



Business Intelligence and Business Analytics

Topic:

Business Analysis and Implementation for VMR Auto Garage (Implementation)

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Project Implementation

Based on the requirement specification, the following areas are to be implemented as part of the project to improve service delivery, customer satisfaction and revenue generation:

1. DATABASE OPTIMISATION

Database optimisation is simply the process of reducing the process and response time of the database system (Kamatkar1, et al., 2018) VMR was storing record in flat files (excel spreadsheets) which took a long time to access, process and retrieve records. The existing record were normalised and then stored into a database. The diagram below shown the database structure used to store the record for the company.

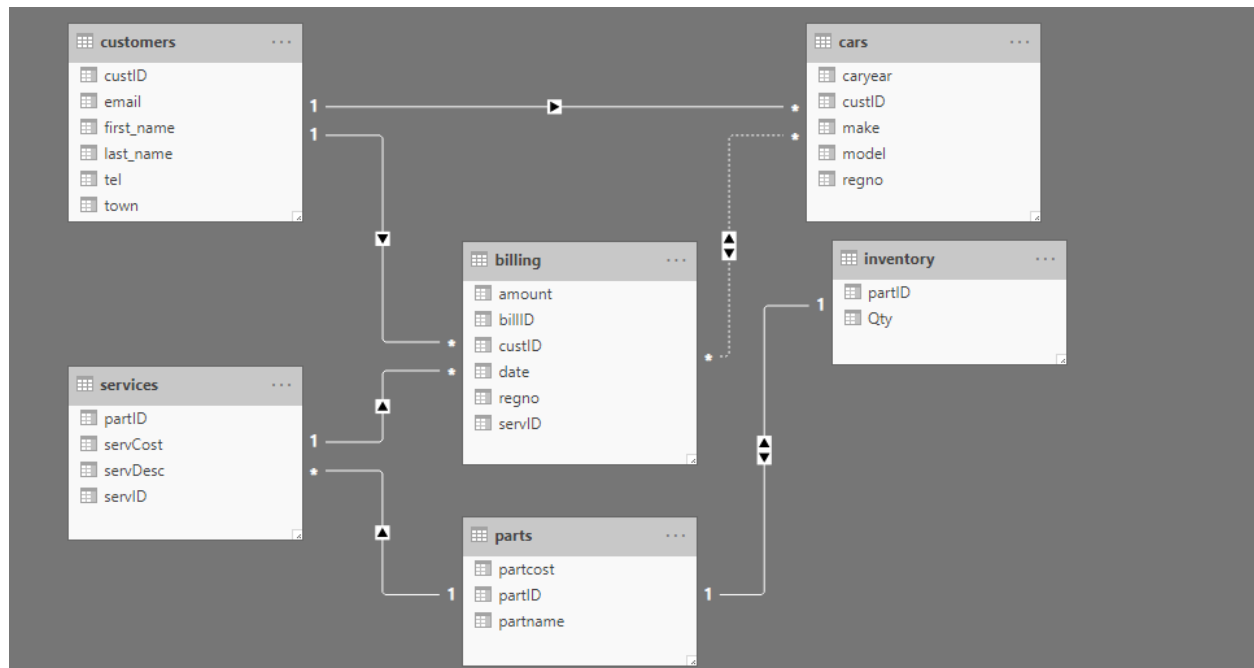


Figure 1-1: Database Design

2. BALANCED SCORE CARD

Balanced scorecard is a comprehensive performance management system. It aims at balancing performance measures and to gauge the performance for long term success and stability of business. It aligns the company's activities to its vision while also monitoring performance against the strategic goals of the business. With the aid of the balanced score card, managerial officers can gain strategic insights into 4 main areas which control the business. These areas are the Financial, Customer, Business Process, and the Innovation/Growth perspectives.

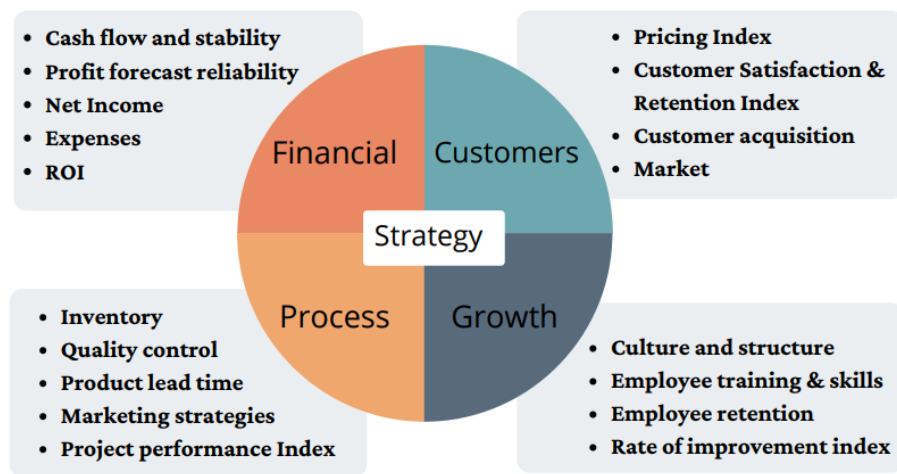


Figure 2-1: Balanced Score Card

- **Financial Perspective:** This is aimed at defining the financial goals of the business. It is often measured by percentage growth, increase in market share or increased revenue. VMR financial goals are delivering profit, increase revenue and maintain stability.
- **Customer Perspective:** Understanding the client needs how they respond to products and services rendered, as well as the ever-changing market and products. The goal is to be responsive to the needs and feelings of the customers as best as the company can, without incurring major financial implications. An excellent measure adopted by VMR is obtaining feedback from customers for further improvement.
- **Process Perspective:** This focuses on optimising the internal flow of process within the company by reducing errors in areas such as marketing, customer relationship management etc. for improved efficiency and better customer satisfaction which in turn fulfils the financial goal.
- **Learning/Growth Perspective:** Could be subdivided into the following;

- i. Human Capital: In VMR, we give importance to employee satisfaction as much as customer satisfaction and staff engagement. Upskilling and setting goals for employees must be taken care of.
- ii. Organizational Capital: The culture of the organization plays a significant role in the proficiency of internal processes. Leadership and structure of the organization must be maintained.
- iii. Information Capital: IT infrastructure, Data flows and data system should be easily understandable.

Some of the benefits of the Balanced Score Card to the business are listed below:

- 1. It helps the company to set strategic goals
- 2. It helps the company to set action plans
- 3. It is useful tool to develop and align KPIs or metrics to help monitor the delivery of strategic goals.
- 4. It makes it easy for managers to communicate the internal and external strategic goals of the company.

3. POWER BI

Microsoft Power BI is a great business intelligence tool used for visualising and gathering business analytics with the use of reports and dashboards to gain valuable insights into an organisation. The use of Power BI has been implemented into VMR's business to answer some of the questions proposed from the Balanced Scorecard.

Power BI works by importing the company's existing data; data which has been transformed and pre-processed- data schema in Figure 1-1.

The dashboard below shows and overview of some of the key metrics measured in the company over the past 2 years (2018-2019).

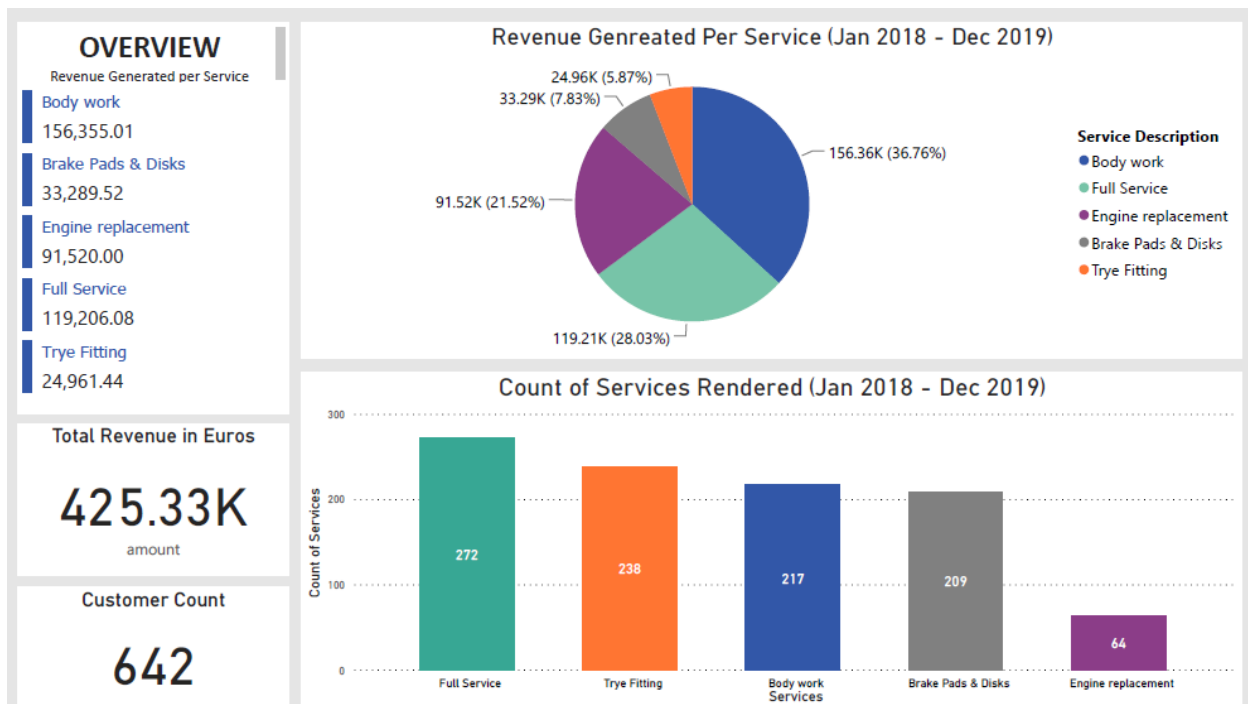


Figure 3-1: Overview Dashboard

From the top left, we can see a breakdown of the amount in Euros generated from each service and to the right of that is a pie chart representing the percent of each service in relation to the total revenue generated. The column chart shows the number of times a service was rendered over the last 2-year period. This can be used in comparison to the pie chart to understand what services produce the most revenue. We can see clearly that although the engine replacement is the least requested service with less than a quarter of the most rendered service, it still accounts for 21.52% of the total revenue which is somewhat high. On the lower right are the representations of the total revenue in Euros and the total number of customers serviced in the last 2 years.

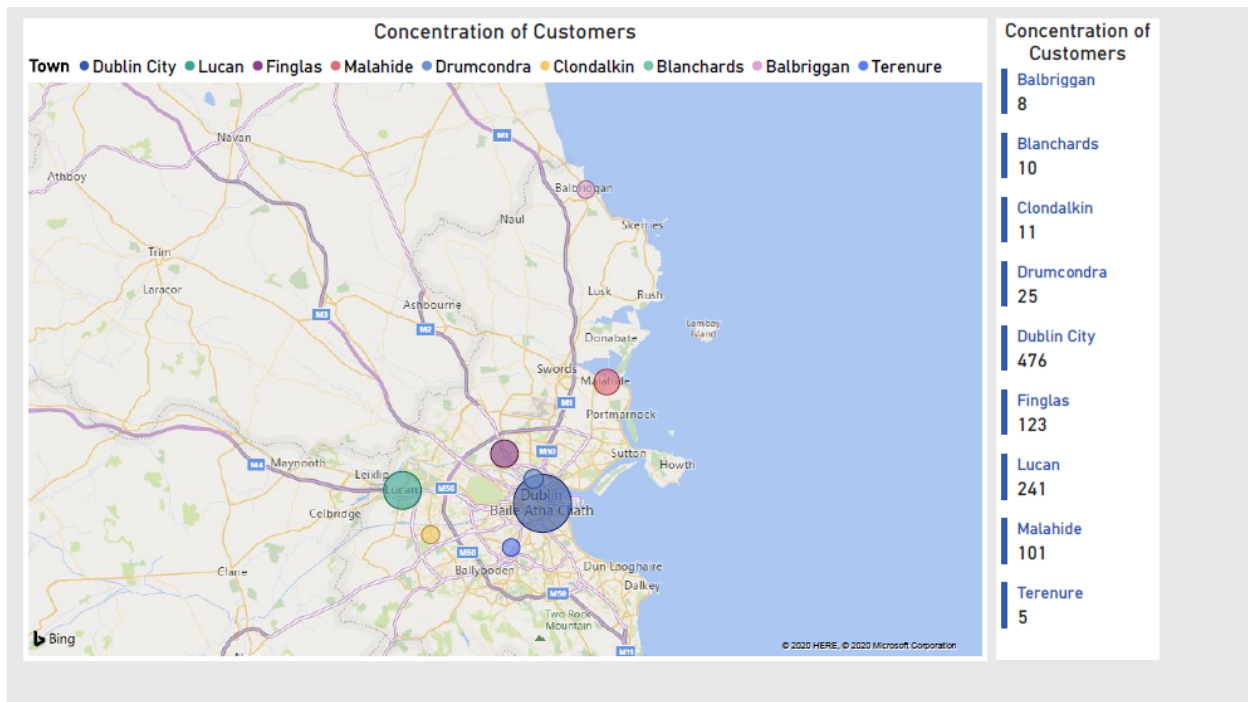


Figure 3-2: Customer Location Dashboard

This dashboard above shows the geographical distribution of the customers. It is evident that a large concentration of VMR's customers are around the Dublin city centre with very few customers around Balbriggan, Blanchards, Clondalkin and Terenure. This dashboard would be extremely helpful to management staff when trying to decide on what locations to focus their marketing campaigns and potential areas to locate new offices when expanding.



Figure 3-3: Revenue per Month

The dashboard above shows the revenue generated every month from 2018 to 2019.

VMR has KPI's to monitor their monthly and yearly progress. Some of these include:

- I. **Revenue:** Comparing the *Actual* and *Target* revenue for each month such as Gross ROI, Productivity, Efficiency, Inventory management.
- II. **Customer Retention:** analysing the number of customers that patronise VMR services after the first time. This basically means, counting the **number of returning customers** each year. This feature can also be used to address the issue of customer loyalty and introduce incentives.
- III. **Customer Acquisition:** this is a **measure of new customers** the business gets very year.

The figure below shows a representation of the *Actual* revenue against the *Target* revenue at the end of each month. The comic icon changes based on if the target is met or not. The line graph visualises the actual revenue and target what over the 2-year period.

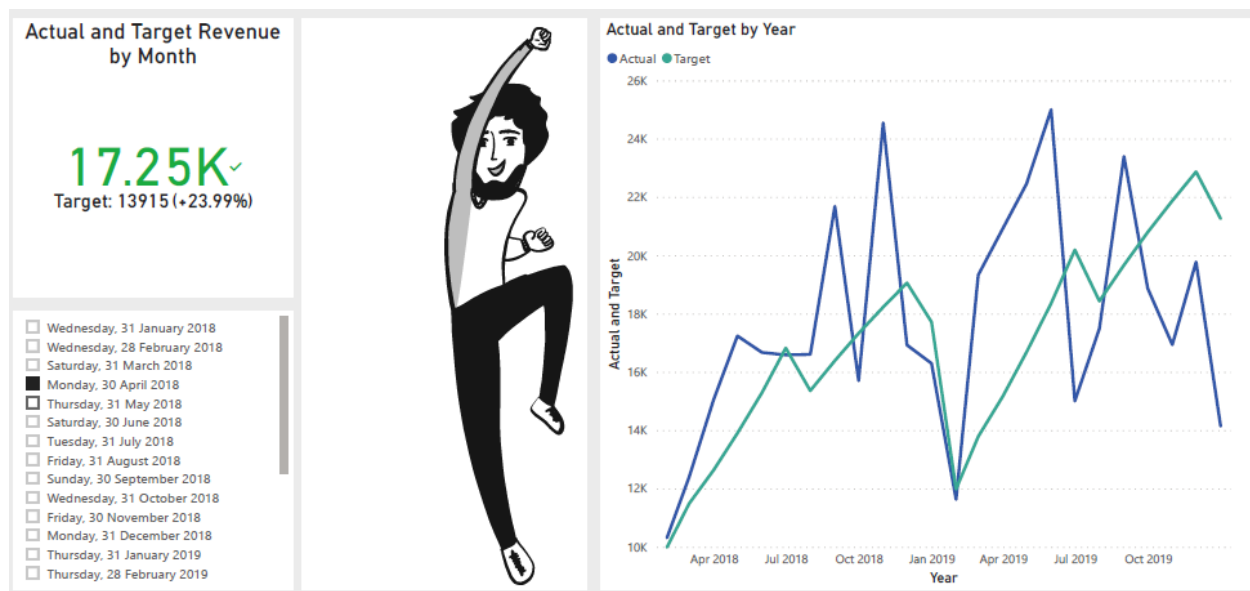


Figure 3-4: Actual & Target Revenue

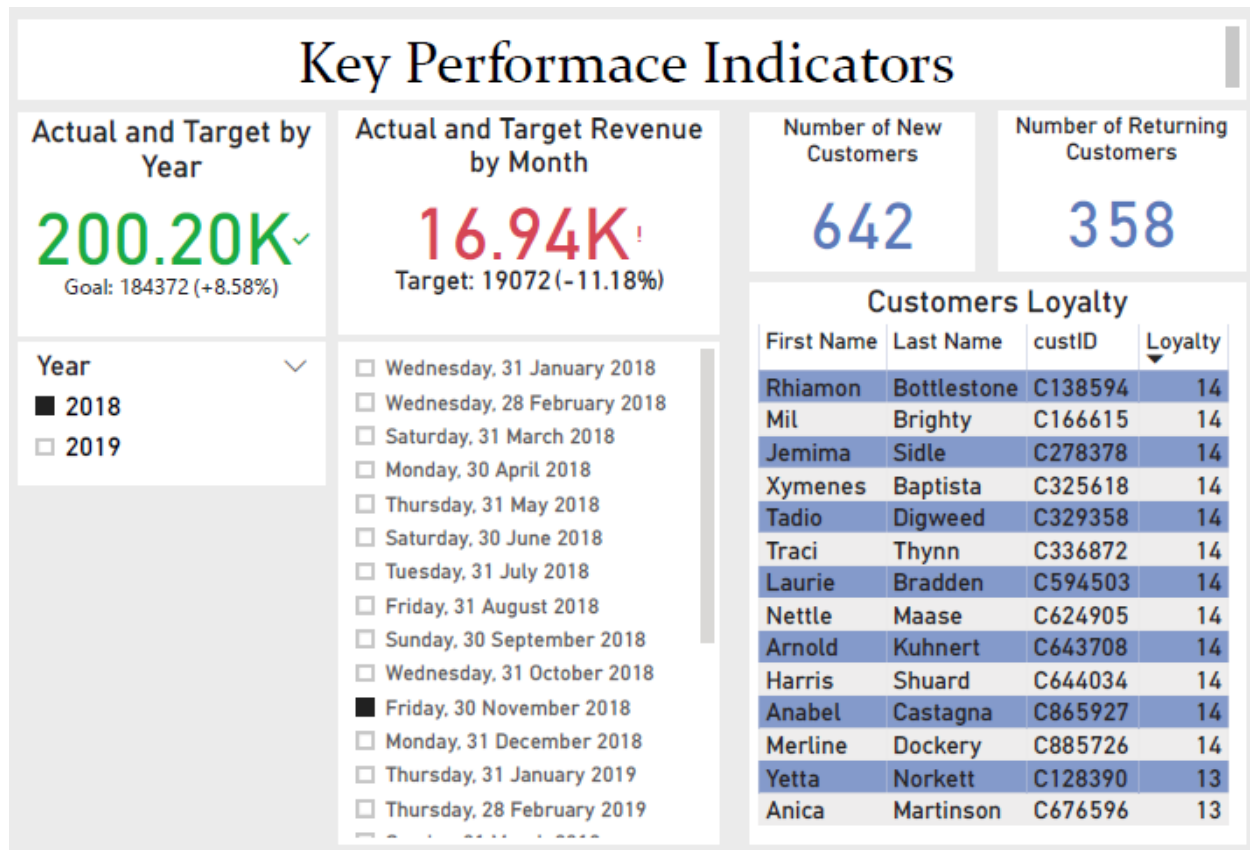


Figure 3-5: KPI Overview

The leftmost part shows the Actual and Target for each year. The next part shows the Actual and Target revenue per month for the 2 years. The number represented in green signifies that the target was met and/ or surpassed while the red signifies that the target was not met.

The rightmost top part shows the number of new customers and the number of returning customer. On the bottom part shows the customers that have patronised the company more than 10 times. We can see the Names, Customer ID and Loyalty (number of times the customer has patronised the business). This has made it easy to identify customers who are loyal to the company.

4. CUSTOMER RELATIONSHIP MANAGEMENT (CRM)

This is a technique used by organisation to manage their interactions with their present and potential clients. The CRM tools within Dynamics 365 makes it easy to track activities within the company using dashboards. Dashboards provide a summarised view of cases within the company. The dashboard in *figure2-1* below shows the cases received by customers. The **yellow** highlight shows how the request was received- by phone or by email, the **blue** highlight shows the priority level of the request- low, normal or high, while the **green** highlight shows the status of the particular case- in progress, on hold or completed. This part of the dashboard handles the everyday walk-in customer.

The screenshot displays the Dynamics 365 CRM dashboard with four main panels:

- Active Cases (Filtered):** Shows 5 cases. The first case, 'Fix Air conditioner' (FA), is marked as 'High' priority (blue) and 'Email' received (yellow). The second case, 'Engine replacement' (Er), is marked as 'Normal' priority (blue) and 'Request' received (yellow). The third case, 'Tyre fitting' (Tf), is marked as 'Low' priority (blue) and 'Problem' received (yellow). The fourth case, 'Body work' (Bw), is marked as 'Low' priority (blue) and 'Request' received (yellow). The fifth case is marked as 'Normal' priority (blue) and 'Request' received (yellow).
- My Resolved Cases (Filtered):** Shows 3 cases. The first case, 'Noise from tyre' (Nf), is marked as 'Normal' priority (blue) and 'Problem' received (yellow). The second case, 'Failed engine' (Fe), is marked as 'Normal' priority (blue) and 'Problem' received (yellow). The third case, 'Required Service scheduling request' (RS), is marked as 'High' priority (blue) and 'Request' received (yellow).
- My Draft Emails (Unfiltered):** Shows 1 draft email. The email is marked as 'Normal' priority (blue) and 'Draft' status (yellow).
- My Activities (Unfiltered):** Shows 1 activity. The activity is marked as 'Email' received (yellow) and 'Normal' priority (blue).

Figure 4-1: Case Dashboard 1s

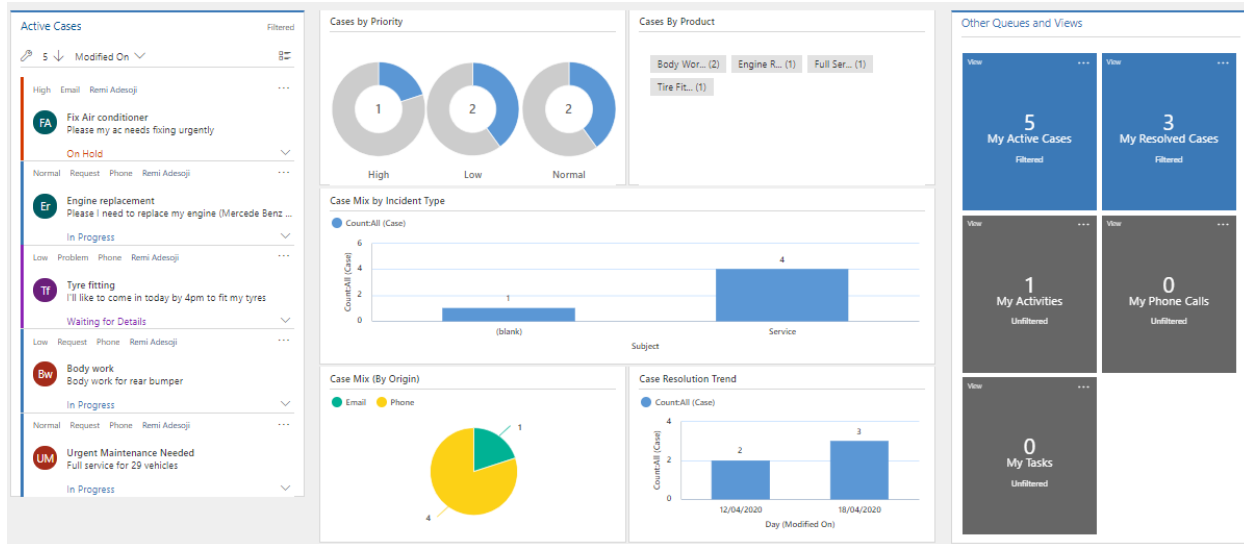


Figure 4-2: Case Dashboard 2

As VMR is looking to expand, they now look at servicing businesses who maintain fleet of vehicles as opposed to only focusing on walk-in customers. With this in mind, there is need to find a suitable way of tracking potential and new businesses that can be added to VMR's clientele list. This can be done effectively by using maintaining the **Leads** dashboard within Dynamics 365.

My Open Leads ▾

Search for records 🔍

✓ Name	↑ ▾ Topic	▾ Status Reason	▾ Created On
Reeky Banks	Regular Service	New	14/04/2020 08:26
Rocky Balboa	Regular Service	New	14/04/2020 08:23

Figure 4-3: Leads

A lead can then be qualified when the customer has shown more interest in working with the company.

Reeky Banks
Lead · Lead ▾

Lead Source: --- | Warm Rating: --- | Qualified Status: --- | Owner: **Remi Adesoji** ▾

Lead to Opportunity Sale...
Active for 49 minutes

Qualify | **Develop (13 Min)** | Propose | Close

Summary | Details | Files | Related

Contact

- Topic: Regular Service
- Type: Service-Maintenance Based
- First Name: Reeky
- Last Name: Banks

Timeline

Enter a note...
No records to show.

Stakeholders

- Reeky Banks Stakeholder

Competitors

No data available.

Qualified

Figure 4-4: Lead qualified as opportunity

When this is done, a quotation can be sent to the client. The quotation will capture the service to be rendered, the cost implication, unit of measure, validity of the quotes and some other important information that the client will find useful to decide if they will continue with the business.

Regular Service
Quote · Quote ▾

Total Amount: €10,000.00 | Effective From: --- | Effective To: 21/04/2020 | Status: **Draft** ▾

Summary | Details | Related

Quote ID: QUO-01000-D8Q6X7

Revision ID: 1

Owner: Remi Adesoji

Name: Regular Service

Currency: Euro

Price List

PRODUCTS

Group By: (no grouping)	Pro...	Pro...	Price ...	Quan.
> Full Servi...	N...	€500.00	20,0000	

Page 1

SALES INFORMATION

- Opportunity: Regular Service
- Potential Customer: Deliveroo

DESCRIPTION

Detail Amount: €10,000.00

(-) Discount (%): ---

Figure 4-5: Quote







The pricelist can also be setup within Dynamics 365 to make it easier when sending out quotes to potential customers. The price list is customisable and can feature discounts depending on the terms discussed with the client.

Charge per vehicle serviced

Transaction Category Price

General

Related

 Price List	*	 New Client Rates
 Transaction Category	*	 Fee
Unit Schedule	*	 Default Unit
Unit	*	 Primary Unit
Description		Charge per vehicle serviced

Pricing

Price Calculation	*	Price per unit
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Figure 4-6: Pricing for quotes

5. CUSTOMER FEEDBACK

Microsoft Forms Pro allows you to gather insight from the feedback received from customers.

a. Insight



Figure 5-1: Insight 1

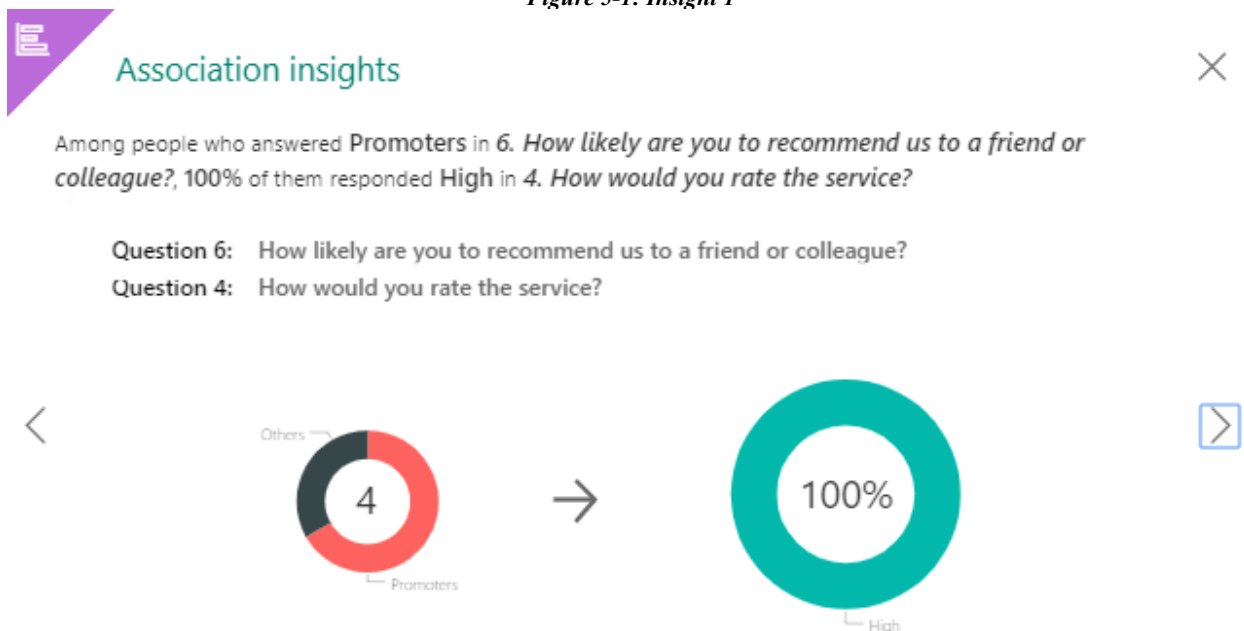


Figure 5-2: Insight 2

b. Question-wise Analysis

The question-wise analysis shows an analysis of the respondents to the questions. Figure 5-3 below shows the number of customers that were new or returning customers and also what services were requested.

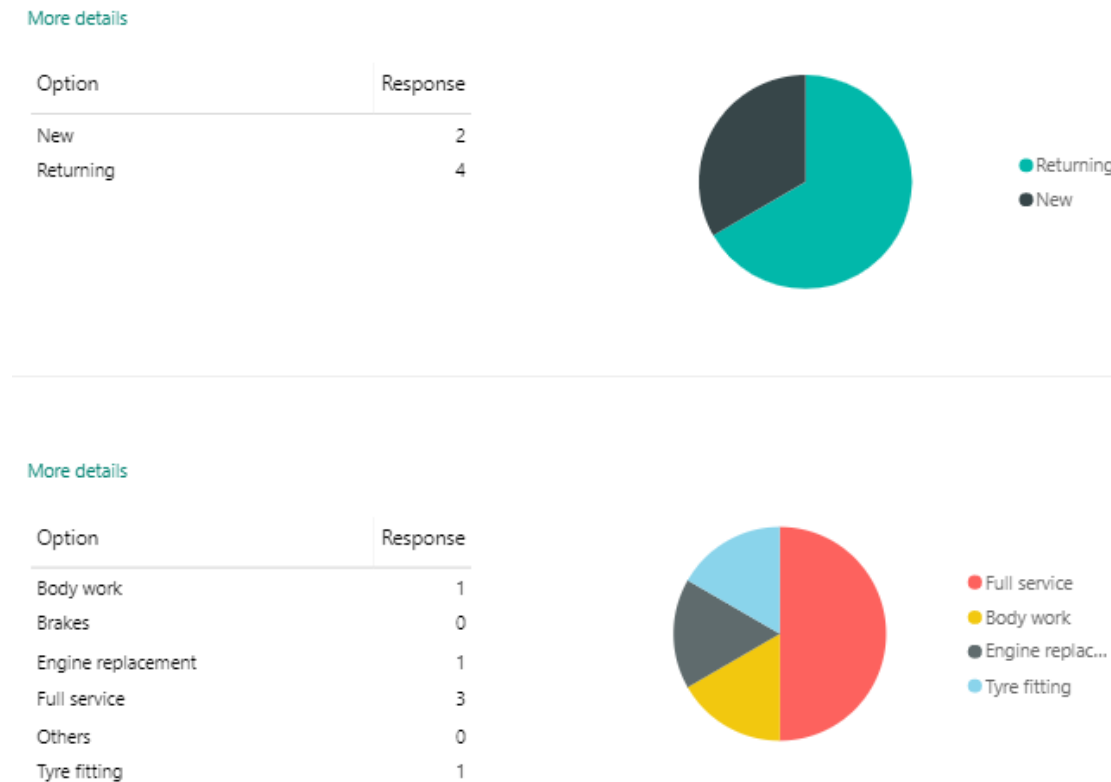


Figure 5-3: Customer Status & Service

This figure below shows the average rating across all the customers who have submitted their feedback.



4.83 Average Rating

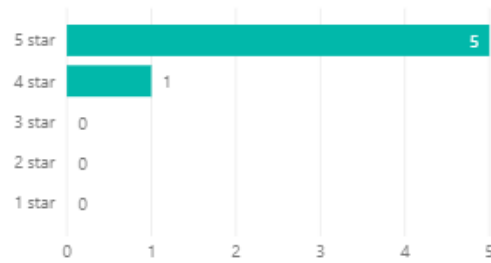


Figure 5-4: Average rating

The NPS analysis is used to estimate the customer's overall loyalty to the company (Rowe, 2017). The higher the NPS score, the more loyal we can say the customers are. NPS divides customers into 3 categories:

- Detractor:** these are customers who have negative feedback about the company. It is important to understand the perspective of this category of customers as you can find possible areas to improve on in the business.
- Passive:** these customers are indifferent about the service rendered. It could be they are probably just trying out the service and do not see the need any time in the near future. It is somewhat difficult to capture accurate feedback from passive customers.
- Promoter:** these are the customers that have been truly impressed by the company and are most likely to recommend the business to others.

These 3 categories are used to calculate the NPS score.

[More details](#)

Category	Responses	Response percentage
Detractor (0-6)	0	0%
Passive (7-8)	2	33%
Promoter (9-10)	4	67%



Figure 5-5: NPS Score

More details

Most common phrases	Response
Exceptional service	1
job	1
Perfect	1
service	1
Staff	1
timing	3



Figure 5-6: Sentiment Analysis

6. REFERENCES

Kamatkar¹, S., Kamble, A., & Vilorio, A. (2018). *Database Performance Tuning & Query Optimisation*. Springer International.

Rowe, J. (2017). *Zen Desk- NPS Best Practices*. Retrieved April 18, 2020, from <https://support.zendesk.com/hc/en-us/articles/203759096-NPS-Best-Practices-Analyzing-your-Net-Promoter-Score-results-and-taking-action-Professional-Add-on-and-Enterprise-Add-on->