**Benefits of a Relational Database Management System for Winter Gear**

Antonio Scalfaro

Computer Science, University of Maryland

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Professor Candice Adams

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***Introduction:***

Winter Gear LLC is a growing chain of over 30 winter supplies stores located in five states and two countries. Having this number of stores in as many locations as Winter Gear does presents certain challenges that must be faced to continue healthy growth. Winter Gear uses Microsoft Excell for most of its internal needs. This includes using it for inventory management, profit and loss profiles, employee scheduling, and customer information. While this method has worked to grow Winter Gear thus far, it has its limitations. First, this style of management means that each store is responsible for inputting and managing all data on their own with little oversight and no early warning system if something is awry. Second, this style creates a ‘lag’ effect from the point a problem occurs, is identified, and can be rectified. Furthermore, Winter Gear is located in both the United States and Canada and must accept both countries’ currencies, which creates stress on the company when evaluating the company’s financial status. Lastly, the current processes create an individualism for each store, instead of each branch being part of the whole. For these reasons, a relational database management system (RDBMS) is suggested to be implemented to address Winter Gear’s needs.

***What is an RDBMS:***

First of all, what is an RDBMS? An RDBMS is a system that is designed to store all of the information our stores generate, from sales and inventory to customer and employee information. The RDBMS will be able to store all of this and more and be able to connect these pieces of information together with unique identification numbers allowing Winter Gear to leverage this information to heighten efficiency. The power of an RDBMS is in its ability to store all pertinent data and be able to use the relationships between the data to quickly recall information when needed.

***RDBMS Improvements***

Currently, all stores are acting as individual businesses, maintaining their own inventory, tracking customer orders, tracking incoming shipments of new inventory, calculating monthly costs and profits, etc. To make Winter Gear a more efficient business, all of this data needs to be collectivized and utilized. Connecting these individual businesses together via an RDBMS will allow every store to act as a part of the whole, ultimately increasing profits, increasing efficiency, and lowering the time to identify potential issues. As it stands now, if a customer comes into a Winter Gear store and is looking for an item that is out of stock at that location, they would be left to their own devices to find that item elsewhere, potentially costing Winter Gear a sale. However, with an RDBMS, an employee would be able to quickly look the item up in the database to see when the next shipment of that item is due in or if another Winter Gear store in the area has that item in stock, thus helping to retain the business of that customer.

This also leads to automation of tasks previously done by hand. Take for instance, calculating the total profits of all stores in US dollars. This is currently done by asking all stores to tabulate their profits for a given period then sending that data to corporate headquarters, where employees would also have to convert Canadian dollars into US dollars in order to tabulate the total. The database will be connected to the point of sales system, when a purchase is made at the register in any store, the database will reflect the change in inventory as well as the change in total sales. The RDBMS would be able to automatically convert all sales to US dollars and produce the total sales companywide within seconds, reducing potential errors. This will allow the company to have a clear understanding of its financial standing and to act accordingly. This whole system could be maintained by a small group of engineers working from corporate headquarters.

***RDBMS Marketing Improvements***

On a customer level, it can store all information for current rewards members, including earned reward points, past purchases, and total spent. Winter Gear can then use this information to more accurately market products to each customer that they may want to purchase in the future, helping to drive in additional revenue. Winter Gear currently sends out an email advertisement to all rewards members once a month. If a member’s past purchases were all snowboarding/skiing related items, Winter Gear could send a more effective advertisement to this member by displaying our newest snowboarding/skiing inventory. This would lead to a higher chance of converting that advertisement into a sale at a Winter Gear location. This knowledge also gives Winter Gear insight into what products are desired by the customer base as a whole. Insights into customer behavior allows Winter Gear to enhance its business flexibility which allows it to keep up with the demands of the market.

***Companies Using RDBMS***

Companies all around the world and in every sector of the economy already use and benefit from using an RDBMS. One such company, though not in the same sector as Winter Gear, is Bank of America (BofA) who has had an RDBMS implemented since 1986 (Carifio & Jahnke, 1998). BofA started to collect and store all the data it could from customer interactions and used this information to glean useful business insights. They found that they were able to categorize their customers from high priority (those deemed to be of high value) to low priority (those they could afford to lose their business) (Carifio & Jahnke, 1998). The aim then became to retain high priority customers and deepen relationships with them using the newly stored information (Carifio & Jahnke, 1998). To help retain clients, they used that information to determine what products were desirable to which clients (Carifio & Jahnke, 1998). This is one of the facets of how Winter Gear will approach utilizing the data collected and stored in its RDBMS.

Another company utilizing an RDBMS to improve their overall production and profitability is an international telecoms company, Telephonica. Telephonica is a telecoms company in Germany that operates as part of a Spanish telecoms company (Islam & Abedin, 2013). Operating as an international company provides unique problems in terms of understanding financial status. Telephonica has used an RDBMS to increase its customer and business relationships, customer satisfaction, revenue projections, and tariff simulation campaign management (Islam & Abedin, 2013). They utilize the power of the RDBMS to generate a clear financial outlook. Similarly, Winter Gear would use an RDBMS to keep a clear eyed view of its own financial standing in both countries of operation and allows ease of expansion to other countries with confidence knowing the system will be able to keep track of all finances.

***Conclusion***

As Winter Gear continues its growth both domestically and internationally, it would benefit by implementing an RDBMS in all facets of the company’s growth. Inventory management, customer relationships, customer retention, and financial clarity would all be improved through the implementation of an RDBMS at Winter Gear. The next evolution of Winter Gear’s growth will be through this implementation and the cojoining of Winter Gear stores in all locations into parts of the whole instead of individual stores. While the growth of Winter Gear has been exceptional to date, it will soon be held back without a system to connect all of its branches together.

**References**

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