



# Consumer Goods Ad-Hoc Insights

By: Ashish Kumar



# About Atliq Hardware

- AtliQ Hardware, a prominent player in the hardware industry renowned for its range of products including PCs, printers, mice, and computers, is experiencing rapid growth in recent years. To maintain a competitive edge in the market and facilitate data-driven decision-making, the company has embarked on a new initiative to implement SQL-based data analytics for the first time. This strategic move aims to address various business aspects such as finance, sales, marketing, and supply chain management

## Objective

- The primary objective is to leverage MySQL as the database management system to overcome performance issues associated with large Excel files. AtliQ Hardware endeavors to extract actionable insights from its data repository. These insights will play a pivotal role in optimizing operational efficiency, empowering the company to make informed decisions and sustain its growth trajectory in the dynamic hardware market.

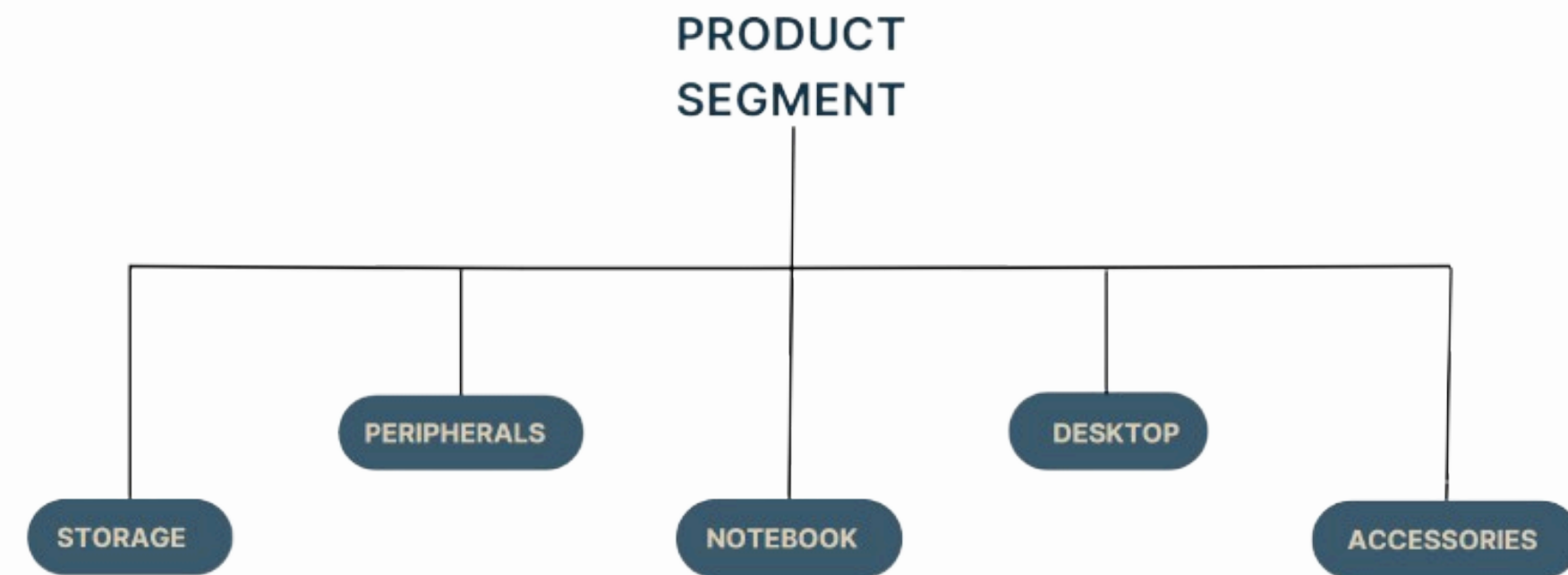
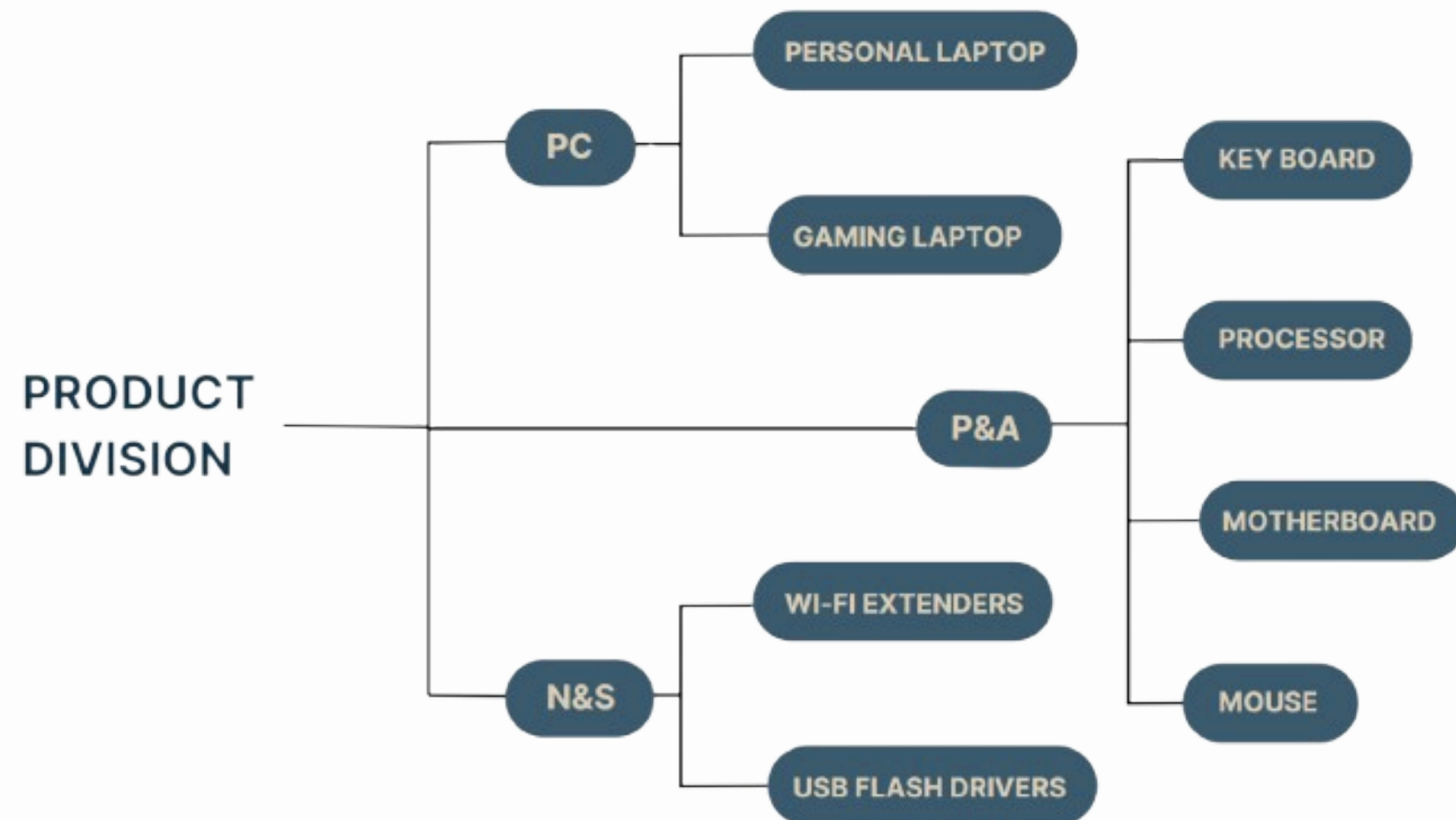


# Problems Statement

The challenge at hand is to assess the financial standing of the company across different fiscal years.

Additionally, there's a need to generate a comprehensive monthly gross sales report. Furthermore, it is crucial to identify the top-performing markets, products, and customers. Additionally, addressing and providing insights for 8 ad hoc requests presented by the management team is imperative.













Ultimately, the goal is to equip the management team with data-driven insights to facilitate informed decision-making processes.







# Database Overview

## Tables

Name	Engine	Version	Row Format	Rows
 dateseed	InnoDB	10	Dynamic	0
 dim_customer	InnoDB	10	Dynamic	209
 dim_date	InnoDB	10	Dynamic	64
 dim_product	InnoDB	10	Dynamic	397
 fact_act_est	InnoDB	10	Dynamic	1919877
 fact_forecast_monthly	InnoDB	10	Dynamic	1880064
 fact_freight_cost	InnoDB	10	Dynamic	135
 fact_gross_price	InnoDB	10	Dynamic	1182
 fact_manufacturing_cost	InnoDB	10	Dynamic	1182
 fact_post_invoice_deductions	InnoDB	10	Dynamic	2006114
 fact_pre_invoice_deductions	InnoDB	10	Dynamic	1045
 fact_sales_monthly	InnoDB	10	Dynamic	1422040

## View

Name
 gross_sales
 net_sales
 sales_post_invoice_discount
 sales_pre_inv_disct

## Stored Procedure

Name	Type
get_market_badge	PROCEDURE
get_monthly_gross_sales_for_Cust...	PROCEDURE
get_top_n_customer_by_sales	PROCEDURE
get_top_n_market_by_sales	PROCEDURE
get_top_n_product_by_sales	PROCEDURE

## Functions

Name	Type
get_fiscal_quarter	FUNCTION
get_fiscal_year	FUNCTION

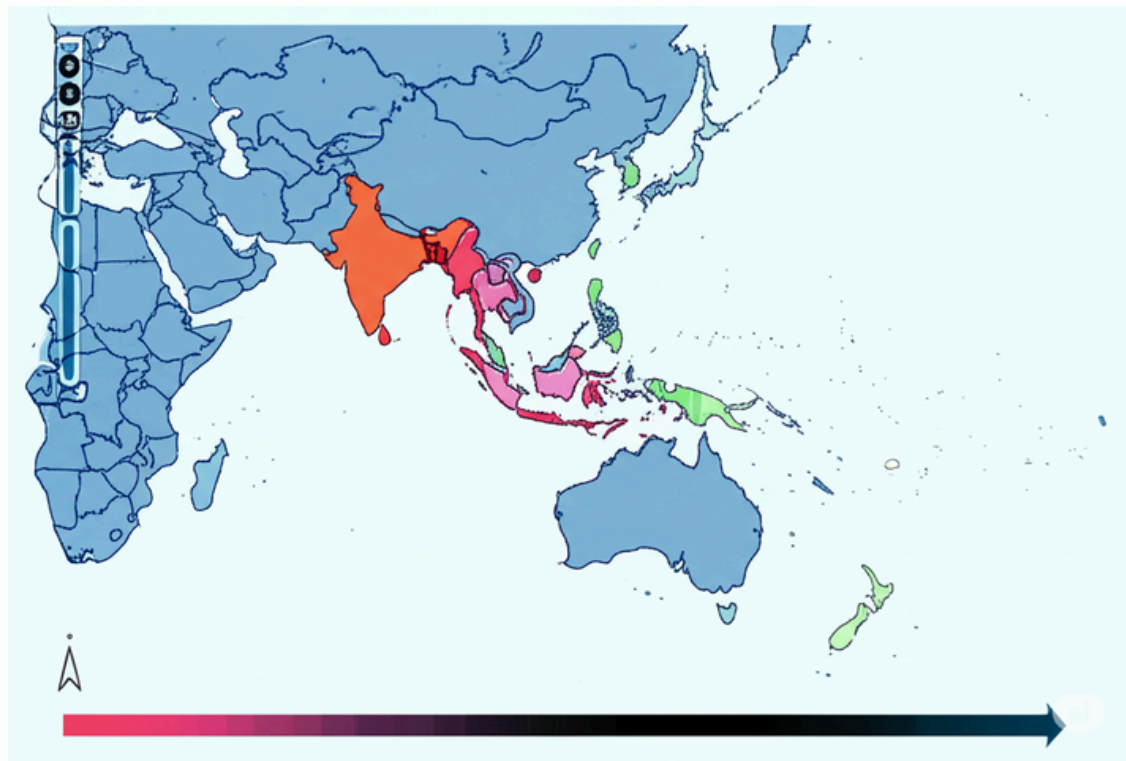
# Ad-hoc insights

**Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region**

## # Code

```
select distinct(market)
from dim_customer
where customer = 'Atliq exclusive'
and region = 'APAC';
```

## # Output



Atliq Exclusive operates its business in 8 Markets, namely **Australia, Bangladesh, India, Indonesia, Japan, New Zealand, Philippines, South Korea** in APAC

# What is the percentage of unique product increase in 2021 vs. 2020?

## # Code

```
with cte1 as(
  Select count(distinct(product_code)) as unique_products_2020
  from fact_sales_monthly
  where year(date) = 2020
),
cte2 as(
  Select count(distinct(product_code)) as unique_products_2021
  from fact_sales_monthly
  where year(date) = 2021
)
select unique_products_2020, unique_products_2021,
round(((cte2.unique_products_2021 - cte1.unique_products_2020) * 100 / cte1.unique_
from cte1, cte2;
```

## # Output

	unique_products_2020	unique_products_2021	percentage_chg
▶	245	334	36.33

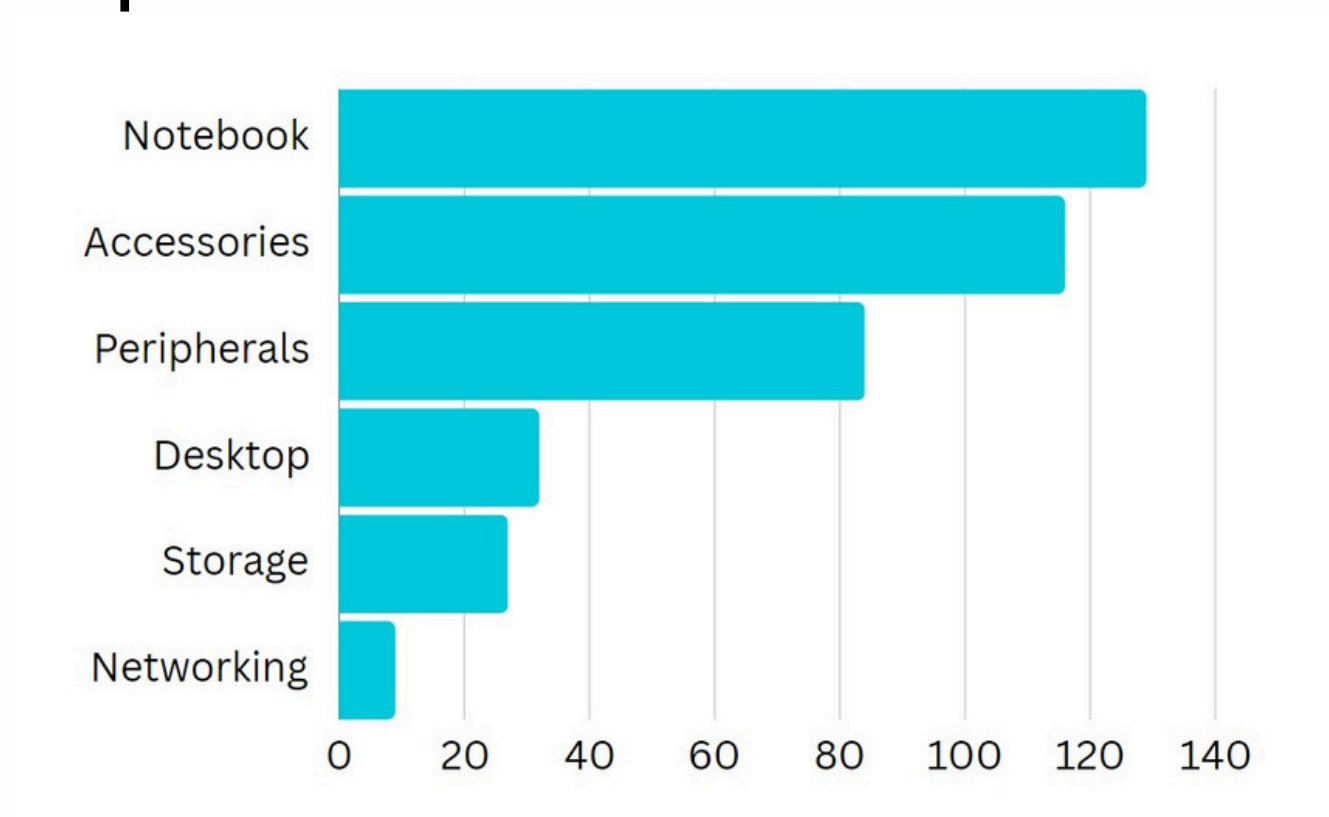
In 2021 , the unique product count rose from **245 to 334**, marking a **36.33%** increase compared to previous year.

**Provide a report with all the unique product counts for each segment and sort them in descending order of product counts.**

#### # Code

```
1 • SELECT segment, count(distinct(product_code)) as product_counts
2   FROM dim_product
3  GROUP BY segment
4  ORDER BY product_counts DESC;
```

#### # Output



**Out of 6 segments, Notebook had the highest numbers of unique products,(129) and Networking has lowest number of products(9).**



# Which segment had the most increase in unique products in 2021 vs 2020?

## # Code

```
WITH cte1 as (  
  SELECT count(distinct(s.product_code)) as p20, p.segment, s.fiscal_year  
  FROM fact_sales_monthly as s  
  JOIN dim_product as p USING (product_code)  
  WHERE fiscal_year = 2020  
  GROUP BY p.segment  
,  
cte2 as (  
  SELECT count(distinct(s.product_code)) as p21, p.segment, s.fiscal_year  
  FROM fact_sales_monthly as s  
  JOIN dim_product as p USING (product_code)  
  WHERE fiscal_year = 2021  
  GROUP BY p.segment  
)  
  
SELECT cte1.segment, cte1.p20 as product_count_2020,
```

## # Output

segment	product_count_2020	product_count_2021	difference
Notebook	92	108	16
Accessories	69	103	34
Peripherals	59	75	16
Desktop	7	22	15
Storage	12	17	5
Networking	6	9	3

In 2021, Notebooks added 16 new unique products, reaching 108. However, Accessories added 34 products, reaching a total of 103, making it first in terms of growth



# Get the products that have the highest and lowest manufacturing costs.

## # Code

```
• SELECT m.product_code, p.product, m.manufacturing_cost
  FROM fact_manufacturing_cost as m
 JOIN dim_product as p USING(product_code)
 WHERE manufacturing_cost = (SELECT min(manufacturing_cost) FROM fact_manufacturing_cost)
 OR manufacturing_cost = (SELECT max(manufacturing_cost) FROM fact_manufacturing_cost)
 ORDER BY manufacturing_cost DESC;
```

## # Output

product_code	product	manufacturing_cost
A6121110208	AQ HOME Allin1 Gen 2	263.4207
A2118150101	AQ Master wired x1 Ms	0.8654

'AQ Master wired x1 Ms' had the lowest manufacturing cost with 0.86, 'AQ HOME Allin1 Gen 2' had the highest manufacturing cost at 263.42

**Generate a report which contains the top 5 customers who received an average high pre\_invoice\_discount\_pct for the fiscal year 2021 and in the Indian marke**

**# Code**

```
select c.customer_code, c.customer, round(avg(p.pre_invoice_discount_pct), 2) as average_discount_
from fact_pre_invoice_deductions as p, dim_customer as c
where c.customer_code = p.customer_code
      and c.market = 'India'
      and fiscal_year = 2021
group by c.customer_code, c.customer
order by average_discount_percentage desc
limit 5;
```

**# Output**

customer_code	customer	average_discount_ percentage
90002009	Flipkart	31%
90002006	Viveks	30%
90002002	Croma	30%
90002003	Ezone	30%
90002016	Amazon	29%

**In the Indian Market 2021, Flipkart had the highest average pre-invoice discount percentage at 31%, and Amazon had the lowest at 29.3%.**

## In which quarter of 2020, got the maximum total\_sold\_quantity?

### # Code

```
SELECT
  CASE
    WHEN period >= 1 AND period <= 3 THEN "Q1"
    WHEN period > 3 AND period <= 6 THEN "Q2"
    WHEN period > 6 AND period <= 9 THEN "Q3"
    WHEN period > 9 AND period <= 12 THEN "Q4"
  END quarter,
  concat(round(sum(sold_quantity)/1000000, 2), "M") as total_sold_quantity_mln
FROM cte
WHERE fiscal_year = 2020
GROUP BY quarter
ORDER BY total_sold_quantity_mln desc;
```

### # Output

quarter	total_sold_quantity_mln
Q1	7.01M
Q2	6.65M
Q4	5.04M
Q3	2.08M

The quarter with the maximum total\_sold\_quantity in 2020 is Q1, with a total sold quantity of 7.01 million.



# Key Findings

- **Unique Products:** The total unique product count saw a significant increase of **36.33%, rising from 245 in 2020 to 334 in 2021**. This growth was driven primarily by the Accessories segment, which added **34 new products**, and the Notebook segment, which added **16 new products**, bringing their totals to **103 and 108**, respectively. Overall, the Notebook segment boasts the highest product count with **129 products**, while the Networking segment has the lowest with nine products.
- **Sales Performance:** The quarter with the highest total sold quantity in **2020 was Q1, with 7.01 million units sold**. This indicates a strong start to the year, although subsequent quarters saw a decline.
- **Market Insights:** AtliQ Hardware operates in eight markets: Australia, Bangladesh, India, Indonesia, Japan, New Zealand, the Philippines, and South Korea. In the Indian market, Flipkart led with the highest average pre-invoice discount percentage at **31% in 2021**, whereas Amazon had the **lowest at 29.3%**.
- **Product Costs:** The product 'AQ Master wired x1 Ms' had the **lowest manufacturing cost at \$0.86**, while 'AQ HOME Allin1 Gen 2' had **the highest manufacturing cost at \$263.42**.
- **Channel Contribution:** The "Retailer" channel was identified as the key driver, **contributing to 73.22% of gross sales**, highlighting its critical role in the company's sales strategy.
- **Segment Growth:** Fiscal year 2021 saw an improvement in sales performance, **especially notable in March and April**, compared to the low sales during the same period in **2020**.



# THANK YOU!



## Ashish Kumar

📞 +91 7004322827

✉️ ashishkumar.du.or.25@gmail.com

🌐 <https://www.linkedin.com/in/ashish-kumar-044098297/>

🐙 <https://github.com/Ashish24062001?tab=repositories>