**Module Two Capstone Element 3: Analysis and Visualization of Additional Data Set**

**Dataset: Retail Sales and Marketing (Key Findings Summary, Insights, Correlations)**

MIS 490: Management Information Systems Capstone

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**Executive Summary (Retail Sales and Marketing)**

ABC Company is looking to expand as it grew from a small company to a multi-national company. As a result, the CEO needs to conduct a thorough review of product-related information such as cost, revenue, price and so on across the years as well as ordering methods. This comes as a necessary step as stakeholders would like to gain insight into the steps taken that worked and made a difference and the steps that did not work as intended. Therefore, this report shows insights into key findings as well as correlations related to the sales and marketing of the company as well as its profit and loss.

**Key findings Summary and Insights**

From the analysis of the Retail Sales and Marketing dataset, the product cost is high across all years and the order method that was utilized the most at the time is Web. The product cost in the year 2015 also spiked higher compared to other years. This indicates that products sold via the web ordering method are generally more expensive as they accumulate costs related to shipping and handling as well as storage. It also indicates that there might have been a particular event that impacted web-related costs of products in 2015.

Furthermore, the sum of unit cost per year is consistently lower than the sum of unit price per year. This indicates a healthy profit margin. The sum of unit sale line closely follows the sum of unit price line. This indicates a consistent pricing strategy across the years. The trend also has unit sales price fluctuating a bit, indicating promotional discounts or other price reduction related activities.

From the analysis, it is evident that the sum of unit cost, price, and unit sale price is the highest for the web order method. This again indicates, thereby reinforces that web-based activities dominates other order method types concerning revenue and cost generation.

Furthermore, the year 2015 shows a noticeable increase in gross profit with it fluctuating a bit for the rest of the years. The order method types that account for the most gross profit generation is again the web order method. This indicates that web channel drove the profits and made 2015 a particularly profitable year as the web order method is a major contributor to gross profits.

A screenshot of a graph

AI-generated content may be incorrect. From the analysis of pie chart, it is evident that the largest portion of gross profit is contributed by the United States, indicating the importance of the US market for the company. The company will have to maintain its grip in the United States market if it wants to stay profitable in the coming years.

Upon analyzing the planned revenue and revenue year by year, it is evident that both lines deviate around the year 2015. This is a sign that the company forecasted revenue for 2015 may be inaccurate. This further indicates a potential planning issue in the management or some external market factors outside of company control.

Lastly, web-based order method types surpassed planed revenue when revenue and planned revenue are analyzed year by year. This indicates that there may be a strong demand for web-based shopping or a marketing campaign may have been successful if it was launched in the same period.

**Correlation Between Data Sets (IT Help Desk and Attrition)**

A lot of difference exists between the data sets. The IT help desk dataset showcases IT issue resolution times as well as influencing factors like priority, severity, and satisfaction ratings. The Employee Attrition dataset showcases attrition rates and factors influencing it such as distance from home, income, job role, education, and satisfaction rates among employees. Job role attribute is present in both datasets, allowing us to draw insights and make connections. For example, longer resolution times promote lower job satisfaction, thereby increasing the attrition rates. This suggests that employee retention and operational efficiency are indirectly linked.

Moreover, both data sets contain satisfaction attribute. The IT help desk data set presents satisfaction via the lens of issue resolution, suggesting that lower satisfactions rates are often caused by higher resolution periods. The employee attrition dataset presents satisfaction rate via the lens of attrition. As a result, Higher resolution times result in lower satisfaction and that results in higher attrition. A statistical correlation might not be found immediately, but the datasets are related via shared variables. This suggests that factors affecting operations of a company also influence employee morale and sentiment, thereby affecting retention.

**IT Infrastructure Assessment and Recommendations.**

In the current state, the data used for analysis might be coming from the ABC company’s HR database (HRIS) or similar sources. The Microsoft Power BI platform is utilized for the creation of visualizations as seen by the visualizations presented. The current infrastructure only supports basic analysis and reporting as well as dashboard creation. As a result, the following presented are the assessment.

First, a data warehouse to hold data from numerous sources needs to be implemented as it allows in-depth comprehensive analysis. Moreover, accuracy should be ensured by increasing the frequency of regular data quality checks as well as other applicable data validation processes. Simultaneously, it needs to be made sure that the infrastructure can handle large volumes of data and demands. Lastly, the ETL processes could be automated to improve operational efficiency.

Upon examining the current assessment of ABC company’s IT infrastructure, the following implementations are recommended. The company should train IT staff on various techniques and analytical tools. Moreover, the company shall implement a framework concerning data governance to make sure data is secure and consistent across the company. Lastly, it is recommended to invest in a cloud-based data warehouse. This will provide the company with an IT system that is flexible and scalable to dynamically handle large volumes of data.

**Information Security Policies and Procedures.**

For any organization,the application of information security policies and procedures that are aligned with national and international standards, laws, and regulations is crucial as it protects sensitive data, maintains customer trust, makes sure regulations are complied with, reduces risk of data breaches, preserves business continuity, enhances operational efficiency, and standardizes security practices, thereby protecting the brand image and providing competitive advantage against competitors (Thurmond, 2024). ABC company should apply role-based access control to make sure access is restricted to people who need it to perform a task. Moreover, unauthorized access should be prohibited and protected against by encrypting data at all stages, that is in transit and at rest (Thurmond, 2024). Privacy should be ensured by masking sensitive data fields in visualizations and reports. Additionally, compliance with existing and new data privacy and handling regulations should be ensured such as CCPA in California, GDPR in Europe etc. (Thurmond, 2024). Lastly, vulnerabilities should be addressed by conducting security audits at regular intervals.

**Recommendations concerning policies and procedures:**

ABC company can develop a comprehensive information security policy and apply it throughout the organization. This would ensure that security policies are standardized at all levels in the company and data is protected evenly and handled with utmost care. Moreover, employees could be provided with additional training concerning data security and privacy such as identifying phishing attacks and reporting them (Thurmond, 2024). Multi-factor authentication should be implemented across the company where sensitive data is present, thereby adding an additional layer of security (Thurmond, 2024). Lastly, the organization needs to have a comprehensive data retention and destruction policy to make sure private and sensitive data does not fall into wrong hands and is misused.

**References:**Thurmond, T. (2024, February 6). *15 information security policies every business should have*. KirkpatrickPrice. https://kirkpatrickprice.com/blog/15-must-have-information-security-policies/