**OSU Analytics Project Notes – Worthington Industries.**

***Question: How do Bookings, Shipments and Forecast correlate and what predictions about inventory changes may be possible?***

**Data Definitions**

**Facts:**

1. **Booked Tons:** When a customer submits an order for Steel (This is a firm order that is expected to ship when the customer requests).
   1. **Example:** Today (02/06/2022) a customer submits an order for 4,000 tons of Steel due next month, this would represent 4,000 tons of Booked Orders for this month (02/2022).
   2. **Common Time:** Booked on Date
   3. **UOM:** Tons
   4. **Time Frame:** Last 4 Years
2. **Shipments:** When material physically ships and is billed out of our system and the customer is invoiced.
   1. **Example:** Today (02/06/2022) We shipped 4,000 tons of Steel to the customer, this would represent 4,000 tons of Shipped Orders for this month (02/2022).
   2. **Common Time:** Shipped on Date
   3. **UOM:** Tons
   4. **Time Frame:** Last 4 Years
3. **Forecast:** Contract customers are expected to give advanced notice of Firm Orders so we can fulfill their orders at mill lead time (8 weeks typically is mill lead time). This forecast represents what we will buy in advance of firm orders to meet customer demand.
   1. **Example:** Today (02/06/2022) A customer submits their forecast cast for the next six months, in that forecast they expect to order 4,000 tons of Steel in May, which would represent 4,000Forecast Tons for 05/2022.
      1. **Forecast lag Example:** Two Months ago, the customer forecasted only 3,000 tons of Steel needed for May, which would be expressed as 2 month lag FC for 05/2022 of 3,000 tons.This is especially important to note, as we buy steel 8 weeks out typically, so what the Customer told us they would need 2 months ago, indicates what we would have physically bought for this month.
   2. **Common Time:**  Forecast-For-Date (Date expected to ship to the customer)
   3. **UOM:** Tons
   4. **Time Frame:** Last 4 Years with 2 Month Lag FC as well.
4. **Inventory History:** What our inventory levels were by Month for a Customer, this represents a snapshot of what was in inventory at the end of each month.
   1. **Example:** Customer A had 4,000 tons of inventory at the end of last month, this would represent 4,000 tons of inventory in January for this customer (01/2022)
   2. **Common Time:** Month End Date
   3. **UOM:** Tons
   4. **Time Frame:** Last 2 Years.
5. **Current Inventory:** The current material in our inventory as of today.
   1. **Example:** Customer A has 4,000 Tons of material in our plant right now, this would represent a value of 4,000 Tons of Inventory.
   2. **Common Time:** Current Date
   3. **UOM:** Tons
   4. **Time Frame:** Current Date Snapshot

**Dimensions**:

**Customer:** End Customer Material is Billed To

**Plant:** Producing Plant for Customer Material

**Primary Market Code:** Customer Market Segment (e.g. Construction/Automotive etc.) Hint: May predict seasonality.

**Material Type:** Type of Steel that we are producing (e.g. Hot Rolled, Cold Rolled, Galvanized etc.)

**Month Name:** Expressed as ’January’,’February’

**Calendar Year:** Expressed as ‘2022’, ‘2021’