**Tableau:** Manufacturing Use Cases

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Manufacturing Industry Market Trends

**Increasing availability of information**
- Leverage data on:
  - Consumers
  - Product usage and performance
  - Shifting industry landscape

**Evolving Consumer Demands**
- Maximize use of digital channels to reach consumers who increasingly research and compare products online
- Improve insights into consumers’ attitudes on driving experience and new mobility trends (Internet connectivity, buy versus lease, car sharing)
- Use customer data and vehicle telematics to increase customer intimacy, ownership experience, product development and overall customer loyalty

**Tightening Regulatory Requirements**
- Comply with tightening regulatory mandates on fuel consumption and safety-related features cost-effectively:
  - Invest in a range of engines (conventional, electric and hybrids) and alternative materials (e.g., aluminum versus steel) to reduce overall fleet emissions
  - Align penetration and pricing strategies with fuel and safety mandates in targeted markets
  - Increase platform sharing and modular systems to offset increasing costs

**Diverging Markets**
- Improve ability to react to demand shifts and unevenness in global markets
- Adjust product portfolio and supply chains for emerging markets (smaller vehicle classes, non-traditional suppliers)
- Ensure suppliers’ production footprints – especially in emerging markets – match future market demands and company’s production plans
Defect Root Cause Analysis

Use Case
Visibility to top quality issues and their cause

Description
Quickly analyze operational quality data to understand what defect types, affected parts, production locations, people, and other variables could be degrading factory quality and performance.

Value Drivers
• Reduce time to find root cause of defects from weeks to hours
• Reduce overall defects per vehicle to lower the cost of quality and improve customer satisfaction
• Improve new vehicle launch efficiency by reduce the time to produce a quality product
Expected Rework and Resource Allocation

Use Case
Improve efficiency of the finish / rework areas

Description
Provides management in the quality / finish areas the ability to allocate manpower across the various rework stations, as well as assign the best people to repair jobs.

Value Drivers
- Improve flow and reduce bottlenecks in finish area
- Improved repair efficiency leads to better resource utilization and better attention to quality details
Production Flow Analysis

Use Case
Identify bottlenecks in the production process

Description
Show the time it takes a car to move through each area in the production process, then analyze the root cause data associated (e.g. defects captured, equipment failures, …)

Value Drivers
- Improve flow and reduce bottlenecks
- Reduce the overall cost of quality
- Increased capacity / productivity for future model launches
- Reduce time to produce a car
  - .5 hrs / car = 50,000 hrs / year
Production KPI Monitor

Use Case
Monitor top level Production KPIs

Description
High level overview of critical plant KPIs, can drill into a given KPI to explore and analyze why the particular metric is up / down.

Value Drivers
• Provides top management the overall picture of plant health
• Ensure production targets are met
• Sustain high quality and production levels
Product Analysis
Other Use Cases

1. Production Sequence / Model Mix Optimization
2. Monitor Tooling to Predict & Alert Failures
3. Advanced Material Planning / Stock Out Prediction
4. Technical Change Impact Monitoring
5. Predictive Defects
6. Suggested Manpower Allocation / Capacity Planning
7. Electronic and Torque Result Failure Analysis
8. Safety and Injury Analysis for Better Ergonomics