IMPROVING THE WASTE SUPPLY CHAIN AT THE FORD AUTOMOTIVE COMPANY OF SOUTHERN AFRICA (PTY) LTD

FROM A DHL PERSPECTIVE

DHL EXEL SUPPLY CHAIN

1 THE PROCESS PROBLEM

DHL is a leading contract logistics provider that provides Ford Automotive Company the necessary manufacturing logistical support. DHL ensures that the materials are at the workstation when needed. As a part of the manufacturing component logistics, it is the responsibility of DHL to move the waste materials (the component packaging) to the dedicated waste areas. The packaging waste restricts the flow of the assembly process and any other movement in the facility. Waste obstructing the pathways is dangerous to the employees and hinders efficiency. There is a need to improve the flow of the waste materials through the facility as well as to ensure that the waste is not on the floor for extended periods of time. Managing the waste currently requires more resources than necessary.

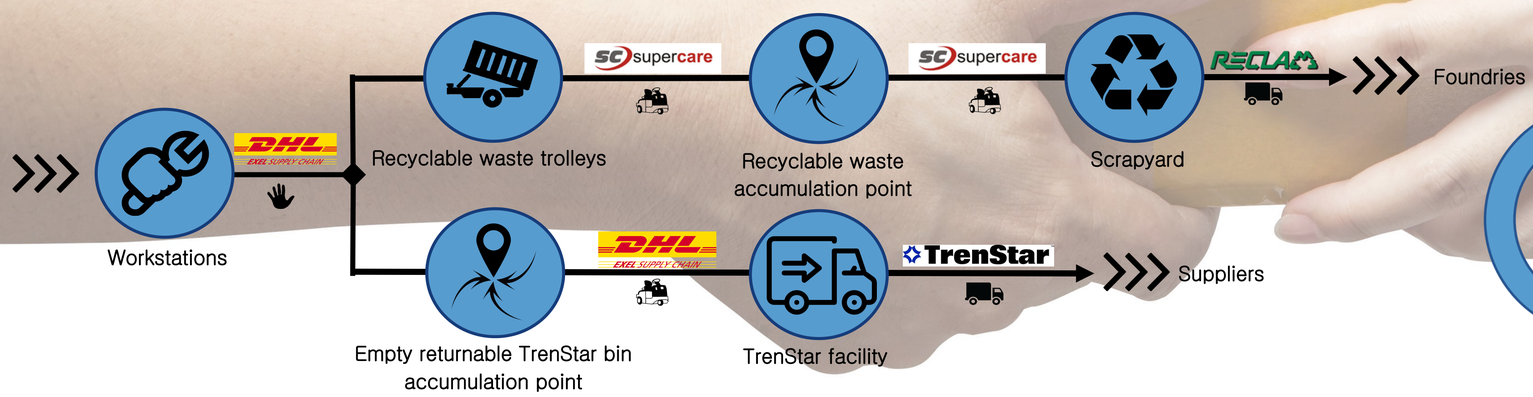
2 THE PROJECT GOAL

The aim of this project is to optimize the flow of the packaging waste materials through the facility to save resources and increase space.

Objectives:

- Improve the flow of the waste materials through the facility.
- Improve the recyclable waste collection.
- Examine the supplier relationships within the supply chain. Collaboration between suppliers is necessary for efficiency and resource utilization.

3 THE WASTE SUPPLY CHAIN



Manual operations (Carry and collapse empty packages)

Material transportation via tow motor (Recyclable waste = Trolleys, TrenStar bins = Flatbed)

Transport packaging to respective end destinations via truck (Outsourced operations)

4 THE PROJECT MODUS OPERANDI

Root cause analysis

- Process flow mapping – Process flow analysis
- 5W1H – Problem root cause identification

Mathematical analysis

- Quantification model – Sectional waste quantification (Volume and number of packages)
- Pareto 80/20 law – Section isolation

Gemba walk

- Observation – Possible process changes (5s, Visual management)
- Identification – Available trolleys and trolley locations

Work sampling

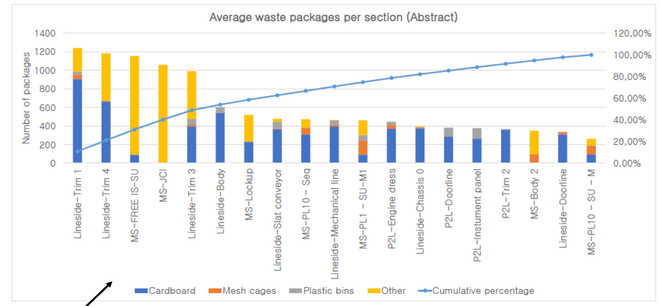
- Time studies – Waste trolley fill rate, box collapsing methods and waste collection schedule
- Material flow – Facility layout and material handling functions

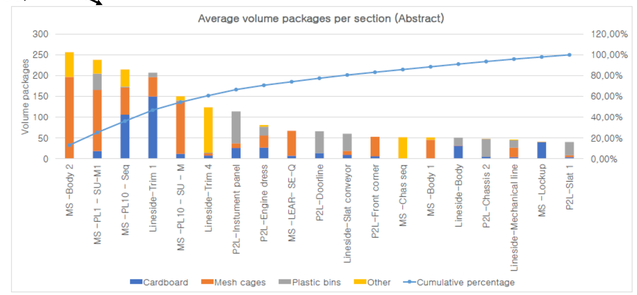
Supplier relationships

- Rotation schedules – TrenStar supply chain
- Collection schedules – SuperCare supply chain

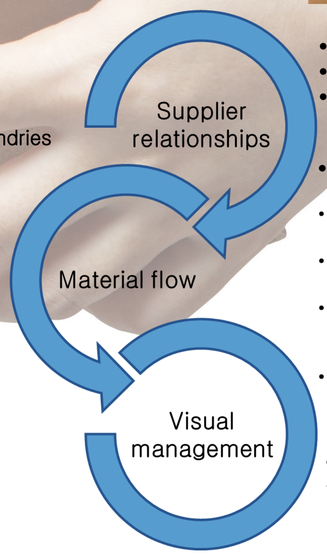
Integration

- Possible solution comparative analysis
- Solution development and integration





5 THE FINAL SOLUTIONS AND BENEFITS



Supplier relationships

- TrenStar bin delivery schedule .
- SuperCare waste collection schedule and routes.
- Pilot an Effi-Bot to collect waste trolleys and distribute waste at scrapyard.

Material flow

- Change the trolley locations to the areas where the most waste is generated.
- Renovate the current trolleys to force the separation of waste materials.
- Acquire power saws to collapse big cardboard boxes.
- Renovate the pick-to-light carton flow racks to include conveyors (move to central waste collection area).
- Assign the waste separation responsibility to the DHL employee.

Visual management

- Demarcate trolley areas
- Mark waste trolleys types

+ Decrease waste space utilization
+ Decrease TrenStar hiring fee
+ EffiBot ROI = 3.75 years

+ Decrease waste handling time
  = decrease picking time
  = increase assembly time
+ Save up to R800 000 worth of parts lost to scrapyard

+ On-the-job training
+ Process flow and efficiency

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