

Addressing Inconsistent Sales and Determining Continent-Specific Discounts: A Case Study of CeilBrakes Furniture Retail Company

¹Huyanah Baghati and ²Pertido Bagalpay

^{1,2} Faculty of Engineering and Technology, University of Hai Duong, VIETNAM

e-mail: ¹ bahagaythuyughay@gmail.com, ² pertidohaiduong@gmail.com

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Corresponding Autor: Huyanah Baghati

Abstract

This paper highlights the primary business issues faced by CeilBrakes Furniture Retail Company, namely inconsistent sales across different continents. While Europe demonstrates strong sales, North America, Australia, Asia, and Africa exhibit varying levels of mediocre and low sales in terms of the quantity of products ordered. Additionally, determining appropriate discount percentages for each continent poses a challenge. To address the issue of inconsistent sales, the company aims to enhance advertising efforts, improve customer relationships, and analyze trends in continents with low sales (excluding Europe). For determining continent-specific discounts, a solution involves identifying continents with low sales and offering higher discounts accordingly. In the case of Australia, which experiences low sales, CeilBrakes should provide more significant discounts. Despite Asia and Africa already having high discounts, their sales remain low. This situation calls for considering factors beyond retail price reductions, such as cultural influences. To facilitate easier viewing and analysis, a dashboard has been developed to visualize the aforementioned issues. The dashboard enables the identification of trends and patterns, empowering the company to make informed decisions in addressing the observed problems.

Keywords— Inconsistent sales, Data analytics, Advertising efforts, Dashboard visualisation

1 Introduction

CeilBrakes Furniture is a leading company specializing in the production of high-quality household furniture, including tables, chairs, and appliances such as lamps and cooking utensils. With a strong focus on utilizing Business Intelligence and Data Analysis, CeilBrakes aims to gain a competitive edge over rival companies in the industry. The primary objective is to drive increased sales through their retail business and consequently boost the overall company revenue. To accomplish this goal, CeilBrakes recognizes the importance of meticulously examining and analyzing data from both previous and current years. By conducting a comprehensive review of this data, the company aims to uncover valuable insights, identify emerging trends, and uncover any underlying issues that may impact the overall sales performance.

Through the application of advanced data analysis techniques, CeilBrakes intends to gain a deeper understanding of customer preferences, market demands, and buying patterns. By identifying these trends and patterns, the company can proactively adjust its product offerings, marketing strategies, and sales approaches to align with customer needs and market dynamics [1]. Furthermore, by scrutinizing the data, CeilBrakes can detect any potential bottlenecks or inefficiencies within its operations that may hinder sales growth. By leveraging the power of Business Intelligence and Data Analysis, CeilBrakes Furniture aspires to make informed and data-driven decisions. This approach enables them to devise effective strategies to enhance their competitive position, capitalize on market opportunities, and achieve sustainable growth in sales and overall company revenue.

CeilBrakes Furniture operates an extensive network of branches spanning across various continents, countries, and cities worldwide. Whenever a customer places an order, the system captures the date of the order placement to maintain accurate records. To cater to customers' preferences, they have the option to specify their desired shipping address, including country, state name, state code, city name, region name, and postal code. Furthermore, the

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system also records the date when the order is successfully delivered to the customer's designated address. In terms of tracking the sales of products, comprehensive details are logged, including the cost of the product, unique product ID, and the customer ID associated with the individual who made the purchase. These details enable CeilBrakes to maintain a comprehensive sales record and efficiently manage customer transactions [2].

One of the key datasets utilized by CeilBrakes is the 'ORDERS' dataset, which provides valuable insights into their sales operations. This dataset consists of a substantial volume of data, comprising 951,669 observations and a total of 20 columns. Analyzing this dataset allows CeilBrakes to extract meaningful information, identify sales trends, and gain a deeper understanding of their customers' purchasing behaviors. By harnessing the power of this extensive dataset, CeilBrakes can conduct in-depth analyses and make data-driven decisions to optimize their operations. These insights aid in enhancing customer satisfaction, streamlining logistics and delivery processes, improving product offerings, and ultimately driving business growth across their vast network of branches worldwide.

2 Business Issues

One of the prominent challenges faced by CeilBrakes Furniture relates to the inconsistent quantity of products ordered by customers across various countries and continents. Analyzing the dataset reveals notable disparities in product demand between different regions. The European branch of CeilBrakes stands out as the frontrunner, with the highest quantity of products ordered among all countries. North America follows as the second-highest, albeit with a considerable gap compared to Europe. According to the dataset, Europe records 1,099,368 products ordered, while North America reports 399,820 products ordered, indicating a substantial difference of 699,548 in product quantity. This variance implies that Europe's product orders are nearly double those of North America.

In contrast, other continents such as Australia, Asia, and Africa demonstrate significantly lower quantities of products ordered in comparison to North America and Europe. This inconsistency can be attributed to several factors, including the varying levels of demand for these products in different countries [3]. Ineffective advertising strategies, lower buying power of consumers, and cultural differences play crucial roles in shaping these disparities. Insufficient or ineffective advertising efforts might contribute to lower awareness and demand for CeilBrakes' products in certain regions. Addressing this issue requires implementing targeted and tailored advertising campaigns that resonate with the specific preferences and cultural nuances of customers in each country. Additionally, lower buying power in some regions can limit customers' ability to afford CeilBrakes' products, leading to lower sales volumes. Strategic pricing initiatives, installment payment options, or exploring potential partnerships can help overcome this obstacle and improve sales performance [4].

Moreover, cultural differences also play a significant role in shaping the demand for furniture products in different countries. CeilBrakes should carefully consider these cultural aspects when designing and promoting their products, ensuring they align with the preferences, aesthetics, and functional needs of diverse customer segments. By addressing these challenges and implementing appropriate strategies, CeilBrakes can strive to create a more consistent and balanced quantity of product orders across various continents, maximizing sales potential and market reach. One of the critical business challenges faced by CeilBrakes Furniture pertains to determining the appropriate percentage of discount for each continent, relative to the retail price of products. This issue is particularly pronounced when comparing different continents and their respective discount rates [5].

An analysis of the dataset reveals that Australia's sales volume is relatively low compared to Europe and North America. Typically, companies would opt to lower the retail cost of products in Australia by offering attractive discounts to incentivize more purchases. However, it is surprising to observe that Australia receives the lowest percentage of discounts (36-37%) among all the continents [6]. This suggests that CeilBrakes may need to reevaluate its discount strategy for Australia to better align with market expectations and encourage higher sales.

Furthermore, the dataset highlights an interesting contrast in the case of Asia and Africa. The retail prices of products on these continents are already set at relatively low and affordable levels, ranking as the second lowest among all the continents. However, despite offering substantial discounts of 42-45% on their products, Asia still struggles to achieve significant sales. In fact, Asia records the second-lowest number of products ordered, with only 1,918 units. This discrepancy suggests that factors beyond discounts may be influencing customer purchasing decisions in Asia, and CeilBrakes should consider additional strategies to address these underlying challenges [7].

To address the difficulty in determining appropriate discount percentages for each continent, CeilBrakes should adopt a more comprehensive approach. It is crucial to consider market demand, customer buying behavior, and cultural factors specific to each continent. Conducting market research, analyzing customer feedback, and engaging with local communities can provide valuable insights into the preferences and expectations of customers in different regions. By aligning discount strategies with these insights, CeilBrakes can enhance its competitive position and optimize sales performance on each continent [8].

Addressing the discount issue requires a nuanced understanding of regional dynamics, ensuring that discounts are both appealing to customers and aligned with market conditions. By implementing a well-informed and tailored discount strategy, CeilBrakes can drive increased sales and achieve a more balanced and effective pricing approach across all continents.

3 Proposed Solution

Given the relatively lower sales volumes observed in Australia, Asia, and Africa compared to Europe and North America, CeilBrakes should prioritize exploring strategies to enhance sales in these regions. By directing attention towards improving market presence and performance in these countries, CeilBrakes can tap into untapped potential and seize opportunities for growth. Developing targeted marketing campaigns, strengthening distribution networks, and establishing strategic partnerships with local businesses are just a few initiatives that CeilBrakes could undertake to boost sales in Australia, Asia, and Africa. By dedicating resources and effort to these regions, CeilBrakes can expand its global footprint, diversify its customer base, and unlock new avenues for revenue generation.

To address the issue of inconsistent order quantities in countries with low sales, implementing more robust and impactful advertising and promotional strategies can be an effective solution. Various advertising channels such as newspapers, magazines, social media platforms, and television can be leveraged to create compelling advertisements that capture the attention of potential buyers. These advertisements should be designed to resonate with the target audience and highlight the unique value propositions of the products. In addition to advertising, promotional initiatives can play a vital role in stimulating sales. For instance, offering attractive deals like 'Buy 1 Free 1' promotions for the products can incentivize customers to make purchases. Another approach is to provide free delivery or postage for orders that meet a certain threshold, encouraging customers to buy more. Such promotions can create a sense of urgency and drive increased sales volume. Establishing a strong customer relationship is crucial for sustained success [9]. Building trust between the company and the customers is paramount. One effective way to achieve this is by providing warranties for products, assuring customers of their quality and reliability. Additionally, maintaining responsive customer service is essential in addressing any concerns or inquiries promptly, thereby fostering a positive customer experience.

To summarize, enhancing advertising and promotional efforts, along with cultivating customer trust through warranties and responsive customer service, can help overcome the inconsistent order quantities in countries with low sales. By implementing these strategies, CeilBrakes can bolster its brand presence, attract more customers, and ultimately drive sales growth in these regions [10]. Utilizing Business Intelligence (BI) can play a vital role in observing product trends across different countries. Since cultural needs vary among nations, analyzing sales data can help identify specific products that are highly favored in certain countries. By leveraging this information, countries with low sales can strategically increase production of these popular products or implement targeted promotions to stimulate demand.

For instance, let's consider the cultural significance of chopsticks in Asian countries like China, where they are commonly used as cooking utensils. Recognizing the substantial use and demand for chopsticks in such countries, CeilBrakes Furniture can respond proactively by ramping up the supply of chopsticks. By meeting customers' preferences and aligning with cultural practices, CeilBrakes Furniture can capture a larger share of the market and generate increased sales. Moreover, BI can provide insights into emerging trends and preferences, enabling CeilBrakes Furniture to identify opportunities beyond the current product offerings. By analyzing market data and customer feedback, the company can anticipate changing demands and adapt its production and promotional strategies accordingly. This proactive approach allows CeilBrakes Furniture to stay ahead of the curve, catering to evolving customer needs and driving sales growth [11].

In summary, leveraging Business Intelligence allows CeilBrakes Furniture to effectively observe product trends in different countries, recognizing the cultural nuances and preferences that influence customer behavior. By aligning production and promotions with these insights, CeilBrakes Furniture can optimize its offerings, meet customer demands, and capitalize on opportunities for increased sales and market expansion. Inconsistent discounts provided to different countries present another challenge for CeilBrakes [12]. To address this, the company should prioritize offering discounts and other promotional incentives specifically tailored to the Australian market. By doing so, CeilBrakes can attract more customers and boost sales in Australia, which currently lags behind North America in terms of sales performance.

However, it is important to note that simply providing substantial discounts does not always guarantee increased sales in all regions. A key issue arises when low sales persist in Asia and Africa despite significant discounts being offered. In such cases, it is crucial to examine other factors that may be influencing consumer

behavior. One potential contributing factor is cultural differences. For instance, CeilBrakes' branch in Africa might be marketing and selling cooking utensils and furniture items commonly used in Asian countries, such as chopsticks and Chinese urns. Consequently, the local population in Africa may not have a strong interest in these products, leading to low sales. To overcome this challenge, CeilBrakes should focus on understanding and meeting the specific needs and preferences of each target market. By aligning product offerings with local demands and cultural contexts, CeilBrakes can effectively appeal to customers and generate increased sales.

In essence, addressing the issue of inconsistent discounts requires a deeper analysis of the underlying factors at play. By recognizing and responding to cultural differences and market needs, CeilBrakes can optimize its sales strategies and ensure that discounts and promotions are tailored to each specific market, ultimately driving customer engagement and sales growth.

4 Supporting Factors

There are several factors that affect the way we approach business intelligence. The first factor is the increasing volume of data. As business grows and expand, data from all aspects of the business is collected and constantly piles up. This is due to the cost of storages being cheaper as well as having more ways to transfer these data[13]. However, data or big data is vast (diverse, large, and takes up a lot of space) and it is getting harder and harder to analyze it for quick and precise decisions the more data gathered. It is known that businesses nowadays understand the value of data, but they are not fully taking advantage of it [14]. A solution to this is by using Smart Data, which means applying analysis in real-time to the collected old data. This way, we can identify the trends of which products is popular or trending in CeilBrakes by looking at the number of sales the product generates over a period of time (for the past 5 years). Doing this, the company can generate more sales by increasing production of that particular product or providing promotions revolving around that product.

The second factor that business intelligence can be utilized in is complex decision making. As global competition continues to grow, CeilBrakes' managers have to make reliable decisions that will keep the company relevant in the market. By using business intelligence, data can be analyzed in order to make the best and most reliable decisions possible by taking account of the risks and the current state of the company. Business intelligence incorporates all the important factors the company has to take into account, such as its current economic state or the current state and trends of the market. This is unlike human made decisions which are mostly based on instinct and inconsistency. Business intelligence tools allow executives to stay up to date on their data and make decisions based on hard facts and data-based analysis [11], [15]. These types of decisions also impact customer experience. If Business Intelligence is applied, better customer satisfaction can be obtained by analyzing data about CeilBrakes customers' experiences.

Thirdly, since the retail market's pace of change is increasing rapidly through the years, company managers has to have the ability to make important decisions quickly. There is constant need for response due to factors such as environmental factors and market influences, which can sometimes even cause overnight changes in an industry [14]. For example, in this case, if CeilBrakes has a new competition in the market, managers have to make quick important decisions for the company in order to stay advantageous over competitions and relevant in the market, such as by releasing a new product, or refining a product so that it is better than the competitions, or even cater to a new market group. The global economy is also changing and operating rapidly as well, hence the time for managers to respond to these environmental changes is quickly decreasing. Business Intelligence allows managers to quickly access data through many ways, such as: converting data from various sources, integrating information across these sources, and making the data available to the managers/decision makers for analysis and processing. Using Business Intelligence, this can be done to capture opportunities which usually come and go very quickly.

Lastly, Business Intelligence allows companies to take advantage of technological progress that has been made over the past few decades. Some technologies that have been developed include Decision Support Systems, which are essentially a set of software that is used to analyze a set of data and is used to support decision-making in the organization based on the data [16]. The way the data is collected and stored is by using business management applications called Enterprise Resource Planning Systems [17]. Data warehousing is also used to store the company data from many sources of CeilBrakes (e.g different branches and sectors of the company) and data mining (examining data from the existing CeilBrakes database to extract information which can be used to help the company's management) are also some of the technologies that Business Intelligence has been integrated to. Text mining, which is essentially Data Mining but using text as a source of data, has also been widely used in Business Intelligence in order for CeilBrakes to extract data from large forms of unstructured text (e.g. documents or record books). By incorporating these Business Intelligence technologies, CeilBrakes is sure to have an advantage in the market amongst its competitors.

5 Required Technologies

There are four main capabilities of Business Intelligence solutions, which are: Organizational Memory, Information Integration, Insight Creation, as well as Presentation.

5.1 Organizational Memory

It is essentially the ability of Business Intelligence to store information and knowledge. It stores data containing information and knowledge from multiple and various sources throughout the company. Likewise, data from all parts of the company can be searched and accessed and used through this. There are three technologies which are related to Organizational Memory. First, there is Transaction Processing System (OLTP), where all transactions in a company's database system is processed and all the details is stored, and can later be retrieved or modified [18]. Second is the Enterprise Resource Planning System, which stores and integrates the data of the company's resources such as their inventory (e.g. raw materials), manufacturing processes, human resources, customer relationship management, etc. into one complete system [12]. Third is Data Warehouse, which is a large storage of data which has been accumulated from various sources within a company. This data is then transformed into a format that is used for data analysis.

All these technologies can be beneficial to CeilBrakes, as the Transaction Processing System can record the company's transactions, which can show the total sum of the price of products sold, the company's expenses, as well as earnings, etc. This can be extremely useful when analyzed. For example, when CeilBrakes analyzes that the total amount of expenses spent on the previous months, they can make sure that the company will reach a certain sales goal in order to provide the budget [11], [13], [16], [19]. ERP can provide the data on the number of employees in CeilBrakes, and can see whether to hire more employees, or to promote some employees which meet the target sales. It also allows monitoring of the inventory of the company i.e. if the company has enough supply of raw materials. Whereas Data Warehousing is where all the data from all the parts of CeilBrakes (e.g. branches, sectors, departments, etc.) is stored and formatted for analysis.

5.2 Information Integration

It is the ability to link structured and unstructured data from a variety of sources, which then facilitates insight creation [19]. Information Integration combines data from different sources into a single, unified view, which can ease the analysis process. Information Integration make use of structured information and data accumulated overtime from organizational memory. There are a few technologies related to information integration. First, is Environmental Scanning which gathers information about events and their relationship to an organization's internal and external environments. The purpose of this is to help determine the future direction of the company [20]. Second is Text and Web mining. This extracts data from contents such as documents and websites in order to detect trends and. Third is Web Scraping. This also extracts data from websites using codes called a "scraper". Data extracted can be in the form of images, videos, text, e-mails, etc. Lastly, there are IoT devices, the Internet of Things. These are computing devices that connect wirelessly to a network and have the ability to collect and transmit data [18], [20].

Environmental Scanning can be used by CeilBrakes to view events outside the company, such as a public holiday (e.g black Friday) and can then make decisions based on this, such as starting a huge sale on the products only on Black Friday. Web and Text mining as well as Web Scraping can be used to extract information from blogs or social media in order to see popular or desired products by the consumers. It can also be used to assess the competition (e.g. view new products or promotions competing companies offer) and CeilBrakes can adjust accordingly to gain advantage.

5.3 Insight Creation

It is the third capability of Business Intelligence, where insight can be created from the data gathered. This insight is important for making better decisions in real time in the company through short and long term planning. Supported by both Organizational Memory and Information Creation, Insight Creation can identify trends and relationships in the data and information.

There are three technologies that are related to Insight Creation [21]. The first technology is Data Mining. Data Mining is discovering data in existing databases in order to generate new information. These information can then later be used to discover patterns that can help solve problems through data analysis. Second, there is Business Analytics. Business Analytics develops new insights based on the data collected from the past business performances (in terms of practices, skills, and technologies). Lastly, there is Real Time Decision Support. This

technology uses both technologies mentioned above to support operational decisions in the company based on the current data.

CeilBrakes can utilize data mining to find out trends or patterns, such as which product has the least sales, which product has high sales during a certain period of time, which country placed the most orders on a product, etc. Then, new insights can be developed based on the Data Mining previously, such as new understanding of the current state of the company, as well as develop new innovations (e.g products and services) for the company. Real Time Decision Support can be used by the managers of a company to decide the next step a company needs to take in order to adapt to the situation (e.g. If sales have been analyzed as low these past few years, managers can identify the problem and overcome it such as by lowering the retail prices or providing discounts).

5.4 Presentation

It presents the information gathered from Insight Creation in a user-friendly fashion according to the roles of each user to help in decision making. The first technology is OLAP (Online Analytic Processing Tool), which explores and analyzes multidimensional data. Second is Visualization, which portrays information in graphics for easier understanding and viewing [22]. Third is Dashboards, which are a layout of graphs, tables, charts which the user can interact with or modify to get information. Fourth is Scorecards, which monitor and show the performance of a business (in terms of financial, customer, business processes and growth) compared to a target. Fifth is Business Performance Management, which monitors and manages the company's performance using Key Performance Indicators.

CeilBrakes can utilize dashboards and visualization to view their data using bar graphs, charts, treemaps to help present all their findings. They can identify the problems in the company by interacting with the dashboard, as well as the trends which support decision making of the organizational processes to overcome the problem and enhance the advantages. Business Performance Management can also be used to monitor the past performance compared to the current performance of CeilBrakes (e.g., Sales).

6 Results and Discussion

Discussion of the results of research and testing obtained is presented in the form of theoretical descriptions, both qualitatively and quantitatively. Experimental results should be displayed in the form of graphs or tables. For graphs, follow the format for charts and drawings.

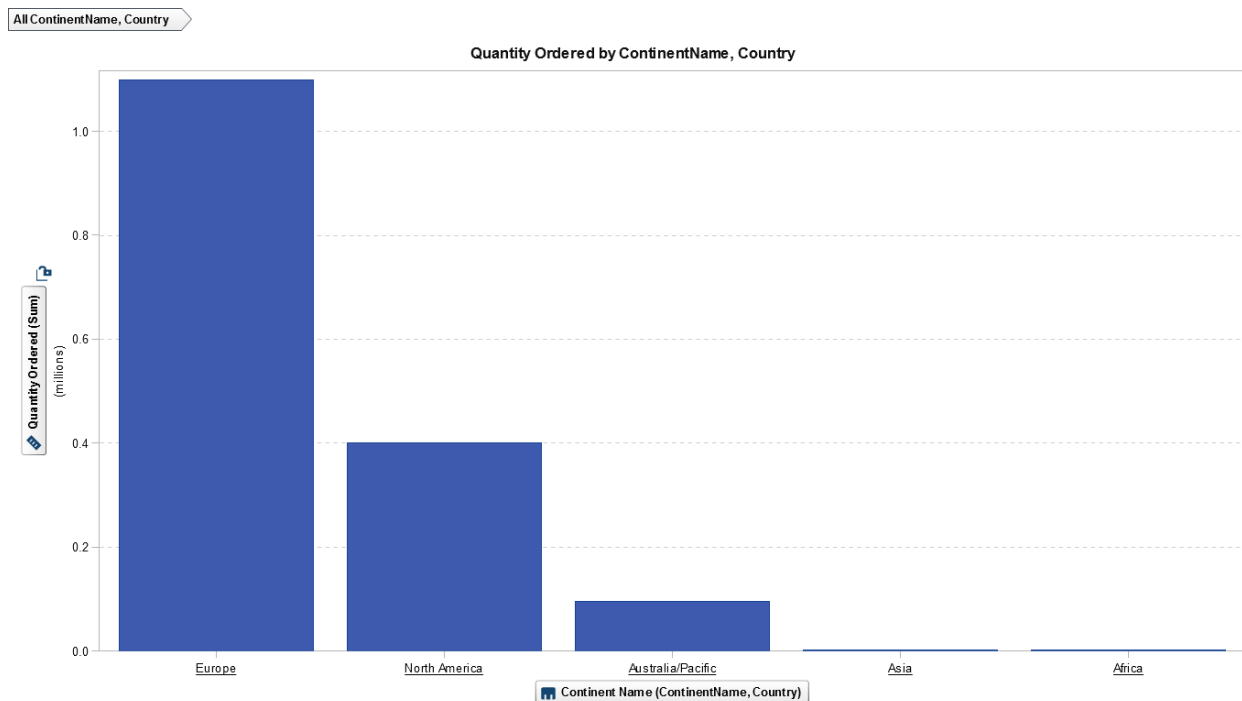


Figure 1. Quantity of Order in All of The Continents

From Figure 1 we can see that Europe has the most sales when compared to the other continents listed above, based on the quantity of products ordered. This shows that CeilBrakes need to focus to put more effort into

obtaining sales on countries such as North America, Australia, Asia and Africa. Since the total sales on Europe is still high, the company can just be consistent in their organizational processes to ensure consistency in sales in the future. In the case of the Continents Asia and Africa, CeilBrakes should focus on all the CeilBrakes branches located in all countries in both of those continents. Countries in Asia such as Singapore and China, and also countries in Africa such as Morocco and Nigeria.

By using Hierarchy of the Countries of each Continent, we are able to identify from figure 2 that the sales in North America is heavily based on the United States. The other branch of CeilBrakes in Canada should be more focused on by the management to match the sales of United States by providing newer innovative products, promotions, or events to attract more customers. This works the same way for the country of New Zealand in Australia continent, where the CeilBrakes branch is also less focused on.

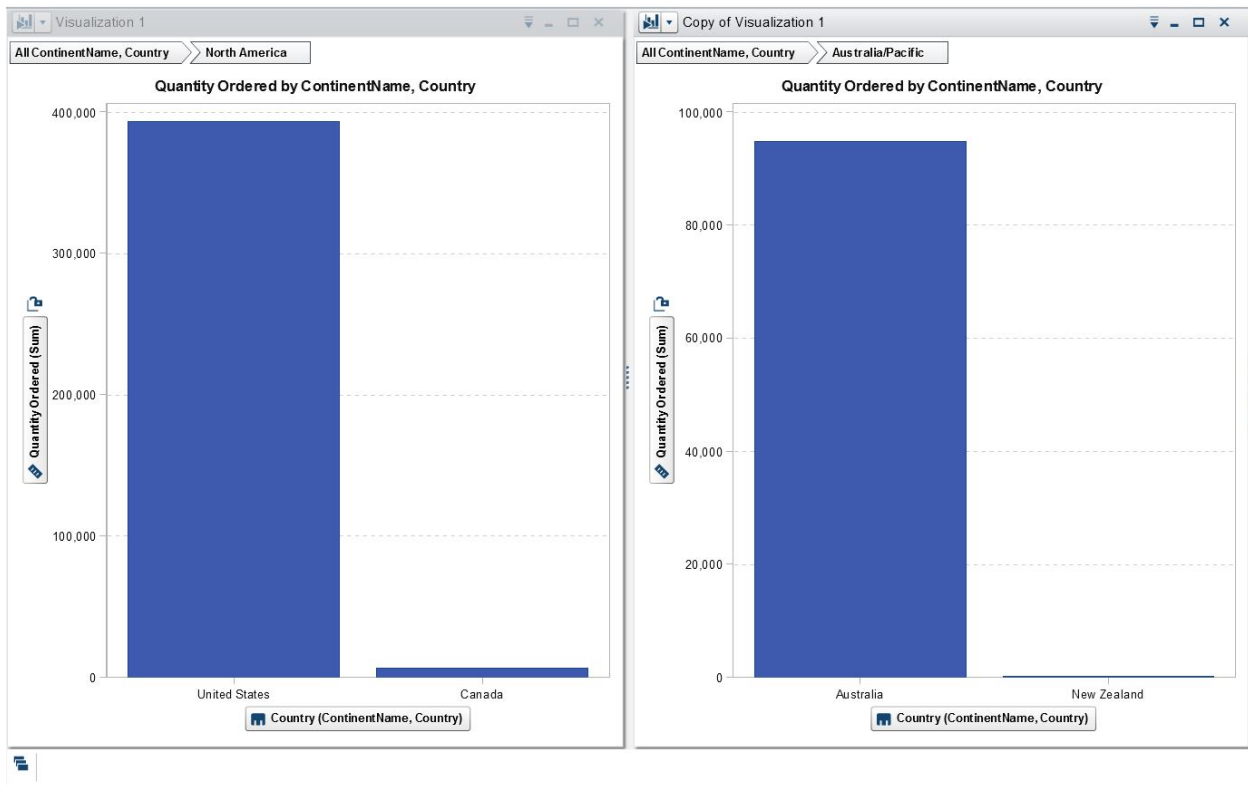


Figure 2. Hierarchy of Countries of North America and Australia Continent

Figure 3 shows that even though the sales based on quantity ordered on Australia is the third lowest (Right Chart), the discount given in percentage of total price is the lowest. Doing this is the wrong course of action to take as in order for CeilBrakes branch in Australia to generate more sales (more quantity of product ordered), there has to be higher discounts or promotions given, hence discounts given to product in Australia should be around 42-44%. Another problem that can be seen is even though huge discounts have been given in Asia and Africa (highest and second highest amount discount), the sales generated as seen on the chart in the right is still low. This can indicate that the price might not be the problem, but some other factors, such as insufficient advertising. Using this, CeilBrakes managers in these branches can decide to advertise more to the market in order to make their product known, or even innovate new products that suite the country's culture and would capture buyer's attention.

In Figure 4 the quantity of products ordered from all CeilBrakes Branches all over the world based on the date the order was placed which is from 1st Jan, 2009 to 1st Jan 2012. Using Data Filtering, it was narrowed down to one year only, which is between the year 1st Jan, 2011, to 31st Dec, 2011, which can be seen in Figure 5 and 6.

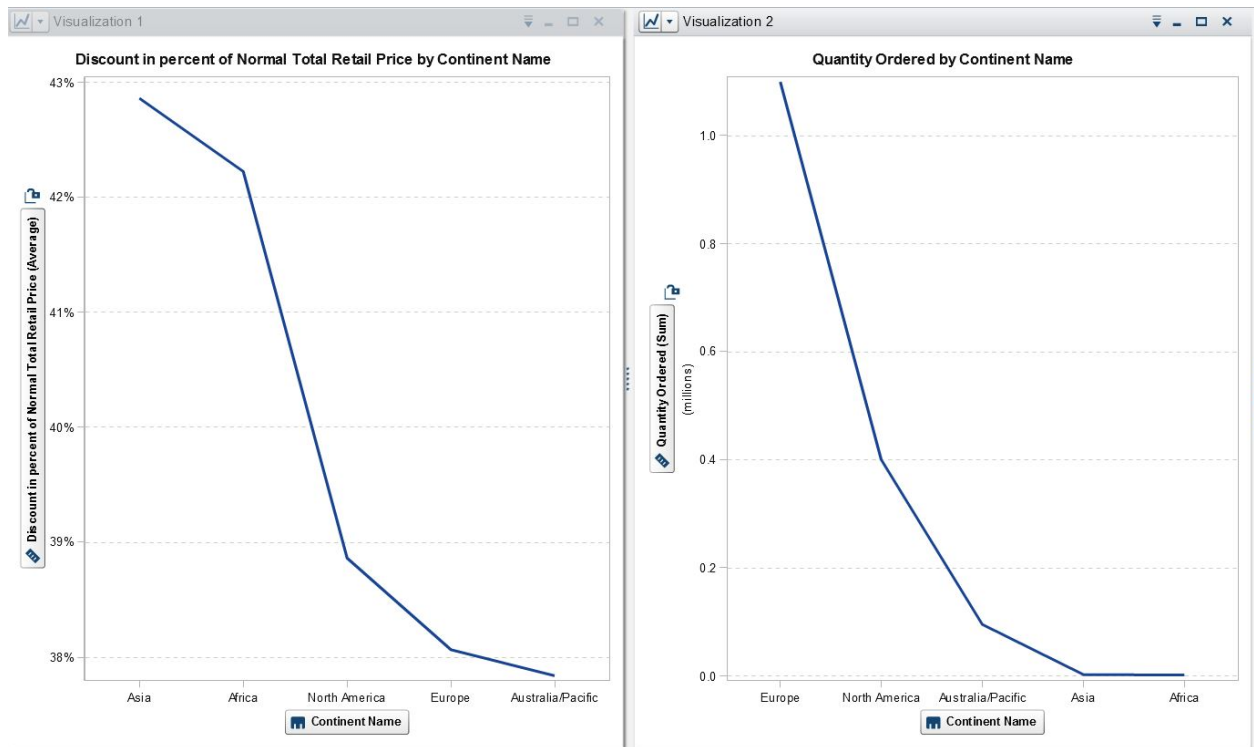


Figure 3. Discount in Percent of Normal Total Retail Price of Product in Each Continent, Compared to Sales in each Continent

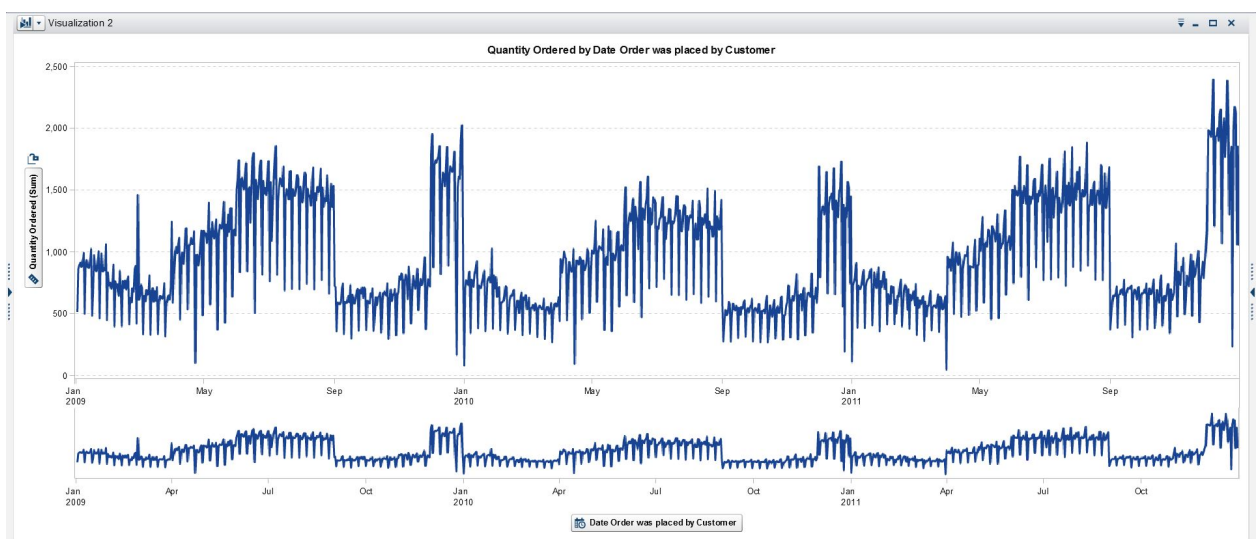


Figure 4. All the Quantity Ordered from all the CeilBrakes Branches Based on the Date Order Was Placed

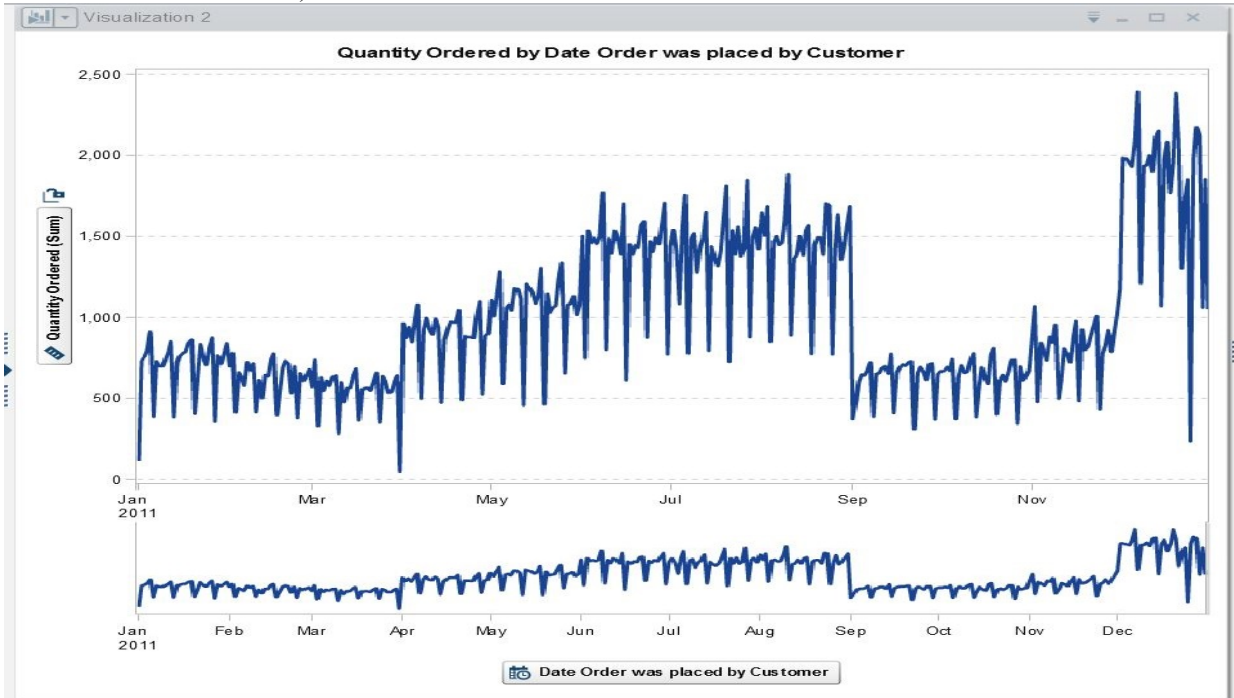


Figure 5. Quantity Ordered from 2011 to 2012

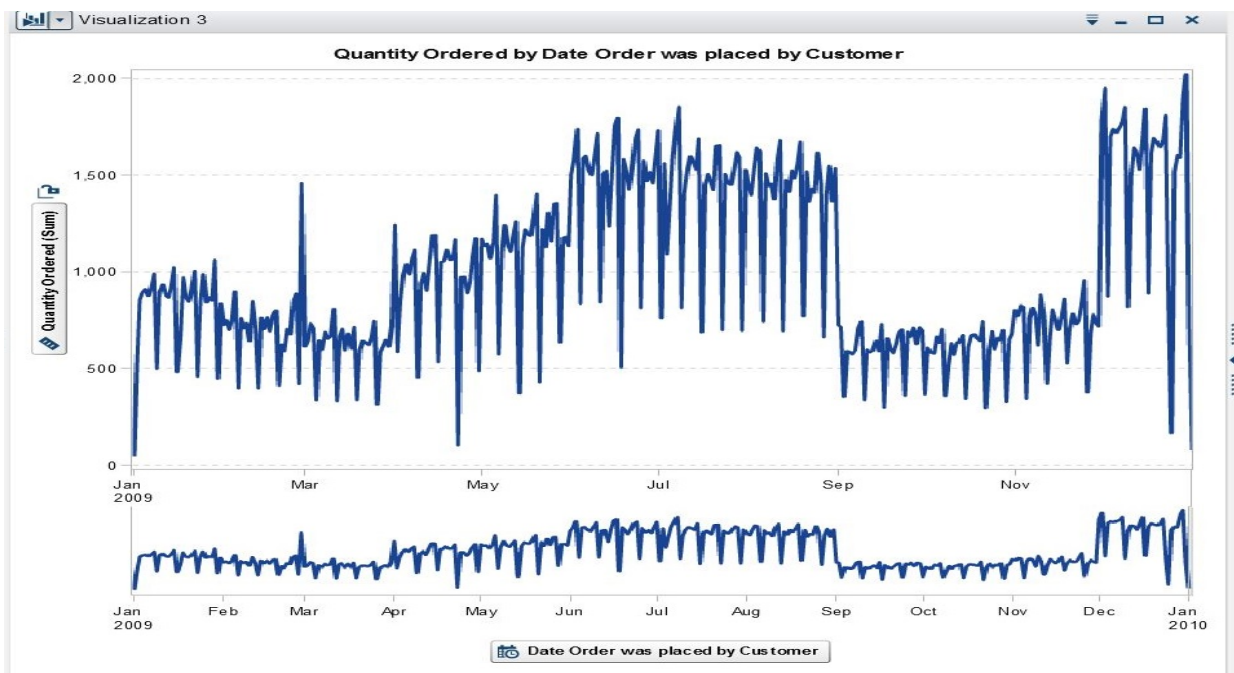


Figure 6. Quantity Ordered from 2009 to 2010

After applying Data Filtering, Figure 5 and 6 shows that the pattern of Quantity of Products Ordered each year based on the Date the order was placed is very similar and almost identical. There would be a drop in sales from starting of the year (January) to about mid of March where sales would increase to a peak between July and September. Going into September, sales would drastically drop until about mid of November, where sales would peak again until the end of the year (December).

The drop in sales in January to mid of March is most likely caused by less demand of the products from CeilBrakes by the customer. By some time the products the customers own would have worn down, and stocks of stores who purchase from CeilBrakes would have diminished. This is where sales start to increase again from end of March towards September. After that there would be less demand again until end of November where sales

would increase until end of December. The increase in sales in this time is most likely due to the holidays celebrated, such as Christmas, where customers would usually purchase products from CeilBrakes as gifts and stores who purchase from CeilBrakes will stock up to sell later on.

Managers of CeilBrakes can prevent the drop of sales from January to mid of March and September to mid of November by engaging in activities such as clearance sales, announcing special time based promotions, create events during these periods of time where retail prices drop in order to attract more buyers. They could also innovate new products that compliment products that were bought during the previous months. (E.g. Previously customers bought furnitures such as tables, then decorative furniture such as table cloths or chair cushions that complement the table can be sold).

7 Challenges in Implementation

Implementing Business Intelligence solutions to CeilBrakes will have its challenges. The first challenge is the cost. CeilBrakes has branches in other continents with much lower revenue than Europe branch (such as North America, Asia, and Australia). For these branches, it is difficult for them to acquire the right software, which usually is very costly and is beyond the branch's budget. Human resources such as hiring BI professionals, Consulting Analysts, IT Infrastructure Professionals, etc. also has high cost and requires a large budget. CeilBrakes would also have to spend a huge sum too for purchasing and maintenance of the hardware resources. In addition to increasing the price of deployment, setting up these data warehouses and processors also impacted expensive IT labor resources [23].

The second challenge is gathering and analyzing data from different data sources [23]. Data of the company's business processes is often spread across multiple systems and software. Hence, gathering data requires accessing these software and systems one by one and also requires careful filtering so as to not gather the wrong data. Some of the software may include Excel spreadsheets, other sources include social media such as Facebook and Dropbox, as well as databases such as MySql and Oracle.

Third is the challenge in dealing with poor data quality. The more data generated in the past decade; it is more difficult it is to sift through all these data to find high quality data containing information that will help enhance the company's performance. These important and high-quality data is usually buried deep into systems and applications and can go lost or unnoticed. Sometimes Business Intelligence can also deliver inaccurate data and poor insights which will only waste time and hinder company progress.

8 Best Practices

Several best practices can be taken to address the challenges listed above. To address the first challenge, which is the high cost, CeilBrakes can adopt Self-Service analytics [17], [22]. These kinds of tools do not require IT support and professionals, which reduces the cost by a huge margin. Business analysts can build their own reports and dashboards using this tool. These dashboards are very interactive and have features such as highlighting profits by using data filtering. Dashboards which are ineffective can also be easily updated to focus on CeilBrakes's current needs, such as focus on determining the amount of discount given. Eliminating the cost for software and hardware (partially), cloud based BI software can also be used as Self-service analytics, such as SAS VA. The second challenge can be addressed by newer BI solutions. These BI tools can easily merge different data sets from all the different sources by using data connectors, which make it convenient for the user as it saves a lot of time in collecting and viewing the data. Lastly, in order to avoid poor data quality, quality control strategies in the company should be developed. Data Quality Management approach can also be implemented and the individuals of the company can be encouraged to follow suit [23].

9 Conclusion

In conclusion, CeilBrakes Furniture has some advantages in the retail market over other competitors, such as dominating the retail market of household furniture and appliances in the Europe continent. However, it also has its downsides, which is mediocre performance in the other continents, mainly North America and Australia. CeilBrakes should focus more on increasing efforts in these continents so that the sales can match Europe continent. The least sales comes from Asia and Africa continents, so in order for CeilBrakes to improve sales in these countries they can implement different methods other than providing discounts (which has been proven from the findings above to be ineffective) such as producing products that suit culture in Asia and Africa. The main goal for CeilBrakes is to attract more customers in these four continents to the point it will match up to the sales in Europe.

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