AtliQ Hardware

Consumer Goods

Ad-Hoc Analysis

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Tools Used: *SQL*

Links:

GitHub Portfolio LinkedIn

AtliQ Hardware

AtliQ Hardware is one of the leading computer hardware producers in India and well expanded in other countries too.

AtliQ sells products in different segments like

- Peripherals and Accessories,
- PC
- Network and Storage

and in Platforms like

- Brick & Mortar (Chroma , Best buy)
- E-Commerce (Amazon, Flipkart)

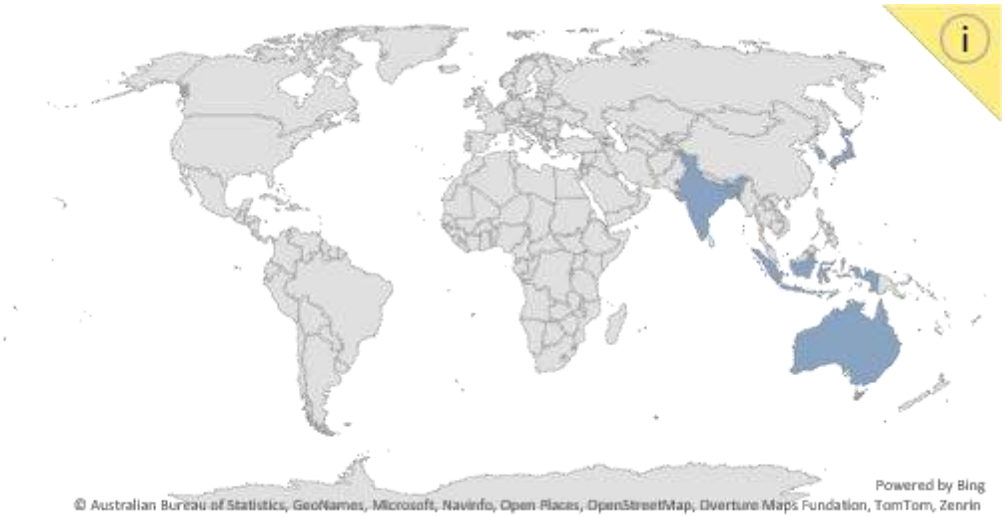
However, the management noticed that they do not get enough insights to make quick and smart data-informed decisions. So, I have done Ad-Hoc analysis to provide insights to management in consumer goods domain.

Ad Hoc Requests

1.Provide list of markets in which customer "AtliQ Exclusive"operates its business in APAC region

```sql
SELECT customer, market
FROM dim_customer
WHERE customer = "Atliq Exclusive" AND region = "APAC";
```

customer	market
Atliq Exclusive	India
Atliq Exclusive	Indonesia
Atliq Exclusive	Japan
Atliq Exclusive	Philiphines
Atliq Exclusive	South Korea
Atliq Exclusive	Australia
Atliq Exclusive	Newzealand
Atliq Exclusive	Bangladesh

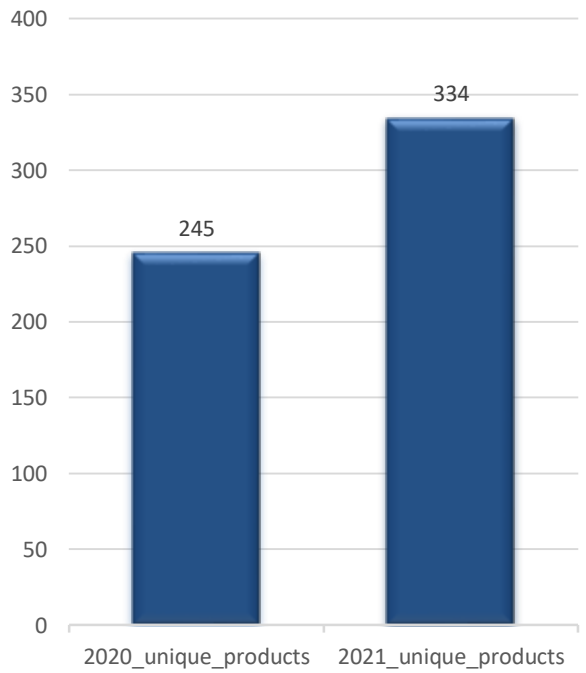


AtliQ Exclusive operates in 8 different markets in Asia Pacific region
Note :APAC stands for Asia-Pacific

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

```
WITH fiscal_year_2020 AS (
SELECT COUNT(DISTINCT product_code) as 2020_unique_products
FROM fact_sales_monthly
WHERE fiscal_year = 2020),
fiscal_year_2021 AS (
SELECT COUNT(DISTINCT product_code) as 2021_unique_products
FROM fact_sales_monthly
WHERE fiscal_year = 2021)
SELECT 2020_unique_products, 2021_unique_products,
CONCAT(ROUND(((2021_unique_products-2020_unique_products)/2020_unique_products)*100,2), "%") AS pct_chg
FROM fiscal_year_2020,fiscal_year_2021;
```

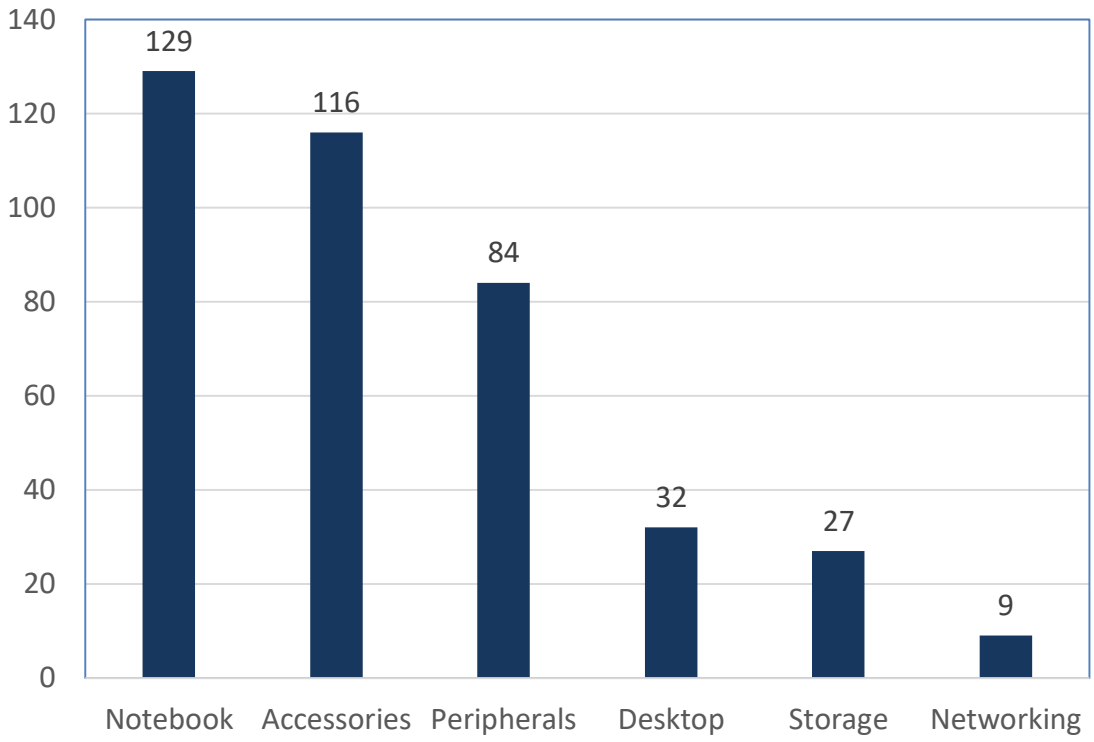
2020_unique_products	2021_unique_products	pct_chg
245	334	36.33%



There is a 36.33% increase in unique products from 2020 to 2021. This growth could be a positive indicator for business performance, signaling innovation or market adaptation.

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

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



Notebook is the leading segment with 129 unique products, indicating a demand in this category.

Networking and Storage have the lowest counts, which may indicate limited offerings or specialization in these areas

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

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

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

Accessories segment had the most significant increase in unique products. Networking segment showed the lowest increase in unique products

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

```sql
WITH COST_DATA AS (
    SELECT
        p.product_code,
        p.product,
        m.manufacturing_cost,
        MAX(m.manufacturing_cost) OVER () AS max_cost,
        MIN(m.manufacturing_cost) OVER () AS min_cost
    FROM dim_product p
    JOIN fact_manufacturing_cost m
    ON p.product_code = m.product_code
)
SELECT product_code, product, manufacturing_cost
FROM COST_DATA
WHERE manufacturing_cost = max_cost
   OR manufacturing_cost = min_cost;
```

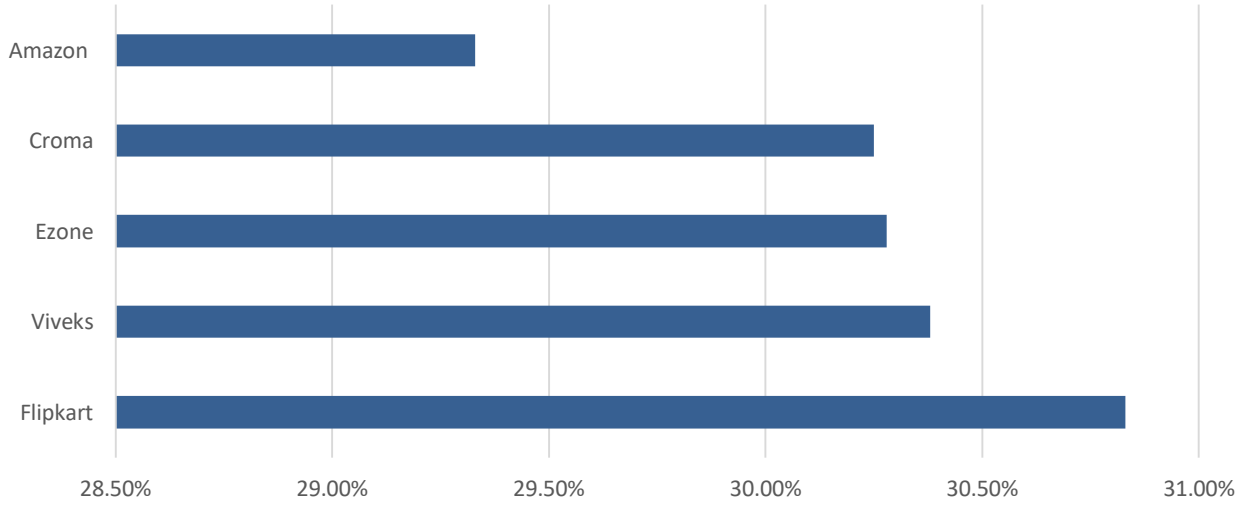
Highest (Personal Desktop)
Lowest (Mouse)

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

6.Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for fiscal year 2021 and in the Indian market

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

customer_code	customer	average_discount_pct
90002009	Flipkart	30.83%
90002006	Viveks	30.38%
90002003	Ezone	30.28%
90002002	Croma	30.25%
90002016	Amazon	29.33%

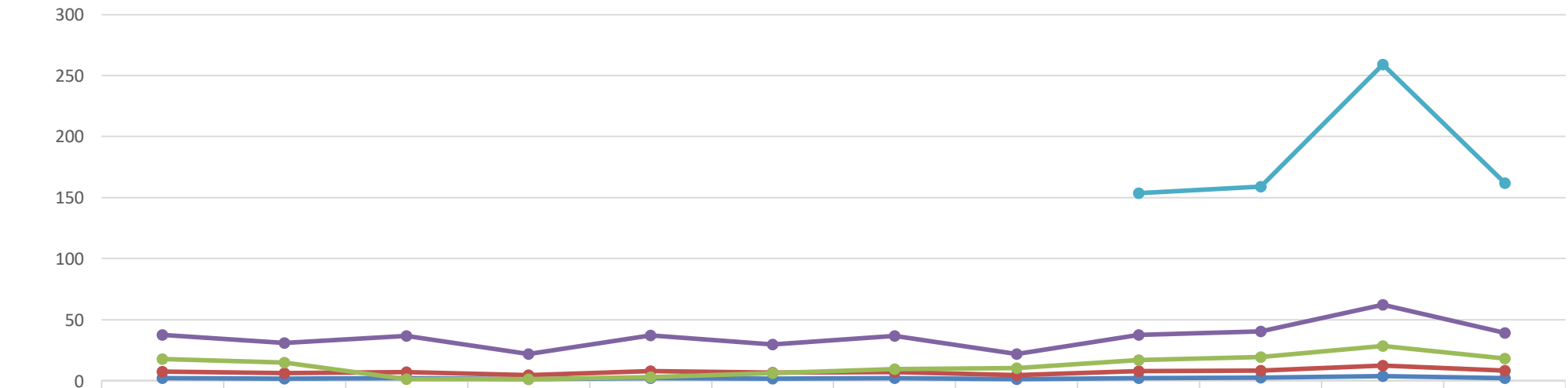


Flipkart customer was given highest average pre-invoice discount in India in FY2021

7.Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month.

```sql
SELECT
    s.fiscal_year,
    MONTHNAME(s.date) AS month,
    CONCAT(ROUND(SUM((s.sold_quantity*g.gross_price))/1000000,2)," M") AS gross_sales
FROM fact_sales_monthly s
JOIN dim_customer c
ON s.customer_code = c.customer_code
JOIN fact_gross_price g
ON s.product_code = g.product_code
WHERE c.customer = "Atliq Exclusive"
GROUP BY  MONTHNAME(s.date), s.fiscal_year
ORDER BY fiscal year;
```

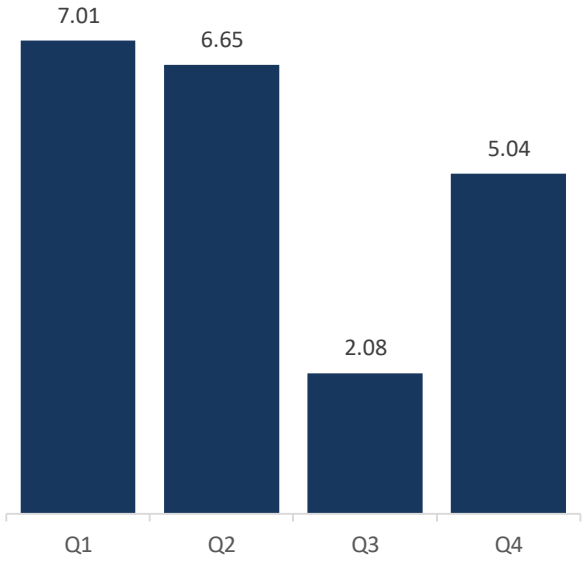
Gross sales increased significantly from FY 2020 to FY 2021, with November recording peak sales of $259.11 million in FY 2022. Overall, November had the highest sales of the each FY year.



	January	February	March	April	May	June	July	August	September	October	November	December
2018	2.29	1.99	2.22	1.39	2.31	1.98	2.22	1.5	2.35	2.46	3.77	2.39
2019	7.61	6.22	7.31	4.68	7.8	6.58	7.3	4.63	7.86	8.5	12.36	8.36
2020	18.01	15.17	1.42	1.49	2.97	6.45	9.69	10.6	17.04	19.48	28.51	18.32
2021	37.7	30.85	36.97	22.15	37.04	29.89	36.68	21.84	37.75	40.44	62.3	39.31
2022									153.6	159.24	259.11	161.73

8.In which quarter of 2020, got the maximum total_sold_quantity?

```sql
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"
    WHEN MONTH(date) IN (6,7,8) THEN "Q4"
    END AS quaters,
    CONCAT(ROUND(SUM(sold_quantity)/1000000,2), " M") as total_sold_quantity
    FROM fact_sales_monthly
    WHERE fiscal_year = 2020
    GROUP BY quaters
    ORDER BY total_sold_quantity DESC;
```

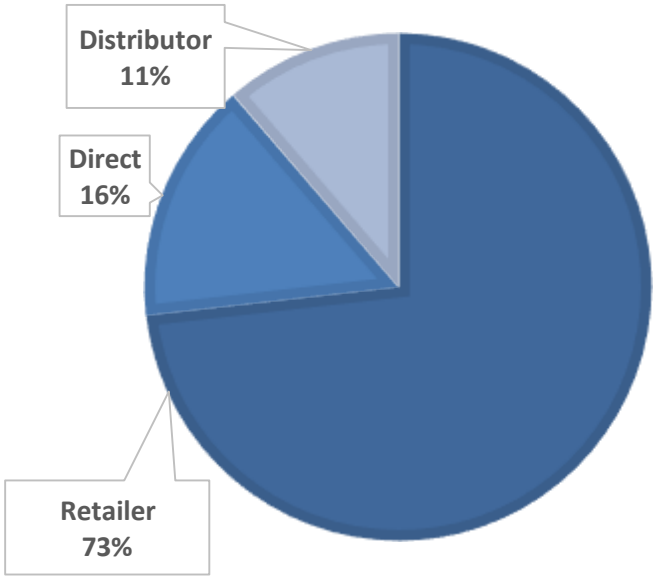


quaters	total_sold_quantity
Q1	7.01 M
Q2	6.65 M
Q4	5.04 M
Q3	2.08 M

This suggests a strong start in total products sold in Quarter1, followed by a gradual decline over subsequent quarters. While Quarter3 sold least number of products.

9.Which channel helped to bring more gross sales in fiscal year 2021 and the percentage of contribution?

```sql
WITH CTE AS (
    SELECT
        c.channel,
        ROUND(SUM(g.gross_price * s.sold_quantity) / 1000000, 2) AS gross_sales_mln,
        SUM(SUM(g.gross_price * s.sold_quantity) / 1000000) OVER () AS total_gross_sales_mln
    FROM fact_sales_monthly s
    JOIN dim_customer c ON s.customer_code = c.customer_code
    JOIN fact_gross_price g ON s.product_code = g.product_code
    WHERE s.fiscal_year = 2021
    GROUP BY c.channel
)
SELECT
    channel,
    gross_sales_mln,
    CONCAT(ROUND((gross_sales_mln / total_gross_sales_mln) * 100, 2), "%") AS percentage
FROM CTE
ORDER BY gross_sales_mln DESC;
```



channel	gross_sales_mln	percentage
Retailer	3708.46	73.21%
Direct	784.14	15.48%
Distributor	572.86	11.31%

The Retailer channel generated the highest gross sales

with 73.21% of total sales in FY2021

10.Get Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021

```
WITH CTE AS(
SELECT p.division, s.product_code, p.product,
CONCAT(ROUND(SUM(s.sold_quantity)/1000000,2), " M") AS total_sold_quantity,
DENSE_RANK() OVER (PARTITION BY p.division
ORDER BY SUM(s.sold_quantity) DESC) AS  rank_order
FROM dim_product p
JOIN fact_sales_monthly s
ON p.product_code = s.product_code
WHERE fiscal_year = 2021
GROUP BY p.division, s.product_code, p.product)
SELECT * FROM CTE
WHERE rank_order <=3
ORDER BY division, rank_order;
```

division	product_code	product	total_sold_quantity	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1	0.70 M	1
N & S	A6818160202	AQ Pen Drive DRC	0.69 M	2
N & S	A6819160203	AQ Pen Drive DRC	0.68 M	3
P & A	A2319150302	AQ Gamers Ms	0.43 M	1
P & A	A2520150501	AQ Maxima Ms	0.42 M	2
P & A	A2520150504	AQ Maxima Ms	0.42 M	3
PC	A4218110202	AQ Digit	0.02 M	1
PC	A4319110306	AQ Velocity	0.02 M	2
PC	A4218110208	AQ Digit	0.02 M	3

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Thank You