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Request 1

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

Solution

```sql
SELECT
    DISTINCT market
FROM dim_customer
WHERE
    customer = 'Atliq Exclusive'
    AND region = 'APAC';
```

SQL Query Result

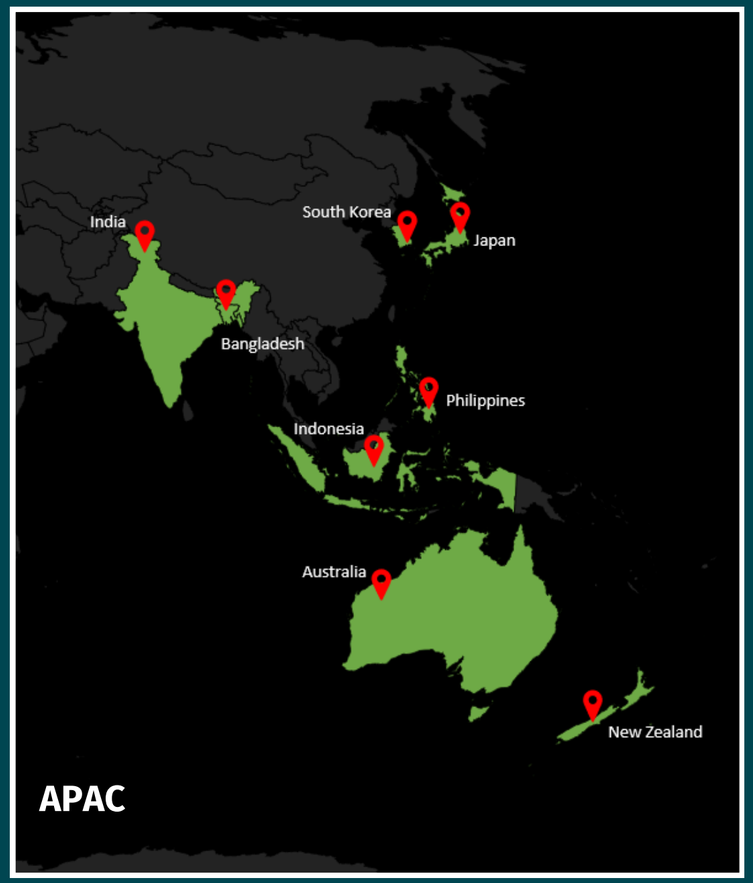
market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

SQL Query

Strategic Insights

AtliQ Exclusive, AtliQ Hardwares' own physical store and a direct channel customer, operates in **8 key markets** within the Asia Pacific (**APAC**) region, underscoring its strategic emphasis on this dynamic and rapidly growing area.

Graphical Depiction



AtliQ Exclusive's commercial zones in APAC region

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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).

Solution

```sql
WITH product_count AS (
    SELECT
        (SELECT COUNT(DISTINCT product_code) FROM fact_sales_monthly WHERE fiscal_year = 2020) AS unique_products_2020,
        (SELECT COUNT(DISTINCT product_code) FROM fact_sales_monthly WHERE fiscal_year = 2021) AS unique_products_2021
    FROM  fact_sales_monthly
    LIMIT 1
)
SELECT
    unique_products_2020,
    unique_products_2021,
    ROUND((unique_products_2021 - unique_products_2020)*100/unique_products_2020,2) AS percentage_chg
FROM product_count;
```

SQL Query

SQL Query Result

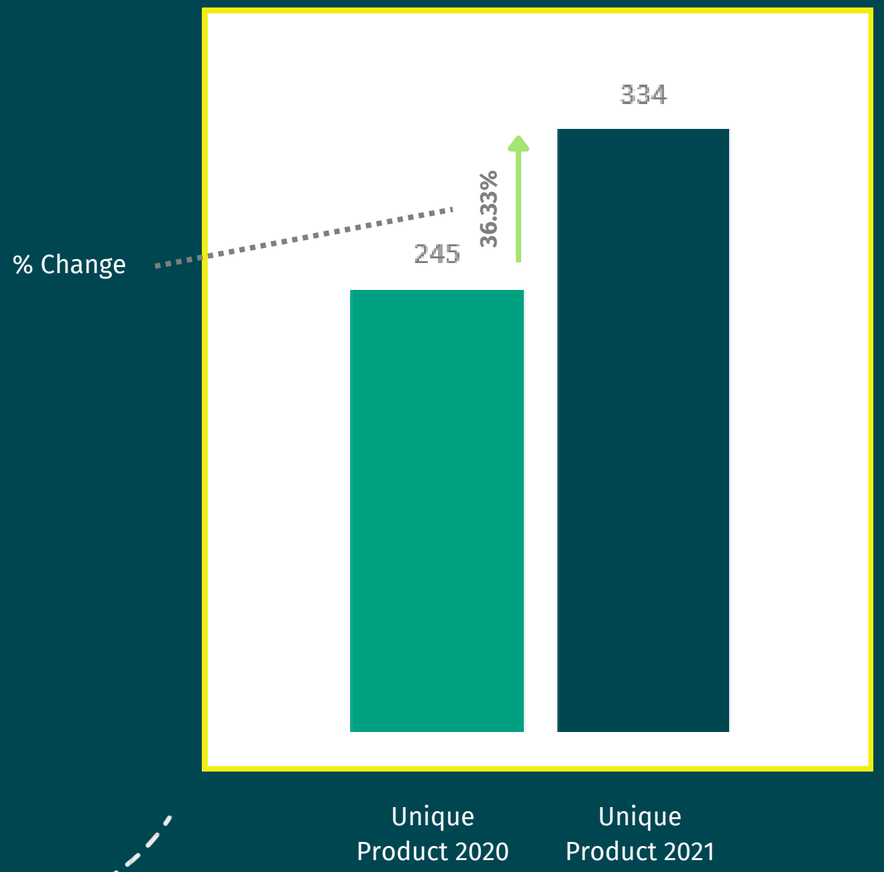
	unique_products_2020	unique_products_2021	percentage_chg
▶	245	334	36.33

Strategic Insights

In **2021**, **AtliQ Hardware** experienced a substantial **36.33% increase** in unique products **compared to 2020**, growing from 245 to 334 products.

This significant rise reflects AtliQ Hardwares' strong commitment to **innovation** and its ability to adapt to **market demands**, ensuring a diverse and evolving product portfolio.

Graphical Depiction



Distinctive Products 2020
Vs
Distinctive Products 2021

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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).

Solution

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

SQL Query

SQL Query Result

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

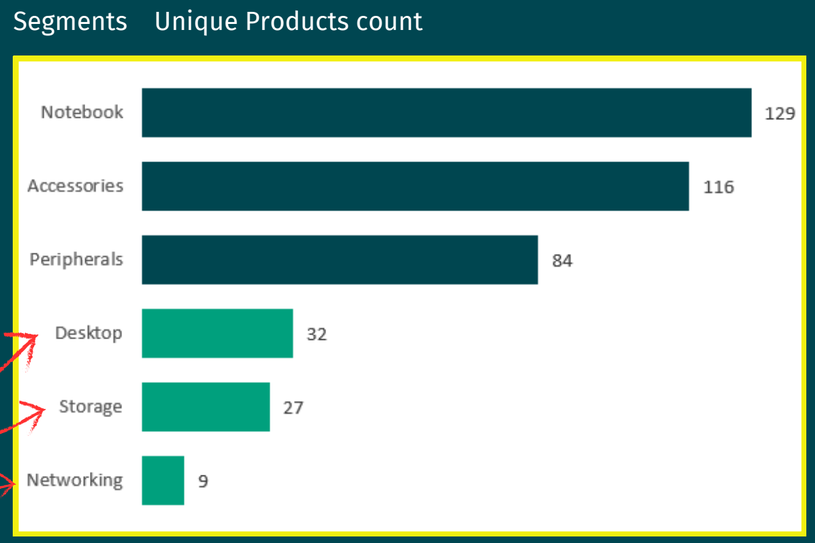
Strategic Insights

The analysis reveals that the **Notebook**, **Accessories**, and **Peripherals** segments are **leading** with 129, 116, and 84 unique products, respectively, accounting for around **83%** of the total product portfolio.

The **remaining 27.13%** of the total products, encompassing the **Desktop**, **Storage**, and **Networking** segments, represent areas with potential for growth.

This disparity highlights an opportunity for the Product Development team to explore innovation and **enhancement** in **these segments** to balance the product diversity and meet evolving market demands.

Graphical Depiction



Unique Products Count by Segment

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Request 4

Follow-up: 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).

Solution

```sql
WITH unique_products_2020 AS (
    SELECT
        p.segment,
        COUNT(DISTINCT s.product_code) AS product_count_2020
    FROM  fact_sales_monthly s
    JOIN dim_product p USING(product_code)
    WHERE fiscal_year = 2020
    GROUP BY segment
),
unique_products_2021 AS (
    SELECT
        p.segment,
        COUNT(DISTINCT s.product_code) AS product_count_2021
    FROM  fact_sales_monthly s
    JOIN dim_product p USING(product_code)
    WHERE fiscal_year = 2021
    GROUP BY segment
)
SELECT
    p20.segment,
    p20.product_count_2020,
    p21.product_count_2021,
    (product_count_2021 - product_count_2020) AS difference
FROM unique_products_2020 p20
JOIN unique_products_2021 p21 USING(segment)
ORDER BY difference DESC;
```

SQL Query

SQL Query Result

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

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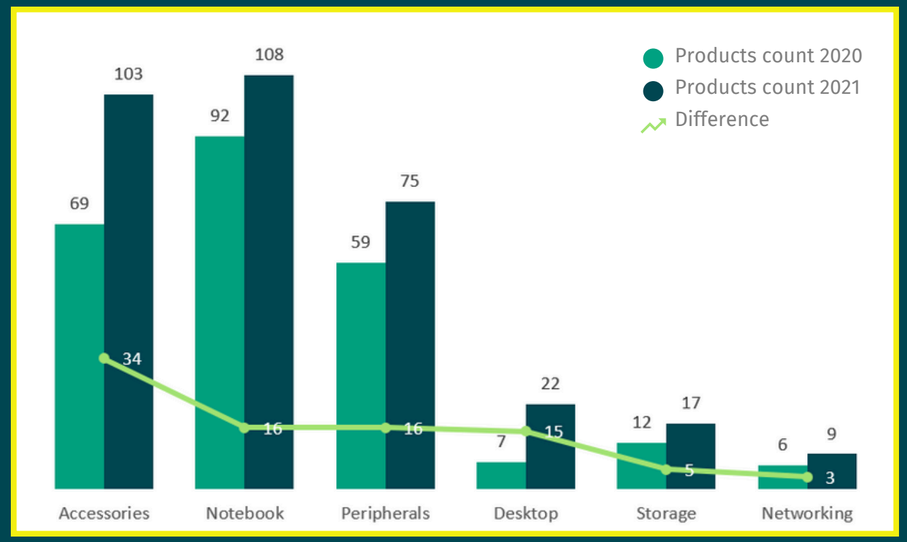
Strategic Insights

In **2021**, the **Accessories** segment experienced the most significant growth, adding **34 new** and unique products, reflecting a robust market demand and strategic focus on expanding this segment.

The **Notebook** and **Peripherals** segments also showed **notable increases**, with **16 new** products each, highlighting consistent innovation efforts.

Conversely, the **Storage** and **Networking** segments had the **lowest** growth, with only **5** and **3 new** products respectively, indicating potential areas for further development and enhancement to keep pace with other segments.

Graphical Depiction



Unique Products Difference by Segment 2020 - 2021

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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).

Solution

```sql
SELECT
    DISTINCT p.product_code,
    p.product,
    ROUND(m.manufacturing_cost,2) AS manufacturing_cost
FROM dim_product p
JOIN fact_manufacturing_cost m USING(product_code)
WHERE m.manufacturing_cost IN(
                              (SELECT MAX(manufacturing_cost) FROM fact_manufacturing_cost),
                              (SELECT MIN(manufacturing_cost) FROM fact_manufacturing_cost)
                             )
ORDER BY manufacturing_cost DESC;
```

SQL Query

SQL Query Result

	product_code	product	manufacturing_cost
▶	A6120110206	AQ HOME Allin1 Gen 2	240.54
	A2118150101	AQ Master wired x1 Ms	0.89

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Strategic Insights

The analysis reveals a notable disparity in **manufacturing costs** among AtliQ Hardware products. The **AQ HOME Allin1 Gen 2**, a comprehensive personal desktop solution, incurs the **highest** manufacturing cost at **$240.54**.

In stark contrast, the **AQ Master wired x1 Ms**, a standard wired mouse, represents the **lowest** manufacturing cost at just **$0.89**.

This significant difference underscores the **varied production expenses** across different product categories within AtliQ Hardware's portfolio.

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Graphical Depiction

$ 240.54

Highest

AQ HOME Allin1 Gen 2

Personal Desktop

$ 0.89

Lowest

AQ Master wired x1 Ms

Mouse

Products with the Highest and Lowest Manufacturing Costs

Request 6

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).

Solution

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

SQL Query

SQL Query Result

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

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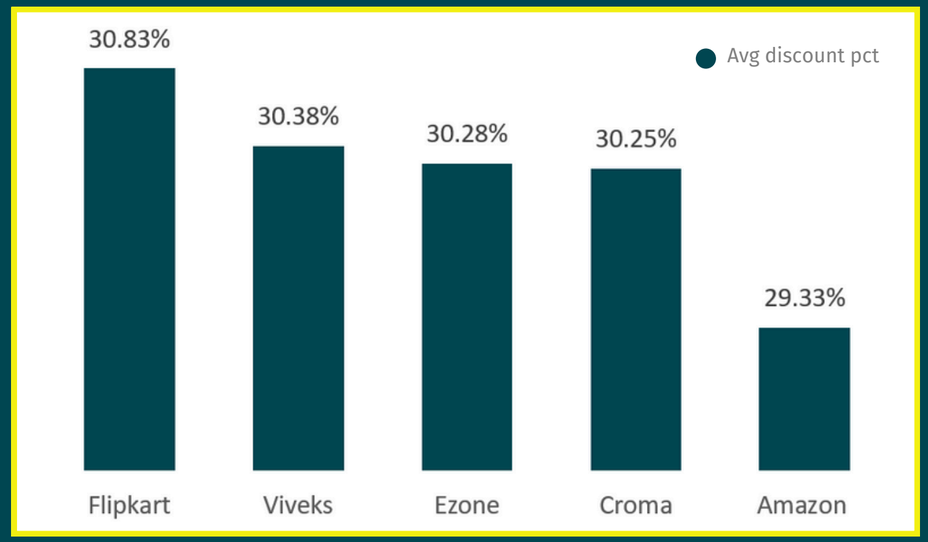
Strategic Insights

In the fiscal year **2021**, AtliQ Hardware extended substantial pre-invoice discounts to its **top 5 customers** in the Indian market, with **Flipkart** receiving the **highest average discount** at **30.83%**.

This was closely followed by **Viveks**, **Ezone**, and **Croma**, with average discounts of **30.38%**, **30.28%**, and **30.25%** respectively. While still receiving a significant discount, **Amazon** had the **lowest** average among the top 5 at **29.33%**.

These figures illustrate a **competitive discounting strategy** aimed at maintaining strong relationships with key customers in the region.

Graphical Depiction



Top 5 Indian Customers by Avg. Discount % (FY 2021)

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Request 7

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).

Solution

```sql
WITH gross_sales AS (
    SELECT
        MONTHNAME(s.date) AS month_name,
        YEAR(s.date) AS calendar_year,
        s.fiscal_year,
        (s.sold_quantity * g.gross_price) AS gross_amt
    FROM fact_gross_price g
    JOIN fact_sales_monthly s USING(product_code, fiscal_year)
    JOIN dim_customer c USING(customer_code)
    WHERE c.customer = 'Atliq Exclusive'
)
SELECT
    month_name,
    calendar_year,
    fiscal_year,
    ROUND(SUM(gross_amt)/1000000,2) AS gross_sales_amt_mln
FROM gross_sales
GROUP BY month_name, fiscal_year
ORDER BY fiscal_year;
```

SQL Query

SQL Query Result

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

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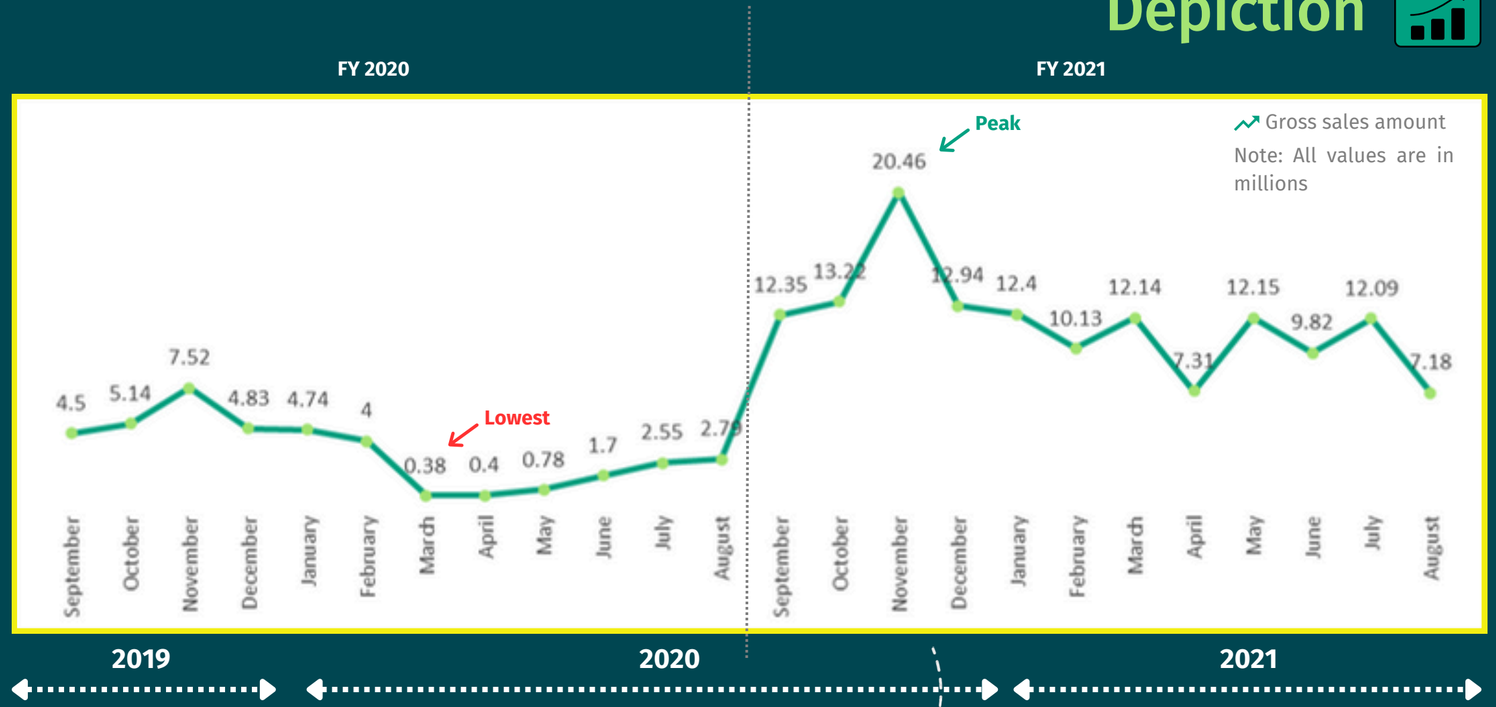
Graphical Depiction



Gross Sales Amount of AtliQ Exclusive by months

Strategic Insights

For **Atliq Exclusive**, **November 2020** witnessed the **peak** in gross sales amounting to **20.46 million**, showcasing a **remarkable recovery** and demand surge **post** the initial **COVID-19 impact**. Conversely, **March 2020** recorded the **lowest** sales at just **0.38 million**, heavily influenced by the pandemic and subsequent lockdowns.

The trend indicates a significant **drop** in sales from **February to April 2020**, followed by a **gradual recovery** from **May onwards**. Notably, the **consistent high sales** from **September 2020 to January 2021**, with **another peak** in **May 2021** at **12.15 million**, suggest robust market resilience and effective recovery strategies implemented by Atliq Exclusive.

The fluctuating sales figures throughout these months provide a clear roadmap for identifying **periods of vulnerability** and opportunities for strategic planning.

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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, total_sold_quantity).

Solution

```sql
WITH quarter_sales AS (
    SELECT
        *,
        CONCAT('Q', CEILING(MONTH(DATE_ADD(date, INTERVAL 4 MONTH))/3)) AS quarter_nm
    FROM fact_sales_monthly s
    WHERE fiscal_year = 2020
)
SELECT
    quarter_nm,
    ROUND(SUM(sold_quantity)/1000000,2) AS total_sold_qty_mln
FROM quarter_sales
GROUP BY quarter_nm
ORDER BY total_sold_qty_mln DESC;
```

SQL Query

SQL Query Result

quarter_nm	total_sold_qty_mln
Q1	7.01
Q2	6.65
Q4	5.04
Q3	2.08

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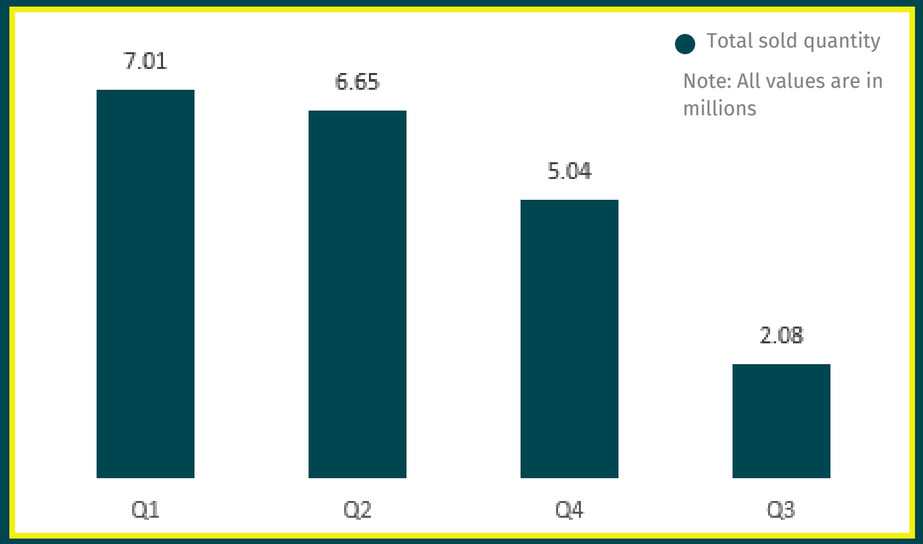
Strategic Insights

In **FY 2020**, **Quarter 1** (September-November) experienced the **highest** total sold quantity, reaching **7.01 million** units, making up a substantial portion of the year's sales.

This strong performance was followed by a **noticeable decline** in **Quarter 3** (March-May), which recorded only **2.08 million** units, the **lowest** for the year, largely **impacted by** the **pandemic** and associated disruptions.

Interestingly, **Quarter 2** (December-February) and **Quarter 4** (June-August) saw sales figures of **6.65 million** and **5.04 million** units respectively, reflecting a **steady recovery post** the initial shock of the **pandemic**. This data highlights the significant seasonal and pandemic-related influences on sales throughout the year.

Graphical Depiction



Total Sold Quantity by Quarters (FY 2020)

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Request 9

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).

Solution

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

SQL Query

SQL Query Result

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

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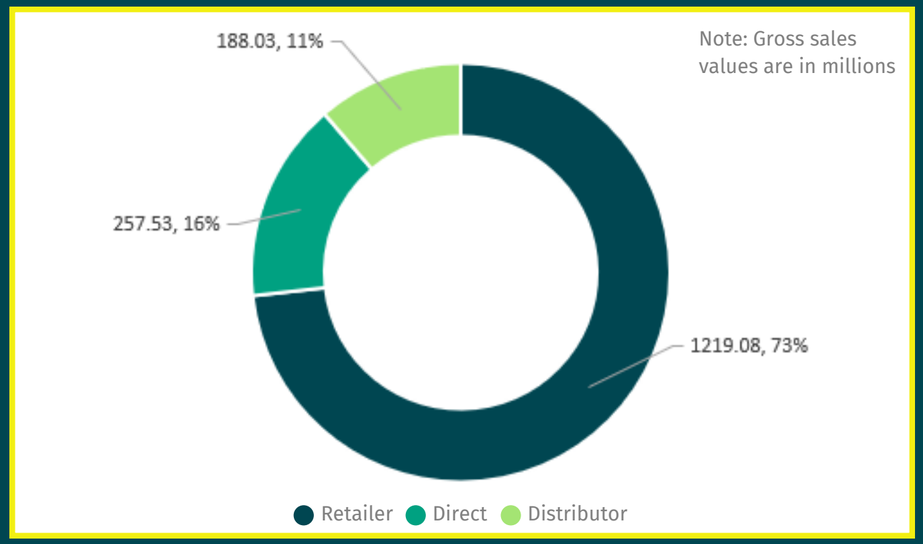
Strategic Insights

In the **fiscal year 2021**, the "**Retailer**" channel was the **primary driver** of gross sales for AtliQ Hardware, contributing an impressive **73.23% of the total sales** with a **gross sales amount** of **1219.08 million**. This dominance highlights the critical role retailers play in the company's distribution strategy.

On the other hand, the "**Direct**" channel accounted for **15.47% of the sales** with **257.53 million**, and the "**Distributor**" channel brought in **188.03 million**, contributing the least at **11.30%**.

This data underscores the importance of retailers in **maximizing sales performance** while **indicating potential areas for growth** and optimization in the direct and distributor channels.

Graphical Depiction



Gross Sales Amount by Channels (FY 2021)

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Request 10

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).

Solution

```sql
WITH sold_qty_by_division AS (
    SELECT
        p.division,
        p.product_code,
        CONCAT(p.product,' (',p.variant, ')') AS product,
        SUM(s.sold_quantity) AS total_sold_qty
    FROM fact_sales_monthly s
    JOIN dim_product p USING(product_code)
    WHERE s.fiscal_year = 2021
    GROUP BY p.division, p.product_code, p.product
)
,rank_product_by_sold_qty AS (
SELECT
    *,
    DENSE_RANK() OVER(PARTITION BY division ORDER BY total_sold_qty DESC) AS rank_order
FROM sold_qty_by_division
)
SELECT * FROM rank_product_by_sold_qty WHERE rank_order <= 3;
```

division	product_code	product	total_sold_qty	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1 (Premium)	701373	1
N & S	A6818160202	AQ Pen Drive DRC (Plus)	688003	2
N & S	A6819160203	AQ Pen Drive DRC (Premium)	676245	3
P & A	A2319150302	AQ Gamers Ms (Standard 2)	428498	1
P & A	A2520150501	AQ Maxima Ms (Standard 1)	419865	2
P & A	A2520150504	AQ Maxima Ms (Plus 2)	419471	3
PC	A4218110202	AQ Digit (Standard Blue)	17434	1
PC	A4319110306	AQ Velocity (Plus Red)	17280	2
PC	A4218110208	AQ Digit (Premium Misty Green)	17275	3

SQL Query Result

SQL Query

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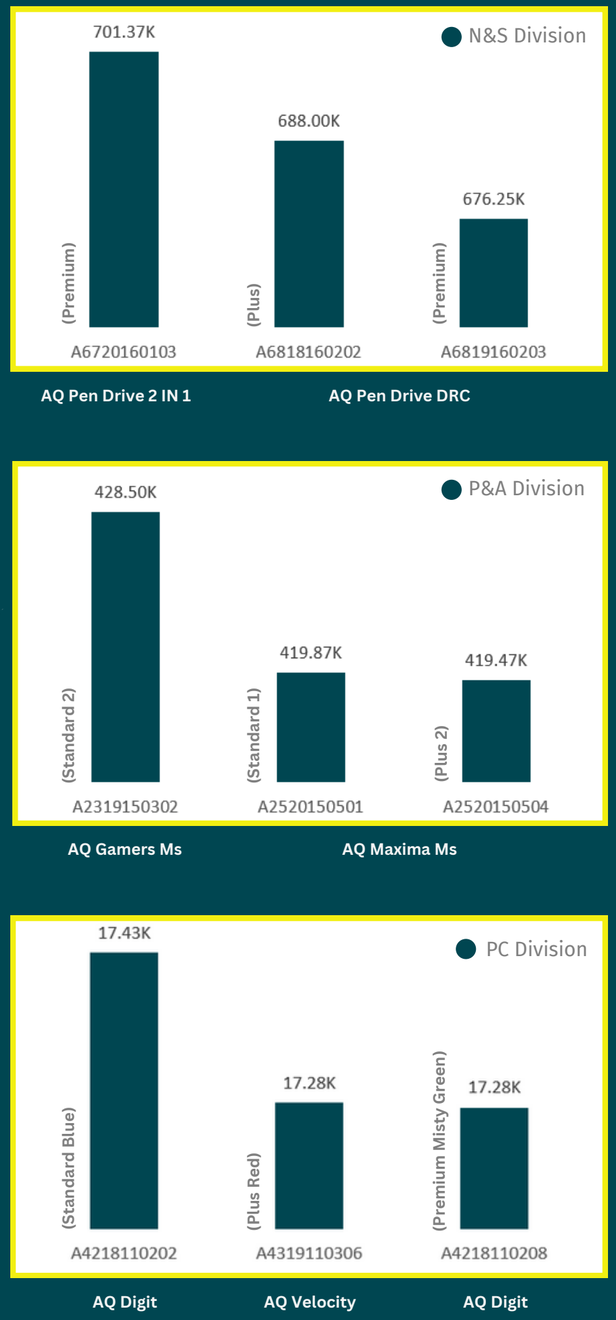
Strategic Insights

The **N & S** division's **top products** are predominantly **pen drives**, indicating a strong market demand for these storage devices.

In the **P & A** division, **gaming and maximum efficiency mouse** products are **leading**, suggesting a growing interest in high-performance peripherals.

The **PC** division, with relatively **lower sales** volumes, might benefit from targeted marketing and product development to boost its presence in the market.

Graphical Depiction



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