



Consumer Goods Sector Ad-Hoc Insights

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Agenda

- Company Overview
- Objective
- Business Model
- Segment-wise Product Analysis
- Dataset Summary
- Ad-Hoc requests & Insights
- Dashboard Resources Utilized



Company Overview

- **Atliq Hardwares** is a leading computer hardware company based in India with a global presence. It makes and sells products like computers, printers, microphones, and other accessories.
- The company is now focusing on growing its data team to make better business decisions and support future growth.



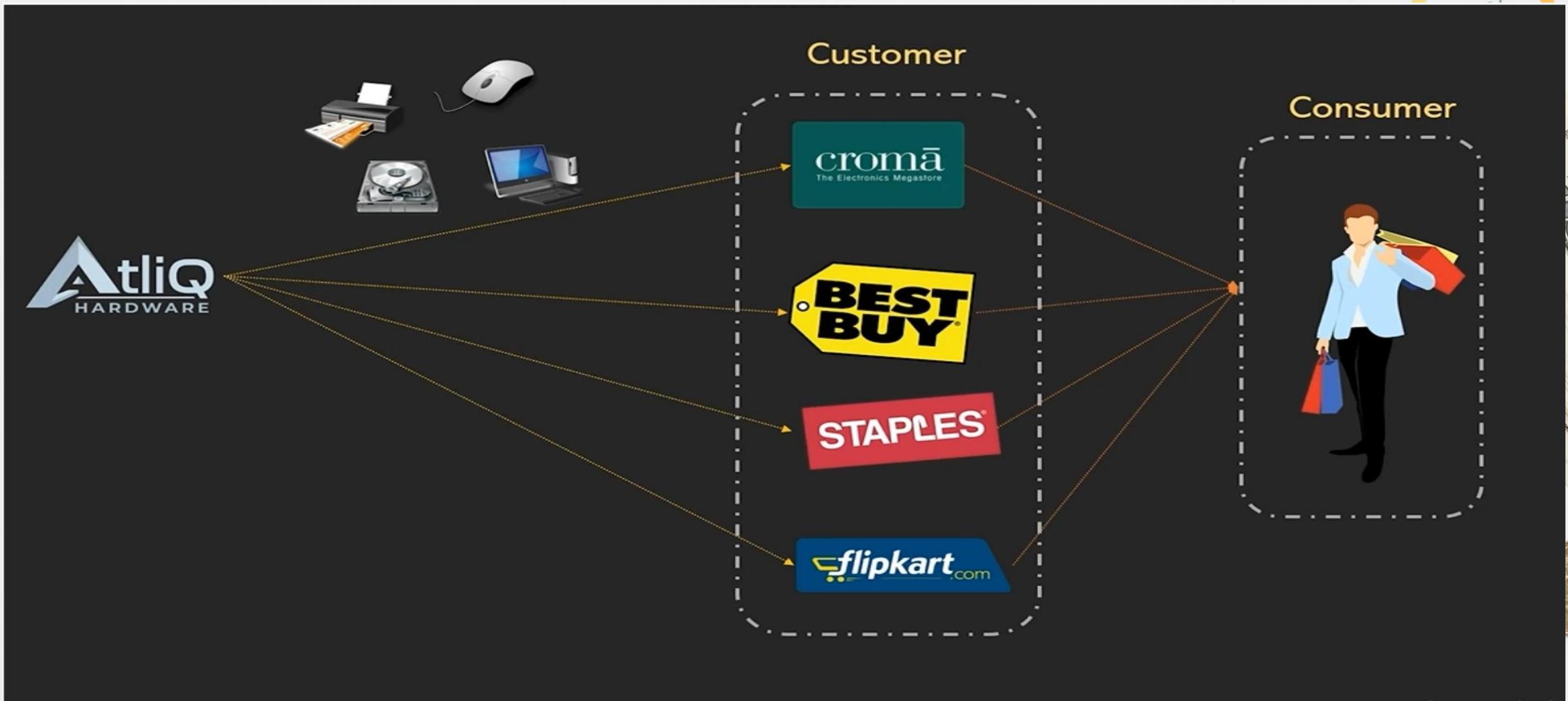
Objective

- **Atliq Hardware** is struggling to get useful data insights for quick decision-making. To address this, they plan to hire junior data analysts with strong technical and communication skills.
- A SQL challenge with 10 ad-hoc business questions will assess candidates' ability to extract insights.
- The results of these tasks will be used to create a dashboard that will help top management make better decisions based on data.



Business Model

AtliQ Hardware produces a range of electronic devices, including mouse, keyboards, laptops, and printers. It supplies these products to both brick-and-mortar and online retailers (referred to as customers), who then sell them to end-users or consumers. The business model is shown below.



Platforms: AtliQ uses both physical retail stores and online e-commerce platforms to deliver its products to customers.

Platforms

Brick & Mortar

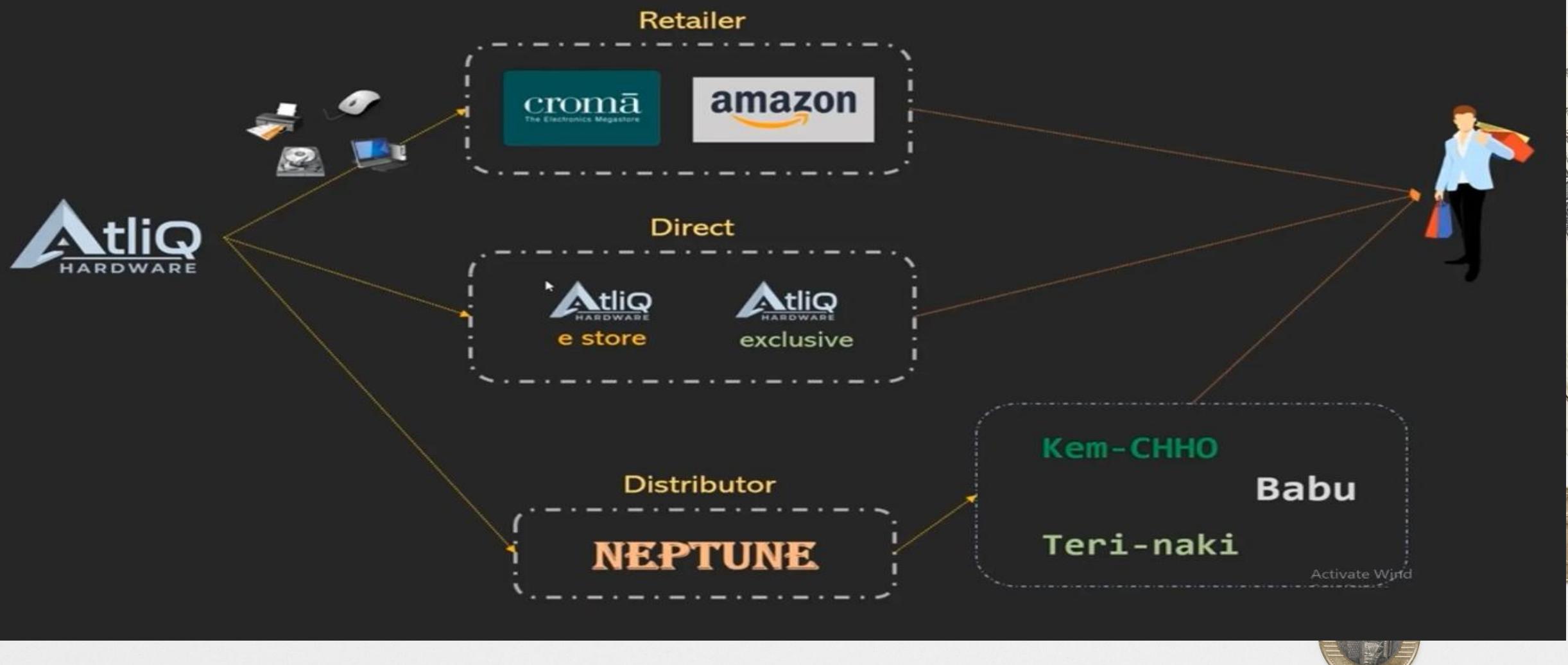


E-Commerce



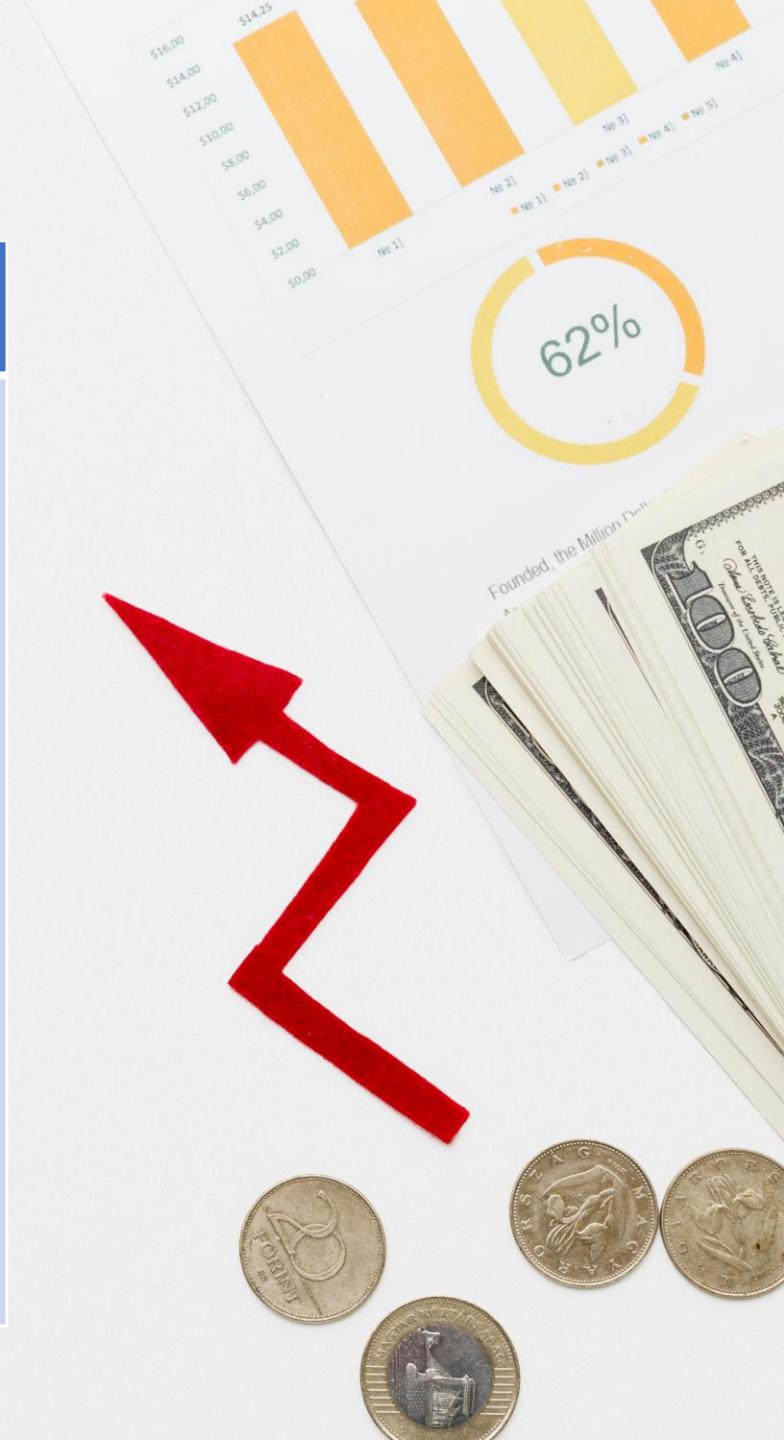
AtliQ uses three main customer channels to sell its products:

- **Retailers** – Partnering with both traditional brick-and-mortar stores and online marketplaces.
- **Direct Sales** – Selling through their online platform (AtliQ Direct E-Stores) and physical AtliQ Exclusive Showrooms.
- **Distributors** – Using a distributor network to supply products to local stores nationwide.



Segment-wise Product Analysis

| DIVISION | SEGMENT | CATEGORY | TOTAL PRODUCTS | VARIANT |
|---|-------------|---|----------------|-------------------------------|
| P & A - Peripherals and Accessories | Peripherals | Graphic Card, Internal HDD, Motherboard, Processors | 84 Nos. | Standard, Plus, Premium |
| | Accessories | Batteries, Keyboard, Mouse | 116 Nos. | |
| N & S – Network and Storage | Networking | Wi fi extender | 9 Nos. | Standard, Plus, Premium |
| | Storage | External Solid State Drives, USB Flash Drives | 27 Nos. | |
| PC – Personal Computer | Desktop | Business Laptop, Personal Desktop | 32 Nos. | Standard, Plus, Premium |
| | Notebook | Business Laptop, Personal Desktop, Gaming Laptop, | 129 Nos. | |



Dataset Summary

| Table Name | Description |
|-----------------------------|---|
| dim_customer | Customer-related data across different platforms, channels, markets and regions. |
| dim_product | Product information including category, segment, and variant. |
| fact_gross_price | Product-wise gross pricing across fiscal years. |
| fact_manufacturing_cost | Year-wise production cost details for each product. |
| fact_pre_invoice_deductions | Pre-invoice deductions by customer and fiscal year. |
| fact_sales_monthly | Monthly sales data with product-wise gross price, quantity sold, and fiscal year. |



Ad-Hoc requests & Insights

- The management team has listed 10 important business questions that need answers based on data.
- We used SQL to find the answers, created visuals in Power BI, and shared useful insights.
- Let's look at each question one by one and see what we found.



Ad-Hoc Request-1 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-1

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

Total Sold Quantity by Markets



SQL Query

```
select distinct market  
from dim_customer  
where customer = "Atliq Exclusive"  
and region = 'APAC';
```

Output

| market |
|-------------|
| India |
| Indonesia |
| Japan |
| Philippines |
| South Korea |
| Australia |
| New Zealand |
| Bangladesh |

Insights

Atliq Exclusive has established its presence in multiple countries across the APAC region, including India, Indonesia, Japan, the Philippines, South Korea, Australia, New Zealand, and Bangladesh.

This highlights a strong market footprint and the ability to adapt to diverse cultural and economic landscapes within the Asia-Pacific region.



Ad-Hoc Request-2 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-2

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

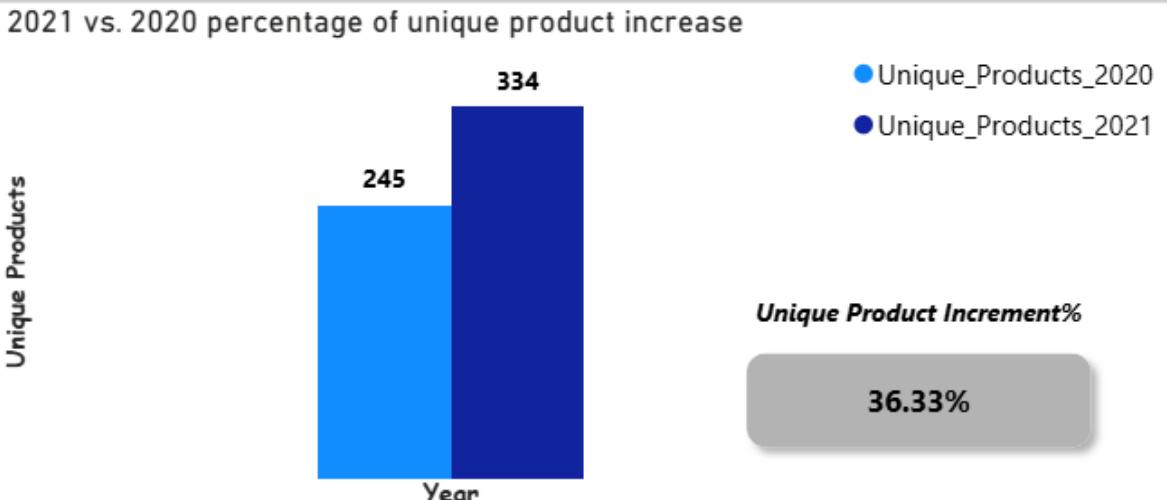
The final output contains these fields - unique_products_2020, unique_products_2021, percentage_chg.

SQL Query

```
WITH unique_product_cnt AS
(SELECT COUNT(DISTINCT CASE WHEN fiscal_year = 2020 THEN product_code END) AS unique_products_2020,
 COUNT(DISTINCT CASE WHEN fiscal_year = 2021 THEN product_code END) AS unique_products_2021
 FROM fact_sales_monthly)
SELECT unique_products_2020,
 unique_products_2021,
 ROUND(((unique_products_2021-unique_products_2020)*1.0/unique_products_2020)*100,2) AS percentage_chg
FROM unique_product_cnt;
```

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

2021 vs. 2020 percentage of unique product increase



Output

| unique_products_2020 | unique_products_2021 | percentage_chg |
|----------------------|----------------------|----------------|
| 245 | 334 | 36.33 |

Insights

AtliQ Hardware produced 245 unique products in Fiscal Year 2020 and expanded its portfolio to 334 unique products in Fiscal Year 2021, marking a 36.33% increase.

This significant growth in unique products highlights AtliQ Hardware's focus on expanding its product offerings, which can attract a wider customer base and drive increased sales and revenue.

It serves as a strong indicator of the company's business growth and ability to adapt to evolving market demands.



Ad-Hoc Request-3 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-3

Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contains 2 fields - segment, product_count.

SQL Query

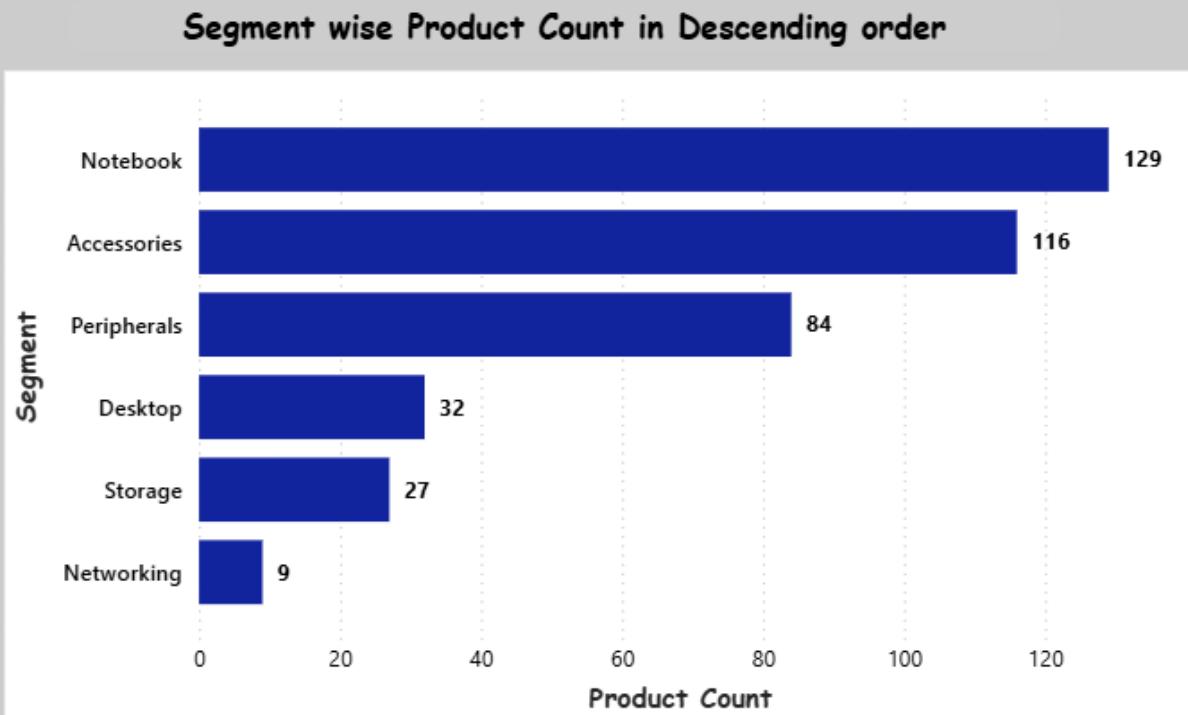
```
SELECT segment,
       COUNT(DISTINCT(product_code)) AS product_count
  FROM dim_product
 GROUP BY segment
 ORDER by product_count DESC;
```

Output

| segment | product_count |
|-------------|---------------|
| Notebook | 129 |
| Accessories | 116 |
| Peripherals | 84 |
| Desktop | 32 |
| Storage | 27 |
| Networking | 9 |

Insights

The "Notebook" segment has the most extensive product range, with 129 products, whereas the "Networking" segment has the smallest selection, offering just 9 products.



This contrast highlights the diversity in product offerings across segments, with categories like "Notebook" and "Accessories" providing a broader selection to meet varied customer demands.

This significant growth in unique products highlights AtliQ Hardware's focus on expanding its product offerings, which can attract a wider customer base and drive increased sales and revenue.

It serves as a strong indicator of the company's business growth and ability to adapt to evolving market demands.



Ad-Hoc Request-4 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-4.1

Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields - segment, product_count_2020, product_count_2021, difference.

SQL Query

```
WITH unique_product AS
(
  SELECT
    p.segment,
    COUNT(DISTINCT CASE WHEN fiscal_year = 2020 THEN f.product_code END) AS product_count_2020,
    COUNT(DISTINCT CASE WHEN fiscal_year = 2021 THEN f.product_code END) AS product_count_2021
  FROM fact_sales_monthly AS f
  JOIN dim_product AS p
  ON f.product_code = p.product_code
  GROUP BY p.segment
)
SELECT segment, product_count_2021, product_count_2020, (product_count_2021-product_count_2020) AS difference
FROM unique_product
ORDER BY difference DESC;
```

Insights

The "Accessories" segment had the most increase in unique products in 2021 compared to 2020.

Output

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



Ad-Hoc Request-4 (SQL Code, Visual representation, Insights)

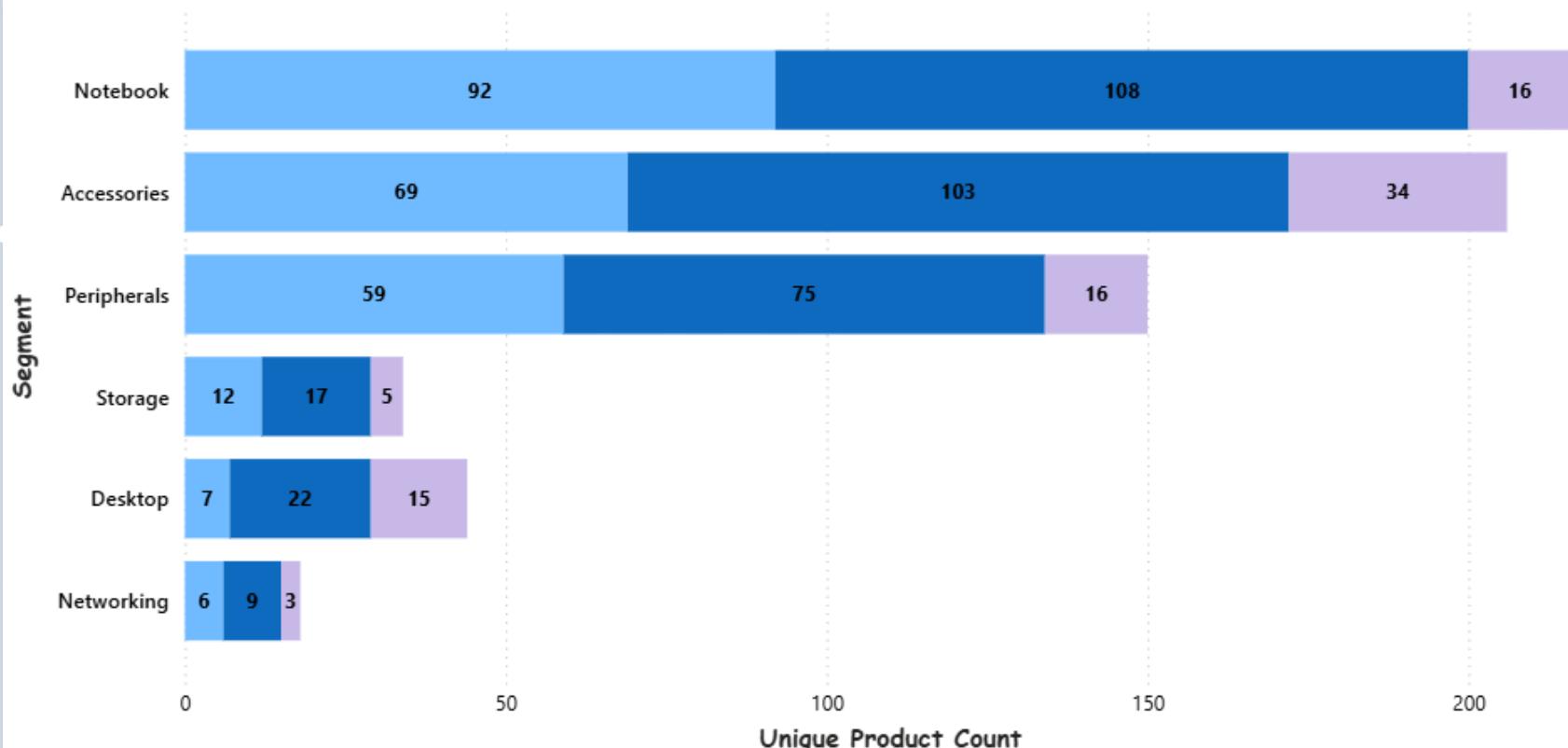
Ad-Hoc-Request-4.2

Which segment had the most increase in unique products in 2021 vs 2020? The final output contains these fields - segment, product_count_2020, product_count_2021, difference.

Insights

Segment wise Unique Product count difference in 2021 vs 2020

● Unique_Products_2020 ● Unique_Products_2021 ● Product_diff(2021-2020)



In 2021, AtliQ Hardware added 34 new and unique products to the Accessories segment, the most among all six segments. This significant growth reflects the high demand for accessories, establishing it as the top-performing segment.

This trend reflects a broader strategy of product portfolio expansion, especially in the "Accessories" and "Notebook" segments, likely aimed at meeting diverse customer preferences. The expanded product variety can strengthen market competitiveness and provide customers with greater choices.



Ad-Hoc Request-5 (SQL Code, Visual representation, Insights)

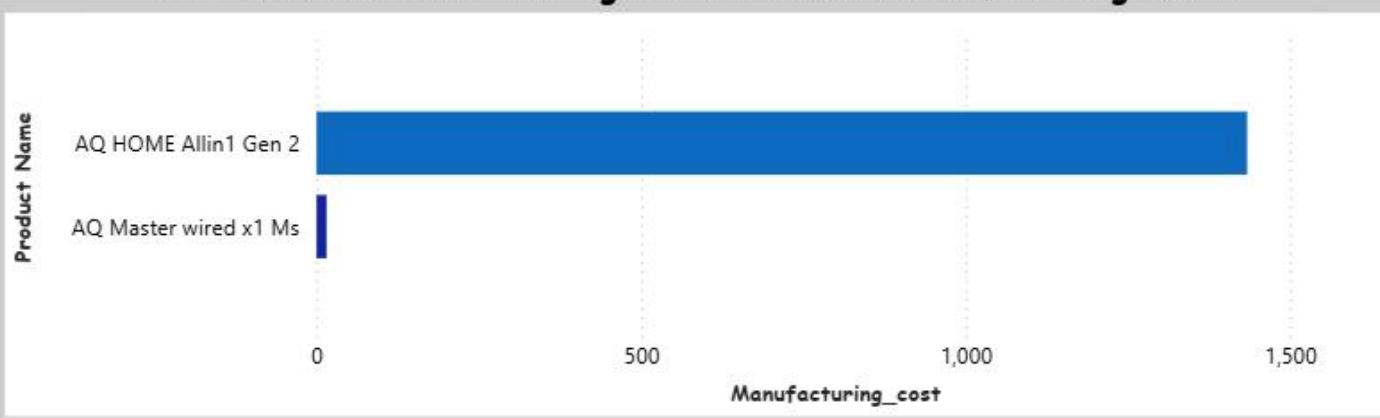
Ad-Hoc-Request-5

Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields - product_code, product, manufacturing_cost.

SQL Query

```
SELECT p.product_code,  
       p.product,  
       m.manufacturing_cost  
FROM dim_product AS p  
INNER JOIN fact_manufacturing_cost AS m  
ON p.product_code = m.product_code  
WHERE m.manufacturing_cost = (SELECT MAX(manufacturing_cost) FROM fact_manufacturing_cost)  
OR   m.manufacturing_cost = (SELECT MIN(manufacturing_cost) FROM fact_manufacturing_cost)  
ORDER BY m.manufacturing_cost DESC;
```

Products that have the highest and lowest manufacturing costs



Output

| product_code | product | manufacturing_cost |
|--------------|-----------------------|--------------------|
| A6120110206 | AQ HOME Allin1 Gen 2 | 240.5364 |
| A2118150101 | AQ Master wired x1 Ms | 0.8920 |

Insights

The "AQ HOME Allin1 Gen 2" stands out with a high manufacturing cost of 240.5364.

In contrast, the "AQ Master Wired X1 Ms" has a remarkably low manufacturing cost of 0.892.



Ad-Hoc Request-6 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-6.1

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 market. The final output contains these fields - customer_code, customer, average_discount_percentage.

SQL Query

```
SELECT p.customer_code ,  
       c.customer,  
       ROUND(AVG(pre_invoice_discount_pct)*100,2) AS avg_discount_pct  
FROM fact_pre_invoice_deductions AS p  
INNER JOIN  
dim_customer AS c  
ON p.customer_code = c.customer_code  
WHERE market = 'India'  
AND fiscal_year = 2021  
GROUP BY customer, customer_code  
ORDER BY avg_discount_pct DESC  
LIMIT 5;
```

Output

| customer_code | customer | avg_discount_pct |
|---------------|----------|------------------|
| 90002009 | Flipkart | 30.83 |
| 90002006 | Viveks | 30.38 |
| 90002003 | Ezone | 30.28 |
| 90002002 | Croma | 30.25 |
| 90002016 | Amazon | 29.33 |

Insights

Top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market.



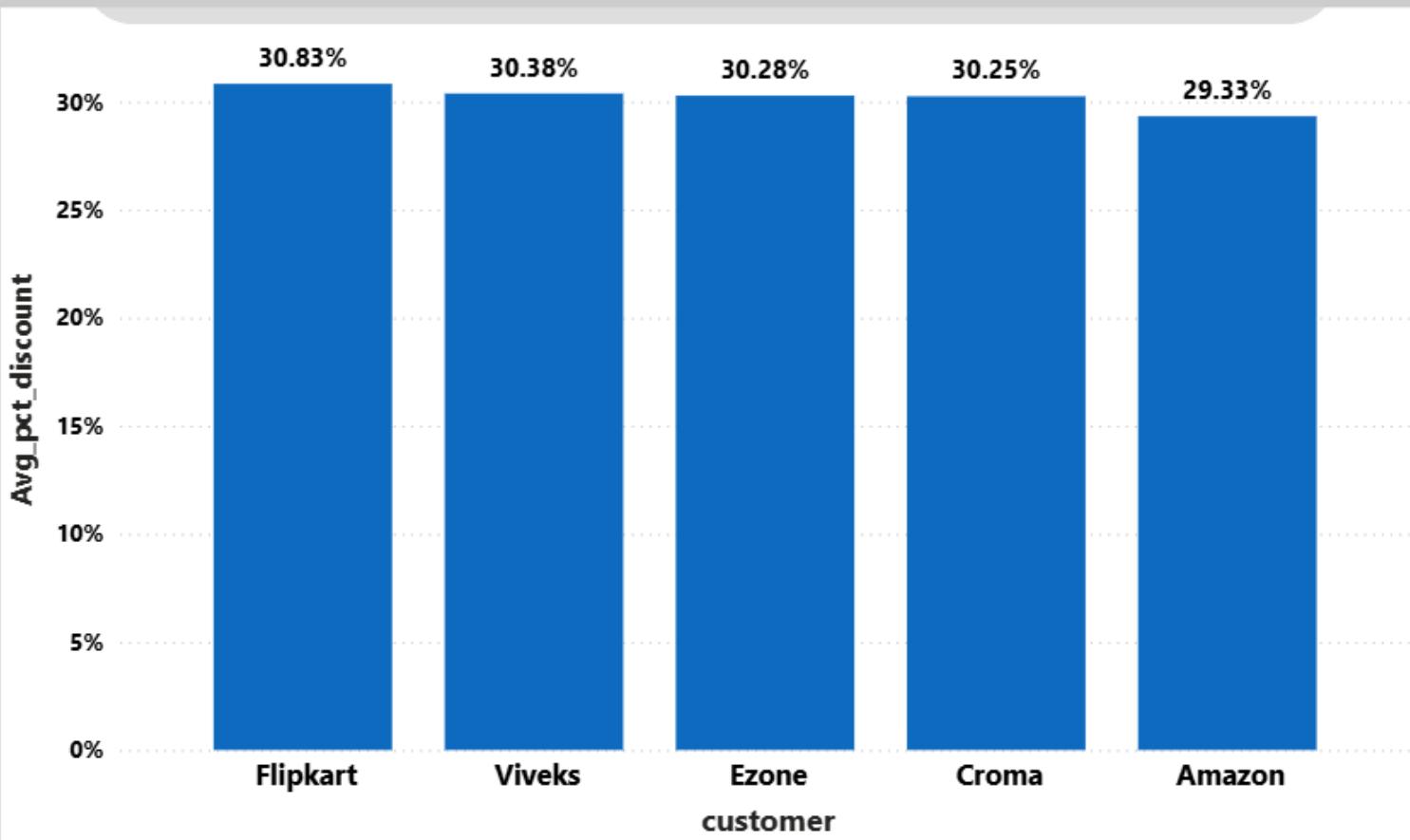
Ad-Hoc Request-6 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-6.2

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 market. The final output contains these fields - customer_code, customer, average_discount_percentage.

Top 5 customers with the highest average pre-invoice discount percentage
in the Indian market for FY 2021

Insights



Flipkart leads with the highest average pre-invoice discount of 30.83%, while Amazon offers a lower average discount of 29.33%. This highlights differing discount strategies, with Flipkart and Viveks focusing on attracting price-sensitive customers through higher discounts. In contrast, Amazon's lower discounts may indicate a different pricing model or a customer base less influenced by discounts. These insights can support more effective discount strategy adjustments and enhance understanding of customer behavior.



Ad-Hoc Request-7 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-7.1

Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month . This analysis helps to get an idea of low and high-performing months and take strategic decisions. The final report contains these columns: Month, Year, Gross sales Amount.

SQL Query

```
SELECT  
    MONTHNAME(date) AS month,  
    YEAR(date) AS year,  
    ROUND(SUM((s.sold_quantity * g.gross_price)/1000000),2) AS gross_sales_amt_mln  
FROM fact_sales_monthly s  
INNER JOIN fact_gross_price g  
ON g.product_code = s.product_code  
AND g.fiscal_year = s.fiscal_year  
INNER JOIN dim_customer c  
ON c.customer_code = s.customer_code  
WHERE c.customer = 'Atliq Exclusive'  
GROUP BY month, year  
ORDER BY year;
```

Output

| FY 2020 | | | FY 2021 | | |
|-----------|------|---------------------|-----------|------|---------------------|
| month | year | gross_sales_amt_mln | month | year | gross_sales_amt_mln |
| September | 2019 | 4.50 | September | 2020 | 12.35 |
| October | 2019 | 5.14 | October | 2020 | 13.22 |
| November | 2019 | 7.52 | November | 2020 | 20.46 |
| December | 2019 | 4.83 | December | 2020 | 12.94 |
| January | 2020 | 4.74 | January | 2021 | 12.40 |
| February | 2020 | 4.00 | February | 2021 | 10.13 |
| March | 2020 | 0.38 | March | 2021 | 12.14 |
| April | 2020 | 0.40 | April | 2021 | 7.31 |
| May | 2020 | 0.78 | May | 2021 | 12.15 |
| June | 2020 | 1.70 | June | 2021 | 9.82 |
| July | 2020 | 2.55 | July | 2021 | 12.09 |
| August | 2020 | 2.79 | August | 2021 | 7.18 |

Insights

At the beginning of the fiscal year 2020, Atliq Exclusive's total gross sales price for all products was 4.5 million. However, during the same year, they experienced a significant decline, with their lowest total gross sales price dropping to 0.4 million, likely due to the global COVID-19 pandemic. Despite this setback, Atliq Exclusive managed to achieve a remarkable recovery, reaching their highest total gross sales price of 20.5 million in the fiscal year 2021.

By the end of the fiscal year 2021, the company recorded a total gross sales price of 7.2 million, indicating progress in their recovery efforts. These insights can support strategic decision-making, enabling the company to enhance marketing efforts and optimize inventory management during peak sales months while developing strategies to mitigate lower sales periods.

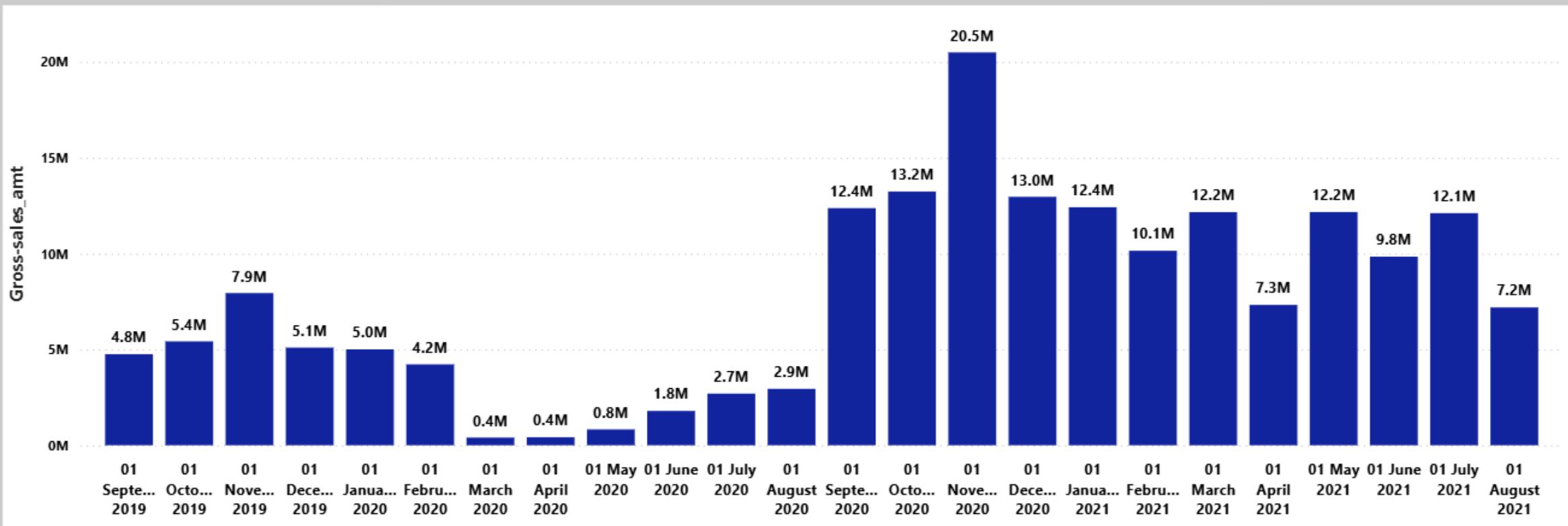


Ad-Hoc Request-7 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-7.2

Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month . This analysis helps to get an idea of low and high-performing months and take strategic decisions. The final report contains these columns: Month, Year, Gross sales Amount.

Gross sales amount for the customer "Atliq Exclusive" for each month



Ad-Hoc Request-8 (SQL Code, Visual representation, Insights)

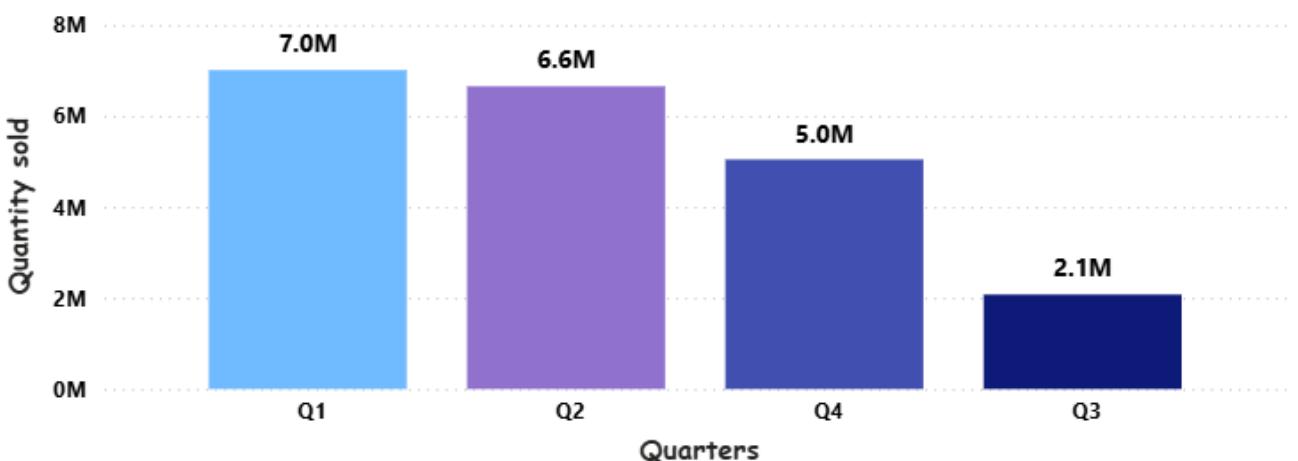
Ad-Hoc-Request-8

In which quarter of 2020, got the maximum total_sold_quantity? The final output contains these fields - sorted by the total_sold_quantity, Quarter.

SQL Query

```
SELECT
CASE
    WHEN MONTH(date) IN (9,10,11) THEN 'Q1'
    WHEN MONTH(date) IN (12,1,2) THEN 'Q2'
    WHEN MONTH(date) IN (3,4,5) THEN 'Q3'
    ELSE 'Q4'
END AS Quarters,
CONCAT(ROUND(SUM(sold_quantity)/1000000 ,2), " M ") AS total_sold_qty
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY Quarters
ORDER BY total_sold_qty DESC;
```

Maximum quantity sold in each Quarter for Fiscal Year 2020



Output

| Quarters | total_sold_qty |
|----------|----------------|
| Q1 | 7.01 M |
| Q2 | 6.65 M |
| Q4 | 5.04 M |
| Q3 | 2.08 M |

Values are in Millions

Insights

In 2020, Atliq Exclusive saw its highest total sold quantity in Q1, with 7.0 million units. The sales data indicates a clear seasonal trend, with Q1 and Q2 performing the strongest, while Q3 experienced the lowest sales. This decline was likely due to the impact of the COVID-19 pandemic, which peaked between March and May 2020. These insights can be instrumental in optimizing inventory management and developing targeted marketing strategies to align with periods of high demand. Additionally, businesses can focus on mitigating the sales decline in Q3 through promotional activities or product launches.



Ad-Hoc Request-9 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-9.1

Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution?
The final output contains these fields - channel, gross_sales_mln, percentage.

SQL Query

```
WITH gross_sales AS
(
    SELECT
        c.channel,
        ROUND(SUM(g.gross_price*s.sold_quantity)/1000000,2) AS gross_sales_mln
    FROM fact_sales_monthly AS s
    JOIN fact_gross_price AS g
    ON g.product_code = s.product_code
    AND g.fiscal_year = s.fiscal_year
    JOIN dim_customer AS c using(customer_code)
    WHERE s.fiscal_year = 2021
    group by c.channel
)
SELECT channel, gross_sales_mln,
ROUND((gross_sales_mln/(select sum(gross_sales_mln) from gross_sales))*100,2) AS percentage
FROM gross_sales
ORDER BY gross_sales_mln DESC;
```

Output

| channel | gross_sales_mln | percentage |
|-------------|-----------------|------------|
| Retailer | 1219.08 | 73.23 |
| Direct | 257.53 | 15.47 |
| Distributor | 188.03 | 11.30 |



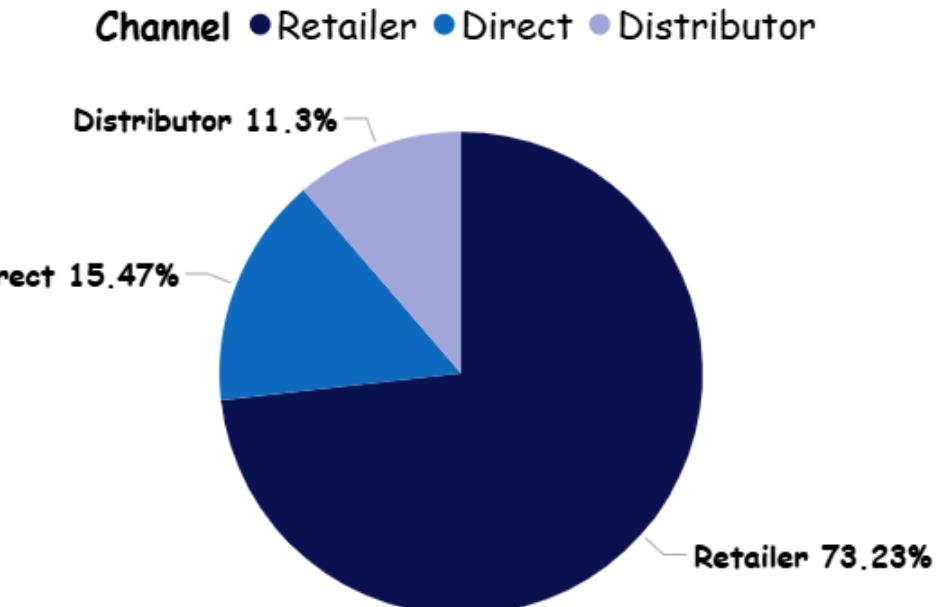
Ad-Hoc Request-9 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-9.2

Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution?
The final output contains these fields - channel, gross_sales_mln, percentage.

Percentage Contribution per Channel for Fiscal Year 2021

Insights



Revenue Contribution by Channel - Atliq Hardware (FY 2021) Among Atliq Hardware's three sales channels, the Retailer channel was the most profitable, generating 73.23% of total revenue, approximately 1219.08 million. In comparison, the Distributor channel had the lowest revenue share, contributing only 11.3% (188.03 million). The Direct channel accounted for the remaining 15.47% of total revenue.

The Retailer channel is the dominant revenue driver. The Distributor channel presents opportunities for growth and optimization. Expanding Direct and Distributor sales could enhance overall revenue diversification.



Ad-Hoc Request-10 (SQL Code, Visual representation, Insights)

Ad-Hoc-Request-10.1

Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021?
The final output contains these fields - division, product_code, product, total_sold_quantity, rank_order.

SQL Query

```
WITH top_sold_products AS (
    SELECT
        p.division,
        p.product_code,
        p.product,
        SUM(f.sold_quantity) AS total_sold_quantity,
        RANK() OVER (PARTITION BY p.division ORDER BY SUM(f.sold_quantity) DESC) AS rank_order
    FROM fact_sales_monthly f
    JOIN dim_product p ON f.product_code = p.product_code
    WHERE f.fiscal_year = 2021
    GROUP BY p.division, p.product_code, p.product
)
SELECT
    division,
    product_code,
    product,
    total_sold_quantity,
    rank_order
FROM top_sold_products
WHERE rank_order <= 3
ORDER BY division, rank_order;
```

Output

| division | product_code | product | total_sold_quantity | rank_order |
|----------|--------------|---------------------|---------------------|------------|
| N & S | A6720160103 | AQ Pen Drive 2 IN 1 | 701373 | 1 |
| N & S | A6818160202 | AQ Pen Drive DRC | 688003 | 2 |
| N & S | A6819160203 | AQ Pen Drive DRC | 676245 | 3 |
| P & A | A2319150302 | AQ Gamers Ms | 428498 | 1 |
| P & A | A2520150501 | AQ Maxima Ms | 419865 | 2 |
| P & A | A2520150504 | AQ Maxima Ms | 419471 | 3 |
| PC | A4218110202 | AQ Digit | 17434 | 1 |
| PC | A4319110306 | AQ Velocity | 17280 | 2 |
| PC | A4218110208 | AQ Digit | 17275 | 3 |

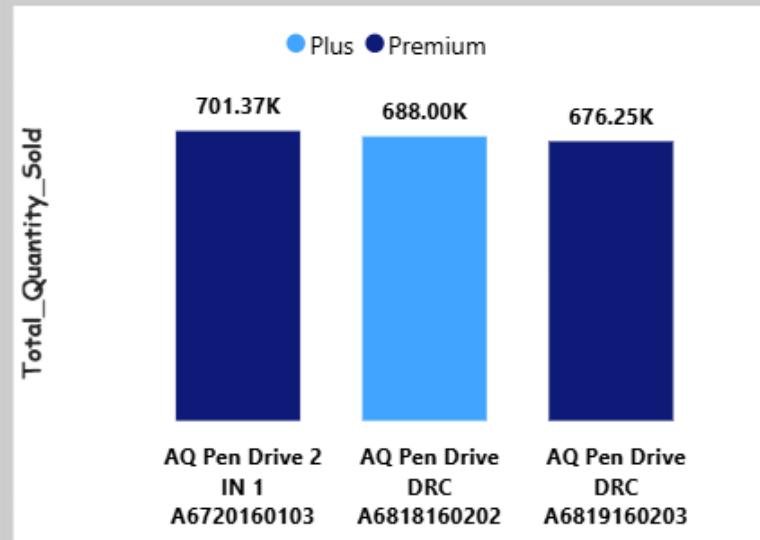


Ad-Hoc Request-10 (SQL Code, Visual representation, Insights)

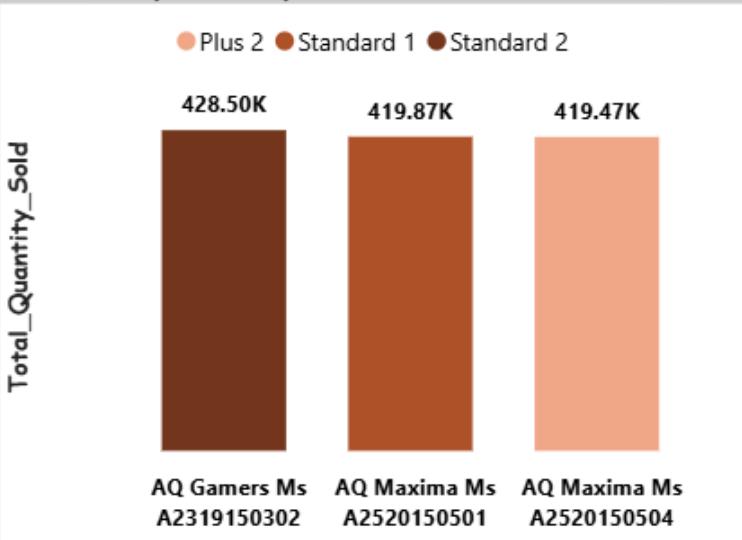
Ad-Hoc-Request-10.2

Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021? The final output contains these fields - division, product_code, product, total_sold_quantity, rank_order.

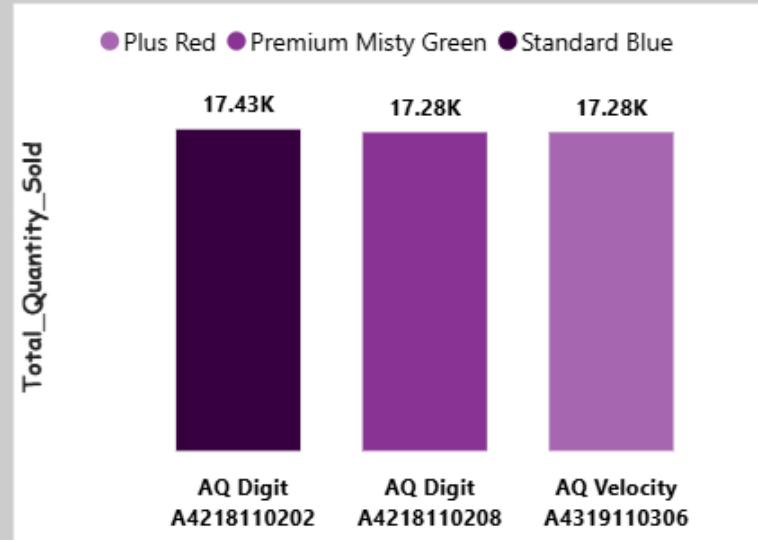
Top 3 sold products in N&S Division



Top 3 sold products in P&A Division



Top 3 sold products in PC Division



Insights

N & S Division - Product Performance Insights (fiscal year: -2021)
The top three best-selling products were:

1. AQ Pen Drive 2 IN 1 (Premium)
2. AQ Pen Drive DRC (Plus)
3. AQ Pen Drive DRC (Premium)

- These results reflect a strong consumer demand for pen drives and related storage products within this division.
- The consistent performance of these products positions the N & S division as a market leader in the personal storage segment, indicating promising opportunities for future growth.
- To capitalize on this momentum, streamlined inventory management will be essential to maintain product availability and meet growing demand efficiently.

Insights

P & A Division - Product Performance Insights (fiscal year: -2021)
The top three best-selling products were:

1. AQ Gamers Ms (Standard 2)
2. AQ Maxima Ms (Standard 1)
3. AQ Maxima Ms (Plus 2)

- The division focuses on gaming-oriented products, appealing to a targeted and loyal customer segment.
- Robust inventory management is vital to keep pace with customer demand and ensure consistent availability.
- Ongoing promotion and brand reinforcement of top-performing products will be essential to sustain and grow the division's success.

Insights

PC Division - Product Performance Insights (fiscal year: -2021) The top three best-selling products were:

1. AQ Digit (Standard Blue)
 2. AQ Digit (Premium Misty Green)
 3. AQ Velocity (Plus red)
- The division is dedicated to PC-related products, reflecting a clear focus on the computing and technology segment.
 - Ensuring efficient inventory management is key to fulfilling demand and maintaining customer satisfaction.
 - Consistent branding and marketing initiatives are essential to strengthen market presence and support long-term growth.



Dashboard Resources Utilized

Image courtesy:

- [Photo by Unsplash](#)
- [Icon by freepik](#)
- [Background by freepik](#)
- [Google Photos](#)





Thank you for your attention

