



HP Indigo ElectroInk Filling Stage Improvement Program

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AGENDA

- General
- Project Background
- Status Prior Project
- Teamwork
- Project Improvements
- Main Accomplishments
- Future Improvements

General

- **Organization** - HP Indigo – ElectroInk Plant
- **Project Name** – ElectroInk Filling Stage Improvement Program
- **Team Members**
 - Maintenance - Rani Ashkenazi, Yoram Hasson
 - Manufacturing - Elhanan Israelov
 - Engineering - Alon Negrin
 - Quality - Edna Dezanashvili
- **Period** – Q3/19 & Q4/19

Project Background

During Six Sigma process implementation in line, data on scrap material throughout ElectroInk production process was collected.

Based on this data, material scrapped mainly at filling stage. This had cost impact and inconsistent work.

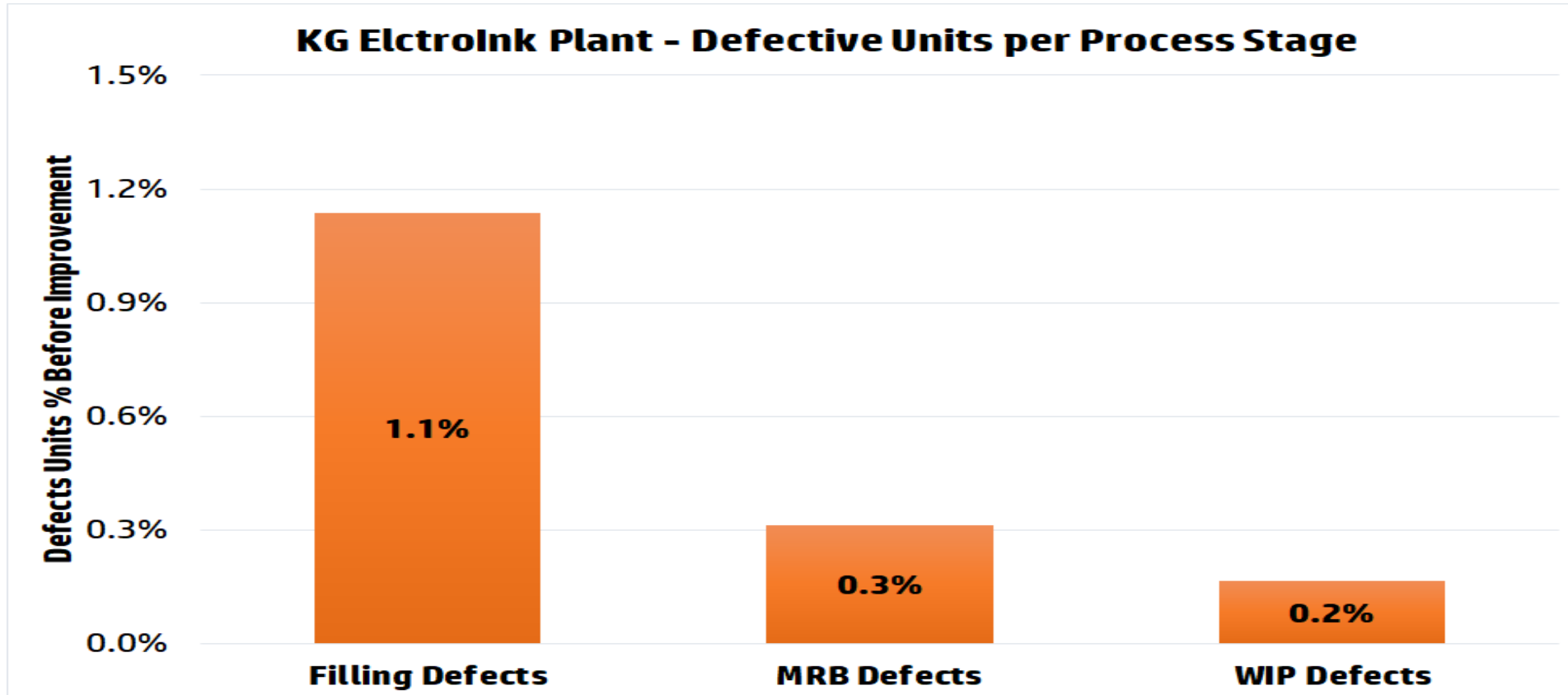


Status Prior Project



Before Improvement

Defective units which lead to scrap, detected mainly at **filling** stage,.
1.1% from overall production resulting in scrap and inconsistent work.



Teamwork

- ▶ Scrap data analysis
- ▶ Identify the area which have the main impact on scrap
- ▶ Identify opportunities
- ▶ Devide to technological and mechanical issues
- ▶ Cost-benefit assement and required resources
- ▶ Define improvement projects, focusing in simple solutions which drive to great benefit
- ▶ Implement solutions and measure impact on scrap



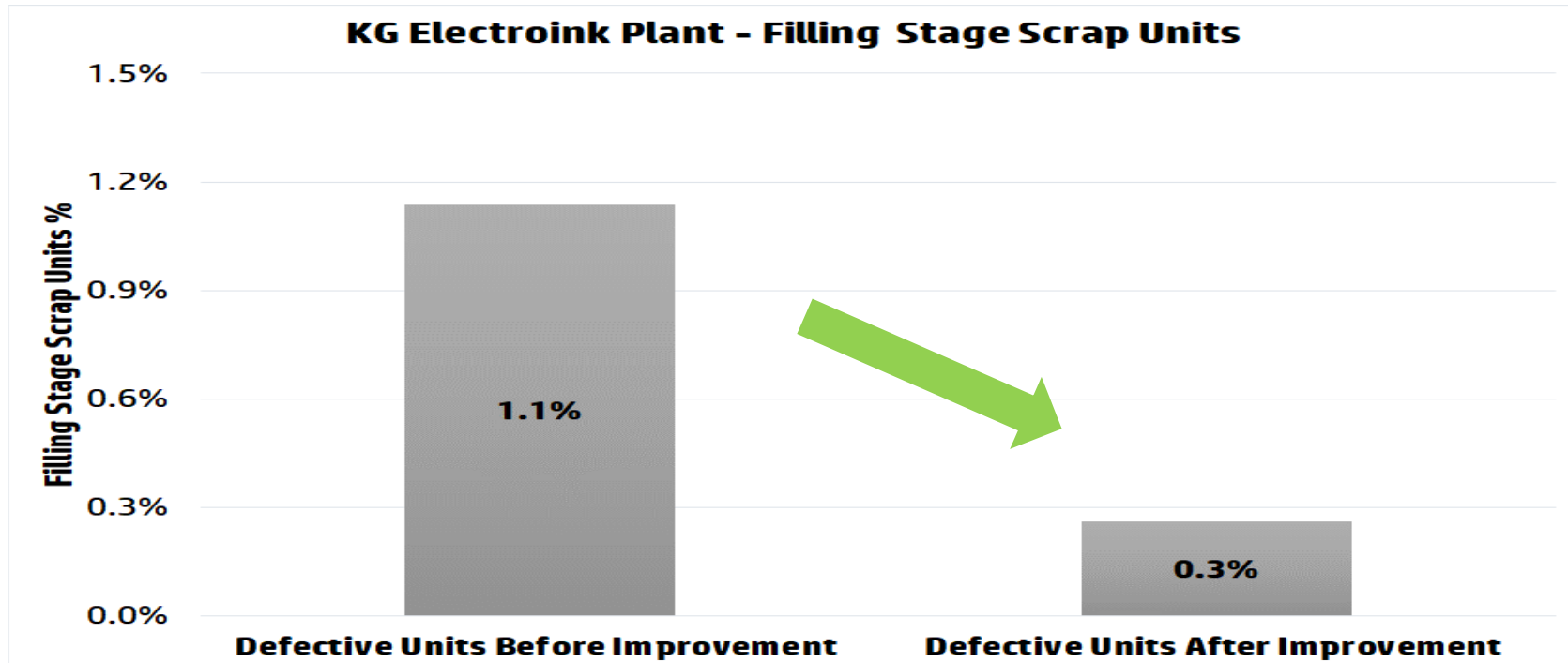
Project Improvements



After Improvement

Filling issues which treated by team leading to defective and scrap units decrease:

- [Ser.3 barcode burn on silver line](#)
- [Tube break](#)
- [Polylid plunger delamination](#)

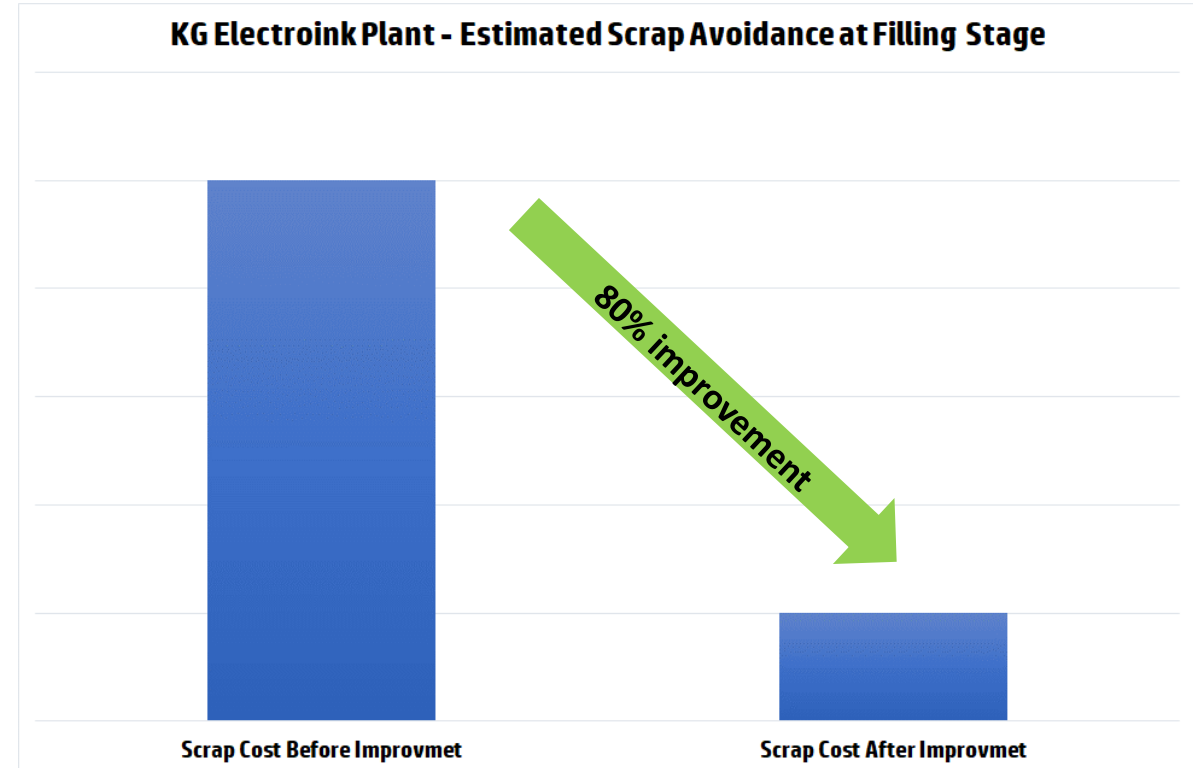


Main Accomplishments

Decrease defects at ElectroInk filling area, leading to estimated scrap avoidance of 80%.

Contribution to business

- ☑ **Decrease costs** – product defects reduced through improvements on filling machines, which led to cost decrease and less time spent on unnecessary steps.
- ☑ **Customer satisfaction improvement** – product defects reduction leads to improved product quality, which increase customer satisfaction.



Future Improvements

Scrap units quantity and cost is under monthly monitoring to ensure achieved improvements are sustained

- Six Sigma KPI
- Monthly quality review

Review filling area technological issues – examine whether applicable solution can be implemented to eliminate scrap units and decrease cost.

- Overweight
- Overflow

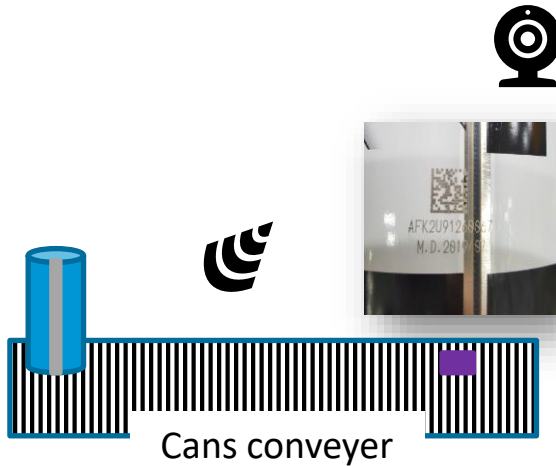
Thank you



Ser.3 FM – Burn on Silver Line

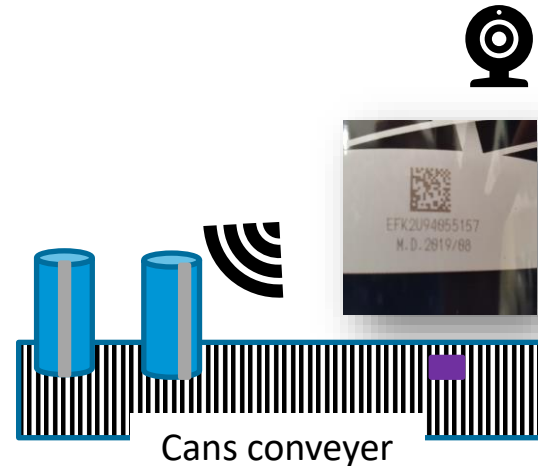
Barcode Burn on Silver Line - Ser.3 barcode burn on silver line decreased by camera angle range enlargement

Before



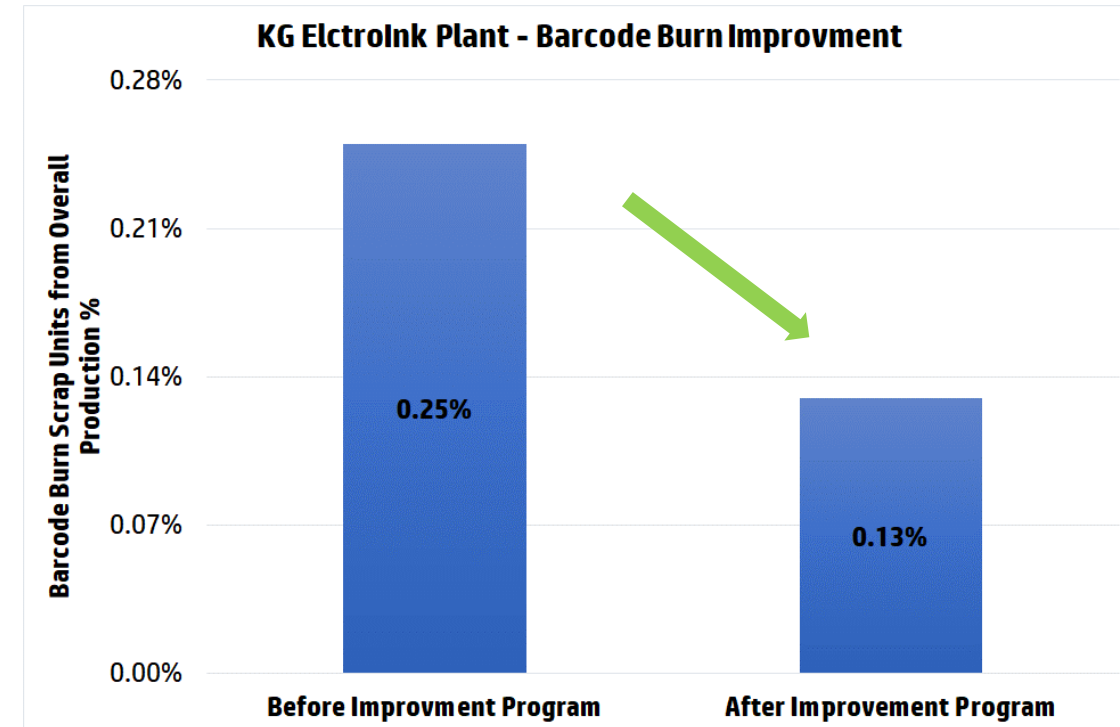
Camera didn't detect the can Silver line, leading to barcode burn on it, which impact barcode scanning

After



Camera angle range enlargement improved can Silver line detection, which enables can rotation and eliminating barcode burn on Silver line

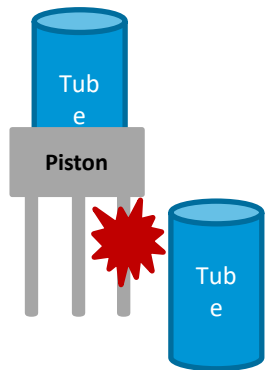
* Solution cost - None



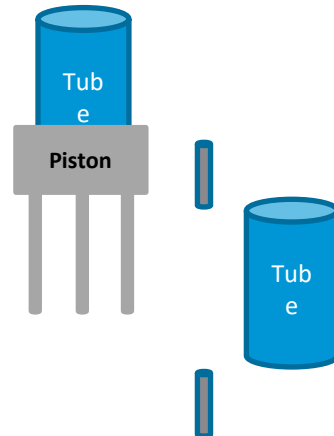
Ser.4 HNVS FM – Tube Break

Tube Break - tube break due to vision piston decreased by mechanical gates

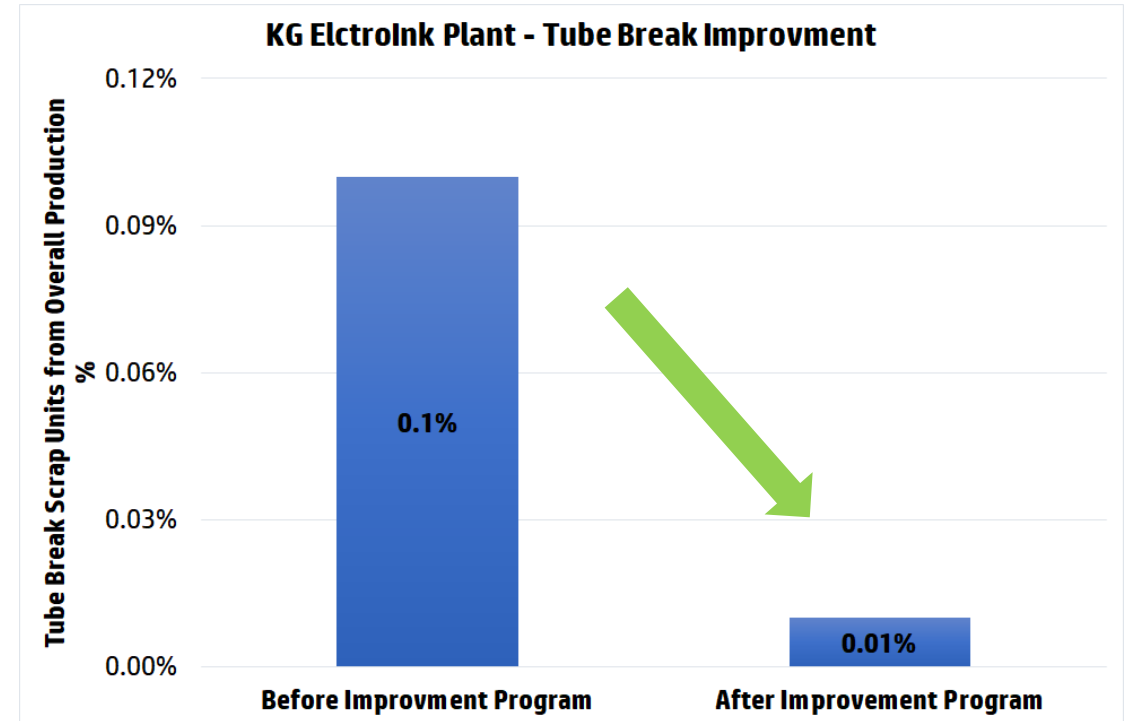
Before



After



* Solution cost (one-time investment) - \$2K



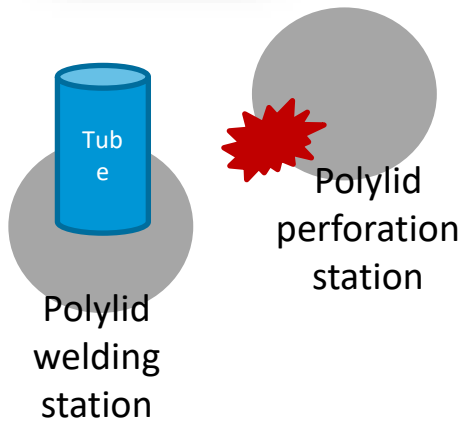
Ser.4 HNVS FM – Polylid Plunger Delamination

Polylid Delamination - occur at end of filling stage, 2 last tubes. Welding area wasn't cure, thus, polylid peeled once the tube moved to next station. Decreased by setting curing time of 3 seconds at end stage

Before



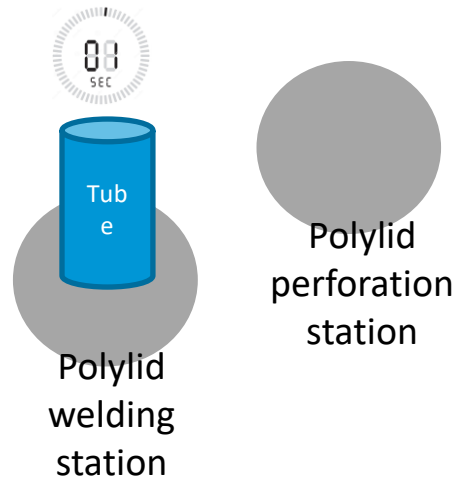
Polylid delamination



After



No polylid delamination



* Solution cost - None

KG Ectrolnk Plant - Polylid Delamination Improvement

