DataSpark: Illuminating Insights for Global Electronics

# Executive Summary

This report presents a comprehensive analysis of the Global Electronics dataset using SQL and Power BI.  
It covers customer demographics, purchasing behavior, sales performance, product trends, store operations, and the impact of currency exchange rates.   
Actionable insights and recommendations are provided to support business growth, optimize inventory, enhance marketing strategies, and improve store and pricing decisions.

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# 1. Customer Analysis

- Gender distribution shows a balanced split, slightly more males (50.58%).  
- Customers aged 65+ dominate the user base, ideal for targeted campaigns.  
- Highest customer concentration in the USA, UK, Germany, and Canada.  
- Segmentation by purchase frequency and average order value helps distinguish high-value customers.

-Customer Feedback Loop – Gather reviews and satisfaction surveys to improve service

# 2. Sales Analysis

- YoY growth trends and MoM comparisons indicate healthy seasonal spikes.  
- Most revenue generated in USD; GBP and EUR follow with notable exchange rate impacts.

# 3. Product Analysis

- Best-selling categories include Computers and Home Appliances.  
- Brands like Adventure Works and Contoso are top revenue contributors.  
- Some brands have high volume but low margin—important for pricing strategy.

# 4. Store Analysis

- Stores sized 1001–1500 sqm contribute over 45.81% of total sales.  
- Older stores (10+ years) generate more revenue, showing operational maturity.  
- United States stores dominate in both count and revenue generation.

# 5. Currency Impact Analysis

- Revenue in USD remains dominant; however, exchange losses are notable in EUR and GBU.  
- This informs the need for regional pricing strategies and currency hedging for international growth.

# 6.Technology & Process Improvement

* AI Chatbots for Customer Support – Provide 24/7 assistance for better UX.
* Data-Driven Staff Allocation – Schedule staff based on data insights.
* Real-Time Sales Dashboards for Executives – Enable agile decision-making.

## Key Business Insights

## 1. Revenue & Profit Trends

Total Revenue: $55.76 million from 2016 to 2021.  
Total Profit peaked in 2019 at $10.7 million and declined sharply in 2020 and 2021.  
Biggest Profit Drop: In 2020 (-49.08%) and 2021 (-88.83%), likely due to pandemic-related effects.

## 2. Sales Insights

Highest Revenue Categories:  
- Computers: $19.3M  
- Home Appliances: $10.8M  
- Cameras & Camcorders: $6.5M  
- Cell Phones: $6.1M  
  
Top-Selling Products:  
- WWI Desktop PC (Black): 550 units  
- Adventure Works PC (White): 521 units

## 3. Geographic Insights

Top Countries by Orders: USA (33,767), UK (8,140), Germany (5,956)  
Customer Base: Highest in the USA (5,706), followed by the UK and Canada.  
Gender Split: Fairly even (M: 6,028, F: 5,858)  
Store Distribution: USA leads with 21 stores, Germany and France follow.

## 4. Channel Insights

Top Performing Store: Online channel.  
Physical Store Sales: Store IDs 55, 50, 54, and 9 are top contributors (combined $13.9M+).

## 5. Currency Exchange Impact

GBP and EUR had negative exchange impacts (over $3.6M combined loss), impacting international revenue conversions.  
CAD and AUD showed positive exchange gains.

## 6. Monthly Revenue Trends (2016–2021)

Seasonality: Revenue peaks mid-year and dips at year-start in several years.  
Revenue growth from 2016 to 2019, but steep decline in 2020, with slight recovery in 2021.

# Growth Opportunities

1. Strengthen Online Presence: Online sales are already top-performing. Invest more in digital marketing, SEO, and global logistics to scale.  
  
 2. Expand in High-Demand Markets: USA, UK, and Germany have the largest order volumes. Expand store presence and localized campaigns there.  
  
 3. Reduce Currency Losses: Hedge against EUR and GBP exchange rate volatility. Offer dynamic pricing or local currency billing to minimize conversion impact.  
  
 4. Product Strategy: Focus on high-performing categories like Computers and Cell Phones. Explore bundling accessories with top-selling desktops and PCs.  
  
 5. Optimize Low-Selling Categories: Music and Audio segments underperforming—consider discontinuation or redesign based on customer feedback.  
  
 6. Store Optimization: Analyze why stores 55, 50, 54, and 9 perform well—apply those strategies (location, marketing, service) to lower-performing stores.  
  
 7. Personalize Based on Gender & Age: Utilize gender parity and age data (23+) to create personalized offers, loyalty programs, and targeted campaigns.

8. Focus marketing on age 35–55 in top 3 countries (US, Germany, Australia).  
  
9. Promote high-margin brands and review pricing of low-margin best-sellers.  
  
10. Expand or remodel stores in the 1500–2000 sqm range.  
  
11. Localize pricing for AUD/EUR based on currency fluctuations.  
  
12. Plan inventory and promotions around Nov–Dec sales peaks.  
  
13. Leverage customer segmentation for loyalty programs and upselling.