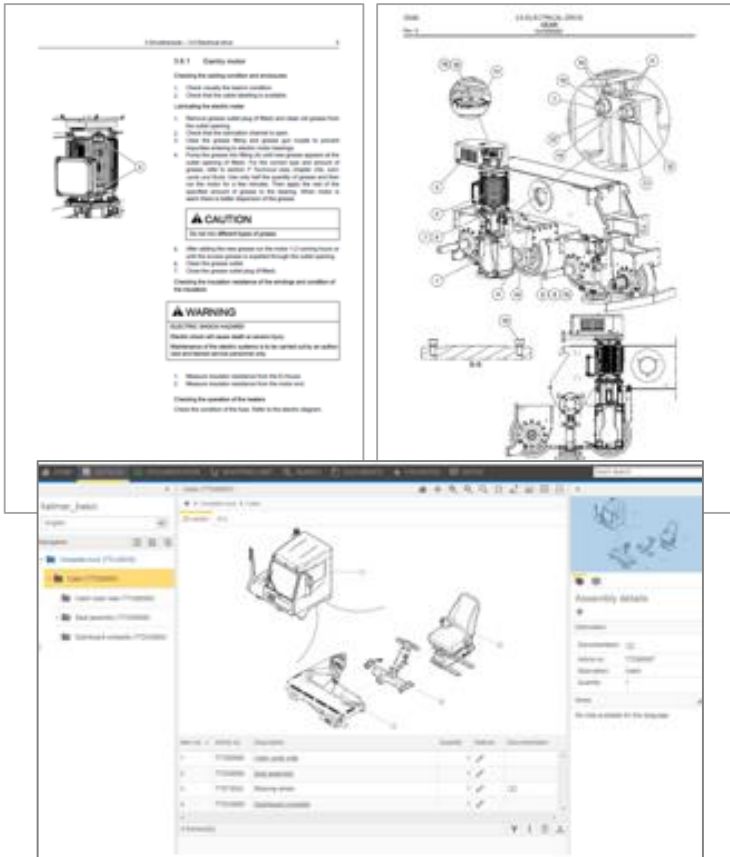
The screenshot shows the Etteplan Service Mate dashboard. At the top, there's a navigation bar with 'Etteplan Service Mate' and a user profile 'David Zayas'. Below the navigation bar are three tabs: 'DASHBOARD', 'DOCUMENT BROWSER', and 'FORMS'. The main content area is divided into two sections: 'Work orders' and 'Reports'. Each section has a summary card with a large number (3) and a 'NEW' button. The 'Work orders' section lists three items: 'Stirrer gets stuck continually' (20.10.2017), 'Problems with moulding machine motor' (15.11.2017), and 'Pra-line XL monthly inspection' (27.12.2017). The 'Reports' section lists three items: 'Problems with stirrer' (02.01.2018), 'Problems with moulding machine's motor' (02.01.2018), and 'Stirrer needs to be replaced' (11.01.2018). A 'SEE ALL' link is visible on the right side of the Reports section.

The map shows a grid of halls (HALL D3 to HALL D9) and a 'Security' area. A blue route is highlighted, starting from the 'Security' area, going north, then east, then north again, and finally east towards 'HALL D8'. A red '1' is placed at the end of the route. To the right of the map, there is a 'Getting to site' section with directions: 'From Palmas airport take route TO-070 south to Tocantia. Drive 72 km and turn right towards Novo Acordo. Drive route TO-383 98 km and the site is on the left.' Below that is an 'At the site' section: 'At the gate, ask to meet your contact person. First you will get a pass to walk alone from gate to your working station.grdngx'. The final section is 'Conditions at site' with the note: 'Heavy rain is to be expected.'



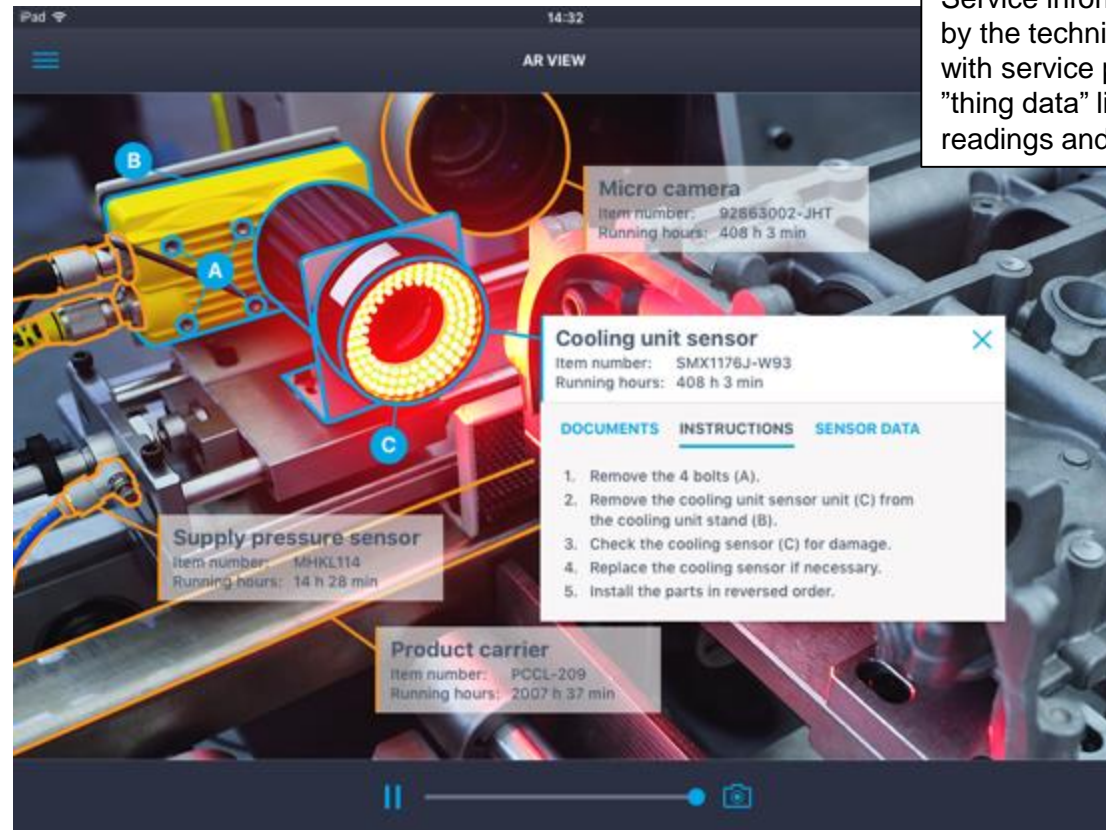
# Augmented Instructions

Today



Structured service information published as paper/PDF format and as electronic service information portal.

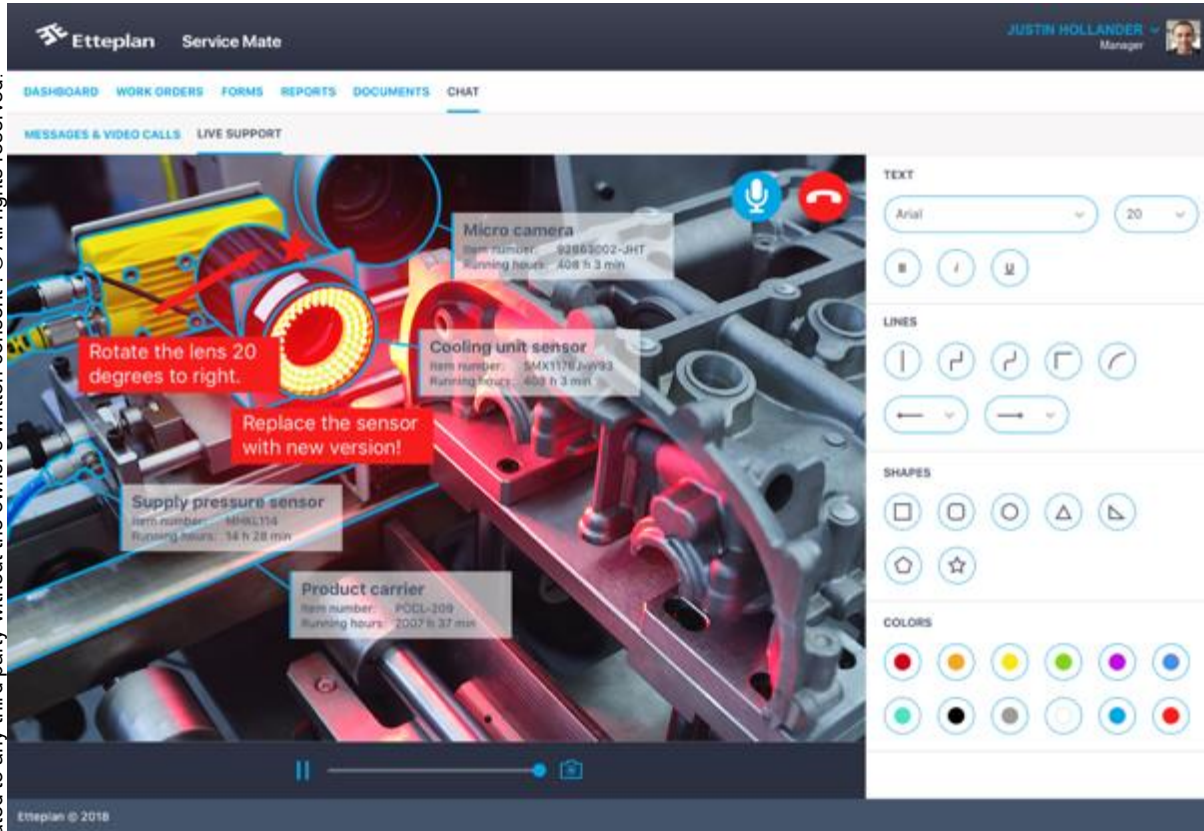
With AR application



Service information triggered by the technician and merged with service procedures and "thing data" like sensor readings and fault codes.

This view: Relevant information provided to the technician in the service tablet/mobile tool, also offline.

# Live Support Tool



This view: The back office personnel can support the maintenance task by adding explanatory comments right on top of the video stream.



This view: This is the video stream view as the technician sees it in the field.

# Objectives for AR/VR applications

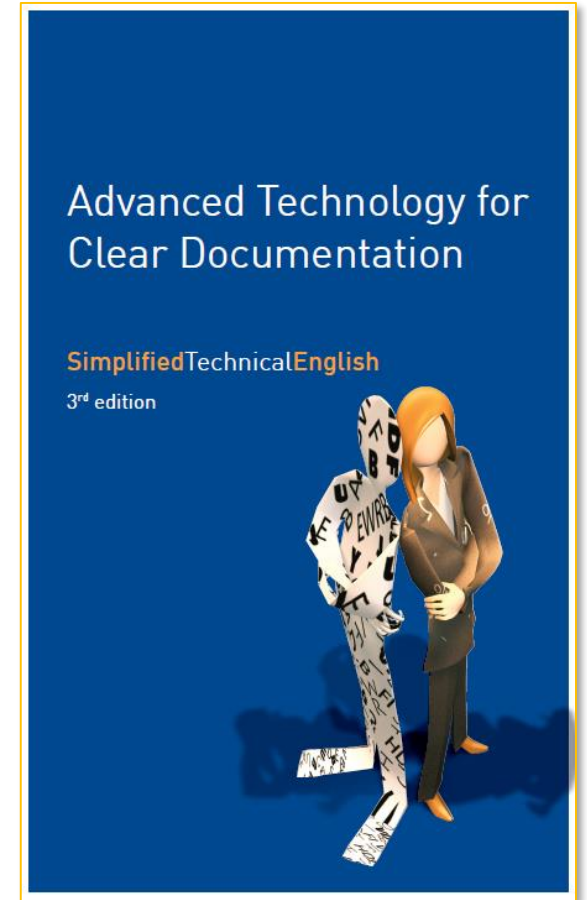
**To improve the profitability of the service business by reducing or preventing downtime, by providing the end user with the right information, whenever and wherever needed:**

- Minimized time to find and troubleshoot issues
- Engaging way to give technical information to end user
- Easy to understand
- Quick and easy access
- Learning and training
- Connectivity for spare parts ordering
- Feedback function to help keep the content up-to-date
- Ability to get published on multiple devices (Hololens, iPad, future proof)
- Connectivity to technical content from CMS/PLM, etc. for long term applicability (vs. one off implementation)



# Request our free booklet and ask for a complimentary business case analysis

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- [Etteplan.com](http://Etteplan.com)
- [Berry.Braster@Etteplan.com](mailto:Berry.Braster@Etteplan.com)



**Thank you**  
for your attention!

**Questions?**