

A wide-angle photograph of a snowy mountain range under a clear blue sky. Two skiers are visible on a snow-covered ridge in the foreground, ascending towards the right. The skier in front is wearing a red jacket and black pants, while the second skier is wearing a blue jacket and black pants. Both are carrying their skis vertically. The background features jagged, snow-dusted mountain peaks and ridges. The overall scene is bright and clear, suggesting a high-altitude winter environment.

DRIVING LEAN PERFORMANCE IN LOW-VOLUME COMPLEX SYSTEM ASSEMBLY



A Canon Innovation Center
for **B2B Production Printing**

Turnover **€1.8 Billion**

3,000 employees in HQ

12,000 employees in sales & services

Top 10 R&D investor in the Netherlands



Automated **printhead** manufacturing

High Complex **Low** Volume Manufacturing

~**15 years Lean** Journey

Consultancy on **lean** transformations

Land van de Makers – partnership of
manufacturing companies in Limburg(NL)

Factory Movie

Driving Lean Performance in low-volume complex system assembly

Wave 1

Optimize all processes & establish lean culture

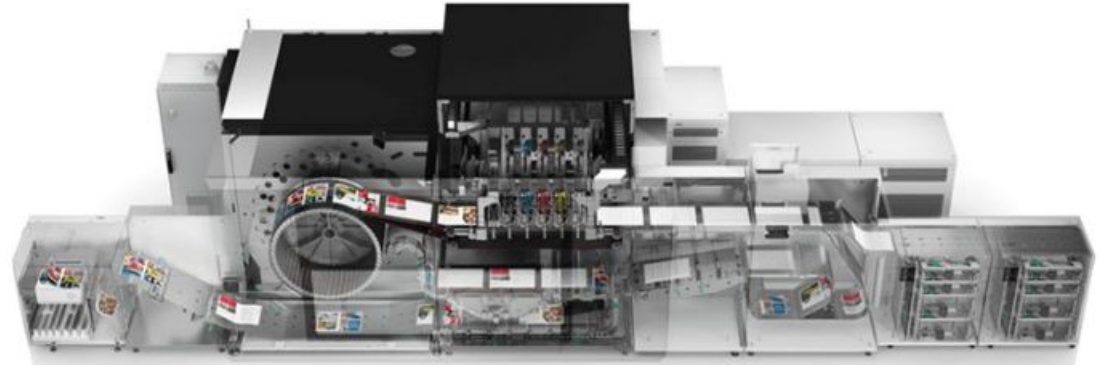
low-volume complex system assembly

Canon VarioPrint iX 3200

A4 / A3 / SRA3 / B3

320 pages a minute

1 - 10Million prints /month



Manufacturing

Total number of parts ~ 50.000

Annual Volume 100-150

Lean @ Canon PP



Strong Project & Technology focus
Improvement with 3-year ROI projects



Lean as a long-term strategy

Company culture

Continuous improvement in all we do

All staff involved and trained

*From 2014 onwards supported by Canon Inc
Japan & Toyota Japan*

A CANON COMPANY

Canon



Learning by Mr Hayashi- Toyota



Measure every step
no averages
reduce, the rest is a
consequence



Listen to the **parts**



What's your **next step?**

**Continuous
Improvement**

Saving 6 seconds every
minute
is 10% more productive

From **days**
To **hours**
To **minutes**
To **seconds**

**Empower All
People**



Mr. Hayashi

Executive Advisory Engineer
Toyota Company

Continuous improvement culture



Training and workshops for all employees



Standard improvement methodologies



LEAN ACADEMY
Quick & Easy Kaizen



LEAN ACADEMY
Kaizen



LEAN ACADEMY
8D



LEAN ACADEMY
Six Sigma

Continuous improvement culture

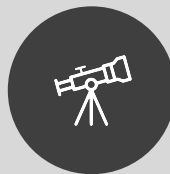


Training and workshops for all employees



Standard improvement methodologies

Management Style



Long Term Vision (5-10 y)

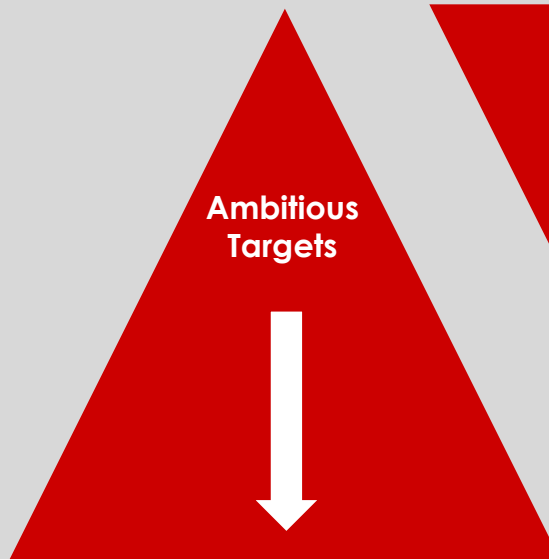
Year Objectives

Every Day

Management

Production

Engineering



Production

Engineering



Management

Lead Time



Improve via
value stream
optimization

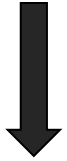


Single
Piece
Kitting

Single
Piece
Flow

Direct
Factory
Deliveries

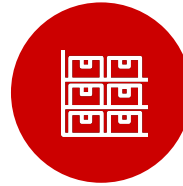
Module
Build



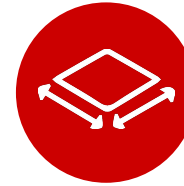
Harvest
benefits of
lower lead time



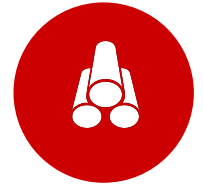
Less cash



Less stock



Less floor space



Less obsolete materials



quicker effect of **cost reductions** and new functionality



Better process and product **quality**

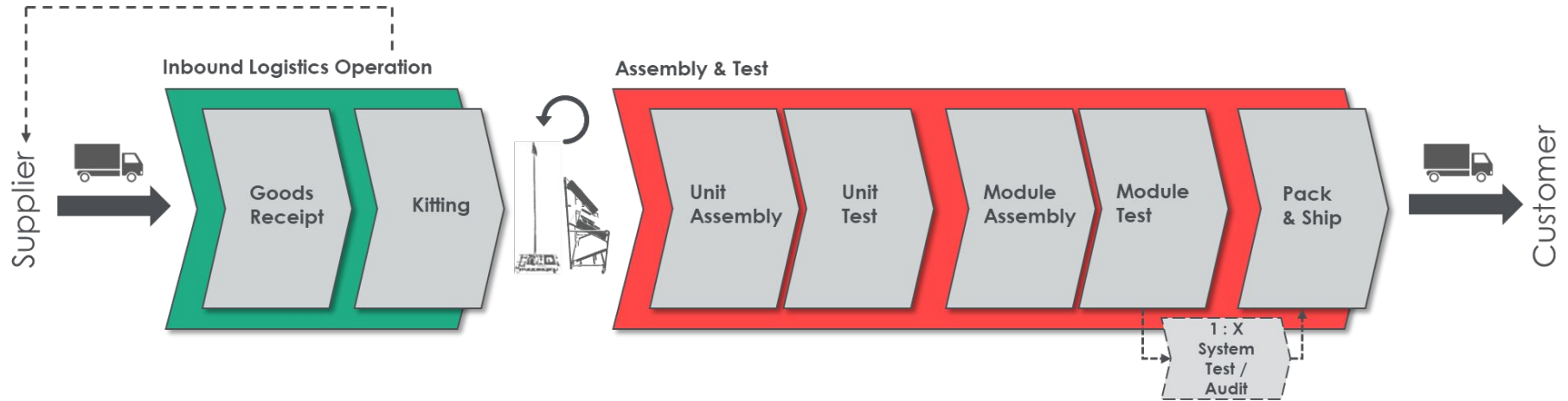


More flexibility towards **customers**



Better and more satisfied **personnel team work**

Results at canon production printing



Results iX3200



Lead Time

Production lead time
2015 : 12 weeks
2024 : 2.5 weeks



Assembly hours

80%



Work in progress

50%



Factory floor

85%

50%



Driving Lean Performance in low-volume complex system assembly

Wave 2

Maximize support of automation

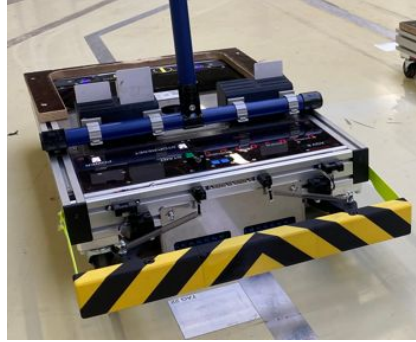
Automation in Logistics

Logistics

Goods-to-man concept



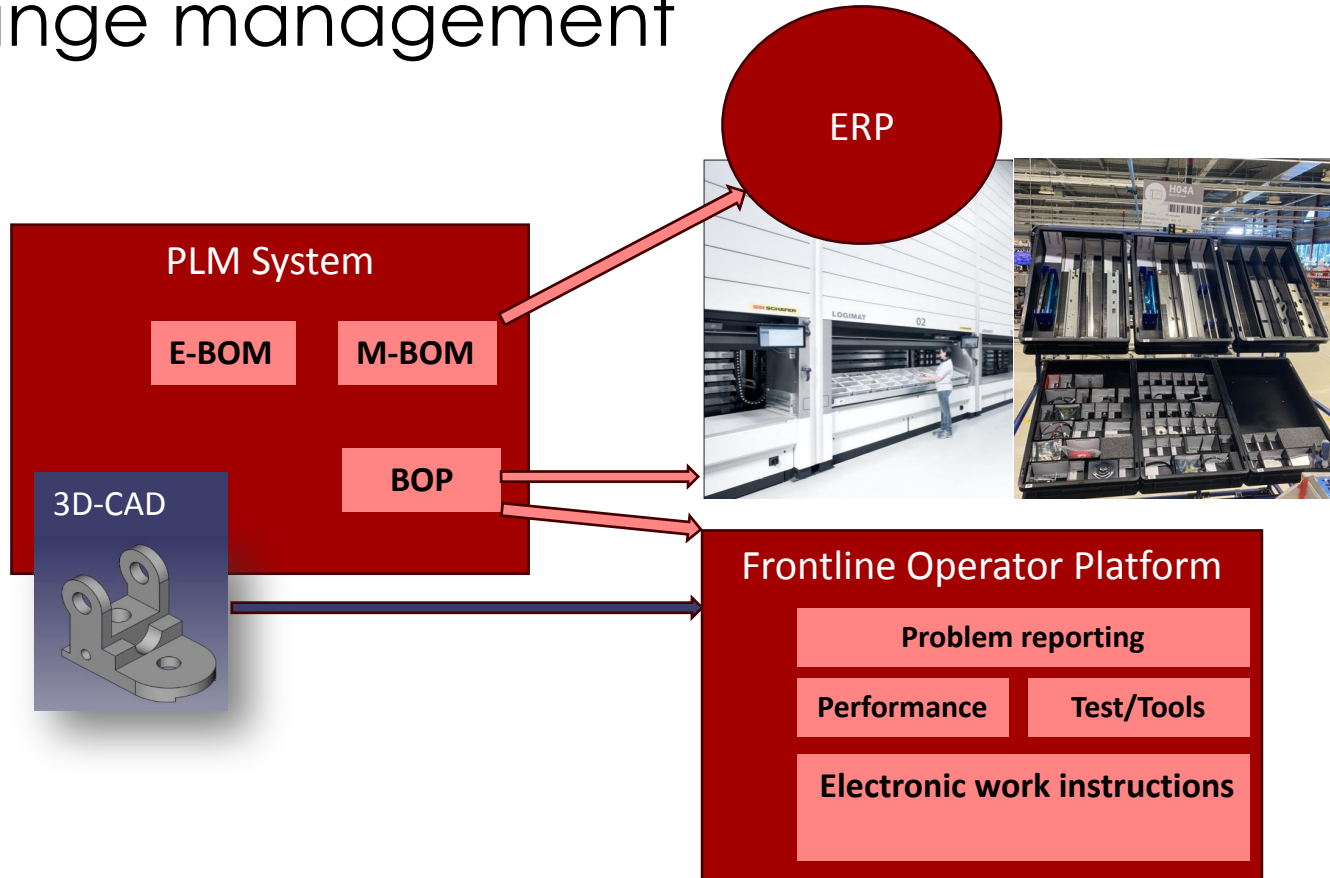
JIT kittrolleys by AGV 's



Automatic Kit trolley Request Software
supporting mixed model assembly



Automation in factory set-up and change management



Canon