Perennial BI

Business Intelligence for ERP Systems

Pre-Built Business Intelligence Visualized Reports

that help business leaders and managers access the data stored in their company's ERP database in a visualized form to provide the information and knowledge required for making the right decisions for their company.

Perennial Software has created Business Intelligence reports and visuals in Microsoft Power BI across 4 Business Functions for product-based companies:

- **Sales and Customers**
- **Products and Stock**
- **Purchases and Suppliers**
- **Financials**

Each function reports against Key Performance Indicators, and the overall performance of the business is summarised in a **KPI Scorecard**.

Power BI provides many ways to look at the same data in different visualized forms, and the examples provided in this Overview go some way to demonstrating that. But how to look at business data often comes down to personal preference, so please understand that the examples we are presenting here can be changed quite easily using Power BI Desktop.

The bigger challenges are:

- Developing visualized reports that provide insights into the critical success factors for the business. The reports in Perennial BI provide insights into critical activities for product-based companies, such as the percentage of customer orders that are delivered in full and on time.
- The ETL process – Extracting data from your ERP database, Transforming it to include only the data that is required by Power BI, and in the form required, and Loading the transormed data into the Data Warehouse to be used by Power BI.

We use the Microsoft SQL Server database and Transact-SQL scripts for this ETL process. SQL Server is fast, it seamlessly integrates with Power BI, and there are lots of skilled SQL software developers out there, available to help.

We have created many Visualized Reports as part of our Perennial BI product range, and new ones are being developed continuously. But if you have a particular requirement that is not included in our range of Visualized Reports, we can develop a customized report for you. Just send an email to me at my address below, with a brief summary of your request.

Best Regards,

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EXAMPLES OF VISUALIZED REPORTS CREATED IN POWER BI

Examples of Visualized Reports that Perennial Software has created in Power BI for product-based companies are displayed in this guide, and brief explanations of each report are provided below.

Each report contains one or more "Visuals", as Power BI calls them, hence the term "Visualized Reports".

Visuals Commonly Used in the Reports

- **Slicers**

  Slicers are used in the reports to select the Division (NSW or VIC) and the Financial Year (2018 – 2022). Slicers can be either Horizontal or Vertical, with the Vertical option preferred when the "Select All" option is required, or when there are many selections to choose from.

- **The Line and Column Chart**

  This combination chart provides the ability to view multiple measures with different value ranges. For example, Sales and Gross Profit in monetary values can be viewed as columns measured against the left-hand Y-axis, whilst the Gross Profit Margin in percentage terms can be viewed as a Line in the same chart measured against the right-hand Y-axis.

- **The Matrix Table**

  The Matrix is a text-based table visual that is used in our reports primarily to provide the detailed data that is visually represented in its accompanying chart. This helps to provide better understanding of the chart and allows for the data behind the chart to be test-checked against the data in the source ERP database from whch the data was extracted. The Matrix automatically aggregates data up to the highest level (e.g. Product Group) and enables drilling down into the lower levels of the data (e.g. Product Code, and even Sales Invoice Line if necessary).

Report 1 – Customer Deliveries In Full On Time (DIFOT)

Features:

A Line and Column Chart showing the sales order lines delivered in full and on time as a percenatge of all sales order lines. The Target DIFOT is 80% and the filters on this chart are Customers with a DIFOT <= 75% and with at least 30 Sales Order Lines per year, thus reducing the number of incidences of a lower than target DIFOT percentage to investigate and resolve, rather than trying to resolve all at once.

Purpose:

To provide insights into the company's Customer Service Levels. The lower the DIFOT Ratio, the more costly it is to satisfy sales orders by having to order stock in for backorders, and the more likely it is that customers will cancel the orders and look elsewhere.

Report 2 – Product Sales Pareto Analysis – The 80/20 Rule

Features:

A Matrix with a Line and Column Chart showing the products that generate 80% of the company's sales revenues. The curved blue line in the chart shows the progress towards to Product 80% Line. The chart can be moved along to the right to find where the blue line hits the orange line. The Cards at the top of the chart summarize the data and show that 21.3% of all products generate 80% of the company's sales revenues.

Purpose:

To provide insights into the company's products that are most in demand, requiring strong stock control and reordering procedures to ensure that stockouts do not occur. This analysis also shows the products that generate only 20% of sales, perhaps requiring consideration as to whether these products should be held in stock, or just ordered in as customer orders are placed for them.

Report 3 – Supplier Purchases Pareto Analysis – Tree Map

Features:

The Pareto Analysis can also be visualized as a Tree Map for each of Customer Sales, Product Sales and Supplier Purchases. This report is a Tree Map for Supplier Purchases, which provides a highly visual representation of the Suppliers that the company purchases most of its products from. Hovering over the Tree Map, you can easily see that the company's largest supplier is NA1283 with 11.5% of Purchases. The Cards at the top of the chart summarize the data and show that 80% of all purchases are made from 17.4% of the company's suppliers.

Purpose:

To provide insights into the company's suppliers that require special attention to ensure that supply is reliable and on time.

Report 4 – Sales by Customer by Product

Features:

A Line and Column Chart showing Sales, Gross Profit and Gross Margin by Customer by Product. The Combo chart is used because Gross Margin is expressed as a percentage, a much lower measure level than Sales and Gross Profit values. This report also uses a Slicer to select an individual Customer Group to report on, or All Customer Groups, and it drills down from Customer Group to Customer, and then to Product Group to Product.

Purpose:

To visually identify the Customer and Product combinations that achieve the best results for the company, at both the Sales and Gross Profit level, and at the Gross Margin level. The chart shows significant differences in Gross Margins for different Customer/Product combinations, which may require explanation or investigation.

Report 5 – Financials – Expenses vs Budget with Variance Analysis

Features:

A Matrix with a Line and Column Chart showing Purchases per Month compared to the Budget, including Variances. A negative value for a Variance represents an Unfavourable Variances – e.g. Actual Purchases are more than Budget.

Purpose:

For the CFO to gain a quick insight into how each Division is performing against Budget for any selected expense, so that rectifying measures can be put into place, if necessary.

Report 6 – KPI Scorecard – Sales Revenue and Gross Margin

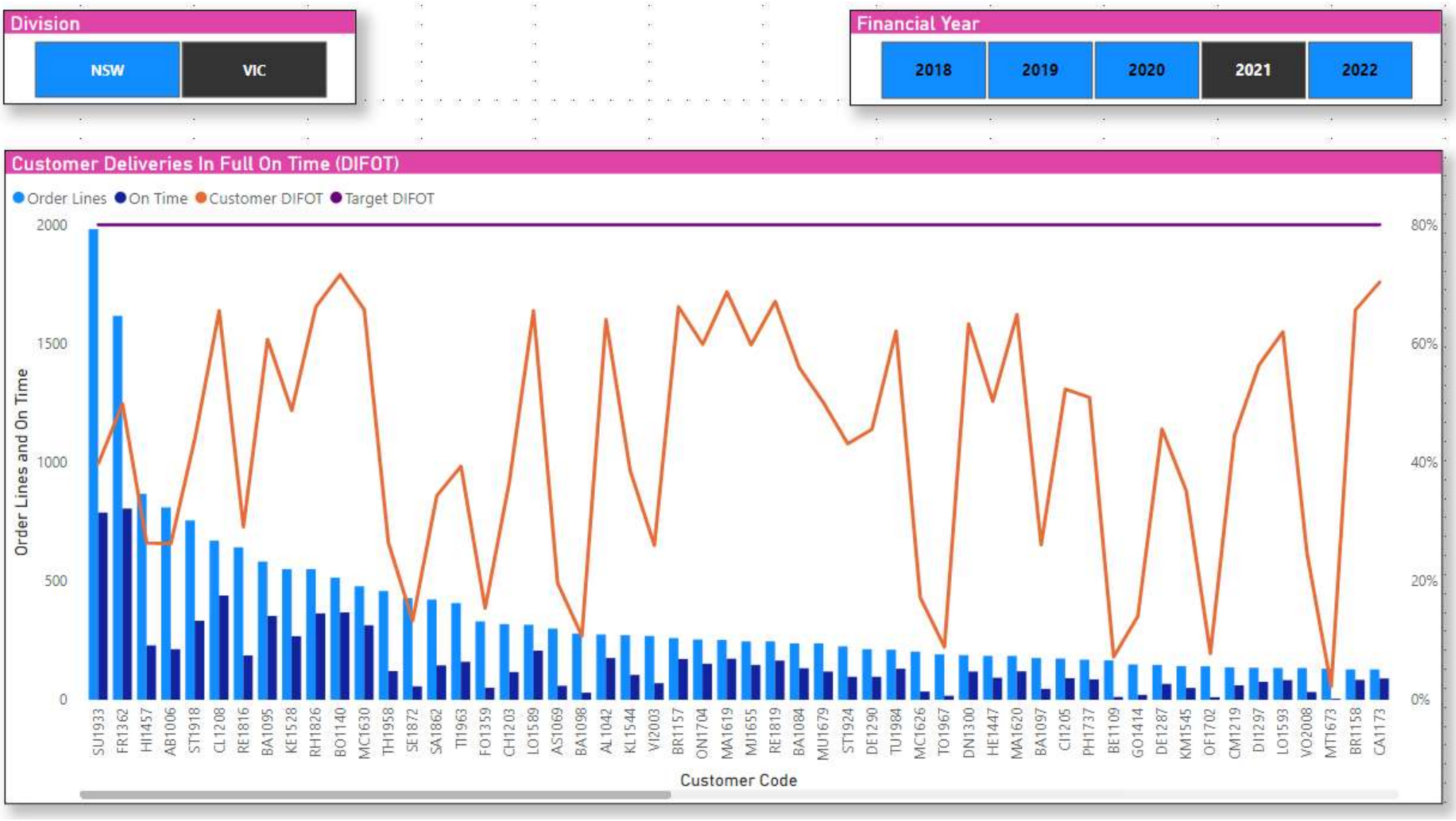
Features:

Multi-Row Cards showing the score out of 10 for the company achieving its sales and gross margin targets. The targets are shown in the Gauges below the Cards for the company, and in the Column Charts for each Division of the company. Gauges are quite space-consuming, so Column Charts are used instead for Divisions, and the KPI's for all Divisions can be shown in just 2 separate multi-column charts, one for Sales and one for the Gross Profit Margin.

Purpose:

For the CEO to quickly identify how well (or how badly) the Company is progressing against some important Sales and Profitability KPI's for the Company as a whole and for each Division of the Company.

Report 1 – Customer Deliveries In Full On Time (DIFOT)



Report 2 – Product Sales Pareto Analysis – The 80/20 Rule

Division

NSW | VIC

Financial Year

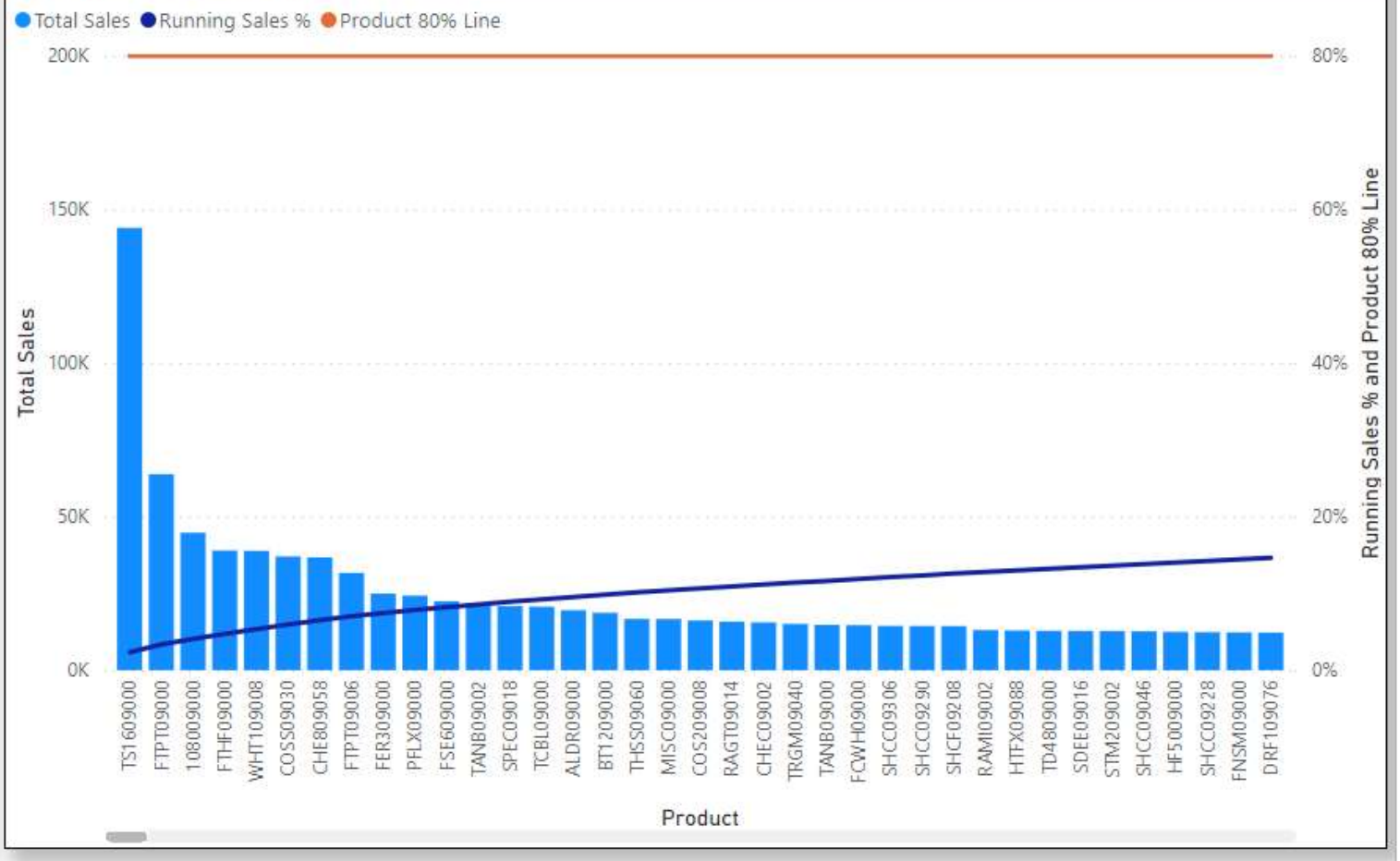
2018 | 2019 | 2020 | 2021 | 2022

Total Number of Products Sold	Number Making 80% of Sales	Percentage Making 80% of Sales
12,075	2,571	21.3%

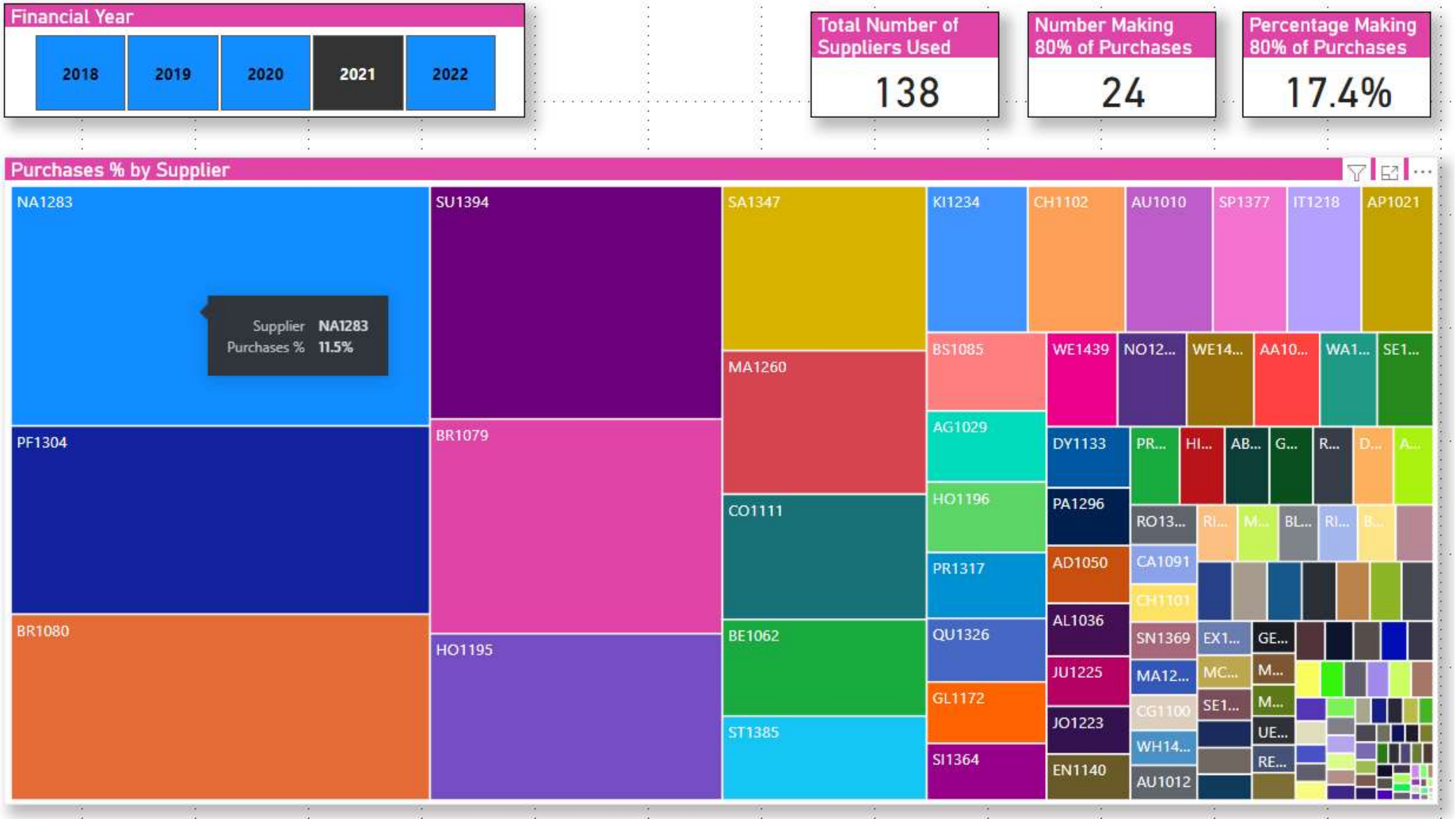
Product Sales Pareto Analysis

Product	Total Sales	Sales %	Running Sales %
TS1609000	144,000	2.3%	2.3%
FTPT09000	63,822	1.0%	3.4%
108009000	44,746	0.7%	4.1%
FTHF09000	38,956	0.6%	4.7%
WHT109008	38,852	0.6%	5.3%
COSS09030	37,018	0.6%	5.9%
CHE809058	36,735	0.6%	6.5%
FTPT09006	31,680	0.5%	7.1%
FER309000	24,940	0.4%	7.5%
PFLX09000	24,276	0.4%	7.8%
FSE609000	22,440	0.4%	8.2%
TANB09002	21,304	0.3%	8.6%
SPEC09018	20,861	0.3%	8.9%
TCBL09000	20,662	0.3%	9.2%
ALDR09000	19,552	0.3%	9.5%
BT1209000	18,686	0.3%	9.8%
THSS09060	16,695	0.3%	10.1%
MISC09000	16,662	0.3%	10.4%
COS209008	16,196	0.3%	10.7%
RAGT09014	15,811	0.3%	10.9%
CHEC09002	15,539	0.3%	11.2%
TRGM09040	15,076	0.2%	11.4%
TANB09000	14,764	0.2%	11.6%
FCWH09000	14,667	0.2%	11.9%
Total	**6,178,863**	**100.0%**	

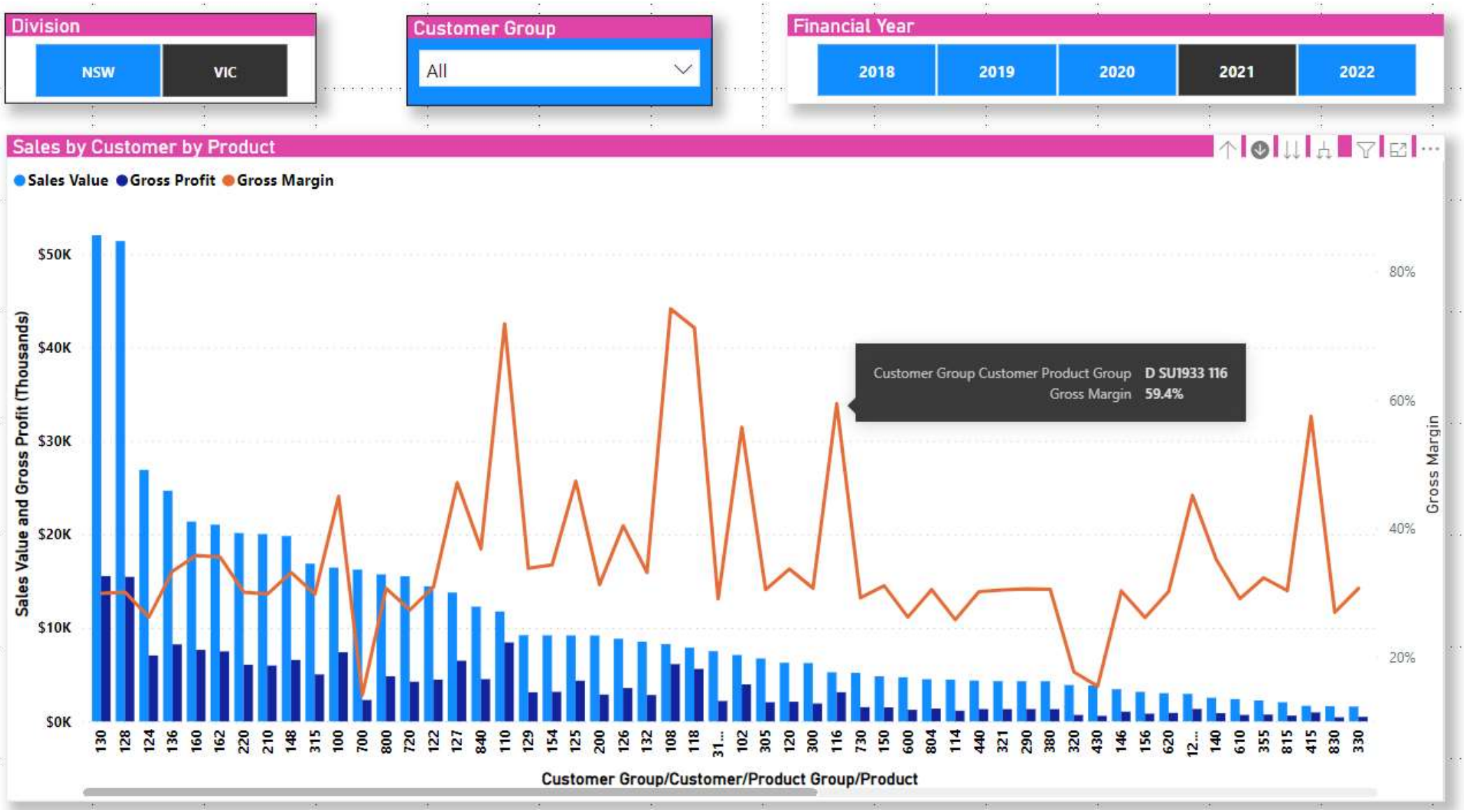
Product Sales Pareto Analysis



Report 3 – Supplier Pareto Analysis – Tree Map



Report 4 – Sales by Customer by Product



Report 5 – Financials – Year To Date Expenses vs Budget – Year to Date is February

Division

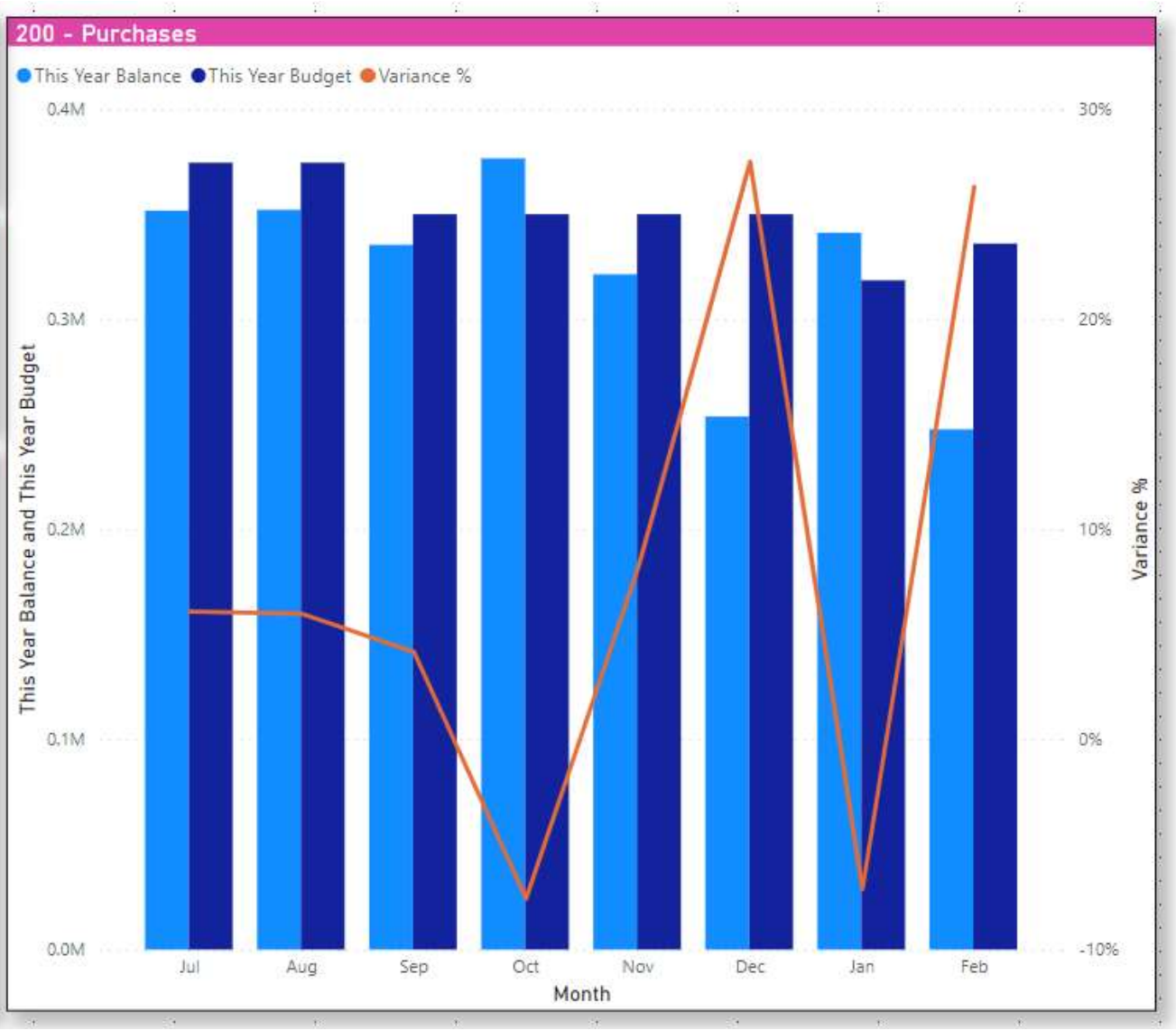
- [ ] Select all
- [ ] NSW
- [x] VIC

Expense Accounts

- (•) 200 - Purchases
- ( ) 250 - Freight& Cartage
- ( ) 300 - Accountancy Fees
- ( ) 301 - Advertising

200 - Purchases

Month	This Year Balance	This Year Budget	Variance	Variance %
Jul	351,707	374,500	22,793	6.1%
Aug	352,078	374,500	22,422	6.0%
Sep	335,420	350,000	14,580	4.2%
Oct	376,547	350,000	-26,547	-7.6%
Nov	321,398	350,000	28,602	8.2%
Dec	253,729	350,000	96,271	27.5%
Jan	341,176	318,500	-22,676	-7.1%
Feb	247,598	336,000	88,402	26.3%
Mar	0	371,000	371,000	100.0%
Apr	0	301,000	301,000	100.0%
May	0	374,500	374,500	100.0%
Jun	0	350,000	350,000	100.0%
Total	2,579,653	4,200,000	1,620,347	463.5%



Report 6 – KPI Scorecard – Sales Revenue and Gross Margin