SUCCESS STORIES - SUMMARY

Project Name	Client	Brief Description	Services
Material requirement & Planning	**Foundation makeup brand**	Developed a suite of S&OP tools including **demand forecasting, inventory modeling leading to a supply planning model,** that helped a makeup products company estimate safety stock, reduce excess inventory, minimize stock-outs and improve accuracy and efficiency in placing orders.	

MATERIALS REQUIREMENTS PLANNING (MRP) TOOL FOR A MAKEUP BRAND

ABOUT THE CLIENT

Company is a foundation **makeup brand** that has been growing at a rapid pace but had seen frequent unexpected demand peaks leading to **excess/shortage of stock** and related **working capital issues**

SITUATION

- **Forecast accuracy was low**, inventory modelling was not robust and subsequently, the **Material Requirement Planning (MRP) process was manual** and inefficient
- Merilytics partnered with the company to **build a robust MRP tool** that fed of off accurate forecasting and inventory models, and **improved the overall** efficiency and accuracy of the **supply chain process**

VALUE ADDITION

- Developed a **demand forecasting model** to accurately reflect the demand trends, seasonality and product changes
- Developed an **inventory model to estimate safety stock** based on vendor lead times, demand variability and service levels
- Integrated forecasting and inventory models to build a **MRP tool** for finished goods and components for next 52 weeks
- **Adjusted the schedule** for lead time, safety stock, MOQ/EOQ and cycle time
- Provided the **flexibility to manually override the purchase orders** for the first 8 weeks to account for budget constraints, corporate targets etc.
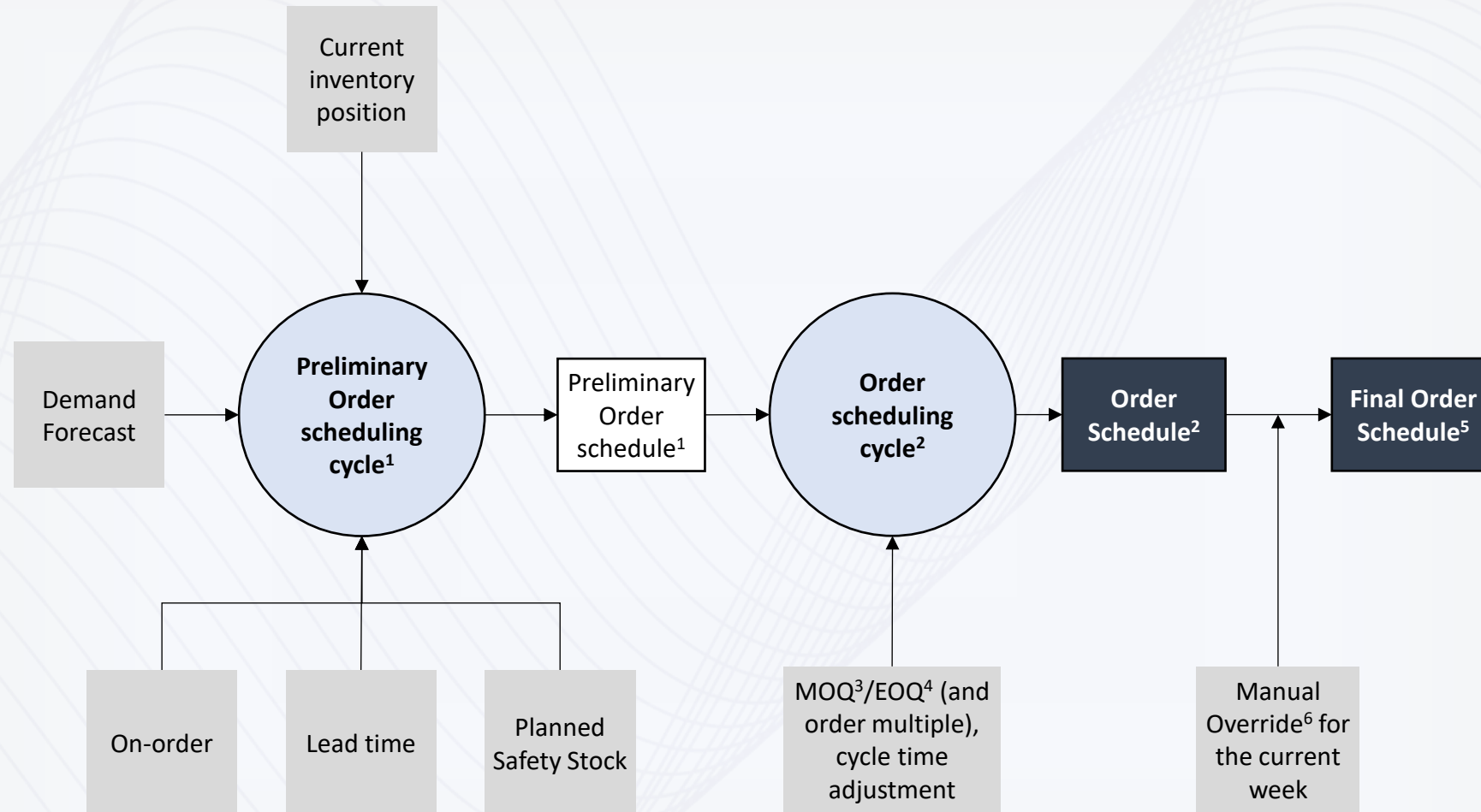
IMPACT

- New MRP process **was rolled out successfully** and the improved MRP process and tool helped the company **reduce excess inventory, minimize stock-outs and place orders accurately and efficiently**
- **Further improved efficiency of process by automating the Purchase Order** generation, which could be uploaded directly into the ERP system

APPROACH & METHODOLOGY

Inputs for the Supply Planning Model

1. Order Quantity before applying cycle time and MOQ (and order multiple)
2. Order Quantity after considering cycle time and MOQ (and order multiple)
3. Minimum Order Quantity
4. Economic Order Quantity
5. The final order schedule for finished goods will determine the demand for raw materials and a similar inventory planning cycle
6. Flexibility to tweak the orders recommended by the model for the current week to account for any business limitations

MRP TOOL EXHIBITS #1

Start date	1-Mar
Week number	10
Percentage of unfilled demand expected to come back	100.0%
Include Safety Stock, Y/N	Y
Inventory Holding Cost as a % of Tier 1 pricing	1.5%
Place Orders Date	7-Mar
Minimum order criteria	MOQ

Provided complete flexibility to the user to tweak the variables involved in the model, such as Safety Stock, criteria for minimum order (Minimum Order Quantity or Economic Order Quantity)

Order Reciepts in CAD

Supplier#	Supplier Name														
10001	Supplier 1	$372,511	$800,050	$864,199	$356,358	$189,705	$785,813	$296,473	$892,646	$758,282	$286,120	$263,986	$652,797	$714,695	$110,353
20001	Supplier 2	$855,577	$536,902	$417,624	$106,917	$791,829	$556,127	$684,261	$537,341	$345,967	$203,366	$486,321	$534,809	$338,829	$666,792
10020	Supplier 3	$523,281	$601,065	$207,824	$648,740	$821,151	$345,874	$367,114	$306,244	$312,524	$849,380	$896,593	$173,867	$637,743	$342,554
10003	Supplier 4	$768,075	$585,274	$418,581	$535,521	$141,328	$653,909	$456,058	$599,579	$116,579	$289,036	$332,479	$412,786	$677,052	$783,543
10002	Supplier 5	$229,885	$840,644	$106,733	$598,223	$849,782	$232,069	$211,755	$364,129	$760,287	$497,455	$684,074	$381,709	$146,541	$223,676
Total		$2,749,329	$3,363,935	$1,814,961	$2,245,759	$2,793,795	$2,573,792	$2,015,661	$2,699,939	$2,293,639	$2,125,357	$2,663,453	$2,155,968	$2,514,860	$2,126,918

Presented the summary of orders placed for finished goods at the assembly unit and raw materials at the suppliers in dollars and units

PO Generator Tool

The PO Generator tool can be used to generate the orders based on the final order quantity that can be shared with the suppliers/upload into the ERP system directly.

Generate Purchase Orders

Developed an in-built tool in the model to generate Purchase orders based on the final order quantity that are customized based on the ERP system

MRP TOOL EXHIBITS #2

ILLUSTRATIVE

Built views to show the expected inventory position by week for a SKU/type/category based on the demand forecast and final orders recommended by the model

Select a Category **Category 1**   Select a Type **Type 1**   Select SKU **SKU 1**   SKU Name 1

Week	Week_beginning	Begin OH (in Units)	Demand (in Units)	Safety_stock (in Units)	On Order (in Units)	Purchases (in Units)	Order Receipts of the orders made by the model (in units)	End onhand (in Units)	wks supply (in weeks)
10	28-Feb-16	90	211	1,323	5,000	0	0	4,879	24
11	6-Mar-16	4,879	211	1,323	0	0	0	4,668	23
12	13-Mar-16	4,668	211	1,323	0	0	0	4,457	22
13	20-Mar-16	4,457	211	1,323	0	0	0	4,246	21
14	27-Mar-16	4,246	178	1,068	0	0	0	4,069	23
15	3-Apr-16	4,069	178	1,068	0	0	0	3,891	22
16	10-Apr-16	3,891	178	1,068	0	0	0	3,713	21
17	17-Apr-16	3,713	178	1,068	0	0	0	3,536	20
18	24-Apr-16	3,536	197	1,068	0	2,500	0	3,339	17
19	1-May-16	3,339	197	1,068	0	0	0	3,142	16
20	8-May-16	3,142	197	1,068	0	0	0	2,946	15
21	15-May-16	2,946	197	1,068	0	0	0	2,749	14
22	22-May-16	2,749	151	1,068	0	0	0	2,598	18
23	29-May-16	2,598	151	1,068	0	0	0	2,446	17
24	5-Jun-16	2,446	151	1,068	0	0	0	2,295	16
25	12-Jun-16	2,295	151	1,068	0	0	0	2,143	15
26	19-Jun-16	2,143	151	1,068	0	2,500	0	1,992	12
27	26-Jun-16	1,992	179	1,218	0	0	0	1,813	11
28	3-Jul-16	1,813	179	1,218	0	0	0	1,634	10
29	10-Jul-16	1,634	179	1,218	0	0	0	1,455	9
30	17-Jul-16	1,455	179	1,218	0	0	0	1,276	7
31	24-Jul-16	1,276	198	1,218	0	0	2,500	3,578	19
32	31-Jul-16	3,578	198	1,218	0	0	0	3,380	18
33	7-Aug-16	3,380	198	1,218	0	0	0	3,181	17
34	14-Aug-16	3,181	198	1,218	0	2,500	0	2,983	15
35	21-Aug-16	2,983	212	1,218	0	0	0	2,771	14
36	28-Aug-16	2,771	212	1,218	0	0	0	2,559	13
37	4-Sep-16	2,559	212	1,218	0	0	0	2,348	12
38	11-Sep-16	2,348	212	1,218	0	0	0	2,136	10
39	18-Sep-16	2,136	212	1,218	0	0	2,500	4,424	19
40	25-Sep-16	4,424	258	1,339	0	0	0	4,166	18
41	2-Oct-16	4,166	258	1,339	0	0	0	3,907	17
42	9-Oct-16	3,907	258	1,339	0	0	0	3,649	15
43	16-Oct-16	3,649	258	1,339	0	0	0	3,391	14
44	23-Oct-16	3,391	243	1,339	0	0	0	3,148	13