The Toyota Way in the Era of Industry 4.0

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- Total turnover €18.7 Billion
- Total employees 52,600
- 4 business sectors

* Figures for FY2017 and 1 Eur = 119JPY
Europe at a glance

- 102,000 units sold in FY17
- 330,000 trucks on service agreement
- 3.5 million service assignments per year
- Active in over 30 countries in Europe
- 2.2 billion total net sales in FY17
- 10,300 employees across Europe
- 4,900 trained service technicians
4 Factories
~3500 employees
2 Main R&D Centre
~300 Design Engineers

Ancenis, (TMHM France)

Mjölby, (TMHM Sweden)

Ferrara, Italy (LTE)

Bologna, (TMHM Italy)
**Toyota Lean Academy**

Training & Consulting Division

- Toyota Material Handling has established a new division dedicated to Training & Consulting.

- TPS Senior Expertise, with over 10 years of managerial experience on Toyota plants, are members of the new team.

- European Customer Centers are located close to the TMHE factories.
What is our journey: How we made it there

Toyota history

In the beginning

1936 First Toyota car produced

1953 The Toyota Production System (TPS) is born
• The TPS is not only a method of production but it is **cultural mindset** that involve **all company employees** and departments.

• It is also called: **Thinking People System**.

• Two Japanese words represent this meaning:
  - Monozukuri: Capability to make good things
  - Hitozukuri: Capability to produce good things through people

物 – Mono (Things)  
者 – Mono (People)  
造り – Zukuri (Production)  
人 – Hito (People)
Impact of the New Technology

Customers 2020

• Shorter Lead Time
• Wider product offers
• Customizations

Companies 2020

• Lean
• Flexible (Supply chain included)
• Close to the market

Logistic 2020

• Flexible
• Fragmented (Pallet Vs Single Component)
• Efficient
Production in batches

**Just in Time** – From push to Pull

- The wide range of products, unstable market and the number of different configurations requested by customers make difficult to predict models and volume (Forecast accuracy)

- Move from Make to stock to Make to order was the way to reduce Finished Good Inventory and unsold trucks

- High flexible production lines has been arranged to produce all the product range in one piece flow
Just in Time

• The most famous pillar of TPS which the payoff is: «What you need, When you need, Where you need”

• The just in time approach is driven by logistic transformation following the 4 key rules:
  - **Accuracy**: Provide only the components related to single order.
  - **Punctuality**: Delivery when we need
  - **Location**: Provide closer the workstation
  - **Tack Time**: Delivery according to the Takt Time
Toyota Production System – TMHMI Experience

Starting point (2005)
Components stock close to the line

1° Step (2009)
KIT & Supermarket

2° Step (2012)
Box Kit & Shutter

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Junjo (Sequence)

- The production sequence is submitted to the supply chain covering 7 days rolling
- Supplier produce the components related to sequence and deliver, on daily base, to TMHMI the daily quantities
Lean as a Foundation for the digitalization

- Mass Production
  - Standard product
  - Push (Produced by forecast)
  - Lot production
  - Low people engagement
  - No Target Sharing
  - Top Down organization
  - Process Knowhow
  - ManPower

- Lean Production
  - One Piece Flow (Pull on Demand)
  - Customized Product
  - People Engagement
  - Waste Reduction
  - Kaizen Culture
  - Visualization
  - PDCA
  - TPM
  - Process KnowHow
  - MindPower

- Digitalization
  - Digitalization For:
    - Lean Process
    - Consolidate for awareness KPI's and analyses
    - Safety improvement
    - Visualization
    - Optimization
    - Process KnowHow
Thank You

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“Having no problem is the biggest problem of all.”

- Taiichi Ohno