

Analysis on Ecommerce Platforms using Marketing Dashboards and Forecasting Techniques

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Abstract

In the past year, the business has been striving to create strategies based on opinionated matters handed by the digital trend. Through forecasting analysis and data visualisation tools, the researcher was able to create a report that shows their position with the variables that were consolidated from ecommerce platforms. The combined information was able to create a forecast as to where the business might be considering that they create an initiative into reaching out to their targets online. As the business wanted to maximise the tools that they have, this brought an idea to create dashboards and reports that are currently being used by the management to see whether the sales and marketing initiatives are incurring reasonable revenue to the business.

Keywords: Ecommerce, Forecasting, Sales Revenue, Conversion Rate, Dashboards

1.Introduction

Ecommerce industry has grown exponentially in the past decade. From being able to sell products in retail stores globally, today's market paved its way to make social media and e-commerce platforms a necessity to almost every consumer-based business in the industry. Marketing is one of the business functions that is dramatically affected by emerging information technologies. The Internet is providing companies with new channels of communication and interaction. It can create closer and yet more cost-effective relationships with customers in sales, marketing, and customer support. Companies can use the internet to provide ongoing information, service, and support. It also creates positive interaction with customers that can serve as the foundation for long term relationships and encourage repeat purchases.

The company used in this research was founded in 2000 by two young men with the goal to be the number 1 distributor of smoking products and accessories in the Philippines. Their mission is to be the go to shop with prime locations in the best malls across the archipelago. To establish the company as the No.1 Tobacconist in the country is their aim together with giving their customers the best tobacco experience through the products sourced from all over the world. With the current situation that the company is facing because of the pandemic, there was an urge to bring the products online to make up for the retail sales that closed for the time being. The business pursued to bring their brands online and reach out to their audiences through ecommerce platforms since most of their targets look and survey online about the best smoking product and accessories. The company started to look into the digital trend and see whether the use of these platforms are effective and cost-beneficial for the business.

This study aims to provide insights to the business by presenting data through dashboards that can be used to frame out the marketing activities moving forward. In addition to this, information through different

channels (ecommerce & websites) can be combined in a report wherein the management can maximize depending on their needs. The main objectives in detail are as follows:

- Create a dashboard that combines information of the same variables from different ecommerce platforms for the management's overall report
- Produce a sales forecast that can equip the business to strategize their marketing activities in the succeeding months

This study provides a plan of action to the marketing strategies of the business. As difficult as it is to be able to penetrate a large market in the e-commerce industry, technology can help executives take advantage of the tools of analysis to create a different approach and communication to their target audience.

2. Research Methodology

2.1 Data Understanding

Data source will be from three online platforms being used by the company: Lazada Seller, Shopee Seller, and Shopify. Through these channels the researcher could be able to combine the similar variables on creating a dashboard and initiate a forecast to be used by the business. To further understand the data and information, the researcher initiated into looking at the common points which can be combined to create a dashboard that fits to the needs of the management. The variables are as follows:

- Conversion Rate - the number of visitors to a website that complete a desired goal (a conversion) out of the total number of visitors.
- Number of Buyers - The number of buyers willing and able to buy a good.
- Page Views - the number of views a website or a webpage gets over a period of time
- Visitors - is a metric used to measure the total number of times a user navigates to a website
- Revenue - refers to income from sales
- Revenue per Buyer - refers to the income divided by the number of buyer
- Units Sold per Day - refers to the number of products sold
- Channel - defined as Ecommerce or Website
- Ecommerce Platform - defined as Lazada or Shopee
- Brand - The brand of the company in each channel

2.2 Dashboard Architecture

To meet the requirements of the management, the researcher opted to create a dashboard to make sure that the report will show the needed information in one report together with the forecast to be made for the business. The chosen type of dashboard by the business is the analytical dashboard to give the user a clear view of performance trends and potential problems. As discussed in the previous sections, the variables to be used for the report are the common points in all the ecommerce platforms of the business. The goal of this dashboard is to cover three parts for management reporting: KPI Section, Trend Section and the Predictive Section.

a) KPI Section

KPI stands for key performance indicator, a quantifiable measure of performance over time for a specific objective. KPIs provide targets for teams to shoot for, milestones to gauge progress, and insights that help people across the organization make better decisions. As defined by the management the goal of the stakeholders is to see the revenue and conversion rates in a certain time frame automatically. The KPI of the company indicates that the conversion rate would amount to more than 10% on a monthly standpoint which should be shown to the management as part of dashboard's aim. Furthermore the revenue should be defined depending on the current offers of the company on a specific period in which would be perceived by the business.

b) Trend Section

This part of the dashboard shows the trend through graphs. The most common charts used in this section would be the line charts which would work better for the progression of a certain target. Scatter plot charts on the other hand are good for relationships and distributions, but pie charts should be used only for simple compositions

and bar charts for different comparisons. As part of the goal of the dashboard, it is also important to have an observation on what brand gives more buyers and revenue to the business.

c) Predictive Section

As part of the researcher's initiative, a forecast for the business is to be accomplished as well to have an overview of how the business would be in the succeeding months so the business can be able to strategize their activities moving forward. The dashboard would link and blend the data from the current information the business has to have an understanding of how the progression of revenue would be in the future. The design of this section would only be based on the time period that moves automatically once the real data would be indicated in the current data source.

3. Execution and Insights

3.1 Dashboard Capabilities

The researcher divided the capabilities of the dashboard into three advantages as designed by the need of the business:

Customizable

The business has required the dashboard to be tailored in a sense that it can change over a period of time depending on the marketing team's requirement. The design of the dashboard has been customized by how they want them to be perceived in this quarter. As part of the recommendations of the management, it is important to consider other sources as well in the future since other data would then be added in the dashboard moving forward. Since aggregated details are aligned with what the business needs, the analyst made sure that the dashboards could be reformed in terms of users and expectations. Each decision level dashboard can be adjusted to visualize the most valuable set of information.

Drill into detail

The dashboard is developed with the ability to get as deeper in information as required by choosing which of the brands or dates they prefer to look into. As expected by the management, the report was able to drill-down what needs to be compared and analyzed over a specific period of time. In the said report, the business can look into larger datasets and filter each variable such as the data consisting of the sales by platform, brand and dates.

All-in-one

The management expects to understand the report at first glance. In the past there were issues in which there would be a hard time checking and apprehending what it means to have such information regarding the digital sales. As the dashboard was designed to collate all common variables into one report, the capabilities was able to assess the status of the business' revenue.

3.2 Business Insights

Through the dashboard, the management was able to explain the position of the business in using e-commerce in the past year. The researcher divided the insights into three components: brand, platform, and seasons since these were the variables they wanted to focus on in the succeeding months.

a) Brand

Brand is defined as a name, term, design, symbol or any other feature that identifies one seller's goods or services as distinct from those of other sellers. The business has five brands that cater to the products they sell online. Through the dashboard, the management was able to see the variance in terms of the revenue being incurred by Brand A compared to other brands. From a marketing perspective, the business was able to assess and justify that brands are essentially patterns of familiarity and assurance of what they bring. Regardless of the platform being used, consumers would prefer to look for the brand since there is certainty on the product they sell since the brand has been famous in retail stores nationwide.

b) Platform

The business utilizes three online platforms: Lazada, Shopee and Website. In the past year, the sales that incurred the most was Lazada. In the table shown, the business was able to see that 91% of the annual sales comes from Lazada. In this category, the management asked if platforms are an important factor to the consumers? To answer the question, consumers still prefer to look for the brands on different online platforms to compare if there is a variance in price and current promotion of the products they are looking for. The marketing budget shows that most of the marketing initiatives are being focused into one platform which is Lazada.

c) Special Seasons

As the researcher was able to collect the sales data from the ecommerce platforms, the management was able to better understand the peaks and troughs of the retail sector, and plan the inventory and marketing spend to maximize sales even during the quieter periods. In line with the number of units sold and the special days of the year given, the researcher was able to modify if the days were part of a payday sale or a holiday in which the consumers look forward to.

3.3 Forecasting Results

The researcher used a tool that uses Gini-Coefficient Analysis as the Technique for the forecast. The Gini coefficient is equal to the area below the line of perfect equality (0.5 by definition) minus the area below the Lorenz curve, divided by the area below the line of perfect equality.

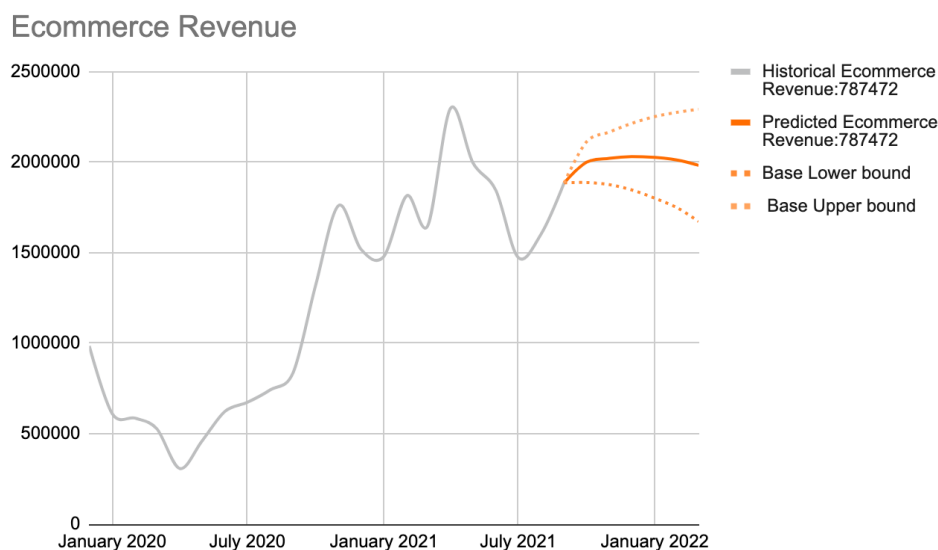


Figure 1. Ecommerce Revenue Graph based on giniPredict

The business referred to the predictive data below without the external factors such as holidays that will be in place. In line with the forecast of the business in the past six months, the marketing team had the initiative to create posts and online promotions to make sure that the business can improve the revenue standing of the company.

Table 1. Predictive Numbers in the succeeding months

Platform	October 2021	November 2021	December 2021	January 2022	February 2022	March 2022
Lazada	₱2,028,753.12	₱2,113,422.25	₱2,200,914.00	₱2,288,405.50	₱2,367,430.00	₱2,454,921.50
Website	₱16,682.14	₱15,958.35	₱15,210.44	₱14,462.52	₱13,786.98	₱13,039.07
Shopee	₱81,907.55	₱74,939.15	₱67,738.47	₱60,537.78	₱54,033.94	₱46,833.25
Ecommerce Revenue	₱1,999,747.86	₱2,021,306.26	₱2,030,598.90	₱2,026,465.76	₱2,011,391.43	₱1,982,787.74

4. Conclusion

In conclusion, the researcher was able to create a dashboard that combined the common variables from the different ecommerce platforms. In line with the goal, the business was able to evaluate and assess their position in the digital channels. Insights were further explained as the management focused on the topics regarding the brand, seasons and platforms. As the report was handed out to the company, the business concluded that brand is an essential factor for the consumer which is why it captured more than 70% of the total e-commerce revenue. In line with this, it also showed the importance of using known platforms in the country to make it visible to their consumers online. In line with the prediction analysis run by the researcher to the business, the sales revenue of the business during the third quarter of 2021 showed a decline by at least 8% because of internal issues being faced by the management. Through the forecast, the business was able to create a strategy and took advantage of the holidays season that made their sales rise by more than 50% of their revenue compared to the previous quarters.

5. References

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Biographies

Hannah Grace Holgado is a graduate of BS Business Administration Major in Marketing Management. As her career progressed, she took up Masters in Business Analytics in Mapua University to further give relevant and insightful awareness on how the digital market has moved over the past years. She is currently working as Marketing Analyst to a financial company based in the Philippines.

Ericson Dimaunahan is a faculty member of Mapua University and is currently pursuing his dissertation for his Doctorate Degree in Electronics Engineering. He handles courses for the Masters in Business Analytics.