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Analyzing SME's Data Visualization, Business Challenges, and Solutions: A Seven Stars Review

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Abstract
This comprehensive report encapsulates a thorough analysis conducted on the extensive Seven Stars dataset. Leveraging advanced data visualization techniques, the analysis has been meticulously executed to extract meaningful insights and elucidate intricate patterns within the dataset. By delving deep into the data, the report identifies a spectrum of potential business challenges that the organization may encounter, both in the present and future landscapes. These challenges encompass diverse realms such as market fluctuations, resource allocation, and operational inefficiencies. In response to the identified challenges, a robust set of solutions is proposed, tailored to address each issue methodically. Drawing upon best practices and industry expertise, these solutions aim to bolster the organization's resilience and competitiveness in the dynamic business environment. Moreover, to facilitate seamless data management and decision-making processes, a bespoke dashboard has been meticulously crafted. This intuitive dashboard serves as a centralized platform, enabling stakeholders to effortlessly manipulate and analyze data from disparate sources, thereby fostering informed decision-making and strategic planning. In essence, this paper serves as a comprehensive roadmap for the organization's data-driven journey, guiding it towards sustainable growth and success in an ever-evolving business landscape. Through diligent analysis, strategic foresight, and proactive problem-solving, the organization can chart a course towards long-term prosperity and resilience.

Keywords: Data Visualization, Data Manipulation, Predictive Analytics, Decision Making

1 Introduction
Seven Stars Sports and Outdoors is a retails organization who sells sports and outdoors products in different location within Vietnam, Indonesia, Thailand, and Philippines. The organization sells their product through the mail orders and over the internet. From here the organization is able to know and track the purchases and enables them to do an analysis of the buying patterns of the buyers and able to offer the markets targeted groups. The Headquarters of the Seven Stars has been in the USA. In this paper, we analyze the Seven Stars branches that are located in Southeast Asia only. There are more than 1000 employees working and approximately 100,000 customers, processes more than 140,00 orders yearly and purchases products from 64 suppliers.

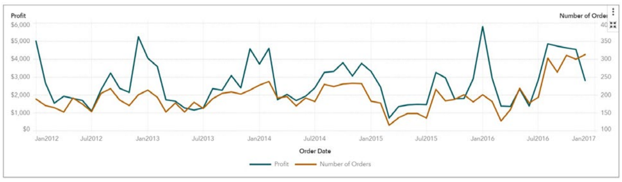

Figure 1. Profits and Number of Products

Figure 1 above shows the Profits and number of products of Seven Stars. The Seven Stars is at its core a sporting goods company with a large proportion of sales coming from the sale of Sports Articles themselves. Alongside this, there are also large portions of sales from Outdoor products and Clothes and Shoes which are associated with Sports. Our overall profits were almost 30 million dollars in the year 2017. It shows that the profits for every year get increased and the number of products also gets more profits when the sales increase as well.

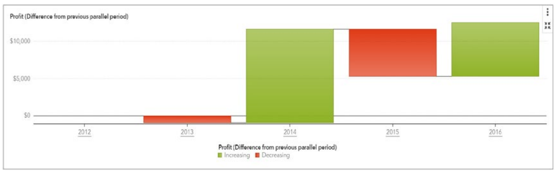

Figure 2. Profits by Periods

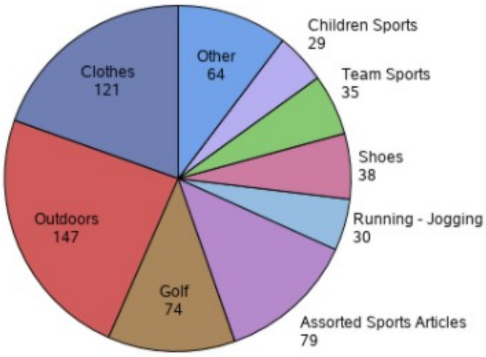

Figure 3. Profits by Categories

The figure above shows the total revenue of the Seven Stars by department by the year 2019. It shows that the response from the customers for the Seven Stars product (shoes) decreased (***38 responses***) and the outdoors (**147**), clothes (**121**), golf (**74**) are getting higher responses from the customers in the year 2019.

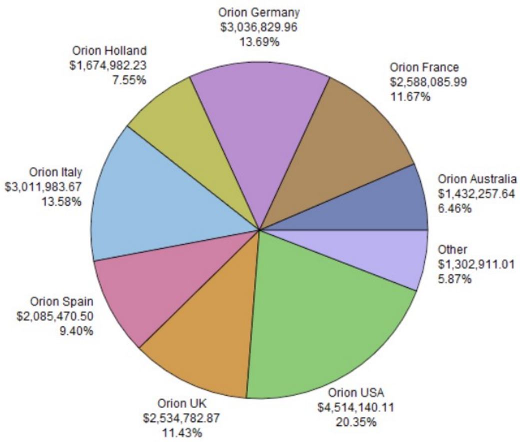

Figure 4. Revenue by Country

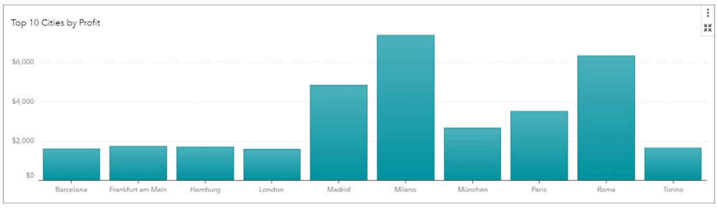

Figure 5. Top 10 Cities by Profits

Figure 4 shows the total revenue from the other countries other than Asia, by the business name of Orion while the business that located in Southeast Asia named Seven Stars. The country with the highest revenue in 2013 was ***USA***, with Germany, Italy, France, and the UK also representing large sources of revenue. These countries are similar in being developed countries; however, many differences exist in their terrain and leisure activities, which could affect sporting goods sales. Overall, it is beneficial to have several country offices located in various countries, who are able to respond to cultural, legal, and financial conditions in those countries. It shows that the USA get more profits which is ***20.35%*** followed by the Germany (***13.69%***), Italy (***13.58%***) and France (***11.67%***).

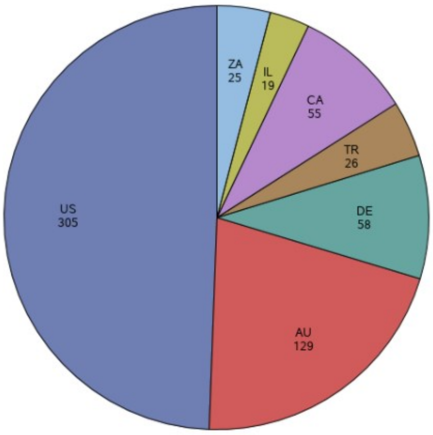

Figure 6. Revenue by Country

Figure 6 above shows the total revenue by country by the year 2019. It shows that the response from the customers to the product from the US remains same with the highest responses from the customers.

2 Problem Statement

We are living in a rapidly developing occasions, particularly for organizations. Thinking about the organization needed to adjust or change to completely new advertising method or channels which concludes how to put the resources into new advancing technologies to compete in worldwide stages [1]. When it comes changes in a big scale, not all CEO or any other worker can be specialist in all things. This thing is valid in all terms.

2.1 *Business Issue faced by Seven Stars*

As qualified consultants help to address the biggest challenges in business, bringing in qualified consultants with the skills they have will help the CEOs to analyze the problems and provide possible solutions. To that, we have provided some of the business challenges that Seven Stars Sports and Outdoors could face in the future. Nothing in this life is ever ensured, but new business owners often allow the fear of uncertainty to affect how they run their organizations. Dread of disappointment, dread of not being a sufficient pioneer and dread of the economy's future can place you in a viewpoint that everything is limited and adversely influences choices and practices. By getting hyper-zeroed in on these things, we set our business up for disappointment as opposed to making the strides important to make progress. Not all CEOs have predictive minds to predict the market and customer trends which is important in changing the economic climate. Getting in the experts in this field will bring in quality in analyzing the business trends which gives the organization a bright future [2].

As for now the current pandemic situation of the world is getting worst day by day. Many companies or organizations are in big trouble to make sure their product has been purchased by their customers. This is where the fear of uncertainty works, where if the CEO did not take the right decision at the right time, then it will be the end of the company or organizations. The next business issue that this organization is faced with is maintaining its reputation. It is important for an organization that needs to be updated with their online reputation [3]. This is because in this modern vein, clients or customers can share their responses or disappointment openly online. In order to that the organization should take care of their online reputation. And it is very important to keep in mind and serve the customer and client with the specific measure of separation. Maintaining the reputation is very hard where it takes more time to gain confidence from the customer [2], [3].

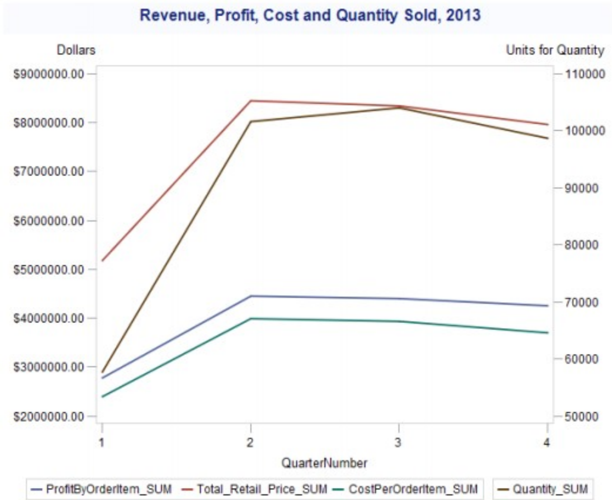

Figure 7. Revenue, Profitsm and Cost

Table 1. Year on Sales

Year On Year Sales

YEAR	SUM_of_Quantity	SUM_of_Total_Retail_Price	Sum of Cost by Year	Profit by Year	Percentage Increase on Previous Year
2009	261159	$21849784.61	$10206885.43	$11,642,899.18	0
2010	301752	$24960592.83	$11723725.50	$13,236,867.33	13.69047
2011	362984	$30484331.66	$14318512.80	$16,165,818.86	22.12723
2012	309328	$25966868.75	$12183436.83	$13,783,431.92	-14.73719
2013	362094	$29934910.62	$14035980.27	$15,898,930.35	15.34813

The table above shows the year of sales of the Seven Stars Sports and Outdoors in between the years 2009 - 2013. The table shows that the Seven Stars consistently increasing sales for these years. There was no data prior to 2009, so the percent increase would of course be meaningless. 2010 was a good year, with a greater than 10% increase on the previous year. 2011 was even better, increasing profit by 22%. 2012 was a very bad year with a 15% decrease on the previous year. This may be attributable to the global financial slowdown, which affected France, one of the biggest markets, in 2012 and Italy from 2011 to today. However, sales are no longer decreasing, and have increased since last year. This shows that even the bigger corporations also struggle in maintaining their reputation and being affected by the global crisis.

The next business issue that can be faced by Seven Stars Sports and Outdoors is introducing new advancing technology that is changing rapidly. Using different kinds of new advancing technologies in modern businesses makes the organization activities work fast and more efficiently [4]. But the organization will be struggling a lot to keep on track with the new advancing technology. Businesses or organizations who did not work on new advancing technology will be left out of the race and will struggle to produce the service to the customers. To that, the organization who really wants to keep on fighting with increasing productivity should choose the right technology to in terms their business operation, finance, and business operations [1], [4].

This is suitable for the Seven Stars Sports and Outdoors. Most recent companies have been using the latest technologies to improve their sales and reputation. Artificial intelligence (AI), 5G, etc. were the newly advanced technology that is used in the markets by consumers. Even though the profits of the Seven Stars are increasing year by year the technologies that they have been used to are still not modern enough. This will not make them more competitive in the future where all other competitors have started using modern technologies [5].

3 Proposed solution

Three problems were identified namely: the fear of certainty, maintaining the reputation, and making advanced technologies in advanced in the future. We will be suggesting some solutions for the problems identified above. The Seven Stars already gets into a good place in order of profits but when it comes to future development, they need to make some changes to make sure they are competitive in the market.

3.1 *Prepare for multiple outcomes.*

The factors that will affect the organization in future are listed now, unfortunately the organization could not have the right solution or do not have the idea for the problem that will happen in the future. It can be any kind of factors such as global crisis, pandemic situation, or political situation [6]. In this kind of situation, before trying to react to the crisis, firstly sort down some of the wagers that are inside your control. By doing this the organization will be able to frame the image of customers, and we will be able to inspire colleagues and being able to move forward through into undiscovered business sectors. By redesigning the organization figure markets, the sales and profits of the organization will be increased and will be able to access the new framework for the organization [7].

3.2 *Get quality control in order.*

When the organization decide to do shuffling of both weakness and development, it is difficult to maintain the quality control. Quality control is one of the most important things in a business. When the organization decides to move forward to and improve the organization the most important thing to do is make sure to equal the quality control [8]. To make sure these frameworks are as per plan the only thing the organizations must do is train the employees and staff. Break down the system and characterize what the best in the organization and analyze all the data that is collected. Gather a team to analyze the data selected together. This is because even the employees who are doing the daily work can come up with a proposal or updates which bring forward the organization in terms of productivity. By doing this kind of thing the Seven Stars were able to deal with this problem and moved forward through it.

3.3 *Manage external reputation risks.*

Problems for an organization can come from outside of the company. This could arise out of deceptive accomplices, specialists, providers, contractual workers, and some other outsiders that the organization manages. Even if we cannot predict this kind of danger for the organization, the authorities should come up with the possible idea to deal with this kind of issue. This will help to avoid or to handle the situation. The organization should know the administration and make sure they are able to understand the market and customer needs. Moreover, there are a lot of competitors around the world who do keep updating their product day by day. Doing this kind of thing makes them maintain their reputation and keeps people attracted to the product. To that the Seven Stars should manage the external reputation risk to avoid any consequences.

3.4 *Make reputational risk part of strategy and planning.*

It is imperative to perceive the effect that standing can have on progress. Examine shortcomings and decide applicable reputational credits inside the association. Conceptualize potential situations that could harm public discernment with representatives at different levels, as they may have special commitments. Decide pointers and admonitions for each property so we will realize when to make a move. For instance, client grumblings about the neatness of an eatery demonstrate that norms should be raised before it gets known as a hazardous spot to eat.

3.5 *Investigate technologies that will solve problems for the company.*

Creating or making new advancing technologies is happening because of the working environment which gives the issues or shortcomings. When it happens, the organization can find a solution to solve it [9]. By this way the new advancing technologies should take place. Before emerging, new technologies make sure the organization does some research and development to make sure that the new technology will be more useful for the organization. Ensure you cast a wide net and investigate every conceivable arrangement. Moreover, before trying the new advancing technologies, the organization should request the contribution from their key partners of the organization. Picking up understanding from key partners right off the bat in the dynamic cycle has another favorable position: you will make 'envoys' for the innovation at all degrees of the organization by requesting their info. Disclose to these representatives the points of interest and expected results of the innovation so they can uphold the work to different representatives later.

3.6 *Train the employees to use the new tool.*

It shows that not all the new advancing technologies are very easy to understand. some new advancing technologies needs more time to understand and mostly spends more money which is not much necessary. These are some of the successful tips to train the employees:

1. Everybody has diverse learning styles and needs. Conduct the meeting with a wide range of the employees by giving a scope of materials and alternatives.
2. Make the preparation individual - let employees know why this work was given to them and how this will be affecting their daily work.
3. Request criticism from clients at each stage in the usage. It is okay to receive criticism from the clients at the beginning. The organization should not think about getting more profits once they launch the new advancing technology.

3.7 Business Analytics method

Figure 8. Business analytics steps

Besides the solution has given, the basic thing that a company or an organization can follow to solve any kind of business problem is to implement the business analytics strategy or steps. These analytics ways are carried out by the organization to analyze how much of the organization's mission statement is accomplished. Moreover, it encourages smart decision making. where these ways will give important to the data that the organization will use to make accurate decision that could help drive in the right path. Additionally, this way provides clearer insights through data visualization. Comprehensive charts and graphs provide a clearer and looks interesting in decision making. And finally, it helps to keep the organization updated in all areas. As previously mentioned, this will help the organization to grow faster and help to determine the steps needed to achieve the goals.

4 Result and Discussion

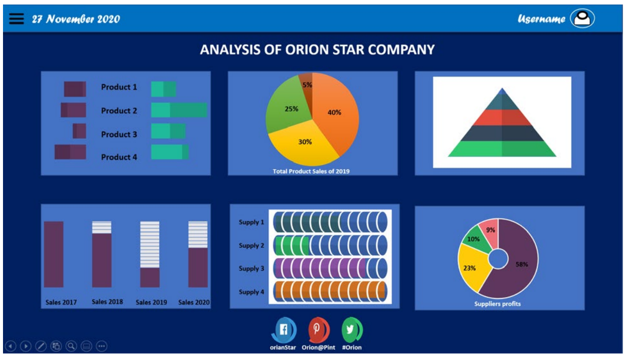

Figure 9. Designed Dashboard

Figure 9 is the dashboard that is designed to address the issues faced by the Seven Stars organization. There are three issues that were identified which are the fear of uncertainty, maintaining the reputation and making advanced technologies. From this dashboard design there are 6 graphs that were inserted to make sure all the issues that identified by the organization get the latest updates and make sure the updates were correctly used to achieve the goal of the organization. This dashboard is called analytical dashboard, which the data is extracted from the past to identify the market trends to take good decision making in the future. There will be a lot of data in the dashboard where the user is able to interact with the dashboard and get the data from it. The most important person who analyzes the dashboard are the database analysts, as they are professionals who understand the typical business user.

As we mentioned earlier the first problem is the fear of uncertainty where the organization must make the right decision at the right time. If the decision that was made by the organization is not the decision that solves the problem, then it drives the organization to the wrong path. The main reason where this problem occurs is that the CEO of the organization is not clear about the market trend and fear in making decision. To that this dashboard will provide the latest news, updates, trends of the markets which is helpful for the business analytics to suggest the right decision to the organization.

5 Implementation Challenges

Data analytics is the most important for the managers of an organization. They play an important role in decision making, increase accountability, benefit financial health, and help employees predict losses and monitor performance. There are several challenges that make risk managers' ability to collect and use analytics.

5.1 *The amount of data being collected.*

Bigger organizations will collect more data from different sources. This will make the manager and the employees overwhelmed with the more data that is collected. A bigger company/organization like Seven Stars will collect the data from every incident and interaction daily which causes the analysts in trouble. The organization should have a data system which automatically collects and organizes the data. This will help the organization to complete their task in the right time because manually performing the data will consume more time compared to this. An automated time will help the employees to finish the task fast.

5.2 *Collecting the meaningful and real-time data*

It shows that more information has been collected by the organization, now it makes it difficult to drop down the most needed data. As mentioned earlier, when the employee/managers are overpower, they might not fully analyze the data or just focus on the easiest information. This will not give the actual analysis that the organization needed. To that a data system that collects the data should alert the users about the data and with this the decision makers can be more confidents with the data they are facing.

5.3 *Visual representation of the data*

To show the data or information in a clear and nicer way the data should be in diagrams or outlines. While these apparatuses are extraordinarily helpful, it is hard to construct them physically. Setting aside the effort to maneuver data from numerous regions and put it into an announcing apparatus is disappointing and tedious. Employees and managers will constant information that they need in an engaging and instructive configuration. Finally, examination can be difficult to scale as an association and the measure of information it gathers develops. Gathering data and making reports turns out to be progressively perplexing. A system that can develop with the association is critical to deal with this issue. While defeating these difficulties may take some time, the advantages of information investigation are certainly justified regardless of the exertion. Improve your association today and consider putting resources into an information examination system.

6 Conclusion

The Seven Stars organization shows that in terms of profits, suppliers, and employees management, they have been in good form right now. But this can be changed in the future with more competitors growing now. This research indicates that the Seven Stars should consider some parts of their organization and make sure they are in competition in the future with the competitors. Although it shows the profit, they make in recent years are much more profitable but with more advancing technology coming, they should encourage the employees and increase productivity by using the latest technologies. Taking the right decision at the right time is one of the biggest challenges. To that the organization should make sure the decision that made in the global crisis time should be work well and cope with the sale and profits. The profits and losses should be taken care of equally. This report will show the ways that the organization should look through to decide.

Using advanced technologies will increase the productivity of the organization. Finally, we believe that this report will be useful for the organization to reconstruct some of the areas in their organization. And we believe these reports will also be useful to analyze the business analytics of the Seven Stars organization.

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