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THE INNOVATION UNIVERSITY

BUSINESS PROCESS REENGINEERING

VOLKSWAGEN AG

GROUP-5

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MATERIAL OPTIMIZATION PROCESS

EXECUTIVE SUMMARY-

- Designing a concept to optimize the supply of materials between cutting systems and press shop at Volkswagen Production Plant. For this purpose, the techniques of Business Process Management (BPM) and the tools of Process Improvement will be used.

PROCESS INVESTIGATION

Process Identification-

Identified improvements and gaps between cutting room and press shop are:

- Push principle and batch-size production
- High material stock
- Large search effort in the storage facilities
- Lack of Transparency between the processes
- Long travel path between the intermediate storage facilities

PROCESS INVESTIGATION

Process Value Analysis

SAILENCE WORTH MATRIX

SALIENCE	WORTH	
	ASSETS	LIABILITIES
IDENTITY	Parent for many brands	
PRIORITY	Material optimization	
BACKGROUND		Wastage of Materials
MANDATED		

PROCESS SELECTION

PROCESS SELECTION- MATERIAL OPTIMIZATION

1. OVER PRODUCTION	2. STOCK	3. WAITING TIME
4. MOVEMENT	5. POOR ERGONOMIC WORKING	6. TRANSPORTATION
7. UNNECESSARY PROCESSES	8. INSUFFICIENT COMMUNICATION	9. REWORK OR DEFECTS

- The Volkswagen production system should be oriented to value chain and to abolish nonvalue chained process, these are the nine types of waste according to our process selection

PROCESS INVESTIGATION

Process Objectives (AS-IS)-

- Complexity Reduction.
- Making
- Access Inventory Operations
- Developing inventory management Plan
- Outsource Business activities

PROCESS INVESTIGATION

Performance Measures-

Customers: This goal dimension focuses on clients' various needs and tailor-made mobility solutions.

Employees: Workforce that is skilled and committed is necessary for long-term success. By providing equal chances, hope to increase their drive and sense of fulfilment.

Safety and Integrity: Complying with laws and regulations and establishing secure processes are the process' main goals.

Competitive Profitability: Investments that are made with the goal of creating profitable growth, enhancing competitiveness, and operational excellence across all company operations.

PROCESS INVESTIGATION

Process Stakeholders –

Outside Stakeholders: Customers, suppliers, investors, and among others, are dedicated to ensuring the company's survival and are interdependent.

Inside Stakeholders: Board, managers and Employees are linked and committed to guaranteeing the business's survival.

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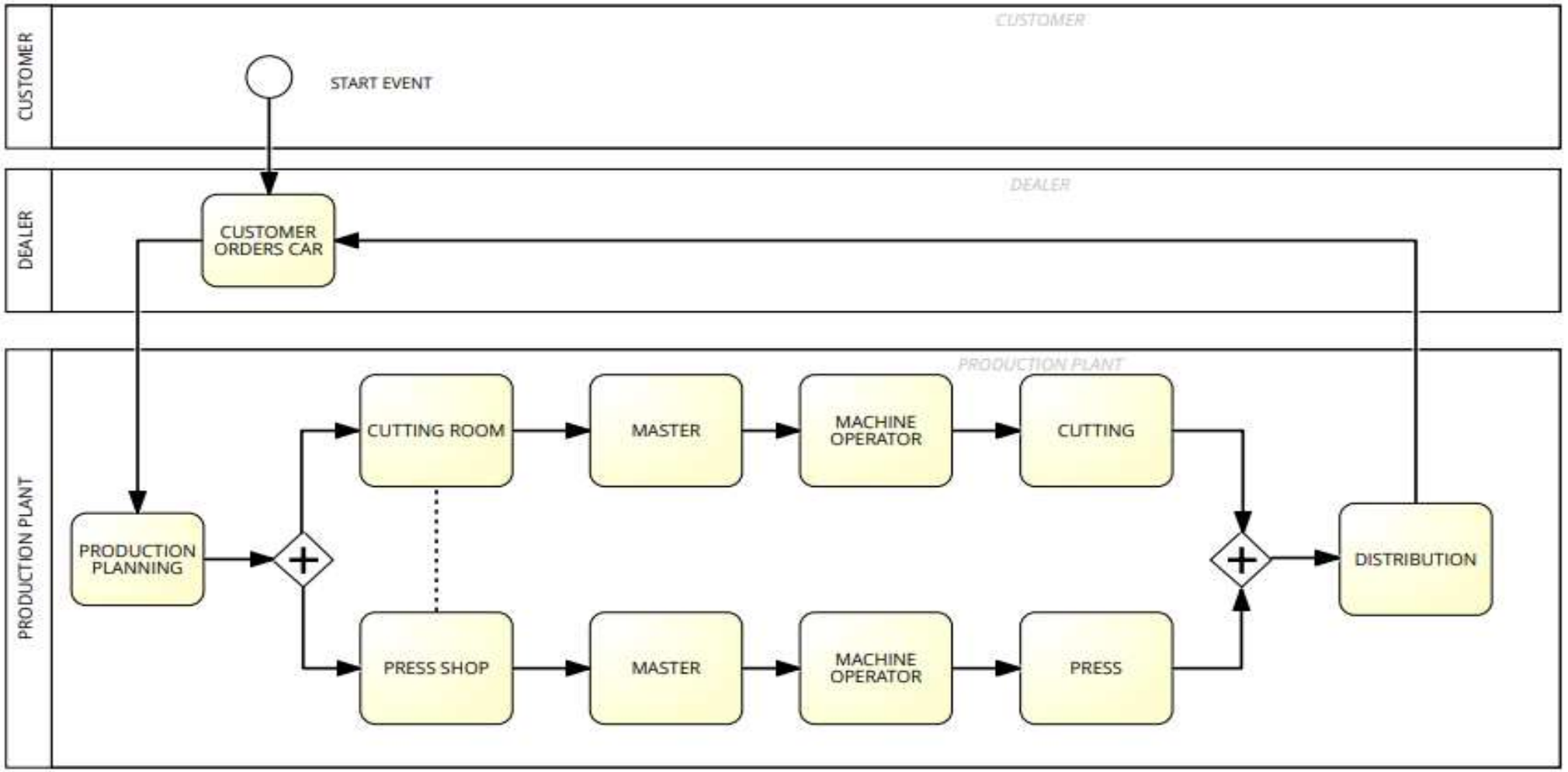
Process Design (AS-IS)



PROCESS INVESTIGATION

Opportunity Identification –

In accordance with the working objectives, improvement opportunities for the process are as follows:

- Elimination of waste
- Optimized and standardized transport routes
- Pull process and visualization
- Cost reduction
- Quality enhancement

Reengineering Proposal

Business Process Reengineering involves changing business processes in a fundamental way. The objective is to eliminate waste, reduce cycle times, and improve accuracy and quality.

REENGINEERING PROPOSAL

OPPURTUNITY SELECTION

- This analysis focuses on the press-150 and the cutting systems (coil-cutting system, metal blank-cutting system (MBCS), and band cutting system (BCS)) that these presses provide.
- The purpose of this project is to provide "a concept to optimize the supply of materials between the cutting systems and the press shop" at the Volkswagen Group.
- Top components such as gearboxes, cast parts, automobile panel bodies, substitution-aggregates, and exhaust systems are manufactured in the manufacturing area, which employs over 15.000 people
- **The goal is to eliminate non-value chained procedures.** In this setting, success is assessed by aspects other than cost and price, with a focus on quality. This includes product stability, process quality, and process stability.

REENGINEERING PROPOSAL

OPPORTUNITY SELECTION

Possible optimization potentials at cutting room and press room:

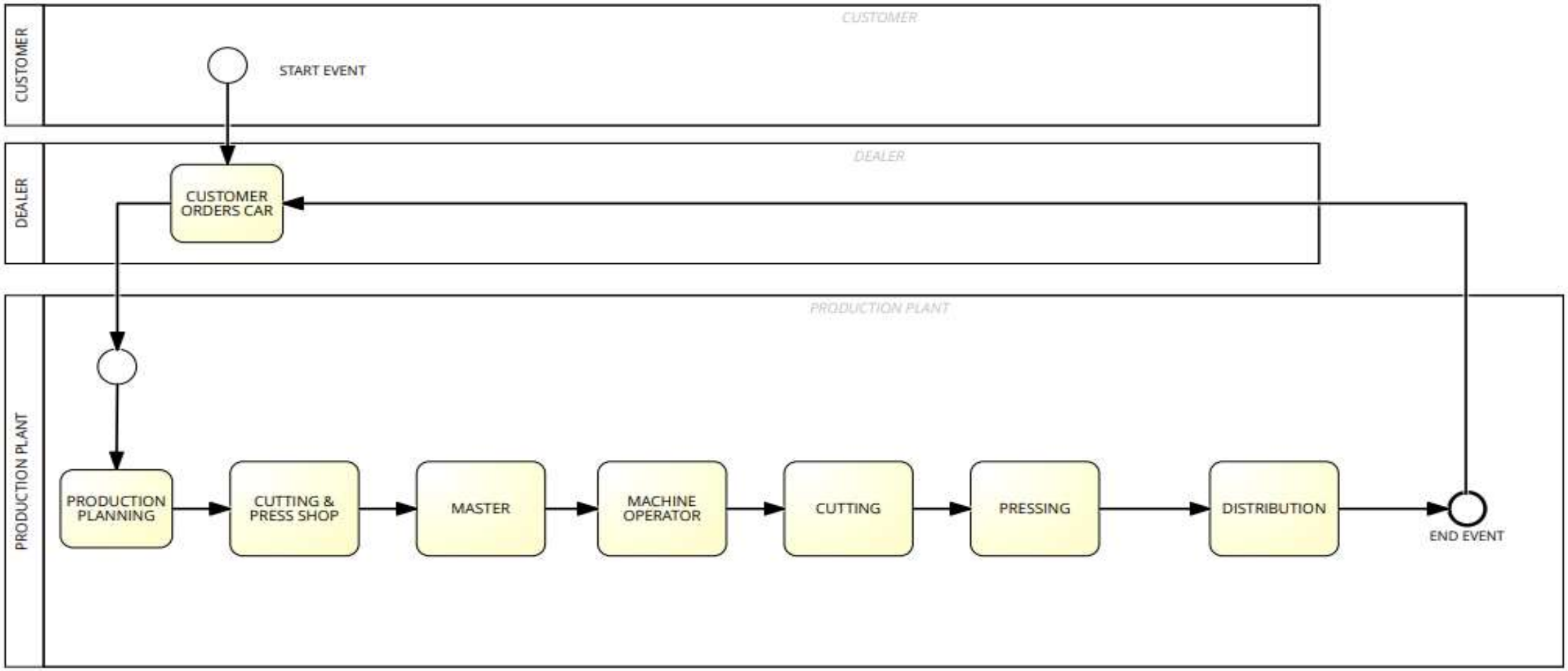
- Transparency.
- Material stocks.
- Fifo principle and repacking processes.
- Searching efforts and travel paths.
- Push and Pull Principle

REENGINEERING PROPOSAL

SOLUTION CREATION

- **PUSH and PULL- PRINCIPLE: Reengineering Principle for lot production: Control Work Release**
- **TRANSPARENCY: Reengineering Principle for Transparency - Coordinate & Integrate**
- **MATERIAL STOCKS: Reengineering principle for Material Stocks: Empower workers**
- **FIFO Principle and Repacking Processes**
- **Searching Efforts and Travel Paths: Principle for Searching Efforts and travel path: Relieve Bottlenecks**

Reengineering Process Design(TO-BE)



REENGINEERING PROPOSAL

CHANGE MANAGEMENT ANALYSIS

1. Elimination of waste

2. Optimized and standardized transport routes

3. Cost reduction

4. Quality enhancement

REENGINEERING PROPOSAL

EXPECTED OUTCOME

- Clocked Route-Transport
- NEW TRANSPORT PATH
- Conversation of manufacture from push to pull-principle
- Increasing the transparency
- Reducing the material stock
- Improving the fifo-principle and unpacking processes
- Perfection of coil ordering and size

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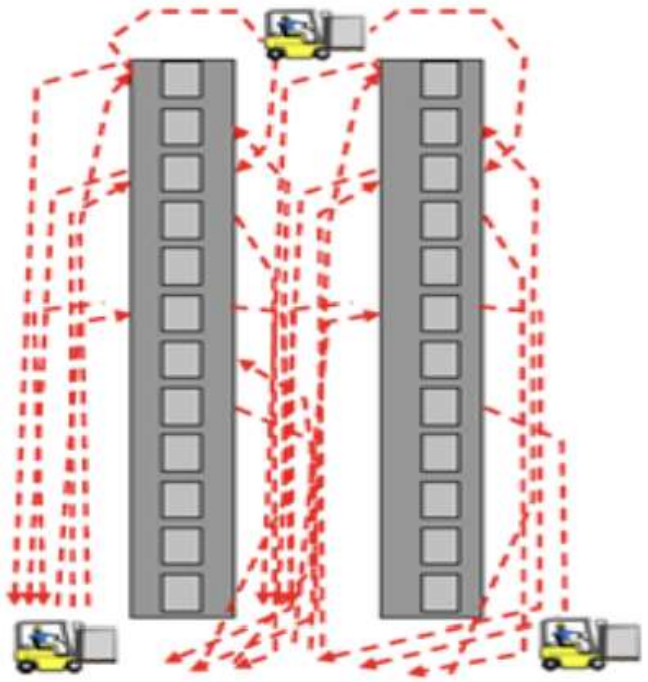
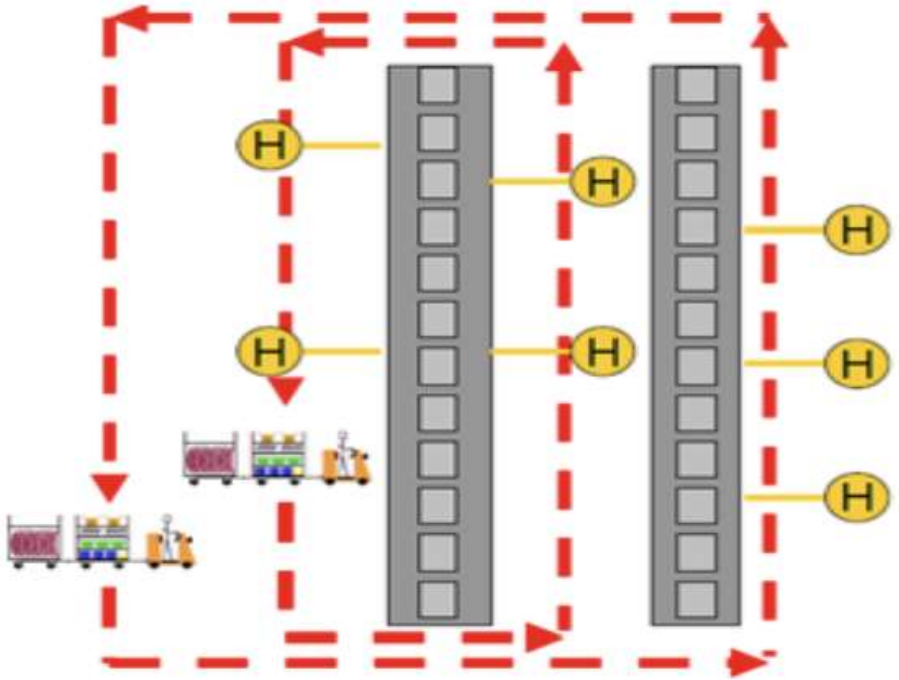
Expected outcome of clocked route transport:



Before



After

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Expected Outcome of new travel path:

Transport-time of the new travel path			
Route	**Length in meter**	**Voyage out in seconds**	**Return journey in seconds**
Coil4 → press-150	132	69,1	68,67

PROJECT PLAN

PROJECT STAKE HOLDERS:

- **Dealer-sale agent**
- **Plant-Production line**
- **Plant-Operators**
- **Plant- manager**
- **Suppliers**

PROJECT TIMELINE

1. JANUARY- Planning begins
2. Feb- Mar: Project structuring and conceptual design phase
3. APRIL- Plant Acquisition meet with investors
4. MAY- Development Begins
5. SEPTEMBER- ready to begin plant production

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PROJECT COST ANALYSIS

- COST OF PROJECT MATERIALS
- PROJECT STAFF COMPENSATION
- COST OF EQUIPMENT & TOOLS
- PLANT EXPANSION

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THANK YOU!