

## Introduction

Michelin is a world-renowned tire manufacturing company, with three locations in Nova Scotia. This project is completed at the Pictou County plant. The Pictou County plant is the only plant in Nova Scotia that manufactures rubber for the tires and builds the tires.

## Problems with Current State

- Shipment Tracking:
  - To track shipments, suppliers must be contacted by phone or email.
  - Can take 3-8 hours to track shipments.
- Review of Inventory Levels:
  - Data can be found on multiple different databases.
  - Format of the data is not easy to use.
  - Can take 2-3 hours per database to review all the data.

## Project Scope

- Shipment Tracking:
  - Eliminate need to contact suppliers.
  - Create an easy-to-use application for suppliers and Michelin.
- Review of Inventory Levels:
  - Extract, transform and load the data into MS Power BI.

## Tools Used

Shipment Tracking:	
<b>Back-end</b>	<b>Front-end</b>
MySQL	HyperText Markup Language (HTML)
HyperText Preprocessor (PHP)	Cascading Style Sheet (CSS)
	JavaScript (JS)
Construction of Dashboard:	
<b>Extract</b>	<b>Transform &amp; Load</b>
SQL	DAX

## Dashboard Design



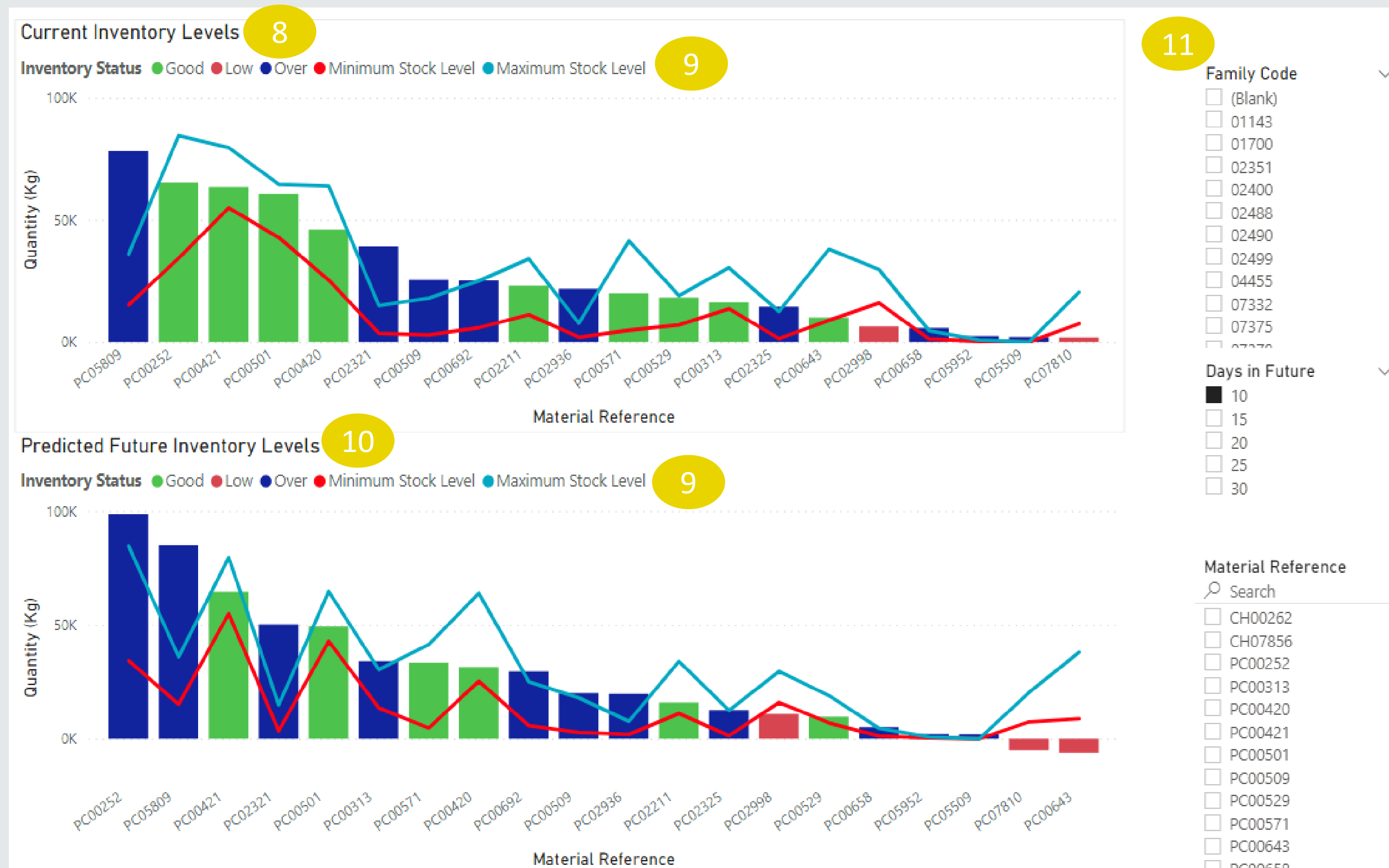
## Dashboard Design Details

- This visual uses the current inventory levels and consumption to calculate the days left of consumption per chemical.
- The colour-coding is done as follows:
  - Red:** Below minimum inventory.
  - Green:** Between minimum and maximum inventory levels.
  - Blue:** Above maximum inventory.
- This visual displays the remaining days until the arrival date per shipment.
- The colour-coding is done as follows:
  - Red:** Delayed.
  - Light Blue:** It is on order.
  - Green:** It has been shipped.
- Click on a bar to view the quantity of expected material in kilograms.
- This visual sums the current inventory per chemical by kilograms.
- User can filter by "Family Code", "Material Reference" and "Inventory Status".

## Shipment Tracking Desired State

The desired state for shipment tracking includes the following components:

- Michelin submits new orders. (Screenshot of 'CREATE NEW ORDER' form)
- The supplier views all their orders. Suppliers can only view orders relevant to them. (Screenshot of 'ORDERS' list)
- Supplier updates shipment status, when applicable. (Screenshot of 'STATUS UPDATE' form)
- Michelin can view all current order specific information. Orders are ordered by the due date (ETA) ascendingly. (Screenshot of 'NEW ORDERS' list)
- Michelin updates order status to arrived, upon order arrival. (Screenshot of 'MODIFY ORDERS' form)



## Project Impacts

- Saves the supply chain team from hiring another employee.
- Saves 20 hours per week switching between interfaces.
- Identifies risks via minimum and maximum stock levels per product.
- Reduces the production risks, by allowing the team to expedite orders or modify production schedule to avoid downtime.

- This visual sums the current inventory per chemical by kilogram and displays it against the minimum and maximum stock levels.
- Review point 2 for the bar colour coding. The lines represents:
  - Red:** Minimum stock level
  - Blue:** Maximum stock level.
- This visual displays the estimated inventory levels in the future, assuming constant consumption and that shipments arrive on time.
- Similar to point 6, this filter allows the user to choose "Family Code", "Material Reference", and "Days in Future".
  - Days in Future allows the user to select how far ahead they would like to look.