



Project „Flexible Assembly Processes for the Car of the Third Millennium (MyCar)“

Problem Description(High Level)

Supply Chain Simulation Software



CASP

Problem description

...how to simulate the time and cost impact for providing a customer a highly customizable vehicle

INTRODUCTION

Decreasing product lifecycle times
Increasing number of products
Increasing degree of product customization



Is required:

Modern production systems to exhibit high degree of
Flexibility



Why?

In order to Adapt to the Demand of Highly Customizable
Products

Problem statement

Hard to evaluate the impact of the production schedule changes on the supply network.

Supply chain management does not consider at supplier's inventory and capability.

Late change in production schedule creates increased transportation costs especially when parts are produced in distant manufacturing plants.

Logistics planning, in a flexible environment, requires an integrated and dynamic planning tool to dynamically control the supply network.

Finally there is no possibility to have a quantified assessment of a customer's likelihood to buy a vehicle that is configured according to his preferences for a certain delivery time

PROBLEMS TO SC due to HIGH CUSTOMIZATION

Production Scheduling

- ❑ Difficult to Forecast customers' requirements – Unique Variants

Supply Chain

- ❑ Limited Inventory visibility to in-transit parts
- ❑ Supplier confirmation for Production Schedule feasibility
- ❑ Changes in Production Schedule increase transportation costs



- ❑ Existing systems mainly based on *Mass Production Concept*
- ❑ Logistics planning require an *INTEGRATED* and *DYNAMIC* Tool to *Control the SC*
- ❑ Organizational *Restructuring - Advanced ICT*

Objectives

- Simulates* the impact of *Production Change* on suppliers**
- Calculates* logistics *Lead Time* and *Cost* due to production change**
- In order to support the plan considers:**
 - ✓ **Supplier inventory**
 - ✓ **Production capability**
 - ✓ **Capacity constraints**
 - ✓ **Supplier ability to support the plan**
- Enhances *Web-based information flow* (OEM-Supplier-OEM)**
- Improves match of Pre-ordered and Pre-configured products to customer *Actual Requirements***