# Memo

**To:**      AdventureWorks Executive Team

**From:**   Josh Wolfe

**cc:**      Andrew Snodgrass

**Date:**   10/12/2020

**Re:**      AdventureWorks Product Sales Analysis

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The first task was to generate an analysis of products from orders and order details combined with customer income information. My approach combined tables containing order, customer, and regional information different join techniques. I also implemented a data modification tool to convert customer income information into three distinct categories of High, Medium, and Low. The resulting table consists of 60,398 unique entries.

The second task was to generate a similar analysis as prior but with products from reseller orders instead of internet orders. I took a similar approach of combining the reseller order table with the product and category tables. This approach results in a table consisting of 60,855 unique entries that displays the product information, product quantity, order date, and sales amounts for reseller orders.

The third task was to generate a table that displays total sales per year, per region, and per country. My approach combined internet and reseller sales and total the sale amounts. These sales were summed and grouped their associated country. Each country's totals were summed for the countries associated region for each year from 2005 to 2008. Initial analysis shows that 2006 and 2007 were the highest performing years of $3,133,143 and $5,816,592 respectively in annual sales.

The fourth task was to put together an analysis of sales promotion data. My approach is similar to the third task in that the main component is the union of both the internet and reseller sales. The table is organized based on category, so that the promotion performance (order quantities and revenue) for each item in any given category can be compared side-by-side. The performance across different regions for different promotions can be compared side-by-side as well.

The fifth and final task asked to look at customer information and order history in some way. My approach was to look at customer order history based on category, showing the percentage of orders coming from which category. The goal here is to target marketing to customers based on past orders, offering them advertisements or discounts based on products that are complimentary to prior orders, such as helmets to bicycles. Family size is also included, allowing the marketing team to potentially send offers for additional equipment to families that may be looking for to make more purchases. The mechanical aspect of this query calculates the orders in each category per customer and calculates the percentage of orders in that category from the total amount of orders made by the customer. The family size is calculated using marital status (counting two people for a married couple) and the number of children.