



National College of Ireland

MSc Data Analytics

BUSINESS INTELLIGENCE

BI IMPLEMENTATION REPORT OF NISSAN

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19 April 2020

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Introduction (Nissan)

Nissan Automobile is a very renowned car maker company. In the last couple of years, Nissan sales got dropped drastically across different regions. As a part of BI solutions, Nissan sales data has been analyzed using power BI to understand and identify the reasons for the drop in sales in the year 2019. CRM is utilized to conduct surveys and gather feedback from existing customers. Then the combination of both inputs has been visualized to identify the gaps using Power BI. CRM tool has been used as a business solution to full-fill the BI requirements and improve customer relationships. Power BI was used to analyze the historic data and prepare the reports or dashboard with useful insights to present to the Nissan higher management so they can take business decisions. This document is concerned with the implementation of all necessary tools to incur business solutions. Effectiveness of those solutions are also validated by comparing sales

Methodology

Kaizen Improvement Model (Rouse)

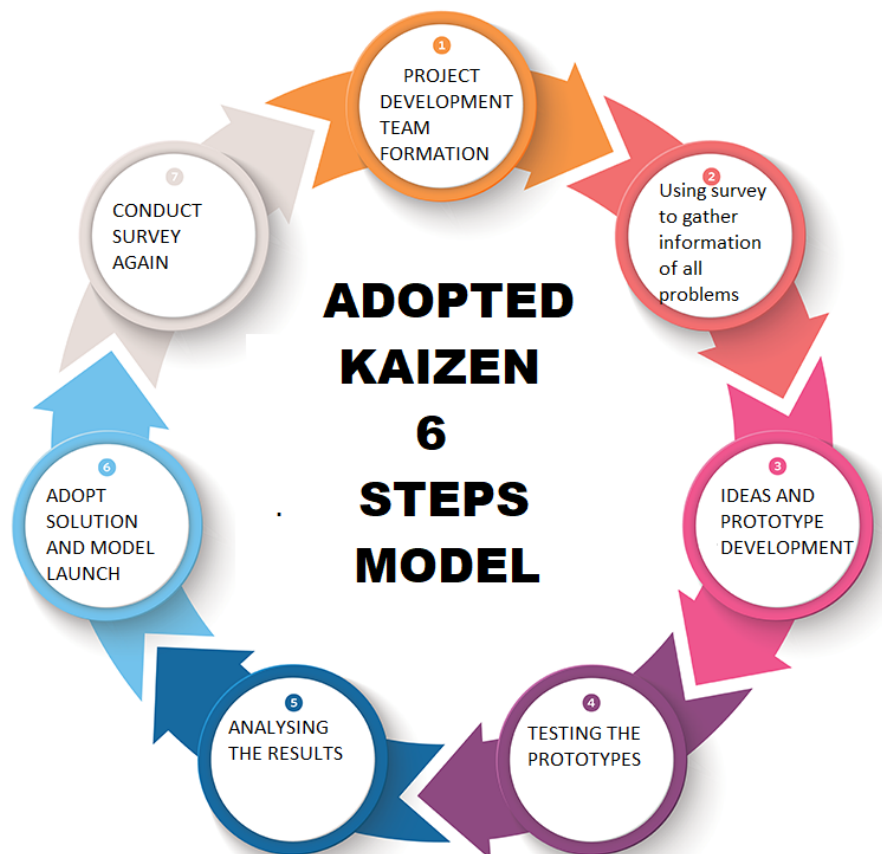


Figure 1: Kaizen Six Step Model

1. Product development team formation

First a team was created to investigate the existing issues. This team would look into the details of the problem, as kaizen's basic idea is to get the employees

involved in the company. The team also has a suggestion channel which is open to all employees of Nissan. The channel would help each employee to directly give their opinion to our product.

2. Survey

The Survey conducted gave a basic idea of where the model stands and what are the means of improvement possible. This survey helped us to gather the list of problems and go to the whiteboard for solutions.

3. Idea and prototype development

The next step was to encourage solutions and choose the ideas possible. All different team members opinions were taken into considerations for idea development. The selected idea was then channelled to prototype. These prototypes were a combined result of everyone's efforts.

4. Testing the prototypes

Prototypes created were tested. Each test revealed some insights into the prototype. The tests were done by keeping the idea of the best model into mind.

5. Analysing the results

The results of the test were studied and analysed regularly. Drawbacks of each

prototypes were studied, and new improved measures were deployed. This process went on for weeks before finalizing the best model.

6. Model Launch

Prototype that cleared all hurdles was transformed into the new model. The new model was the result of rigorous hours of testing and analysing. Each part of the model was tested severely to make it Peoples car.

7. Survey

The last step in the kaizen model is feedback. The survey conducted gave proper feedback about the model and the results of the survey were given to the Product development team to start again.

Best practice of kaizen**Identified areas for improvement**

Below are the few identified areas that need improvement.

- | | |
|-----------------------|-------------------------------|
| 1. Build Quality | 3. Customer Feedback |
| 2. Automatic Features | 4. Employee skill improvement |

Develop solutions

Ideas are discussed and feasible solutions are implemented, below are a few of those implemented solutions.

- | | |
|---|-------------------------------|
| 1. Developing a new Car model with modified features. | 2. Increment of campaigns |
| | 3. Conduct Technical training |

Streamline the process

Proposed solutions should be implemented with an eye on future enrichment.

- | | |
|---------------------------------|---|
| 1. Continuous Customer Feedback | 2. Proper integration of different Department |
|---------------------------------|---|

Balance Scorecard (LEAP)

Balance scorecard is used for specifying Objectives and initiatives for four major aspects of Nissan.

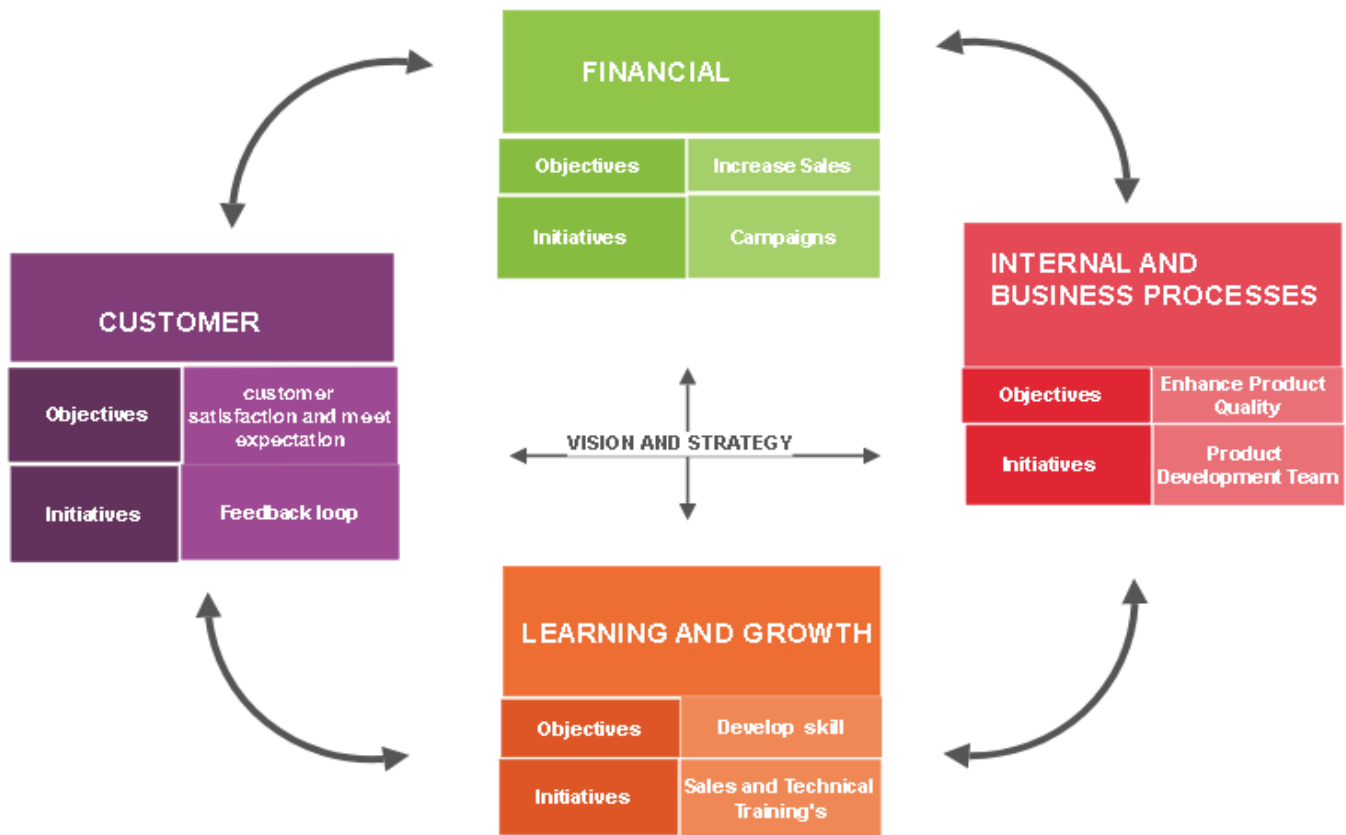


Figure 2: Balance Scorecard

Financial

The main Objective in the financial aspect is the improvement in revenue. There was a drop in sales in 2019 compared to 2018. Motive is to elevate the sales back to its earlier positions by taking the necessary initiative. It was found that campaigns had a positive impact on sales, more campaigns can be conducted to improve the Sales. So, we have increased the number of campaigns across the regions.

Customer

Customer satisfaction is paramount for any business which directly interacts with the end-user. A continuous process of customer feedback should be initiated to make deep interaction with clients for better customer understanding. Then feedbacks can be further utilized to improve customer services to better serve the user and some

suggestions from the customer can be taken into account for further improvement in the product.

Internal and Business Process

Any area of improvement should be highlighted to relevant teams. Valuable suggestions from them are then considered to modify the product. Feedback from customers can also be used to drill down weak points which can be strengthened.

In CRM we have taken those suggestions as an idea and those ideas can be assigned to concerned teams which we have created and mapped to ideas. We have automated the complete flow in CRM. That will provide the hassle-free access to all authorized access to all stakeholders who all are involved in that Idea.

Learning & Growth

Advancement in Employee skills also play a major role in edging ahead with competitors. Region with greater employee sales rating also turned

out to be a better market for selling cars. Technical training should be conducted to upscale employee attainment of customers.

Implementation of CRM (365)

Customer Relationship Management is one of the crucial aspects for any business to maintain the relationship between customers and the organization. CRM Dynamics 365 is a very powerful tool that provides a wide range of integrated services for customer support. It was used as a business solution tool to the Nissan along with Power BI. Where CRM manages the business processes by integrating them. Which created automated flows of business process so that data can be transferred seamlessly from one department to another.

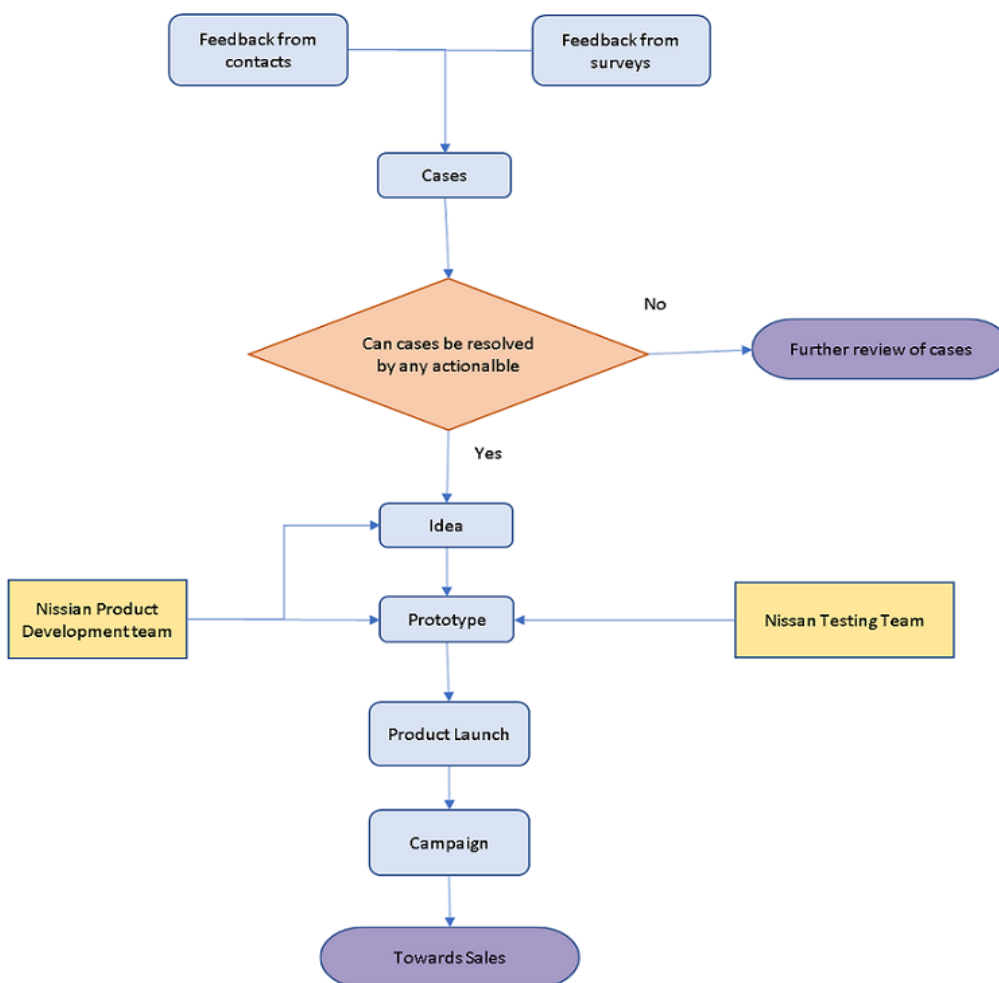


Figure 3: Feedback CRM workflow

Survey

The sale of Nissan got dropped in the year 2019. So to understand the reason for this drop Using CRM Microsoft form a survey was conducted to know the buyer's views on what they think about the Nissan Micra. The target audience for the survey was the existing customer and leads generated in the past. Results of the survey show that customers didn't like the Nissan Micra much and given the average rating was only 2.8.

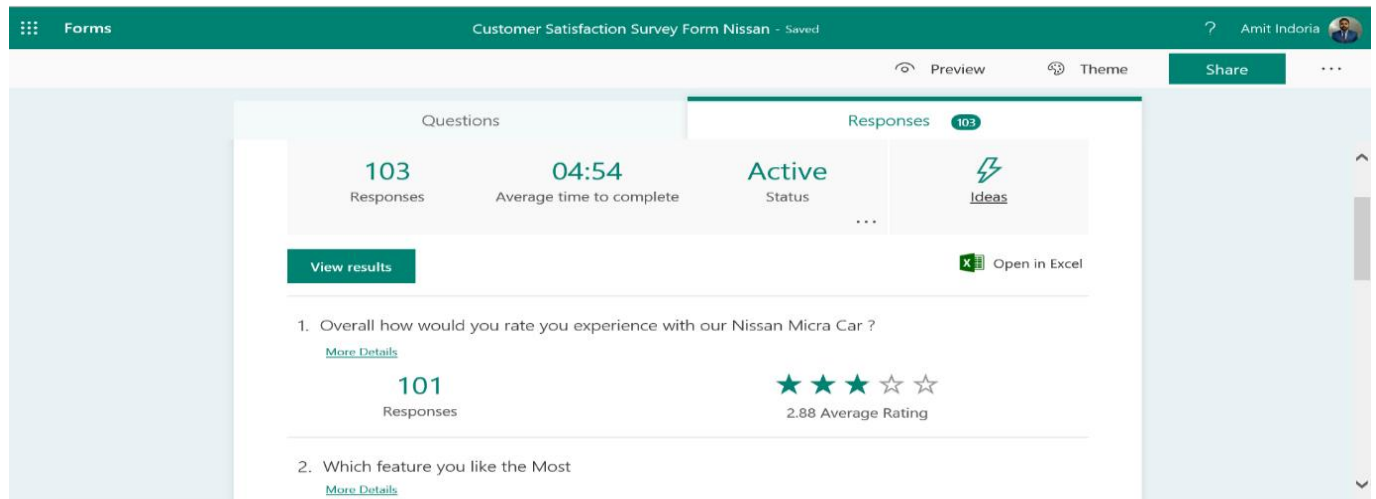


Figure 4:CRM - Customer Satisfaction Survey Form

Most of the customers say they don't want to recommend the Micra car to their friends/relatives and a lot of negative feedback received for the build quality of the car.

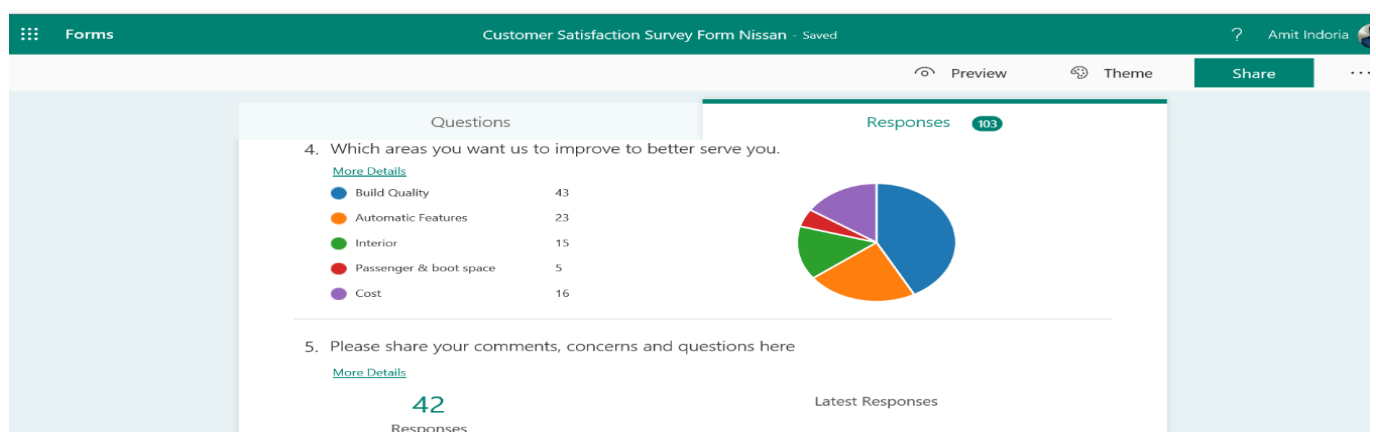


Figure 5: CRM- Customer Satisfaction Survey Dashboard (1)

Below responses received from the customers are the suggestions for improvement across different segments of the product. This clearly shows to increase sales, Nissan has to work on the product quality and automatic features because a lot of customers suggest they want to see improvement in these areas they might didn't like these features/qualities in the existing car models.

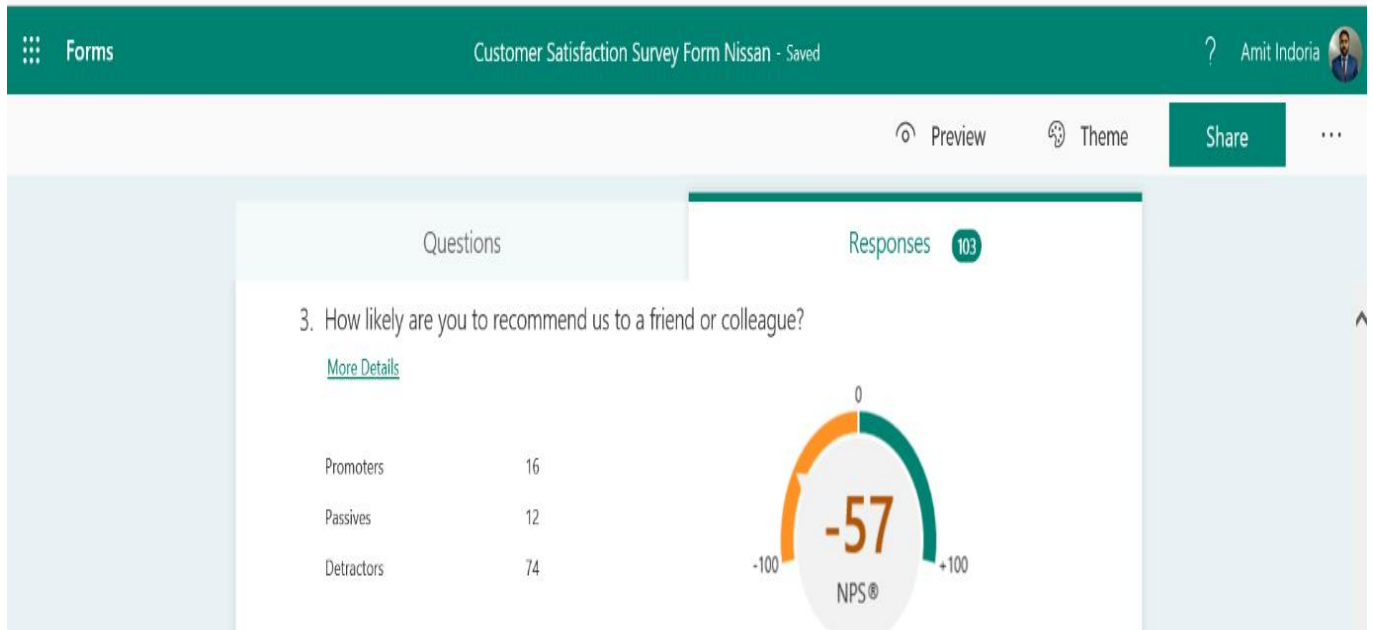


Figure 6: CRM - Customer Satisfaction Survey Dashboard (2)

Power Automated Feature and Case Entity

A routine survey process configured into CRM that will trigger the survey at every end of the quarter to get the customer suggestion, feedbacks. These survey responses were captured into the CRM sales module under the Cases entity and this integration has been done using Power Automate features. As we have automated the survey results with cases entity if anyone responded to the survey their results will be reflected in the cases entity.

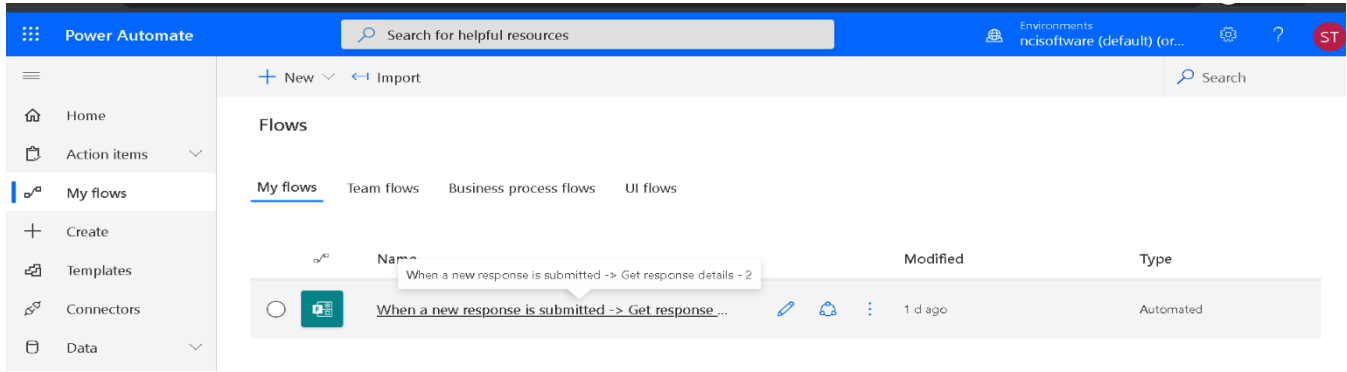


Figure 7: CRM Power Automated Feature

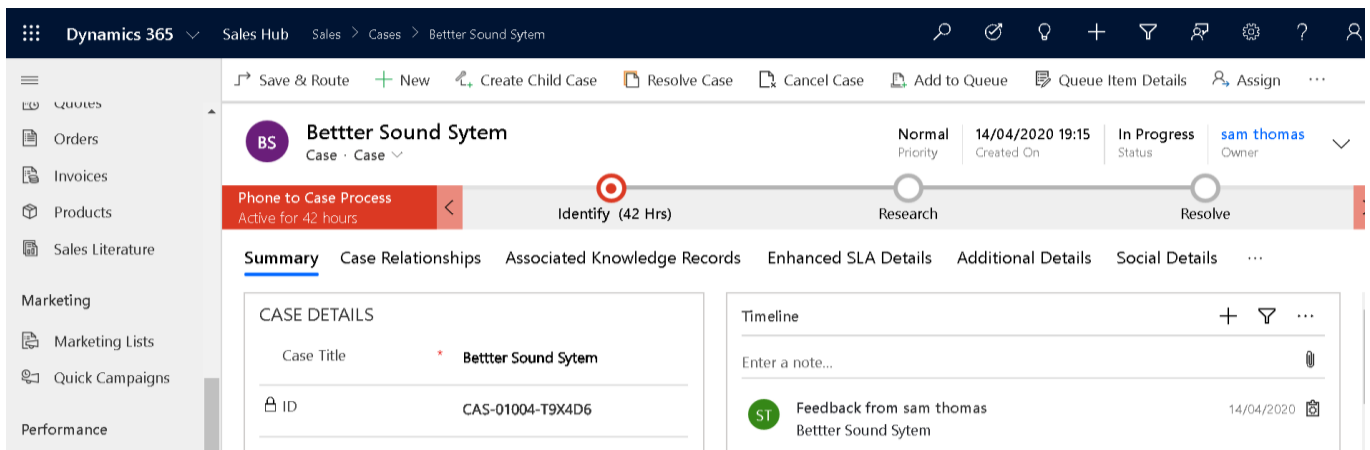


Figure 8: CRM Case Entity

Idea

CRM is capable to synchronize and integrate the different processes that help to create an end to end flow. As we have received the customer improvement suggestion into the Case entity. That will provide the privilege to the Nissan Product Design team to filter all the suggestions and pick different areas of improvement as an Idea.

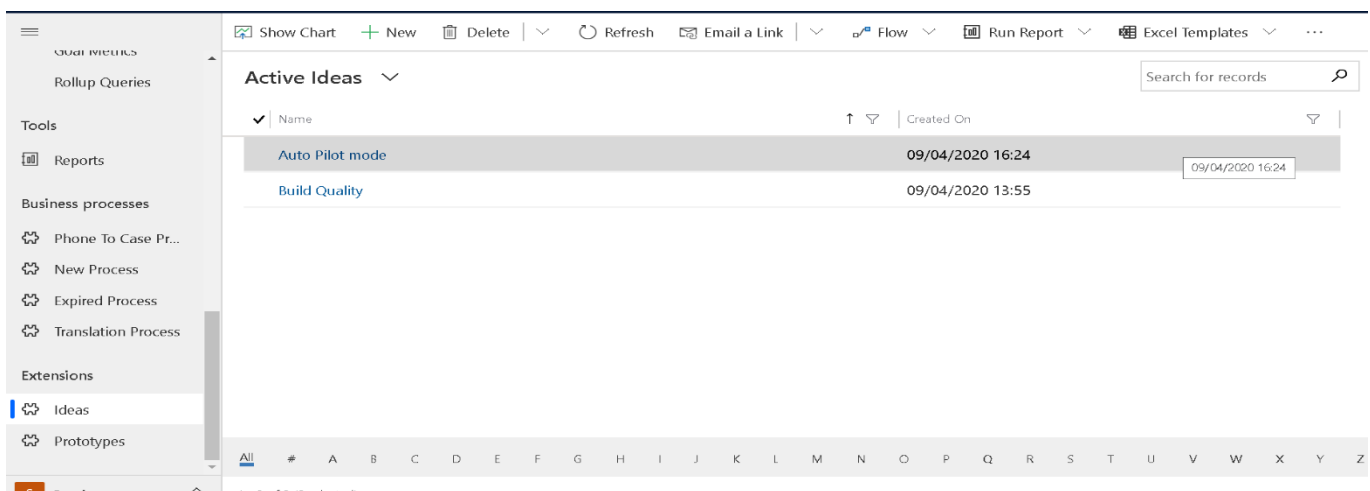


Figure 9: CRM Ideas

Now, we have created the Idea entity and pull all suggestions from the Case entity into the Idea entity. After the filtering process, all selected improvements come under the Idea entity so that further enhancements to customize the product as per customer expectations.

Prototype

The prototypes are the real improvements made in the designs or products for any idea. So, we have created the prototypes which will be associated with the respective Idea.

✓	Name	Planned Completion	Originating Idea	Target Market Size (Ori...	Owner
	Heavy Metal sheet	---	Build Quality	---	sam thomas
	Nissan 3D sound and Voice Commands	30/07/2020	Auto Pilot mode	100	sam thomas
	Passenger & boot space	---	Build Quality	---	sam thomas
	Test Prototype	---	---	---	sam thomas
	Voice command control	---	Auto Pilot mode	100	sam thomas

Figure 10: CRM Prototypes

Mappings and Forms

Through mapping we have linked the Idea entity with prototype entity by adding fields to the forms.

Create Field Mapping From Idea to Prototype

Create field mapping.

Source Entity Fields

Name ↑	Display Nam...	Type (Size)
awcnpd_detaileddescr...	Detailed Des...	Single Line of Text(100)
awcnpd_ideaaid	Idea	Primary Key
awcnpd_name	Name	Single Line of Text(100)

Target Entity Fields

Name ↑	Display Nam...	Type (Size)
awcnpd_budget	Budget	Currency
awcnpd_name	Name	Single Line of Text(100)
importsequencenumb...	Import Sequ...	Whole Number

Form: Idea

General

- Name *
- Owner *
- Target Market *
- Detailed Description *

Idea Details

- Target Market Size *

Prototypes

Form: Prototype

General

- Name *
- Owner *
- Originating Idea *
- Master Prototype *
- Total Cost *
- Total Feedbacks *

Figure 11:CRM Idea Prototype Mapping

Relationships and Business Rule

In CRM we can create relationships among entities such as one to one and one to many, so we have created the relationship between idea and prototype. For Example, Ideas can have multiple prototypes, but prototypes can have only one idea. Business rules were created to stop the user to change the assigned prototype from originating idea to any other Idea.

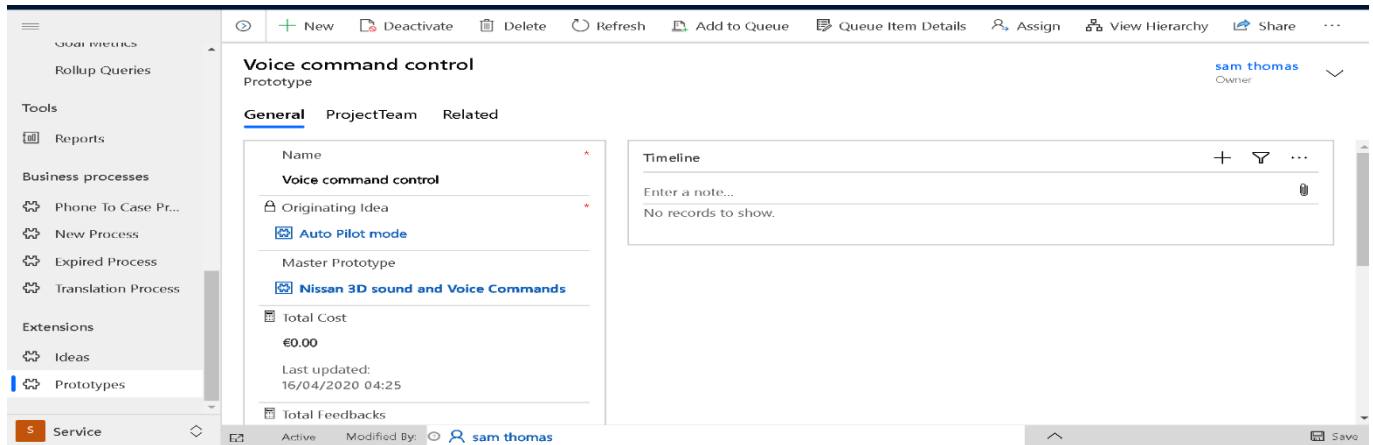


Figure 12: CRM Voice control command

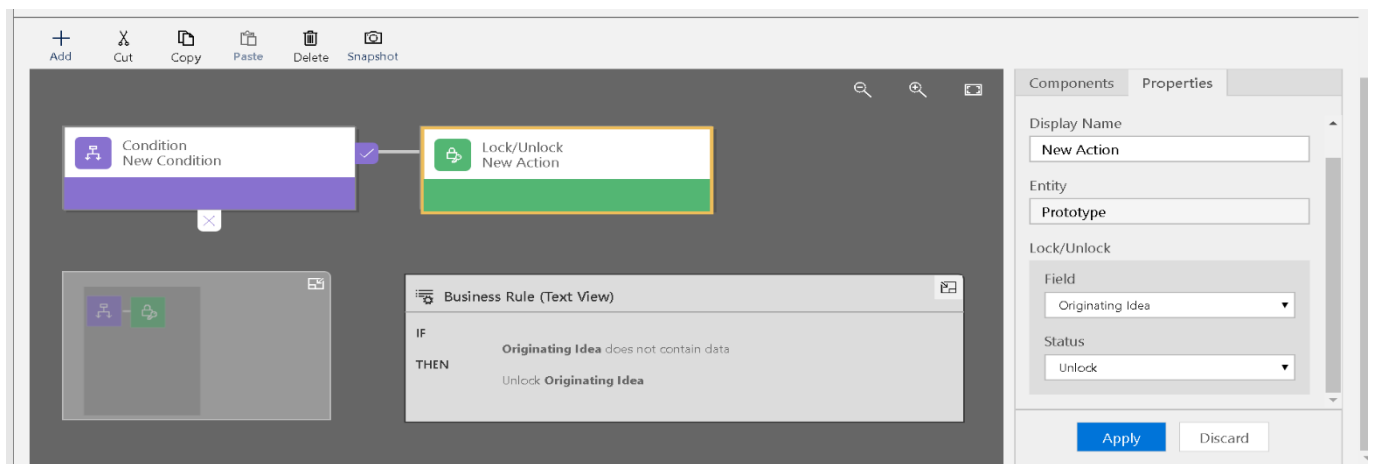


Figure 13: CRM Business rule

Project Team

Assigned the prototypes to the respective teams who can come up with there different solutions and designs.

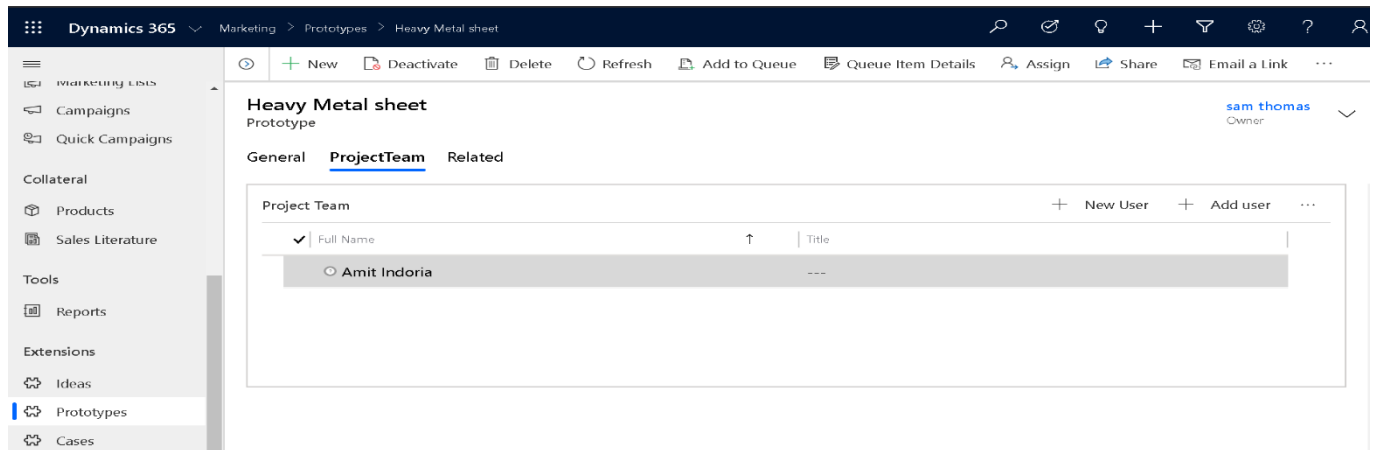


Figure 14: CRM Project Team

Once the development and testing of the prototype completed by the dev and test teams. Nissan Management has finalized the prototype as a solution (in our case build quality) and the changes been implemented across all-new models of Nissan car.

New Model Launch

Nissan has launched the new model of Micra Car into the US market to test, whether people like the changes done in the new model of Nissan Micra with the improved build quality and automatic feature along with some customized features.

Marketing

After the analysis of last year's sales data, it is been found that less campaigning was one of the potential reasons for the drop-in sales in the year 2019. So now Nissan has done small changes in the marketing strategy and decided to double the number of campaigns to increase sales margins.

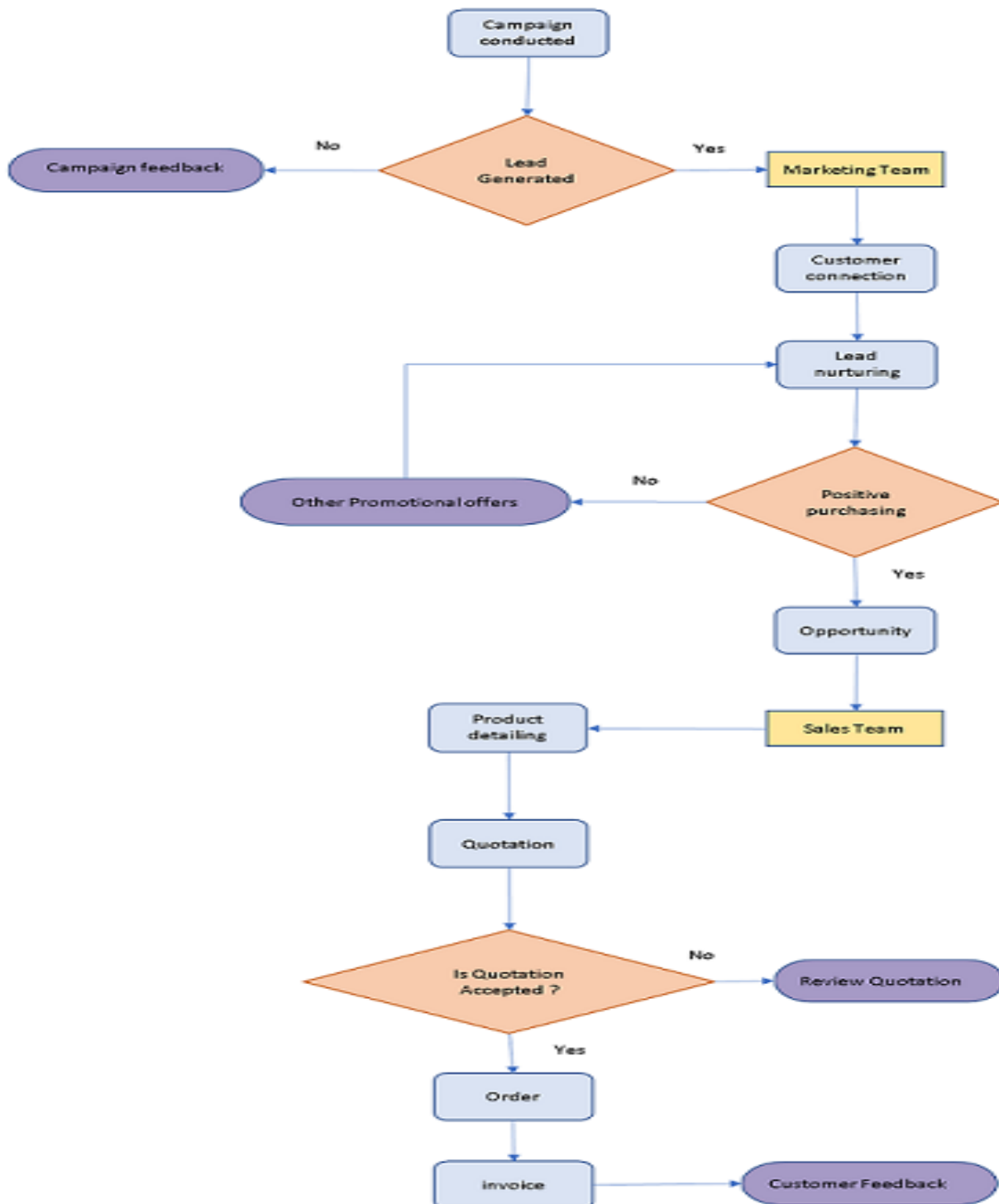


Figure 15: Campaign Work flow

Nissan Q1 Campaign

Campaigns are great platforms to advertise the product and generate leads. Nissan has organized campaigns for its vendors and the general public. A new Nissan campaign has been created under campaigns entity to track all activities related to the campaigns starting from dates, planning, leads generated, sales, revenue collected, etc.

Dynamics 365 Marketing > Campaigns > Nissan_Q1_Campaign

Nissan_Q1_Campaign Campaign

No Template | €0.00 Estimated Revenue | Proposed Status Details | sam thomas Owner

Summary Details Related

CAMPAIGN

Name	Nissan_Q1_Campaign
Campaign Code	CMP-01008-K0W7M
Currency	US Dollar
Campaign Type	Advertisement
Expected Response(%)	---

Timeline

Enter a note...
No records to show.

Figure 16: CRM Campaign

Leads

In the event total, 500 leads were generated, and their details directly feed into the CRM (Marketing). As you can see the below.

Dynamics 365 Marketing > Campaigns > Nissan_Q1_Campaign

Nissan_Q1_Campaign Campaign

No Template | €0.00 Estimated Revenue | Proposed Status Details | sam thomas Owner

Summary Details Related

LEADS

Name	Owner	Status
Abbye Schinetti	sam thomas	Qualified
Abbye Schinetti	sam thomas	Qualified
Abigail Plumley	sam thomas	Qualified
Addie Cortin	sam thomas	Open

1 - 4 of 501 (0 selected) | Page 1

Figure 17: CRM Campaign Lead

Disqualified leads

Leads who did not show any interest in buying were considered as disqualified leads and their details got saved into the CRM contacts for further cases and reviews.

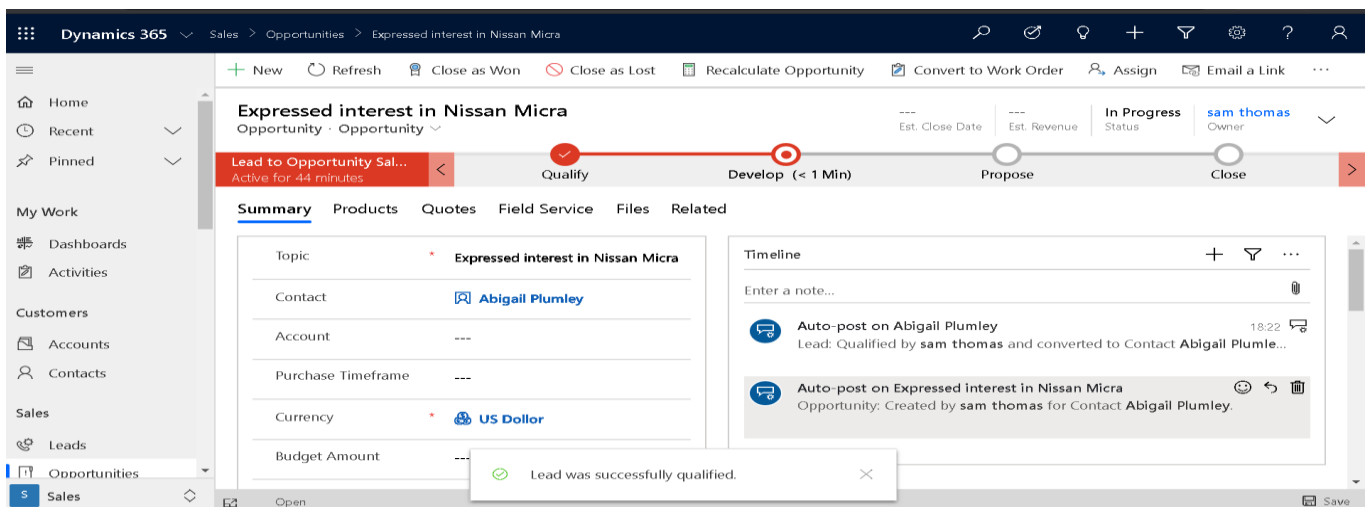


Figure 18: CRM Leads TimeLine

Qualify Lead

Nissan's marketing team has called up all the leads generated in the campaign and explain about the new features added and quality of new Nissan Micra. This time marketing team got better response from the leads for upgraded version of Micra and half of the of leads expressed their interest in buying. Those were qualified leads and moved to the opportunity into the CRM.

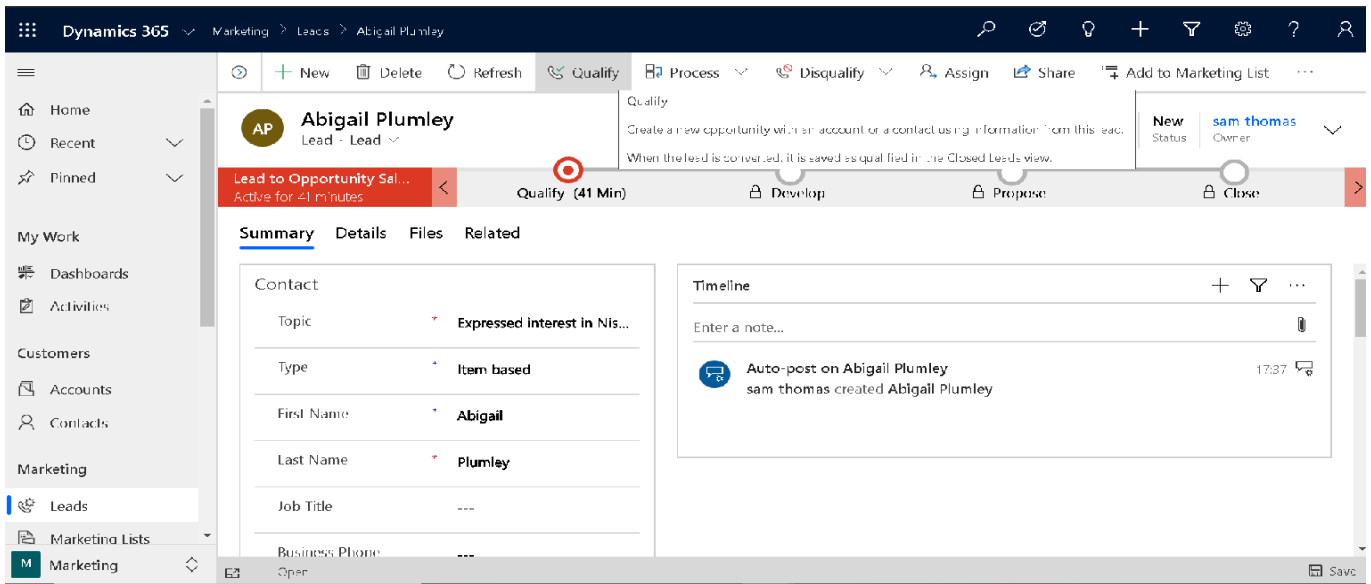


Figure 19: CRM Leads to Opportunity

Quote

A quotation has been created into CRM for Micra car to send to the all opportunities. That has pricing details about the car so that opportunities can make their mind to buy. We have to activate the quote to enable the quote for the particular product (Nissan Micra). Once it is activated, we can create an order with that quote.

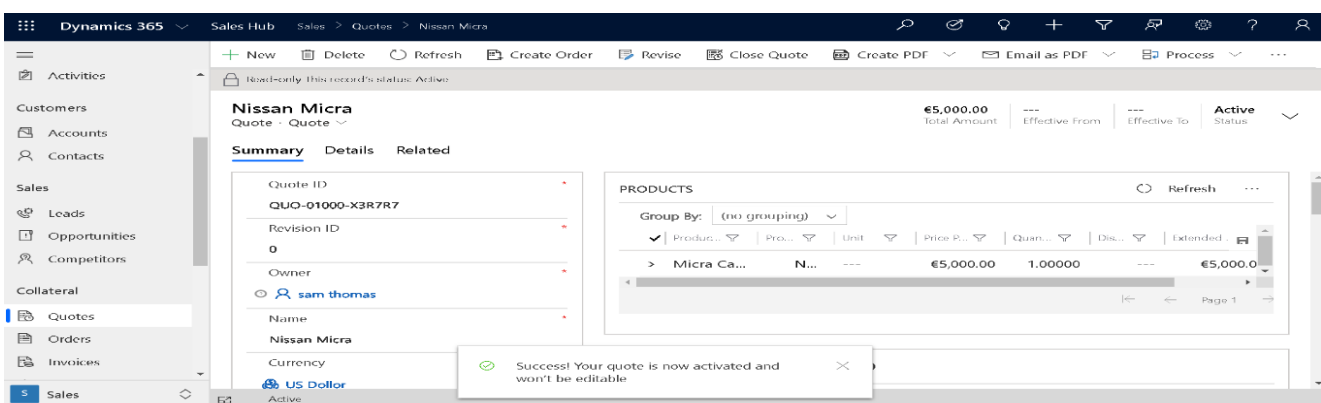


Figure 20: CRM quote

Order

Once the customer gave the confirmation order been created for the customer into the CRM and lead converted into sale.

The screenshot shows the Microsoft Dynamics 365 CRM interface for a new order. The top navigation bar includes 'Dynamics 365', 'Sales Hub', and 'Sales > Orders > Nissan Micra'. The left sidebar lists various sections: Activities, Customers (Accounts, Contacts), Sales (Leads, Opportunities, Competitors), and Collateral (Quotes, Orders, Invoices). The main content area is titled 'Nissan Micra' and shows the order details. The 'Summary' tab is active, displaying the Order ID (ORD-01000-L8T8W2), Name (Nissan Micra), Currency (US Dollar), Price List (CRM Service USA (sample)), and Prices Locked (Yes). The 'Products' section shows a table with columns for Product, Price, Quantity, and Extended Amount. The total amount is €5,000.00, and the status is Active. The owner is sam thomas.

Product	Price	Quantity	Extended Amount
Micra Ca...	N...	1.00000	€5,000.0

Figure 21: CRM Order

Invoice generation

Now the order has been created into the CRM and next step is to generate and send the order invoice to the customers.

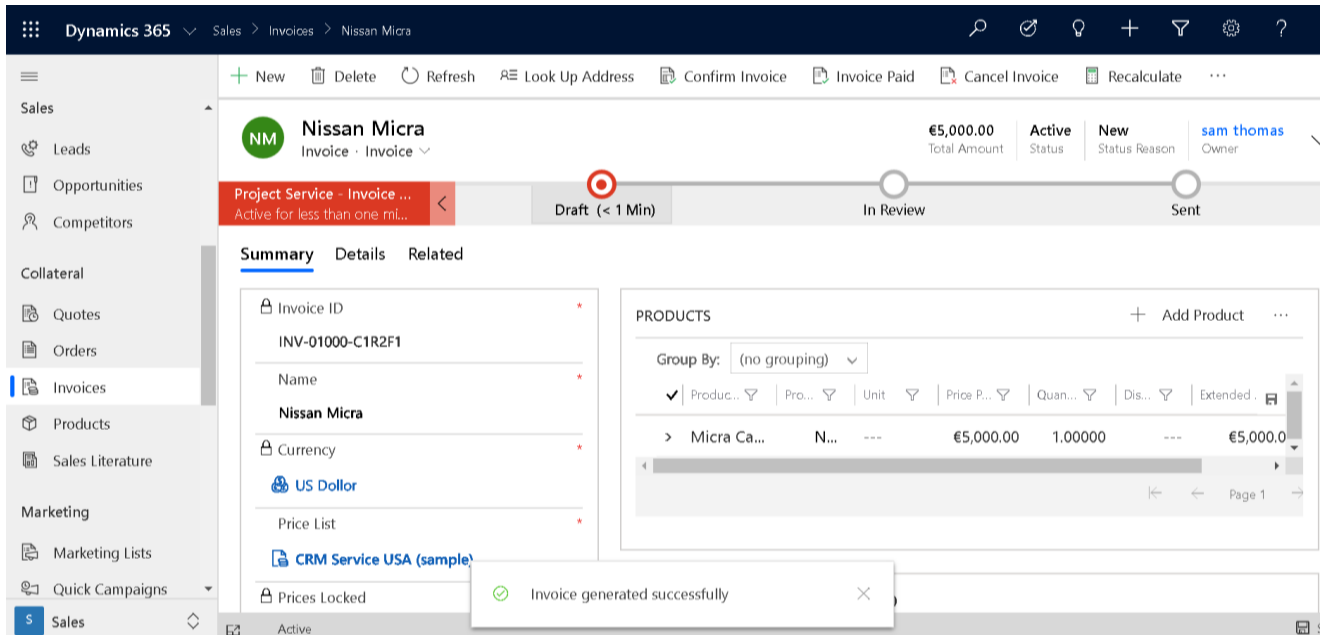


Figure 22: CRM Invoice

Marketing Dashboard

In CRM all marketing dashboard provides the overall view of all marketing activities such as how many campaigns organized, and revenue generated from those campaigns. As you can see in the below image screen revenue generate from the Nissan Q1 Campaign.

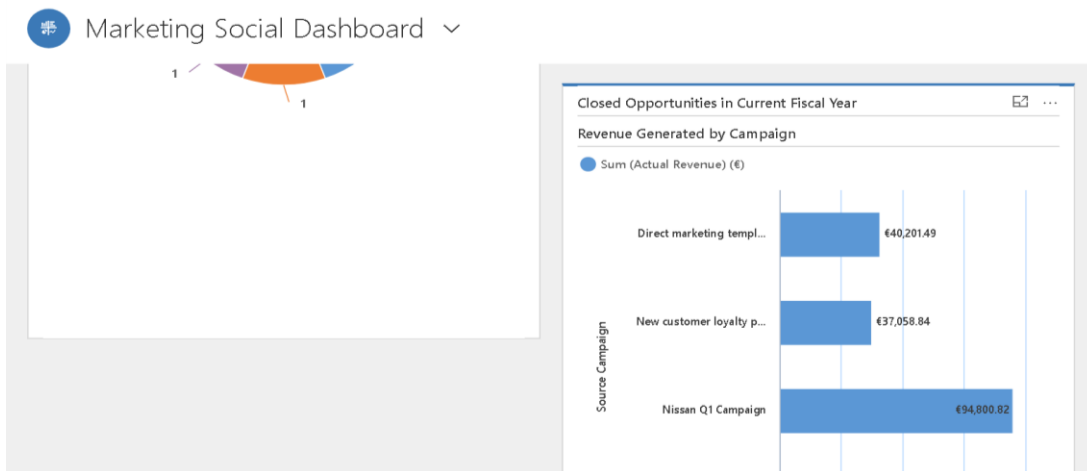


Figure 23: Marketing Dashboard

Implementation of Power BI (Microsoft)

Introduction

Power BI is a Visualisation tool by Microsoft. It works on the basic principles of creating a dashboard, publishing it and gaining meaningful insights. Nissan is a global automobile company. In this project real data was collected for Nissan and Power BI was used to visualize the data, analyse it and draw meaningful insights from it.

Sales and production dashboard



Figure 24: Power BI Sales Dashboard

For this project four major regions were selected.

- Japan
- US
- Europe
- China

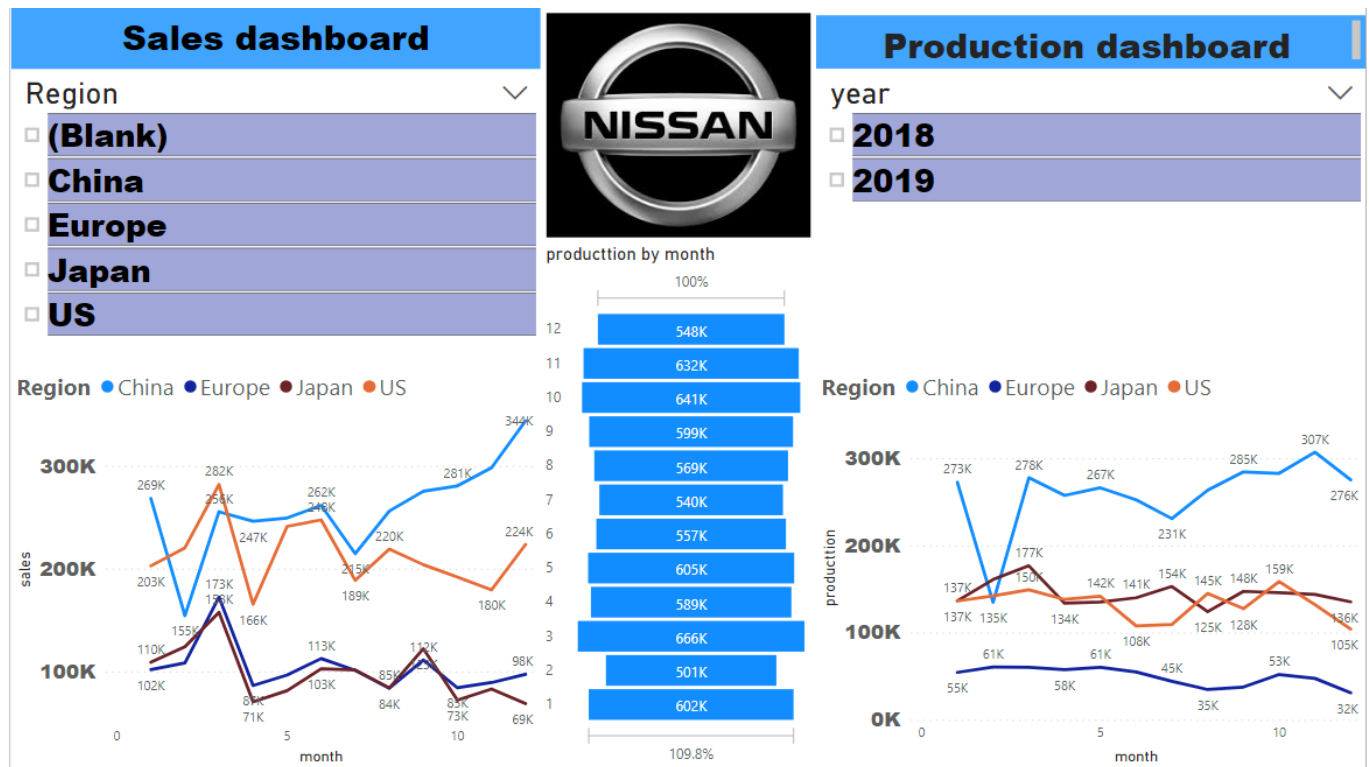
The first dashboard gives insights into the monthly sales of all the four regions for the year 2019. It is visible that China has the greatest number of sales followed by the US. Japan and Europe saw a major

downfall in sales in 2019. The annual sales follow a seasonal pattern, giving high sales in March, June, September and December. A high downfall in sales was observed in April.

Production and Sales Dashboard

The comparison between sales and production was analyzed using the above dashboard. Two slicers were used to visualize region-wise yearly sales and production. The investigation revealed

Europe was the most decremented region where the sales dropped by nearly 25%. The production in Europe was the most severely affected with a drop from nearly 80,000 to 15000. Nissan suf-



a huge downfall in production between the first and second quarters in China as the sales in the US for the same saw an increment. The production in the US saw a great dip in the third quarter where the sales were constant for the same. The Annual comparison revealed an overall drop of nearly 17% sales from 2018 to 2019 for Nissan.

ferred a huge loss in the second quarter in China. The gap between China and the US has widened significantly from 2018 to 2019. US sales were highly affected in the year 2019. Further investigations were made to find the reason for the decrement in sales in the US.

Campaign and Survey Dashboard

To identify the reason for the decrease in sales further region-wise analysis was done. The

- Marketing campaigns
- Employee Ratings
- Lack of comfort and feature

analysis revealed three major causes for the decrement in sales.

a reason for the drop-in sales. The plan is to develop a training program for the US to increase sales. The survey was conducted in public, re-

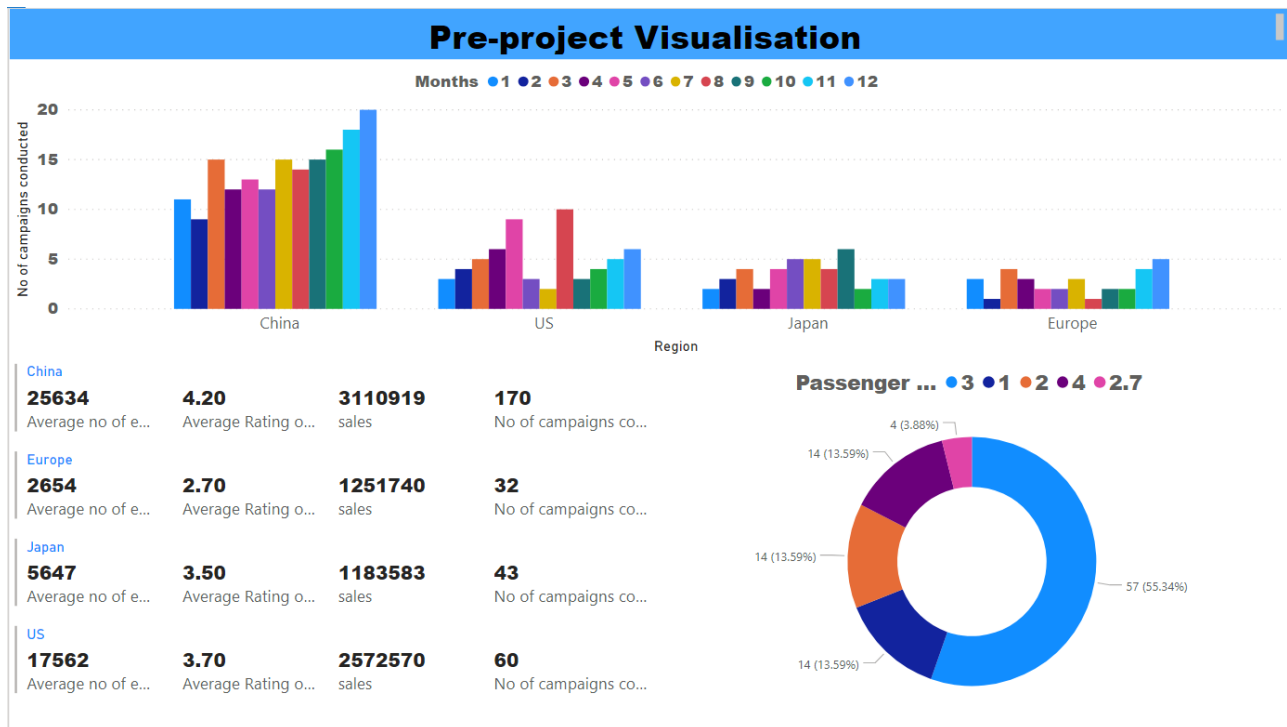


Figure 26: Power BI Pre-Project Visualisation

The number of campaigns conducted in every region for each month were analysed. China has the highest number of campaigns and thus the sales in China were the highest. The plan is to increase the number of campaigns in the US for the new model to increase sales. China has the highest employee rating of 4.2 hence it is believed that the lack of trained employees might also be

vealed that Nissan lacks in Built quality, Interior (55% people think the interior is average giving it 3 on 5 stars). Many other features like Cost, Automation and performance also got average ratings. The drill through option can be used to see the ratings of others in the donut chart.

Development of Nissan product enhancement team

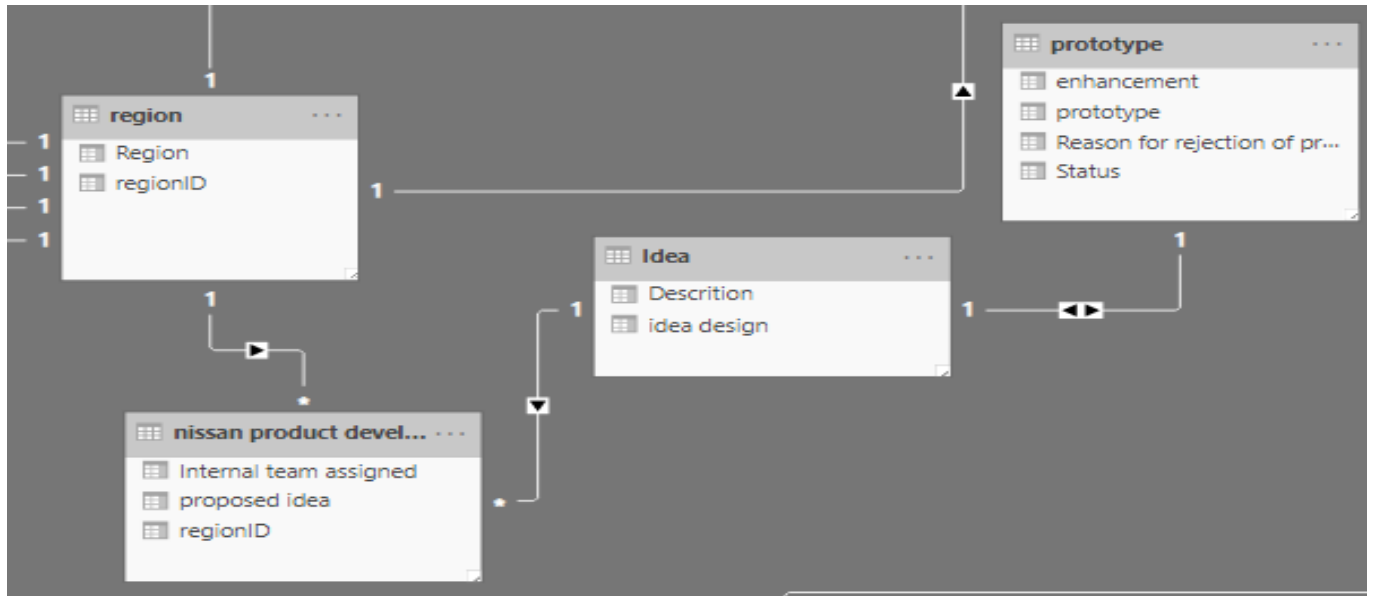


Figure 27: Product Enhancement Developing Team

The insights of the survey were given to the company. They made a new team to improve the quality of the model. The team was made of four sub-teams like development, performance, design, IT. Each team came up with new ideas to enhance the features.

idea design	Description
I1	Cylinders increment from 3 to 6
I2	EBD
I3	ABS system
I4	Fibre Body
I5	Wheel base
I6	CC- Engine Capacity from 1.4 to 1.6 L for gasoline engine
I7	Power windows
I8	Power steering
I9	central locking system
I10	Auto Parking
I11	Transmission i.e semi-auto gear system
I12	Music system upgradation
I13	Leather seats
I14	AC vents in back seats
I15	Adjustable back seats

Figure 28: Ideas Presented

Then after the integration of major ideas, different prototypes were developed. These prototypes went to vigorous testing and then prototypes with no limitations were cleared. These prototypes were presented to the Board members and after their approval a new and enhanced model of Micra was launched in US in January 2020.

prototype	enhancement	Status	Reason for rejection of prototype
P1	Heavy load with off-roading capability	Fail	unaccepted by system desingning team
P2	Improvement in breaking system	Pass	
P3	Hybrid wheeling	Fail	Not feasible in this car type
P4	Light weight with cost reduction	Pass	
P5	Grip control enhancement for better handling	Pass	
P6	Superior pickup	Fail	Major drawback in mileage
P7	Push-button window operation	Pass	
P8	easy controlling	Pass	
P9	Automatic remote locking	Fail	To be further reviewed and implemented if necessary
P10	Push-button parking lock	Pass	
P11	Availability of Automatic gear switching	Pass	
P12	From manual to android touch pad	Pass	
P13	Hybrid seats	Pass	
P14	Introduction of AC vents in back seats	Pass	
P15	Adjusting the back seat can provide flexibility to maneuver	Pass	

Figure 29: Prototypes and their status

Post-launch marketing campaign Dashboard

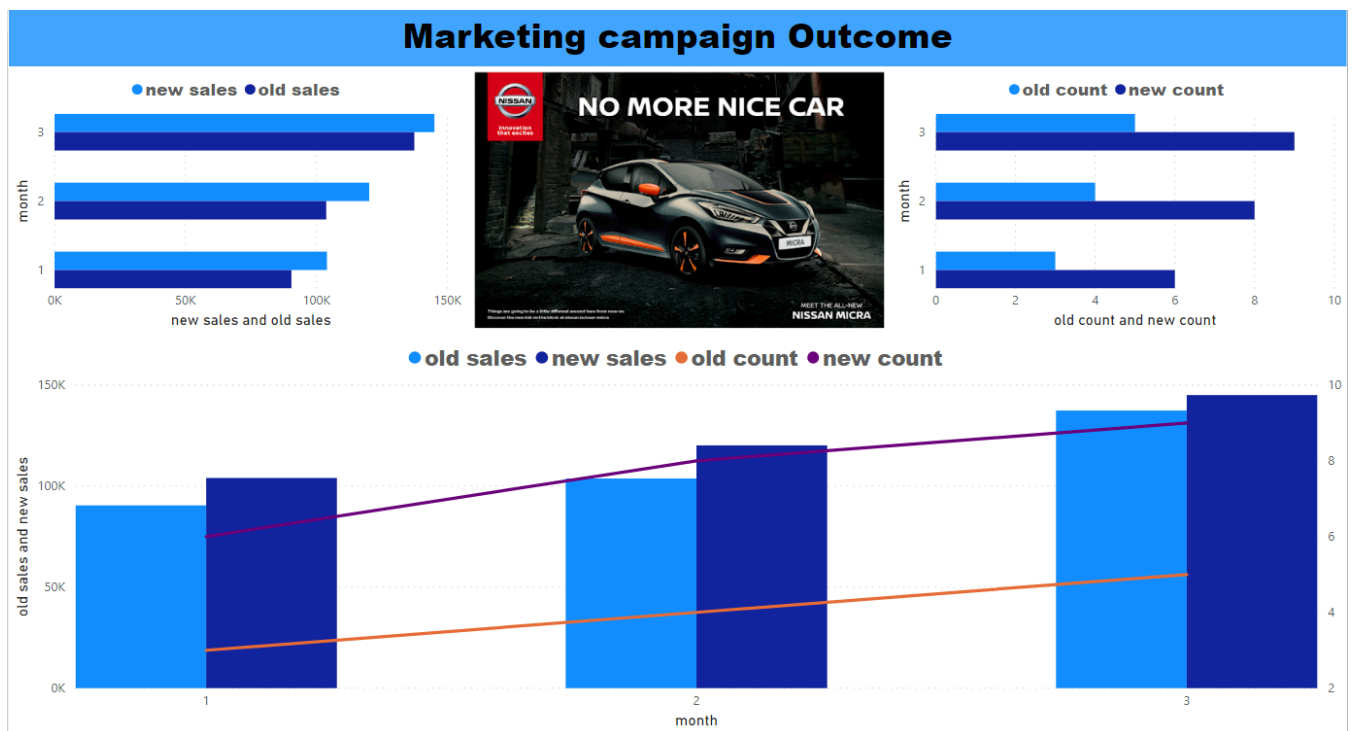


Figure 30: Marketing campaign Dashboard

The marketing team proved that with correct marketing campaigns the sales can be increased. The dashboard above shows that, as the campaign counts were nearly doubled in the US the sales went up by nearly 15%. The

campaign count for January 2019 was 3 and sales for the same were nearly 90000, but as the count was increased to 6 in January 2020 the sales went up to 104000.

Post-launch Survey Dashboard

The campaign Id were tracked with the number

features of the new Micra. Similarly, the drill-

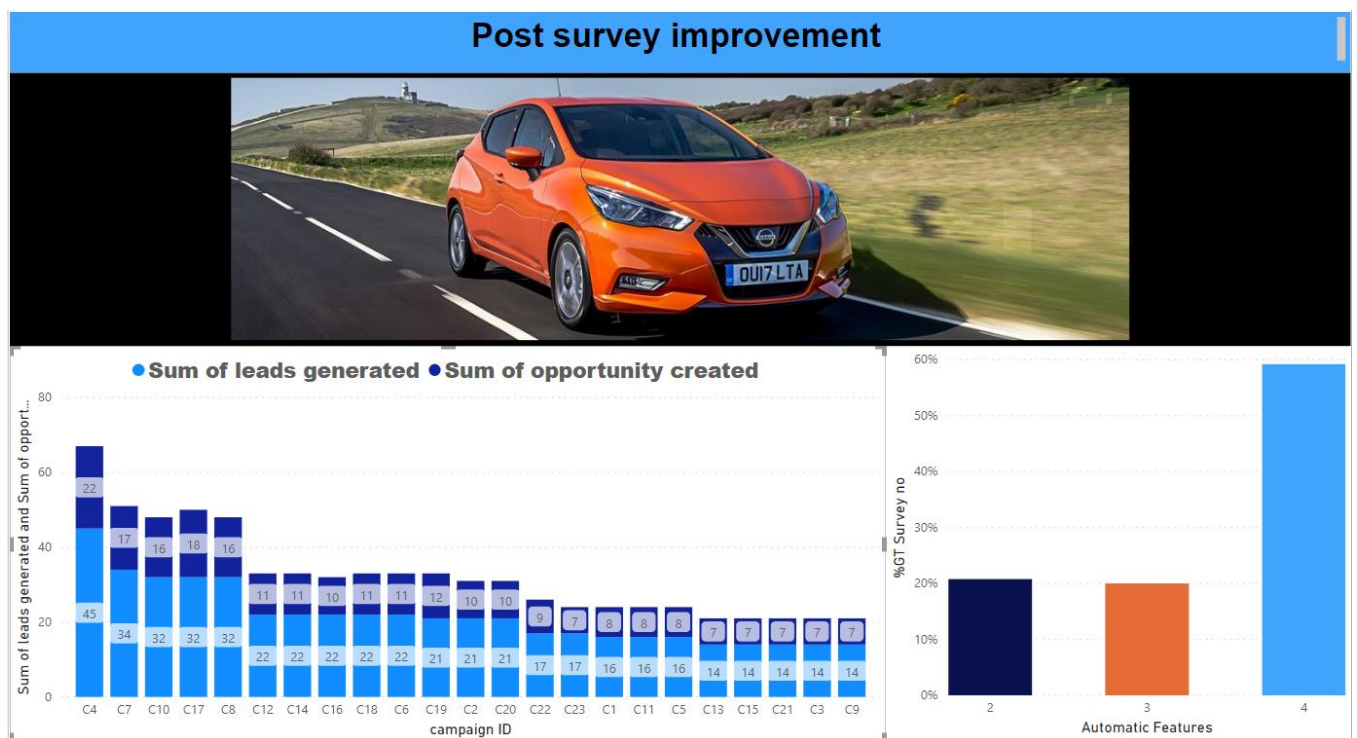


Figure 31: Post Survey Improvement Dashboard

of leads generated and the opportunity created for the same. The Data shows that Campaign 4 was the most successful drive with 22 opportunities created from 45 leads. Overall the conversion ratio was 50% as seen from the chart above. The conversion ratio is a huge increment from what was observed in the past years.

The post-launch survey showed the success of the development team as it revealed 60% of people were now happy with the automation

down option would show that people were overall happy with the build-up, performance, cost and Interior of the new model.

The new model bought Nissan close to the once high sales rate, but Nissan still has a long way to go. Nissan wants to develop a Car of the people. At Nissan we believe that sales are just a number that would automatically increase if we were able to connect with people and develop a car that they need.

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