



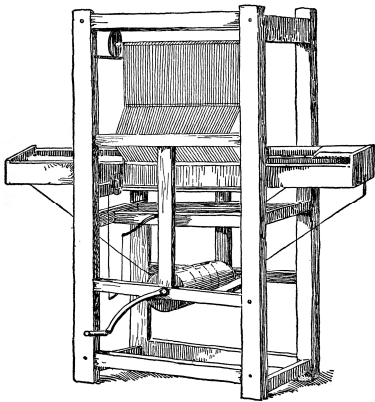
4th Industrial revolution & technical textile

Schneider Electric India Private Limited

Presented by: Meenu Singhal, Vice President - Industry

Textile Industry and Industrial revolution

First Industrial revolution :
Development of First mechanical power loom in 1784



It started with
textile

Fourth Industrial revolution :
Efficiency and productivity
improvement in technical textile



**Indian economy and technical
textile**

Indian economy's \$ 5 trillion target needs a real growth of 9% .(Source EY)

This implies a higher demand of technical textiles.

India has a per capita technical textile consumption of 1.7 Kg. Compared to 10-12 Kg in developed world *

http://www.texmin.nic.in/sites/default/files/scheme_technical_textile_070116.pdf

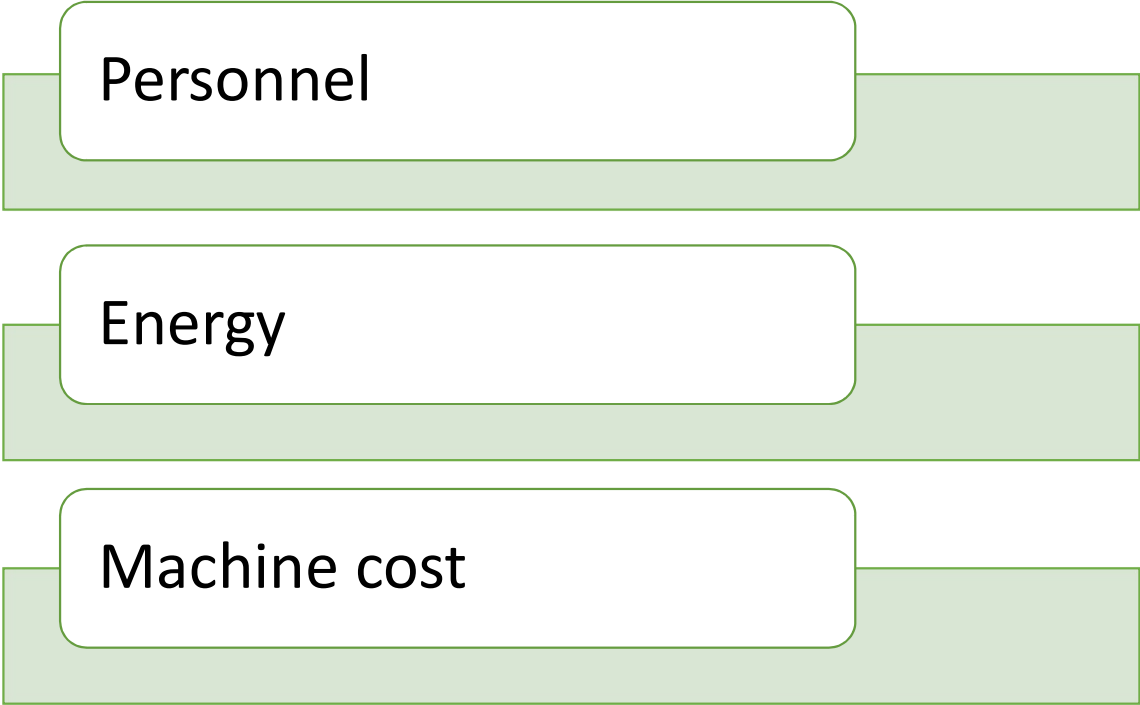
4th Industrial revolution is the era of technological revolution that is blurring the lines between physical, digital and biological spheres

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Cost structure for Non Wovens

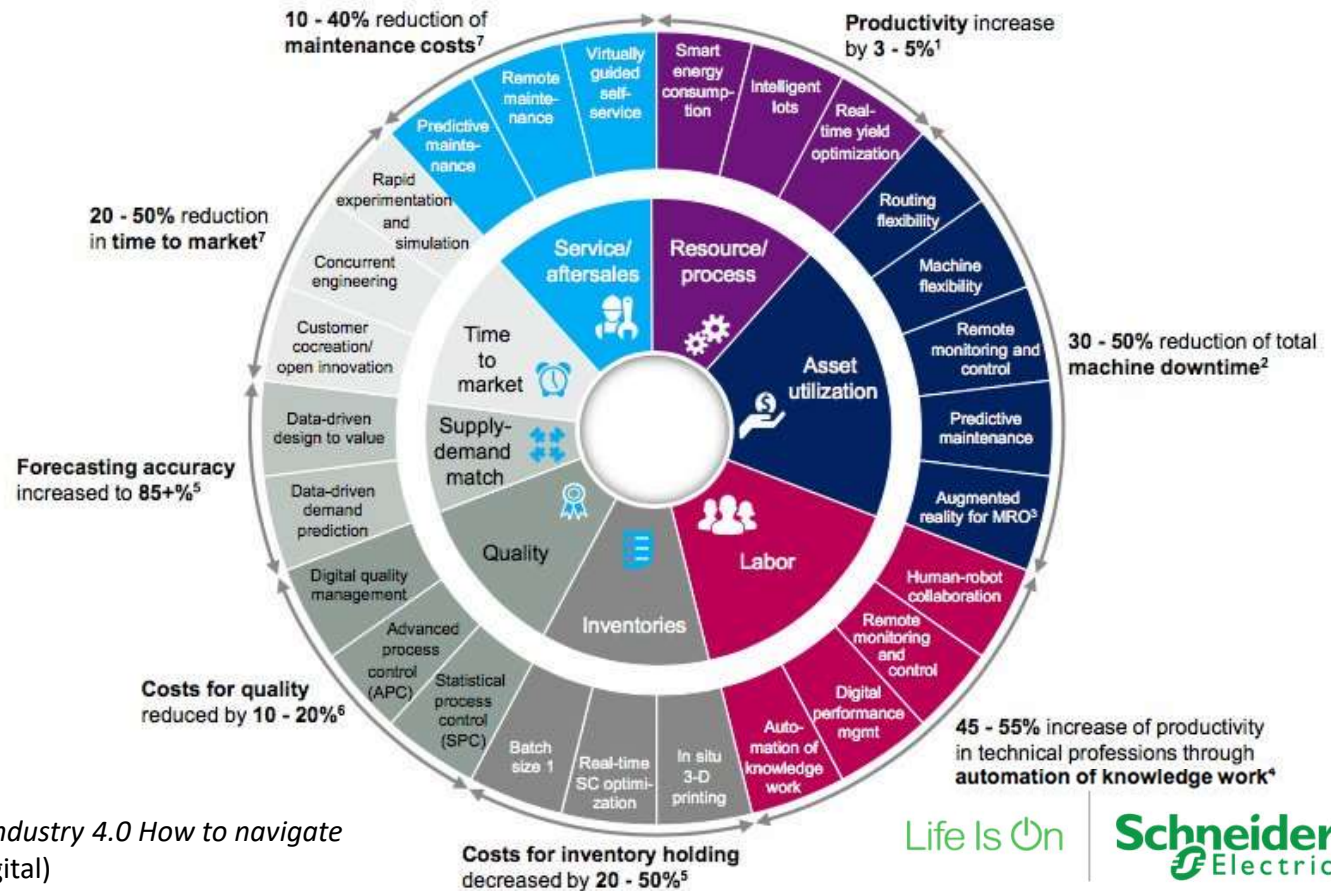
Cost distribution for Non-Wovens (removing the Material cost)



Grebe J 2014 *Technische Textilien Branchenbericht* (Frankfurt: Commerzbank AG)

Industry 4.0 Value drivers

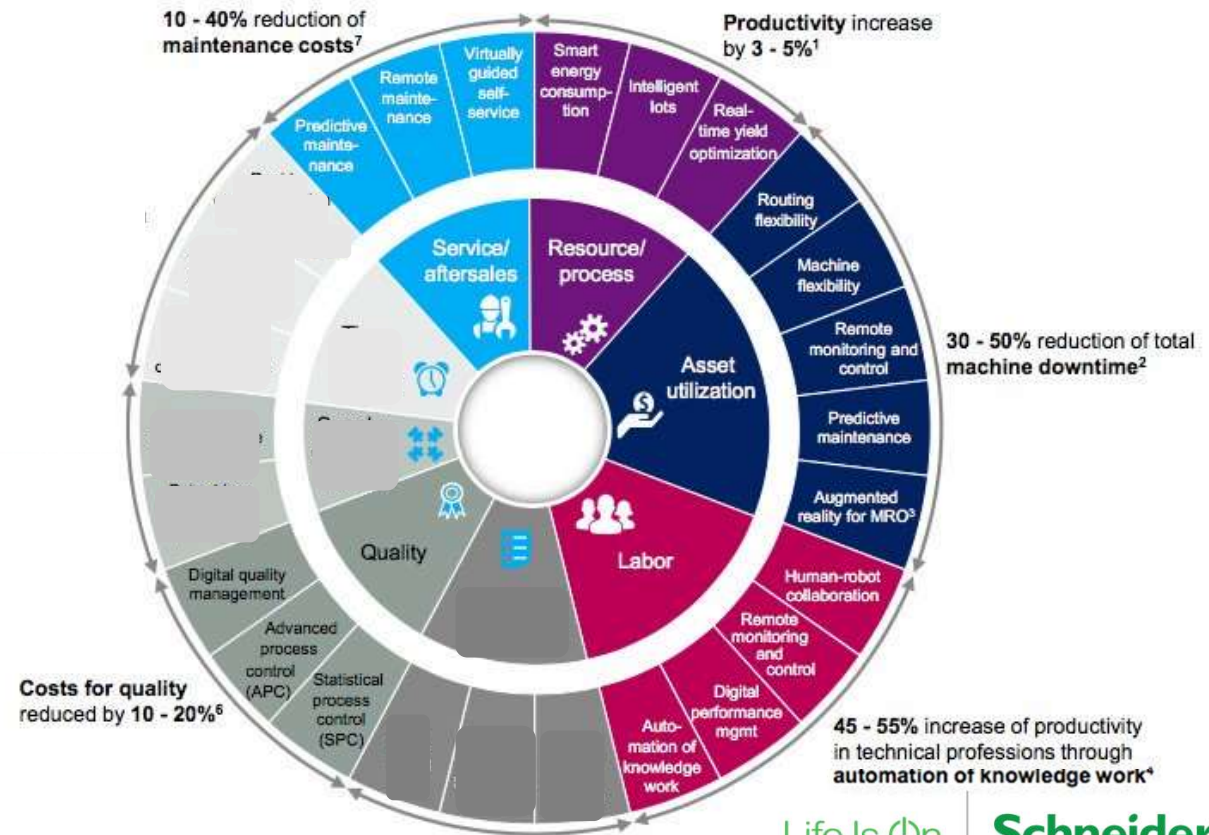
- ✓ Resources/ processes
- ✓ Asset Utilization
- ✓ Labor
- ✓ Inventories
- ✓ Quality
- ✓ Supply/Demand match
- ✓ Time to market
- ✓ Service/aftersales



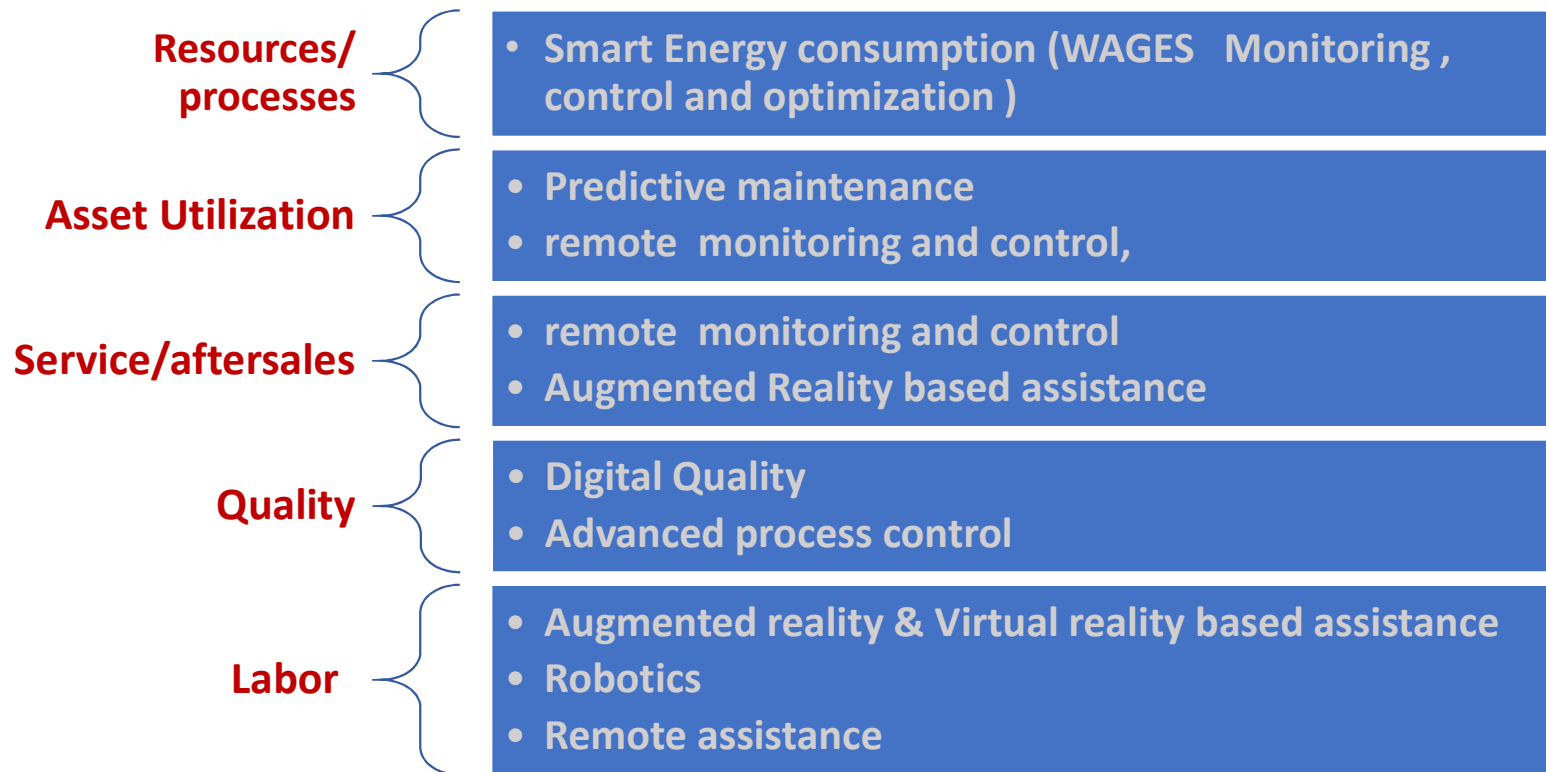
Source: Wee D, Kelly R, Cattell J and Breunig M 2015 *Industry 4.0 How to navigate digitization of the manufacturing sector* (McKinsey Digital)

Cost relevant Value drivers for the non woven industry

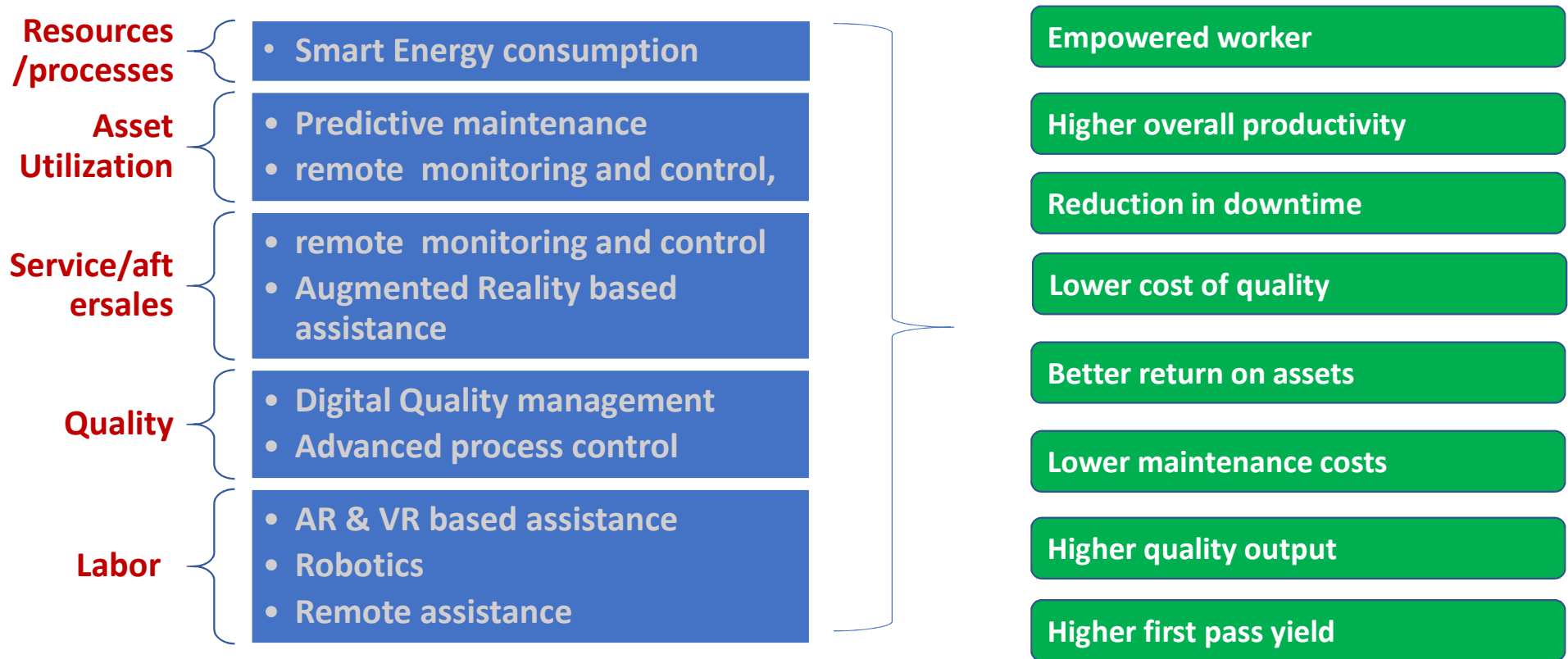
- ✓ Resources/ processes
- ✓ Asset Utilization
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Technologies for Industry4.0



Impact of Industry 4.0 on Technical textile



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Industry 4.0 + Technical textile : “Advantage India”

Empowered worker

Higher overall productivity

Reduction in downtime

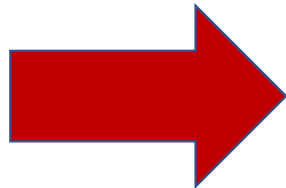
Lower cost of quality

Better return on assets

Lower maintenance costs

Higher quality output

Higher first pass yield



- **Globally competitive** in terms of **cost**
- **Globally at par** in terms of **quality**
- **Competitiveness** leads to **higher export and lower imports**
- Gain for **Make in India** by becoming **manufacturing hub**.
- **Higher FDI** in this sector.
- Gain for **Skill India** by **Workforce empowerment** (*skilling on job through digital assistance*)
- **Positive externalities for other manufacturing sectors** due to **affordable/cost effective raw material** in form of technical textiles .

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Introducing EcoStruxure for Industry

EcoStruxure™
Innovation At Every Level for Industry



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EcoStruxure Plant business values

Mastering the digital future of technical textile Industry

With EcoStruxure Plant, we are powering technical textile industry to lead the digital economy and offering new opportunities for your business.



Efficiency & Profitability

- Reduce cost
- Increase productivity
- Maximize profit



Safety & Security

- Simplify compliance to regulations
- Protect people, data and assets



Sustainability & Transformation

- Minimize environmental footprint
- Exceed customers satisfaction
- Expand business opportunities through Digital

Reliability & Performance

- Maximize return on asset
- Minimize risk through reliable & future-proof investment

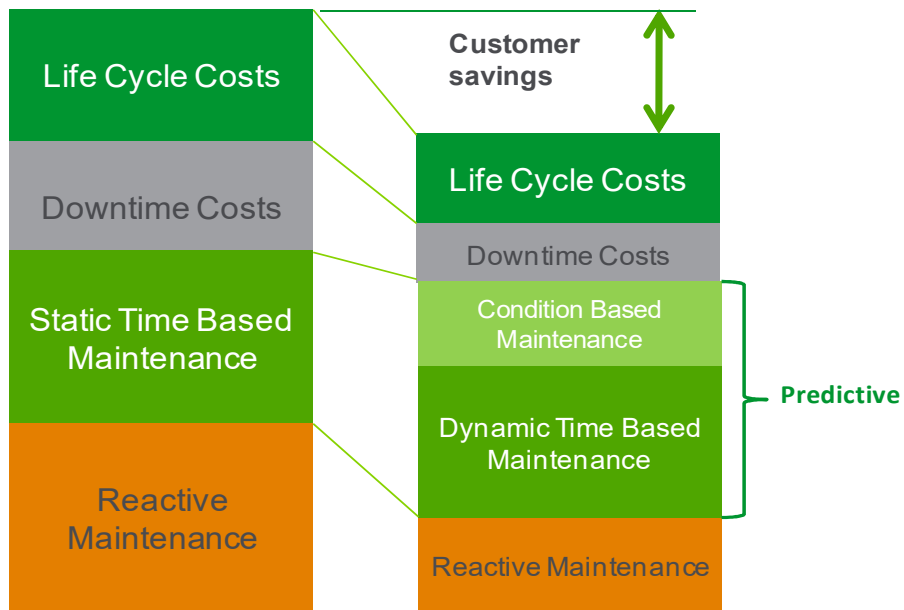


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Predictive Maintenance

Applying proactive maintenance strategy can reduce the cost of downtime considerably



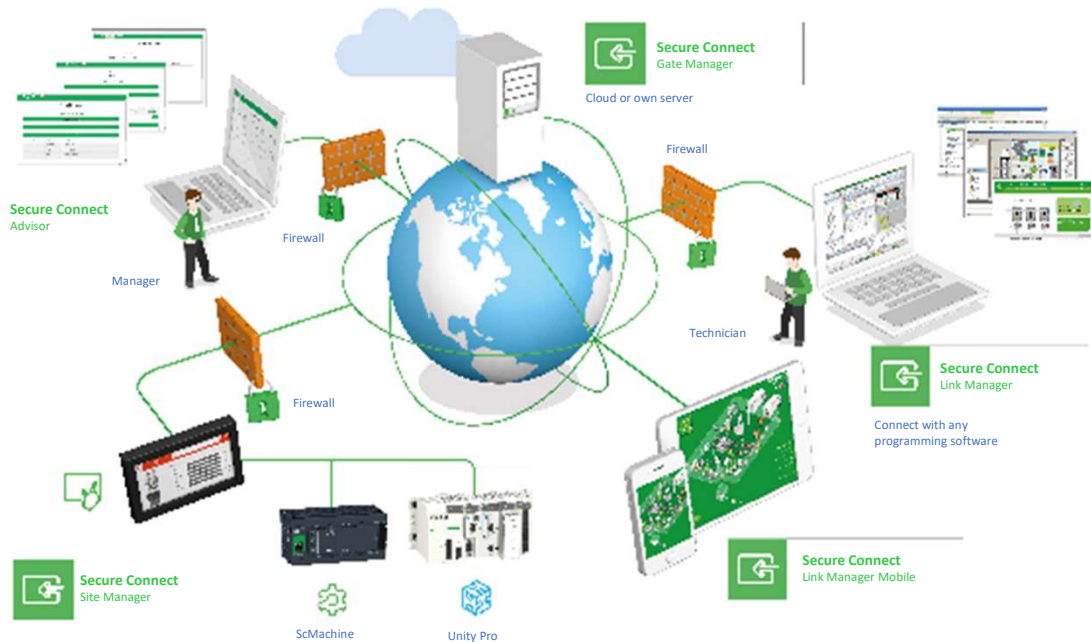
1) **Asset Advisor** for Electrical distribution assets



2) **Prism** for critical rotating equipment

Remote monitoring and control

Secure Connect Advisor



Simple and smart asset monitoring connection for diagnostic and maintenance

- ✓ More effective use of OpEx
- ✓ More effective budgeting & planning of maintenance activities
- ✓ Reduced Maintenance Costs
- ✓ Improved worker safety



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Augmented & Virtual reality

Superimpose real-time data and virtual objects on real machine in field

Speed up maintenance

Standardize expertise



Find information faster with immediate, relevant access in the field (user manuals, instructions, diagrams, etc.) and **avoid unnecessary machine downtime** with the ability to open the electrical cabinet doors virtually.



Reduce operator errors during maintenance by locating the right equipment and guiding operators step-by-step to complete the procedures



“At present, 50% of time spent on maintenance involves finding information, with the remaining 50% devoted to actual intervention on the equipment”

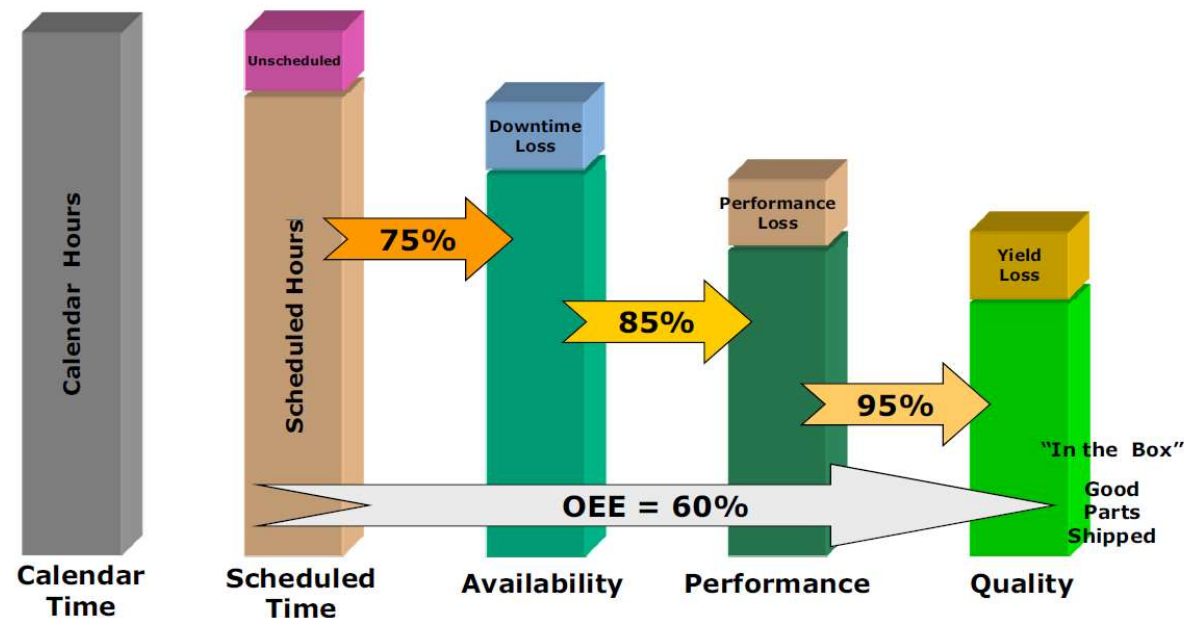


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Digital Quality management

OEE is used as a business metric by the world's leading manufacturing companies to measure the effectiveness of their processes and/or equipment, to identify improvement opportunities And deliver increased capacity and reduced costs



- Up to 5 to 10% OEE improvement in 4 Weeks * and continuous improvement afterwards
- Reduces yield loss and improves first pass yield.

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