

ASCM 2020-2021 Case Competition

Regional Round

Developed in collaboration with Deloitte Consulting LLP

Re-inventing Inventory Management at AutoCorp to increase service levels

Company Background

AutoCorp is a leading automobile manufacturer in North America that specializes in passenger vehicles. Their market share in the past 3 years has increased by 10% and, buoyed by this success, the company has been actively identifying ways to sustain and impel their growth. With the advent of online shopping and ridesharing, convenience and expediency have become top differentiators for consumers. While wait time for a personal vehicle to be delivered to a customer used to be close to a month a decade ago, today's customer cannot tolerate this long lead time. Therefore, AutoCorp has started to focus on reducing Order To Delivery (OTD) time in an effort to increase service levels. Through customer surveys, the company has determined that its Order to Delivery time does not match customer expectations. The issue AutoCorp faces now is that its supply chain is unable to match and support any reductions in OTD time and there is a wide variance in customer service levels across dealerships. In addition, the status of orders and inventory levels in dealerships and warehouses across locations is not easily accessible to all who need to view the overall health of OTD. The COO has set up your team as internal consultants to audit and improve their operations. He has identified three key areas of improvement that can provide significant benefits both in the short term and the long run.

Multiple Streams of Data

AutoCorp sells 3 vehicle models with a variety of customizations. A customer can choose between several body styles and paint colors. When a customer orders a car, the dealer representative enters the details of the order on a Global Orders Database (GOB) where all orders across all company dealerships are stored. The GOB then sends the order details to the distribution network.

The distribution network maintains its own database for inventory called the Warehousing System (WHS). A merchandising agent at the warehouse then queries the WHS for the orders entered in the GOB. If the distribution center (DC) closest to the dealer has stock or anticipates restocking for the entered models within the timeline of delivery, then the WHS ships the orders to the dealership on a specified date. For those orders that it cannot fulfill, the WHS prompts merchandising agent to forward the GOB orders to the manufacturing department for production.

The marketing department is responsible for forecasting the potential sales of vehicle models and variants. Towards this end, marketing forecasts sales for a date about three weeks from the current date on a database called the Marketing Forecast System (MFS). This head start is needed to allow manufacturing to have enough time to procure the required parts from the parts vendors and set up a production plan for the forecasted vehicles.

The manufacturing department pulls up data from the MFS and the forwarded orders from the GOB to determine its weekly quota for production. The quota will include the cars needed to fulfil the marketing forecast as well as the forwarded customer orders. Currently, this involves a dedicated production planner who pulls the MFS data and the forwarded GOB orders, and then filters them out to obtain only that data which is necessary to build his production sequence.

The company is focusing on rationalizing and automating its database systems. As the Chief Information Officer (CIO) jokes, “The fewer databases I have screaming for maintenance, the better I can do my job” She would like your team to come up with a better system for managing the order flow process. Towards this end, she would like you to deliver a slide containing the system map of your idea, like the way the current system is charted out in the **Current Order Flow** exhibit.

The manufacturing department is, perhaps, most dependent on the order flow. The factory is divided into two shops – the body shop and the paint shop. In each shop, vehicles are built up in a sequence of operations. Every shop measures its success chiefly in terms of efficiency. Efficiency means different things to each shop. The paint shop is efficient when they must change the pigment in their paint guns as few times as possible. Each change in car color needs the paint guns that apply different coats to be drained, washed and refilled with the new pigment. The body shop is efficient when they must change the welding fixtures to accommodate different body styles as few times as possible. Every change in body style implies down time across the entire assembly line. Manufacturing currently produces the orders in the same sequence that it receives them from the GOB and the MFS and there seems to be significant downtime and material wastage in both shops. The Chief Production Planner (CPP) wants you to examine the sample GOB and MFS data provided and find a production logic which minimizes this downtime and waste. Your logic need not sequence the sample data provided; the CPP only requires a high-level logic. A single slide articulating your logic clearly is sufficient.

Customer Demand Sensing

Over the years, AutoCorp has noticed a creeping unpredictability in customer preferences. Shorter development cycles combined with a general market shift towards convenience and variety have influenced customer demand. This has caused gross errors in setting production targets and inventory levels. Dealerships are the worst affected by this changing preference. When the dealership forecast is below actual demand, they face falling service levels, irritated customers and lost brand value. When the forecast is above actual demand, they face high carrying costs and obsolescence. Consistent estimation errors by the company are also leading some of their dealers to court other automakers to sell their vehicles. This issue can seriously threaten AutoCorp’s market advantage. The company is now looking for a proactive measure to rectify forecasting errors.

The company has provided your team with sample forecast data for 15 weeks. They would like your team to research and suggest new digital demand sensing tools that will enable them to enrich the sales forecasts with real time customer data. Provide a single slide explaining the methodology of the tool, the infrastructure and data that it will require, how it will be integrated into the existing forecasting system and potential benefits and problems.

End to End view of OTD health

Senior leadership has always faced a problem when it comes to quick decision making about operations. They find that their reports are hopelessly outdated, and it takes a long time and coordination with multiple points of contact in the four departments to get up to date information on the overall health of Order to Delivery (OTD). They would like you to create a dashboard that summarizes and presents all the important metrics from the four departments that are critical to OTD health. Please keep your audience in mind while you design the dashboard. Senior leadership is keen on the narrative and the dashboard must be able to flesh out a narrative about the current state of OTD. Present your wireframe mockup on a single slide.