

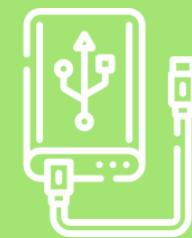
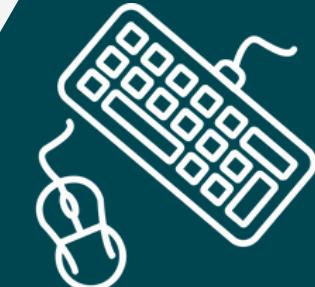


AtliQ Hardware

On-Demand Sales Insights

Consumer Goods A teal shopping cart icon containing a white line-art graph with an upward trend and a single five-pointed star.

CREATED BY
UJJWAL SINHA



Agenda



WHAT?

RESULT

- Situation Analysis
- Corporate Information
- Market Arena
- Supplied Information
- Ad-hoc Requests
- Technologies Applied
- Ad-hoc Requests Solutions
- Project Result

WHY?

HOW?

Situation Analysis



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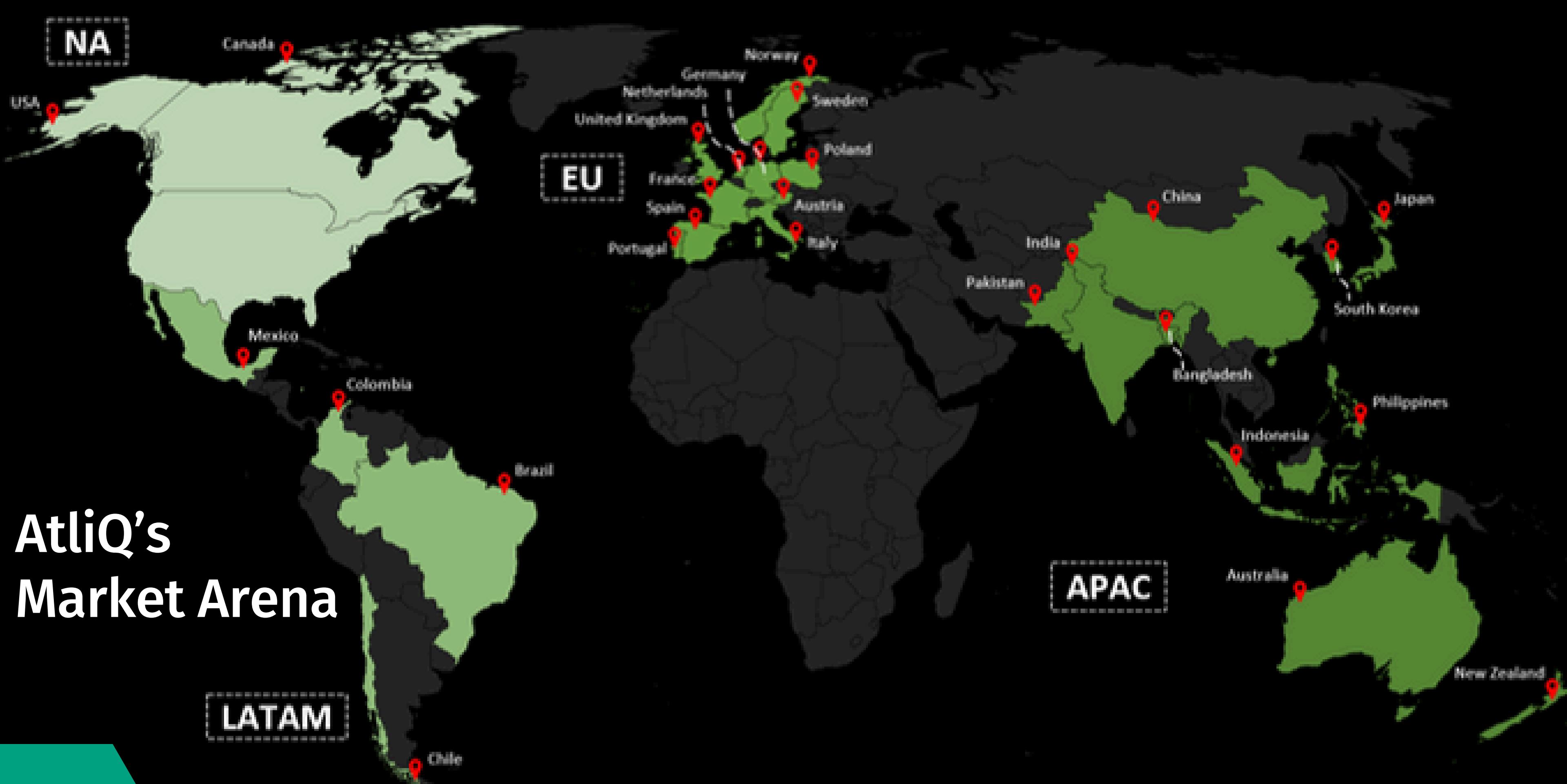
- **AtliQ Hardware** (Hypothetical Company), a prominent player in the computer hardware industry within India and globally, has identified a **critical need for enhanced data insights** to support agile and informed decision-making.
- Despite its leading market position, the company's current data analytics capabilities fall short of delivering the timely insights required for strategic decisions.
- In response, AtliQ Hardware plans to **expand its data analytics team** by onboarding junior data analysts who can contribute effectively to bridging this gap.
- To gauge the suitability of candidates, **Tony Sharma**, the Director of Data Analytics, has **devised an SQL challenge** that tests both technical expertise and soft skills.
- The company requires detailed insights to address **10 specific, ad hoc data requests**.



Corporate Information

- **Pioneering Excellence:** AtliQ Hardware stands as a **premier computer hardware manufacturer** in India, celebrated for its state-of-the-art technology and groundbreaking products. AtliQ specializes in **computer peripherals & accessories, networking & storage devices, desktops, and notebooks.**
- **Global Expansion:** Rooted in strong domestic success, AtliQ Hardware has ventured internationally, providing exceptional hardware solutions across the globe.
- **Fiscal Year:** AtliQ Hardwares' fiscal year begins on **September 1st** and concludes on **August 31st**, aligning its financial planning and reporting with its strategic business goals.





AtliQ's Market Arena

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Supplied Information

Delivered data in tabular format from AtliQ.
(For **FY 2020 & FY 2021**)

DIMENSION TABLES

dim_customer	
customer_code	INT
customer	VARCHAR(150)
platform	VARCHAR(45)
channel	VARCHAR(45)
market	VARCHAR(45)
sub_zone	VARCHAR(45)
region	VARCHAR(45)

dim_product	
product_code	VARCHAR(45)
division	VARCHAR(45)
segment	VARCHAR(45)
category	VARCHAR(45)
product	VARCHAR(200)
variant	VARCHAR(45)

FACT TABLES

fact_gross_price	
product_code	VARCHAR(45)
fiscal_year	YEAR
gross_price	DECIMAL(15,4)

fact_sales_monthly	
date	DATE
fiscal_year	YEAR
product_code	VARCHAR(45)
customer_code	INT
sold_quantity	INT

fact_pre_invoice_deductions	
customer_code	INT
fiscal_year	YEAR
pre_invoice_discount_pct	DECIMAL(5,4)

fact_manufacturing_cost	
product_code	VARCHAR(45)
cost_year	YEAR
manufacturing_cost	DECIMAL(15,4)

Ad-hoc Requests

Codebasics SQL Challenge

Requests:

1. Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.
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
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
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
5. Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields,
product_code
product
manufacturing_cost

codebasics.io

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
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
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
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
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

codebasics.io

Technologies Applied

**MySQL**

(For Visualization)



(For Analysis)

Request 1

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

Solution

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

SQL Query



SQL Query Result

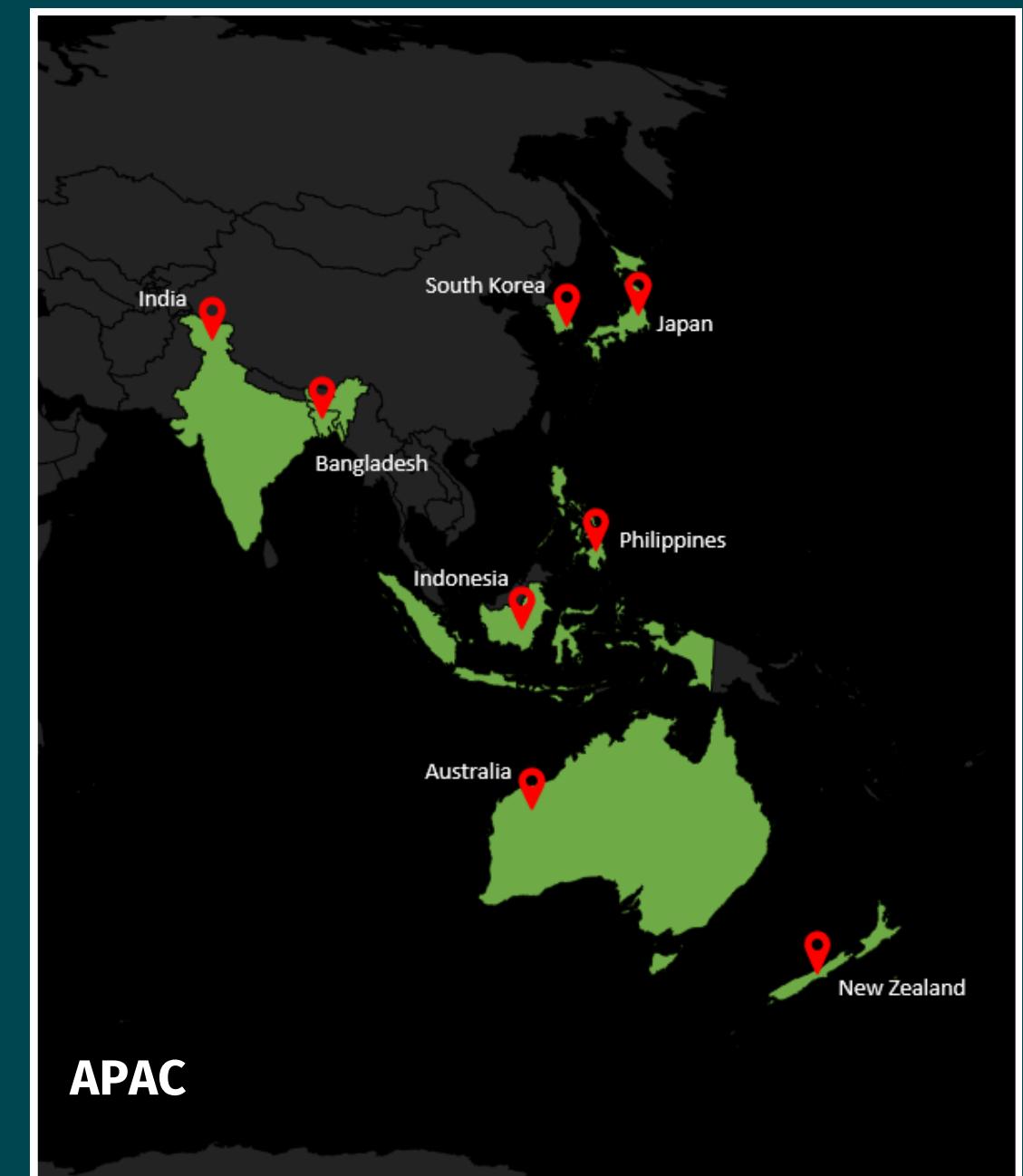
market
India
Indonesia
Japan
Philippines
South Korea
Australia
New Zealand
Bangladesh

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

```
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

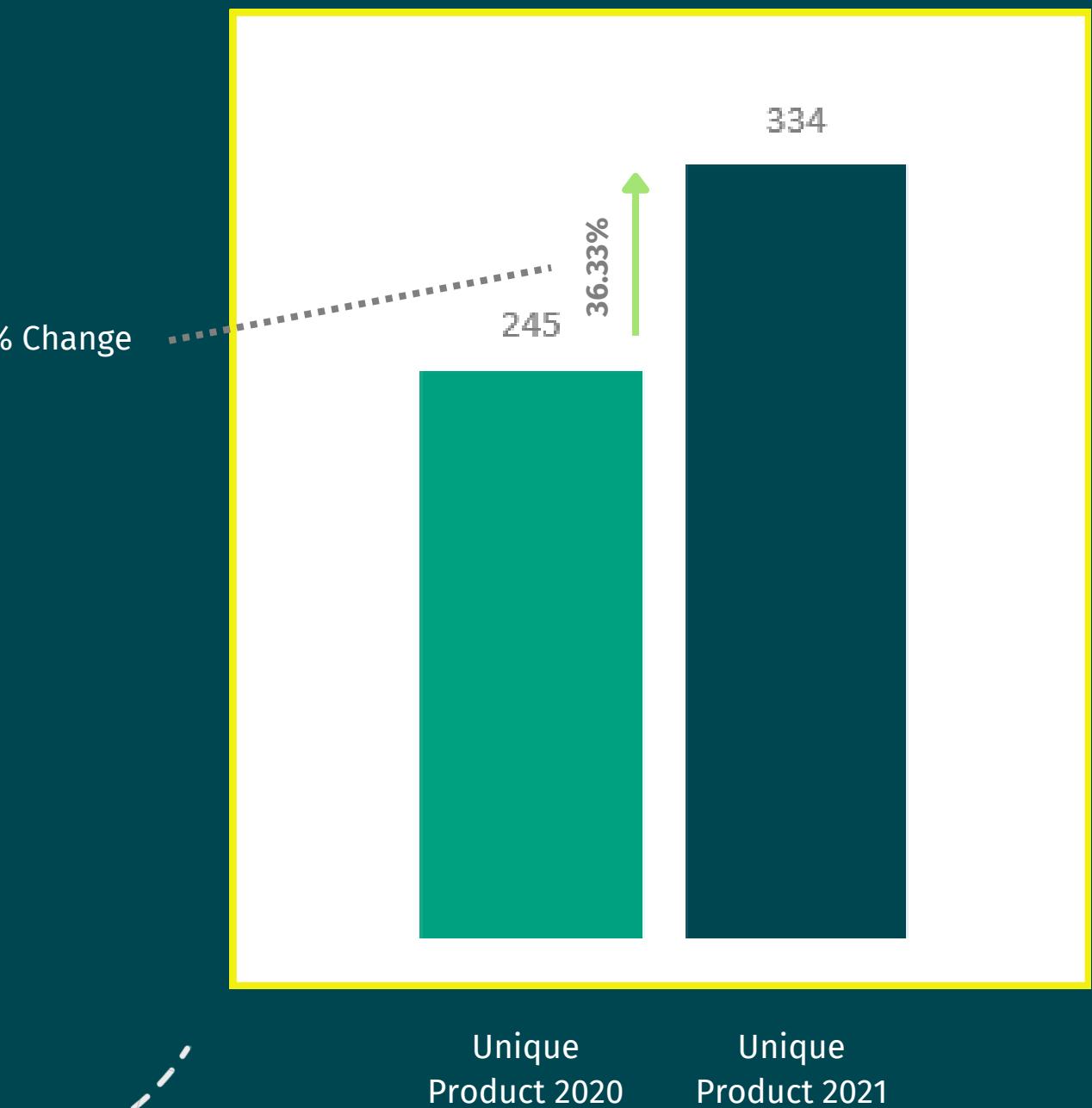
Strategic Insights



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

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

```
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.

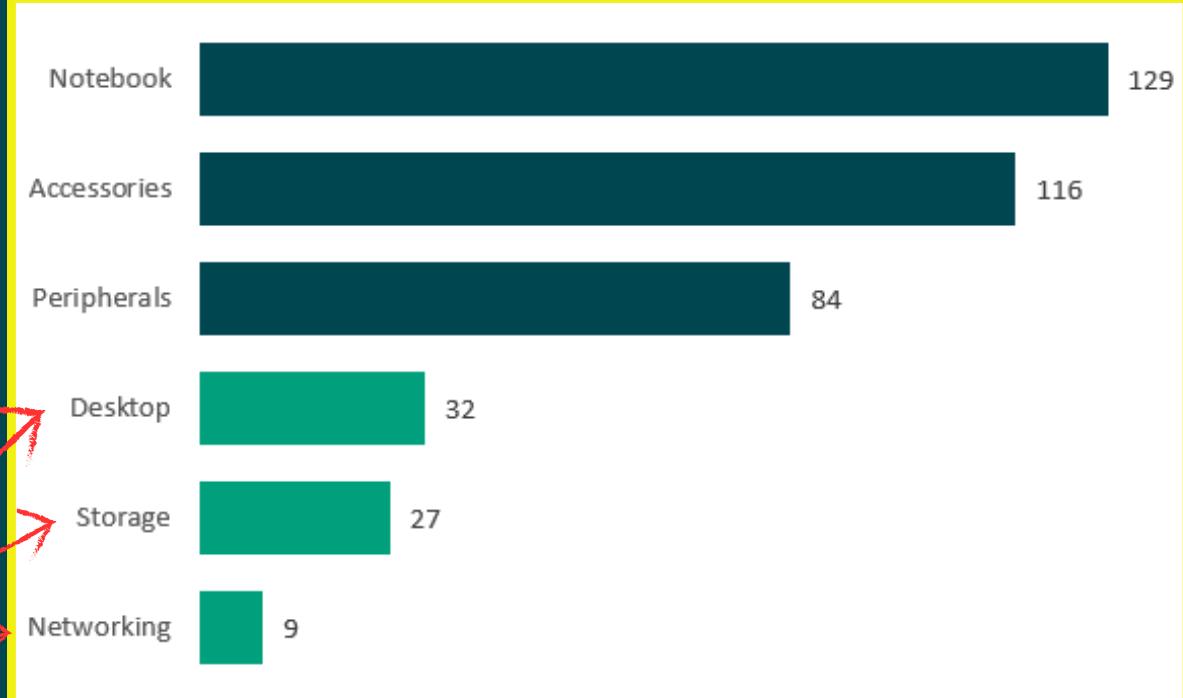
The **remaining 27.13%** of the total products, encompassing the **Desktop**, **Storage**, and **Networking** segments, represent areas with potential for growth.

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



Segments Unique Products count



Unique Products Count by Segment

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

```
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

Strategic Insights

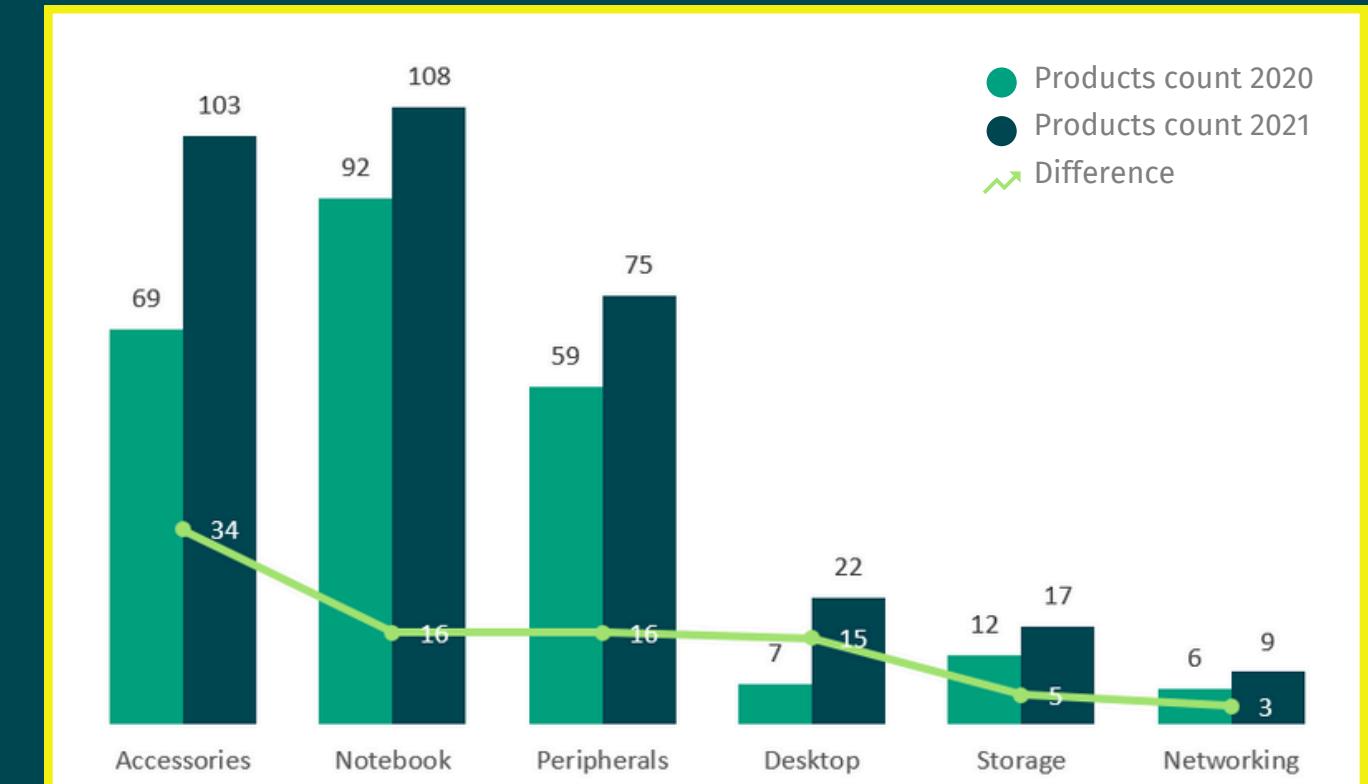


In **2021**, the **Accessories** segment experienced the most significant growth, adding **34 new** and unique products, reflecting a robust market demand and strategic focus on expanding this segment.

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

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

```
* 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

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.

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

```
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

Strategic Insights

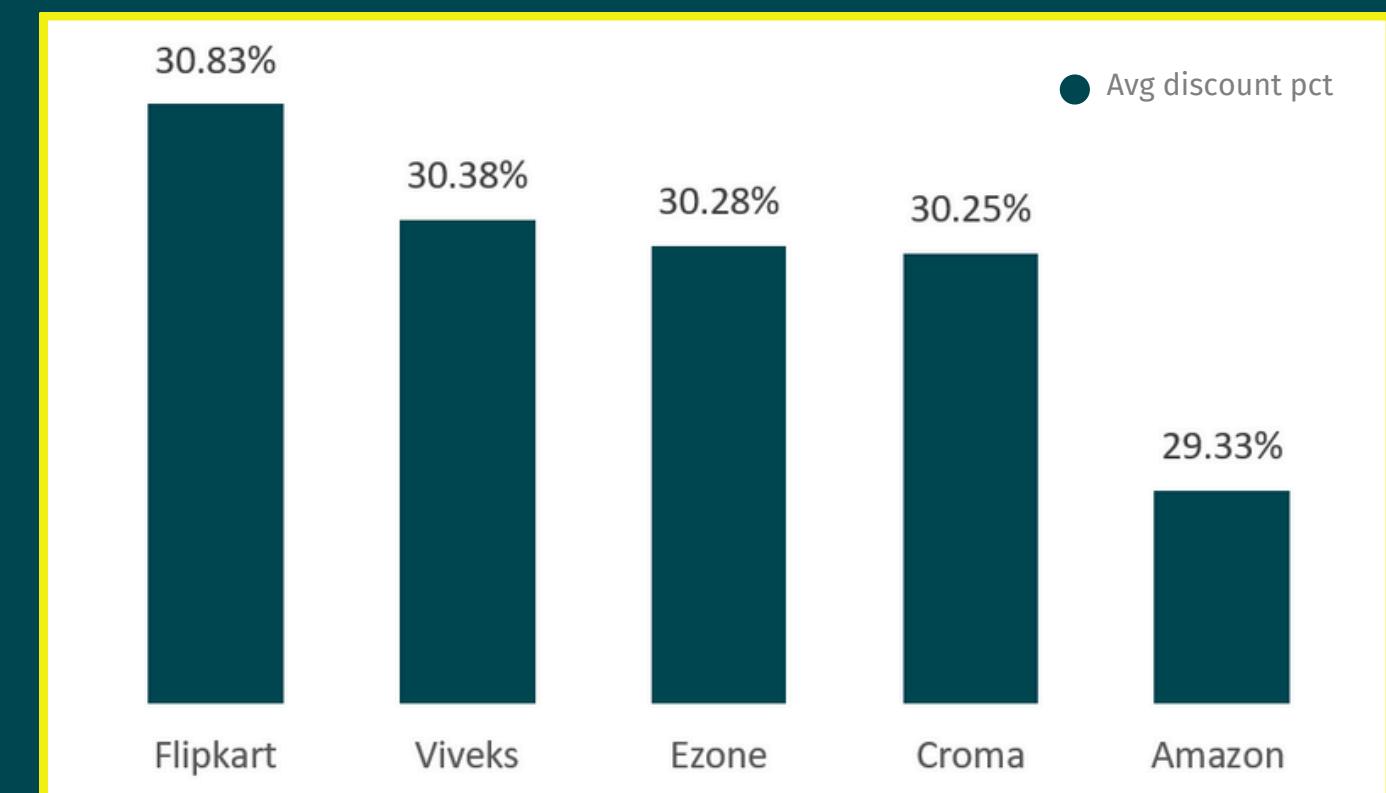


In the fiscal year **2021**, AtliQ Hardware extended substantial pre-invoice discounts to its **top 5 customers** in the Indian market, with **Flipkart** receiving the **highest average discount** at **30.83%**.

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)

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).

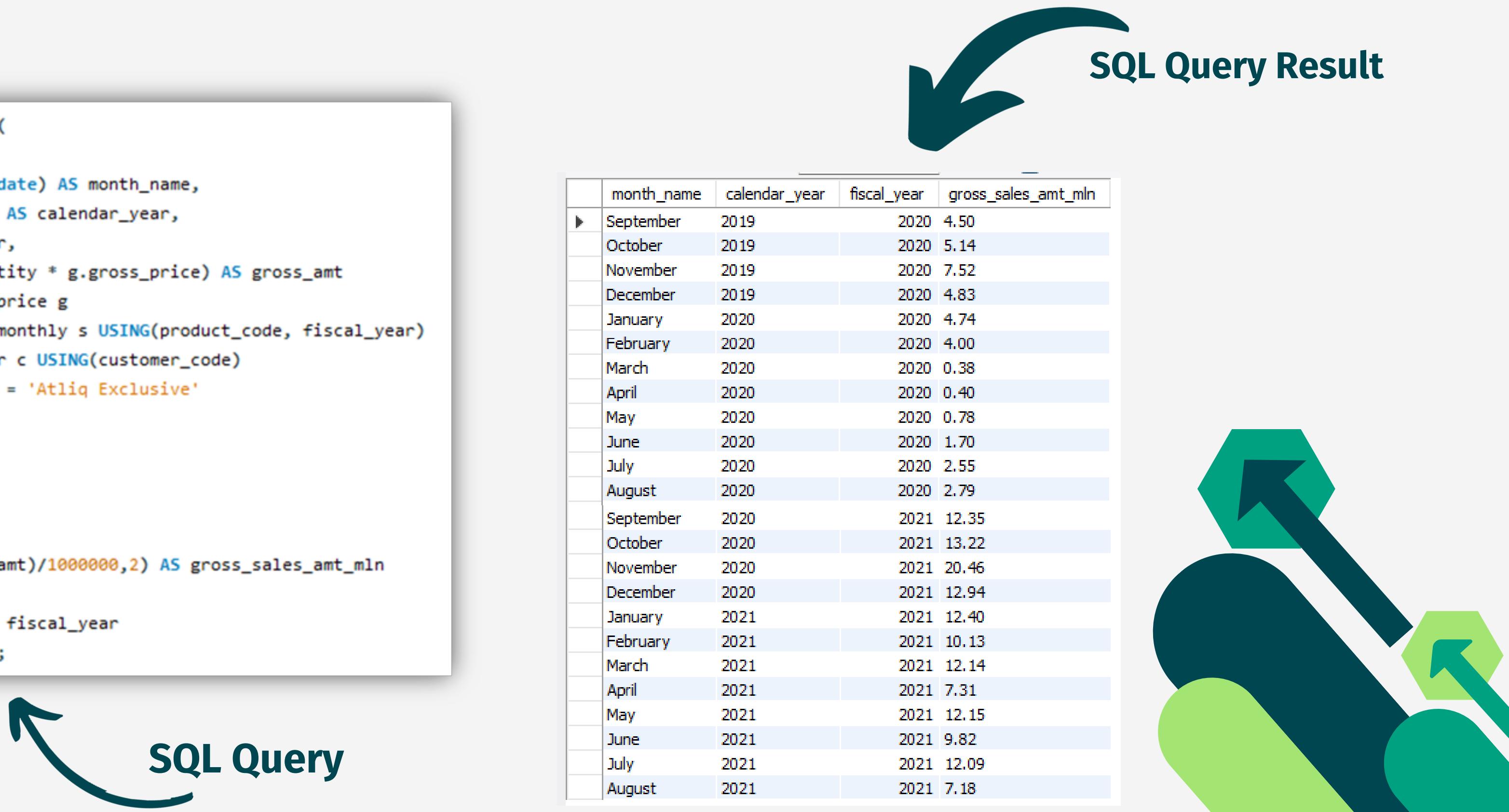
Solution

```
• 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

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SQL Query Result

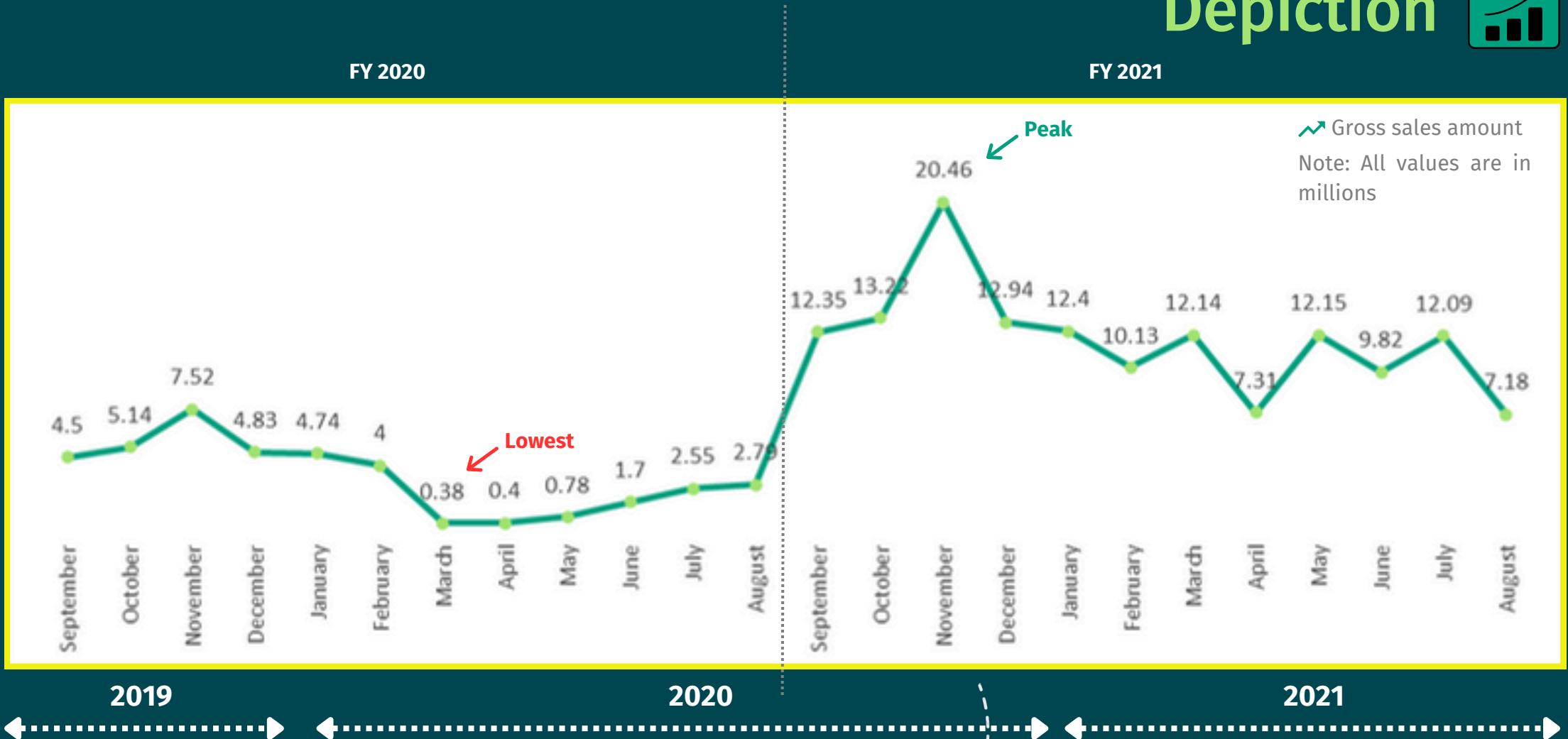


	month_name	calendar_year	fiscal_year	gross_sales_amt_mln
▶	September	2019	2020	4.50
	October	2019	2020	5.14
	November	2019	2020	7.52
	December	2019	2020	4.83
	January	2020	2020	4.74
	February	2020	2020	4.00
	March	2020	2020	0.38
	April	2020	2020	0.40
	May	2020	2020	0.78
	June	2020	2020	1.70
	July	2020	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

Graphical Depiction



Strategic Insights



Gross Sales Amount of AtliQ Exclusive by months

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

```
• 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

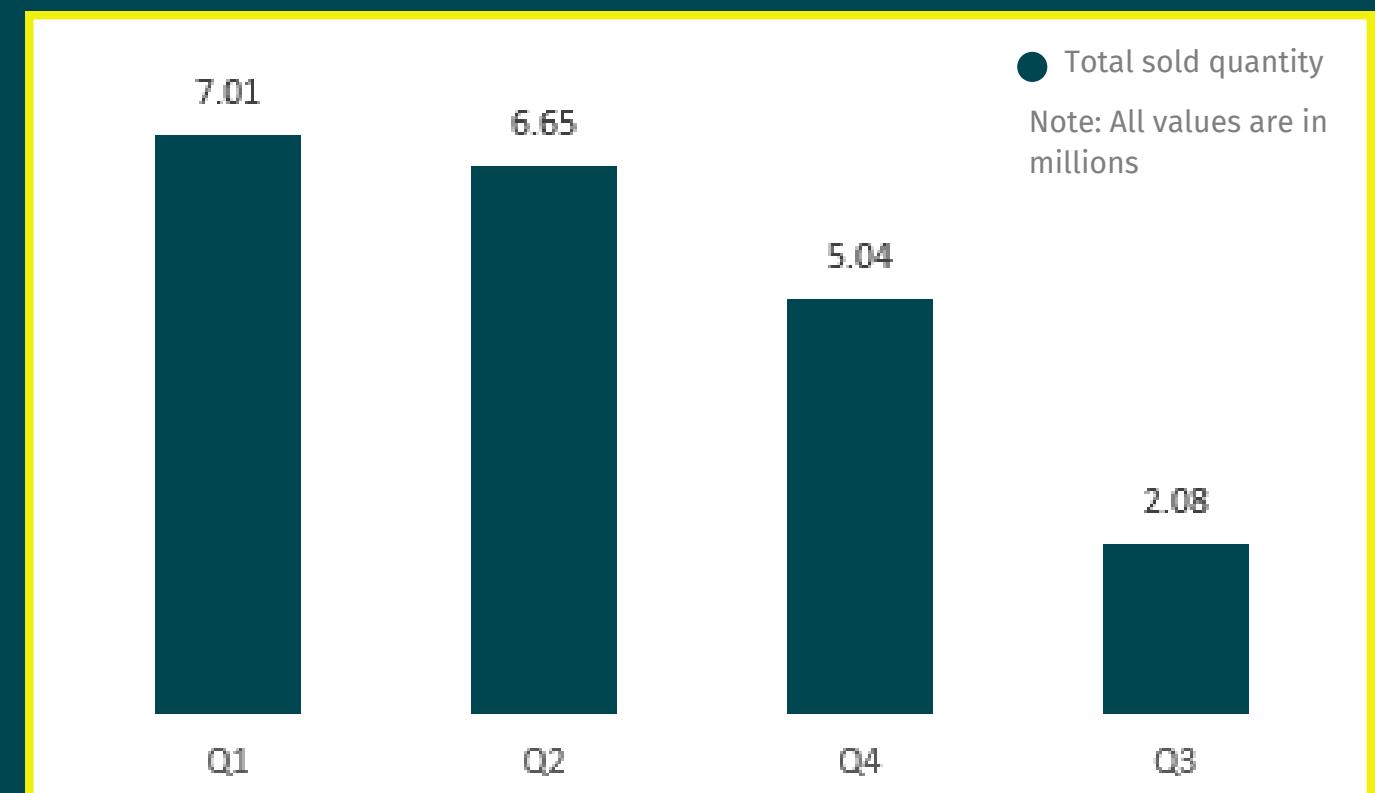


In **FY 2020**, **Quarter 1** (September-November) experienced the **highest** total sold quantity, reaching **7.01 million** units, making up a substantial portion of the year's sales.

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)

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

```
• 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

Strategic Insights

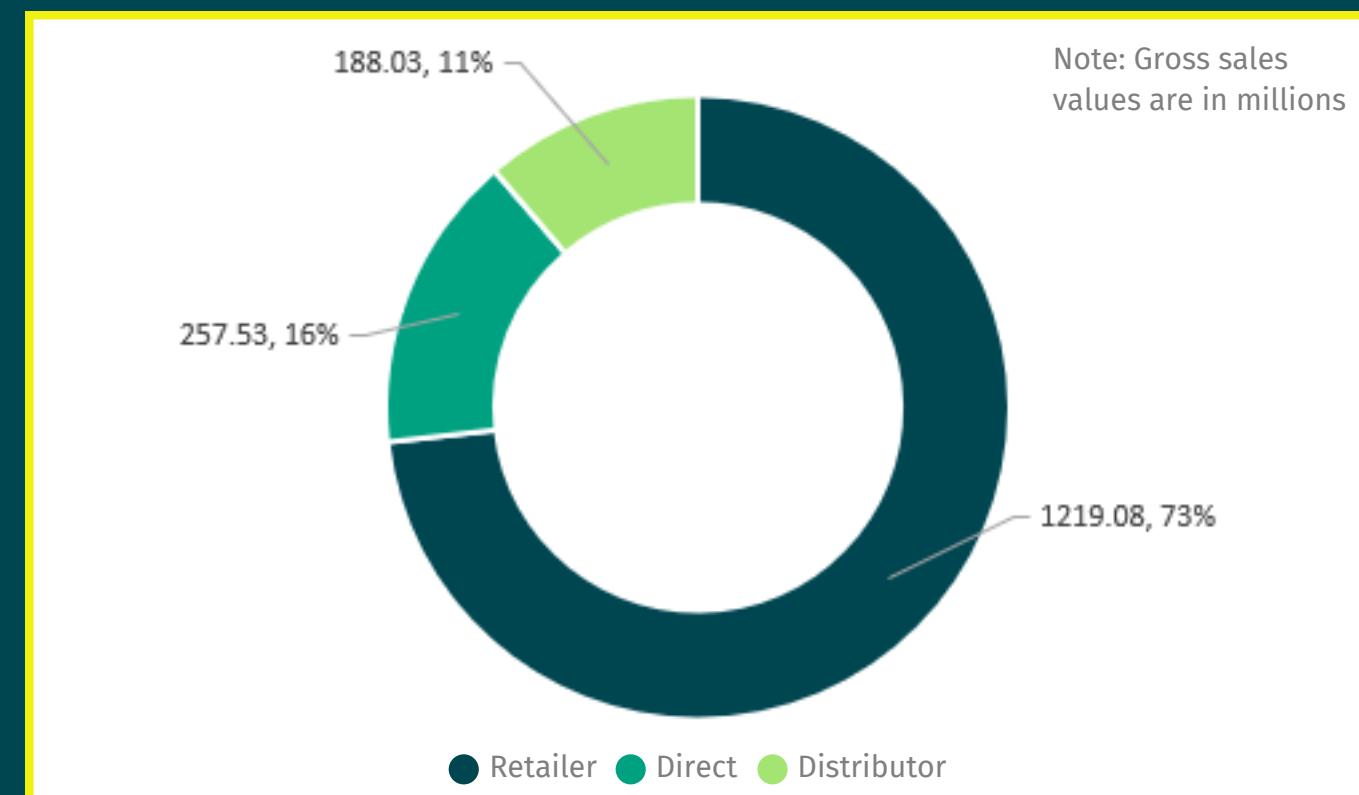


In the **fiscal year 2021**, the "**Retailer**" channel was the **primary driver** of gross sales for AtliQ Hardware, contributing an impressive **73.23% of the total sales** with a **gross sales amount of 1219.08 million**. This dominance highlights the critical role retailers play in the company's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

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

```
• 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

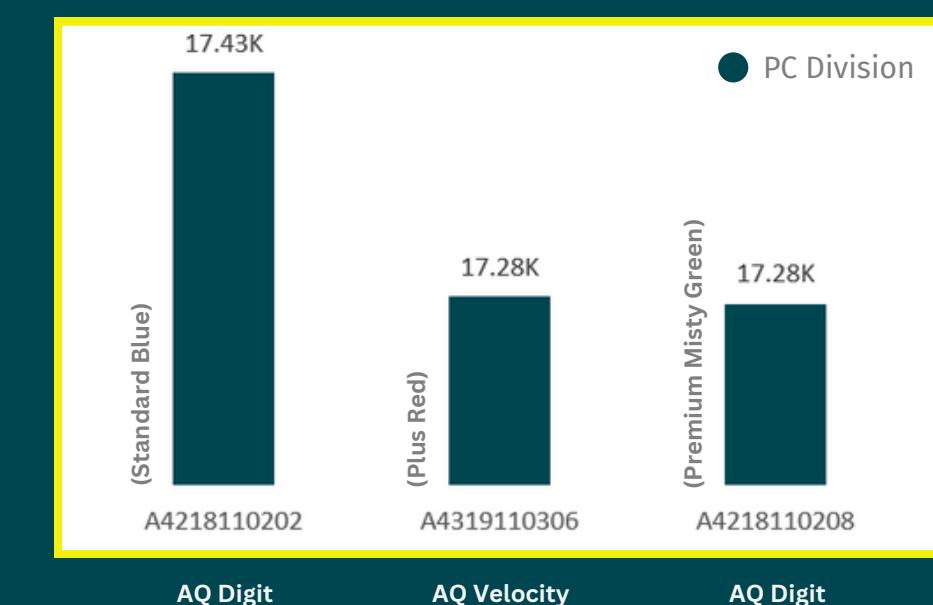
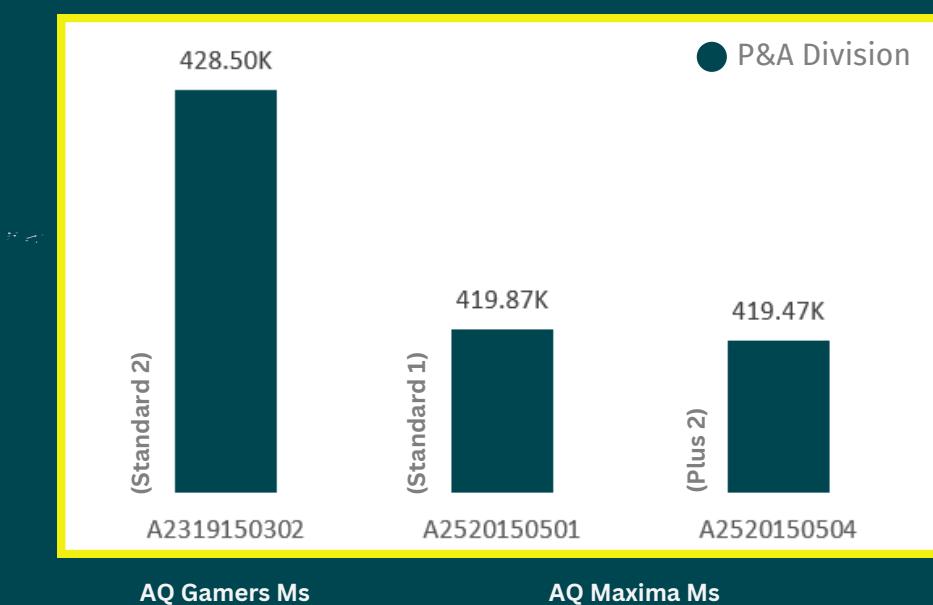
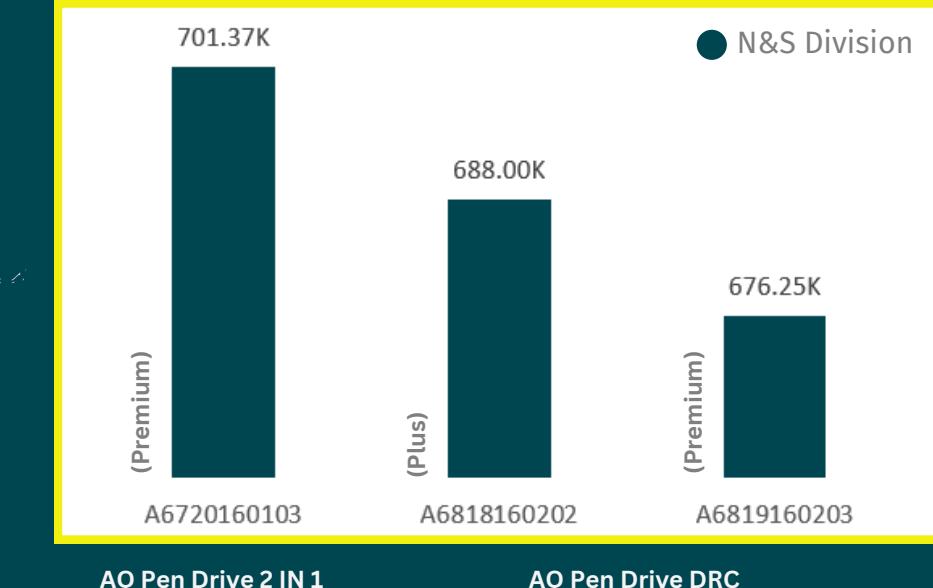
Strategic Insights

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



**Total Sold Quantity
by Division, Product code
(FY 2021)**

Add on Research 1

Product Performance by Region: Analyze the total gross sales and gross profit for each product segment by region (APAC, EU, NA).

The final output contains these fields: (segment, region, total_sold_qty, gross_sales_mln, total_manufacturing_cost_mln, gross_profit_mln).

Identify the most and least profitable regions for each product segment.

Solution

```
SELECT
    dp.segment,
    dc.region,
    SUM(fsm.sold_quantity) AS total_sold_qty,
    ROUND(SUM(fsm.sold_quantity * fgp.gross_price)/1000000,2) AS gross_sales_mln,
    ROUND(SUM(fsm.sold_quantity * fmc.manufacturing_cost)/1000000,2) AS total_manufacturing_cost_mln,
    ROUND(SUM(fsm.sold_quantity * (fgp.gross_price - fmc.manufacturing_cost))/1000000,2) AS gross_profit_mln
FROM fact_sales_monthly fsm
JOIN dim_product dp ON fsm.product_code = dp.product_code
JOIN dim_customer dc ON fsm.customer_code = dc.customer_code
JOIN fact_gross_price fgp ON fsm.product_code = fgp.product_code AND fsm.fiscal_year = fgp.fiscal_year
JOIN fact_manufacturing_cost fmc ON fsm.product_code = fmc.product_code AND fsm.fiscal_year = fmc.cost_year
GROUP BY dp.segment, dc.region
ORDER BY dp.segment, gross_profit_mln DESC;
```

	segment	region	total_sold_qty	gross_sales_mln	total_manufacturing_cost_mln	gross_profit_mln
▶	Accessories	APAC	24468471	344.31	103.00	241.31
	Accessories	EU	10268344	145.79	43.61	102.18
	Accessories	NA	9557913	133.95	40.08	93.87
	Accessories	LATAM	232229	3.10	0.93	2.17
	Desktop	APAC	72064	52.71	15.85	36.85
	Desktop	EU	30126	22.00	6.62	15.38
	Desktop	NA	28296	20.70	6.23	14.48
	Desktop	LATAM	354	0.25	0.08	0.18
	Networking	APAC	2352801	79.62	23.68	55.94
	Networking	EU	955577	32.48	9.66	22.82
	Networking	NA	911622	30.80	9.16	21.64
	Networking	LATAM	24278	0.80	0.24	0.56
	Notebook	APAC	1017469	391.38	117.13	274.24
	Notebook	EU	421878	162.82	48.73	114.09
	Notebook	NA	400037	153.65	45.98	107.67
	Notebook	LATAM	8968	3.27	0.98	2.29

Peripherals	APAC	4473998	251.51	75.05	176.46
Peripherals	EU	1858431	104.91	31.30	73.60
Peripherals	NA	1758058	99.00	29.54	69.46
Peripherals	LATAM	43516	2.36	0.70	1.66
Storage	APAC	6659172	91.31	27.38	63.94
Storage	EU	2736912	37.42	11.21	26.21
Storage	NA	2592234	35.56	10.66	24.90
Storage	LATAM	64723	0.89	0.27	0.62

SQL Query

SQL Query Result

Graphical Depiction



Gross Profit by Segment, Region

Strategic Insights

APAC Dominates: APAC consistently outperforms other regions in all product segments, generating the highest gross profits, with **Accessories** and **Notebooks** driving the most substantial returns.

LATAM Struggles: LATAM **underperforms** significantly **across all segments**, contributing minimal gross profits, indicating limited market potential.

EU and NA: Both regions perform solidly, particularly in **Accessories** and **Notebooks**, with **EU** showing higher profitability in Networking and Storage.

Profit Distribution: **Notebooks** and **Accessories** stand out as top profit-generating segments across regions, while **Desktop** and **Networking** show moderate profitability.

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Add on Research 2

Sales Channel Efficiency: Compare the yearly average order size and frequency of orders across different sales channels (Retailer, Direct, Distributor).
The final output contains these fields: (channel, fiscal_year, avg_order_size, order_frequency).

Solution

```
SELECT
    dc.channel,
    fsm.fiscal_year,
    ROUND(AVG(fsm.sold_quantity),2) AS avg_order_size,
    COUNT(fsm.customer_code) AS order_frequency
FROM fact_sales_monthly fsm
JOIN dim_customer dc USING(customer_code)
GROUP BY dc.channel, fsm.fiscal_year
ORDER BY avg_order_size DESC;
```

SQL Query

SQL Query Result

	channel	fiscal_year	avg_order_size	order_frequency
▶	Distributor	2021	374.74	15030
	Distributor	2020	217.83	10690
	Retailer	2021	77.18	476640
▶	Direct	2021	66.50	116438
	Retailer	2020	52.40	280470
	Direct	2020	51.79	72363

Strategic Insights

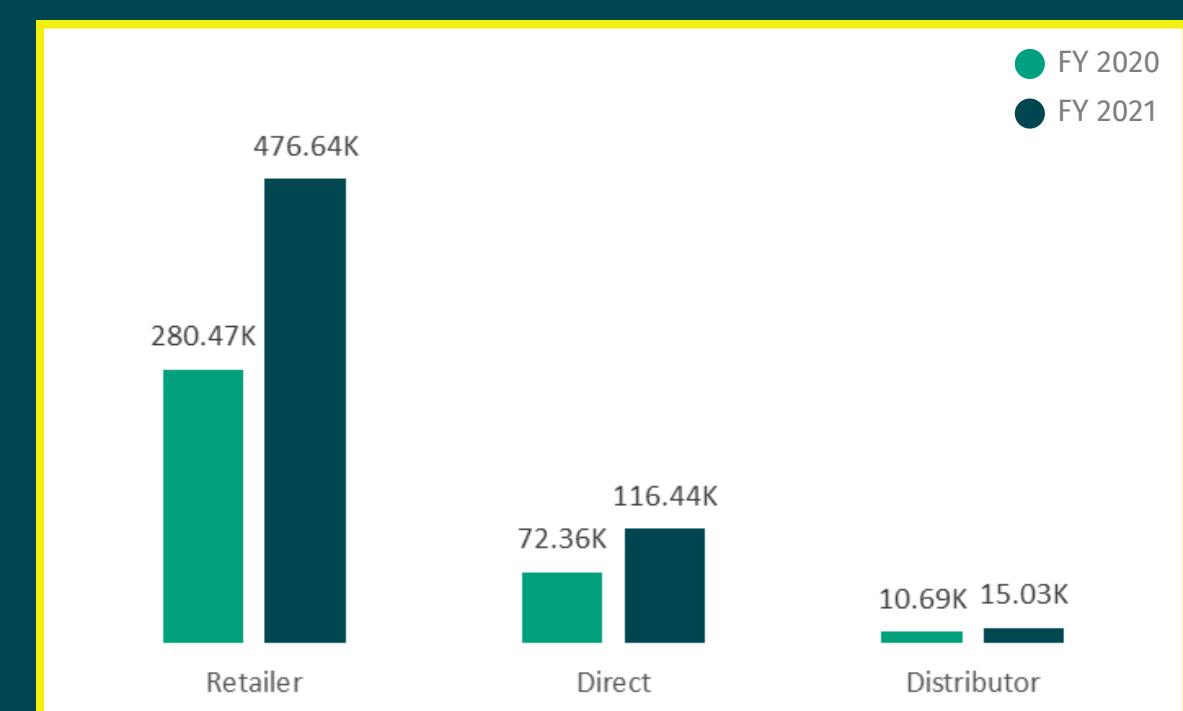
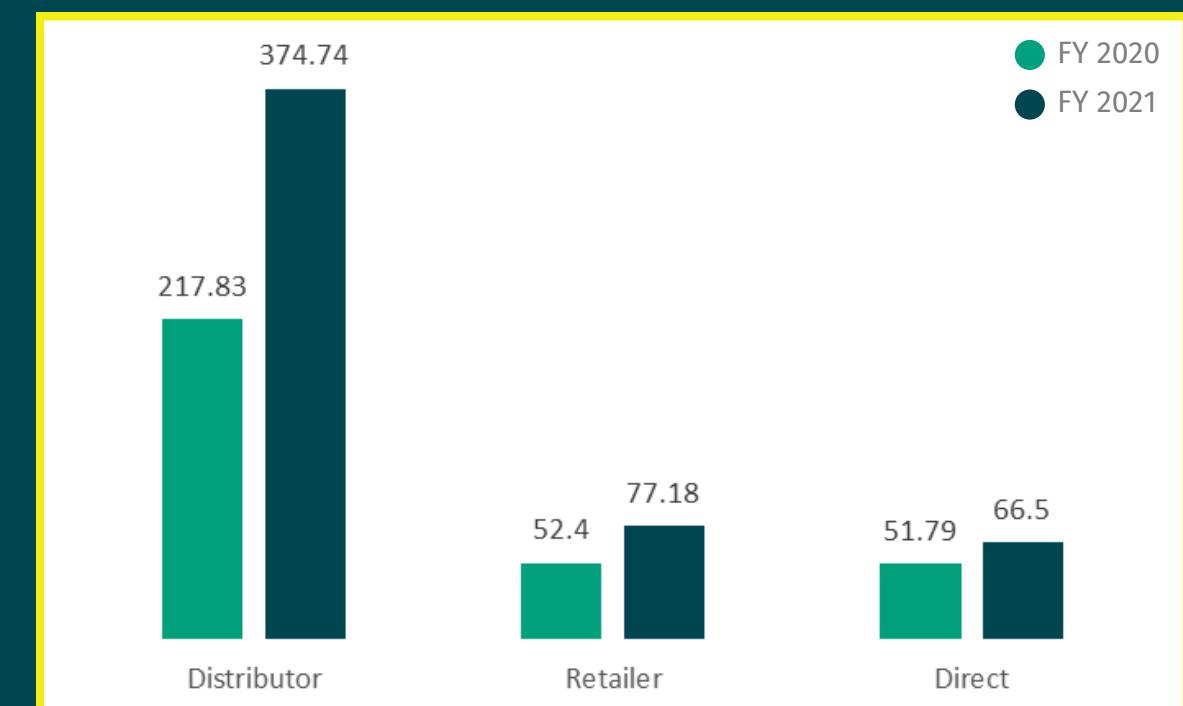


Distributors show the **highest average order size** but significantly **fewer orders** compared to other channels, with a substantial increase in both metrics from **2020** to **2021**.

Retailers have the **highest order frequency** across all channels, with a **moderate increase** in **average order size** from **2020** to **2021**.

Direct Sales exhibit the **lowest average order size** but show **steady growth** in both **order size** and **frequency** year-over-year, indicating potential for further expansion.

Graphical Depiction



Add on Research 3

Impact of Discounts on Sales: Analyze the impact of different discount rates on sales volumes.

The final output contains these fields: (customer, market, fiscal_year, discount_rate, gross_sales_mln, total_sold_quantity).

Identify top 10 customer in 2021 by gross_sales.

Solution

```
SELECT
    dc.customer,
    dc.market,
    fsm.fiscal_year,
    fp.pre_invoice_discount_pct AS discount_rate,
    ROUND(SUM(fsm.sold_quantity * fgp.gross_price) /1000000, 2) AS gross_sales_mln,
    SUM(fsm.sold_quantity) AS total_sold_quantity
FROM fact_sales_monthly fsm
JOIN fact_pre_invoice_deductions fp ON fsm.customer_code = fp.customer_code AND fsm.fiscal_year = fp.fiscal_year
JOIN fact_gross_price fgp ON fsm.product_code = fgp.product_code AND fsm.fiscal_year = fgp.fiscal_year
JOIN dim_customer dc ON fsm.customer_code = dc.customer_code
WHERE fsm.fiscal_year = 2021
GROUP BY
    dc.customer, dc.market, fsm.fiscal_year
ORDER BY gross_sales_mln DESC
LIMIT 10;
```

	customer	market	fiscal_year	discount_rate	gross_sales_mln	total_sold_quantity
▶	Amazon	India	2021	0.2207	65.37	1971428
	Leader	South Korea	2021	0.2819	48.69	1456255
	Sage	South Korea	2021	0.2617	48.25	1443568
	Atiq Exclusive	India	2021	0.0703	47.77	1453369
	Amazon	USA	2021	0.2902	42.06	1269708
	Neptune	China	2021	0.2485	37.26	1113979
	Flipkart	India	2021	0.3083	30.68	912784
	Novus	Philippines	2021	0.3091	27.51	829053
	Synthetic	Philippines	2021	0.2103	26.31	789531
	Vijay Sales	India	2021	0.2753	25.50	769180

SQL Query Result

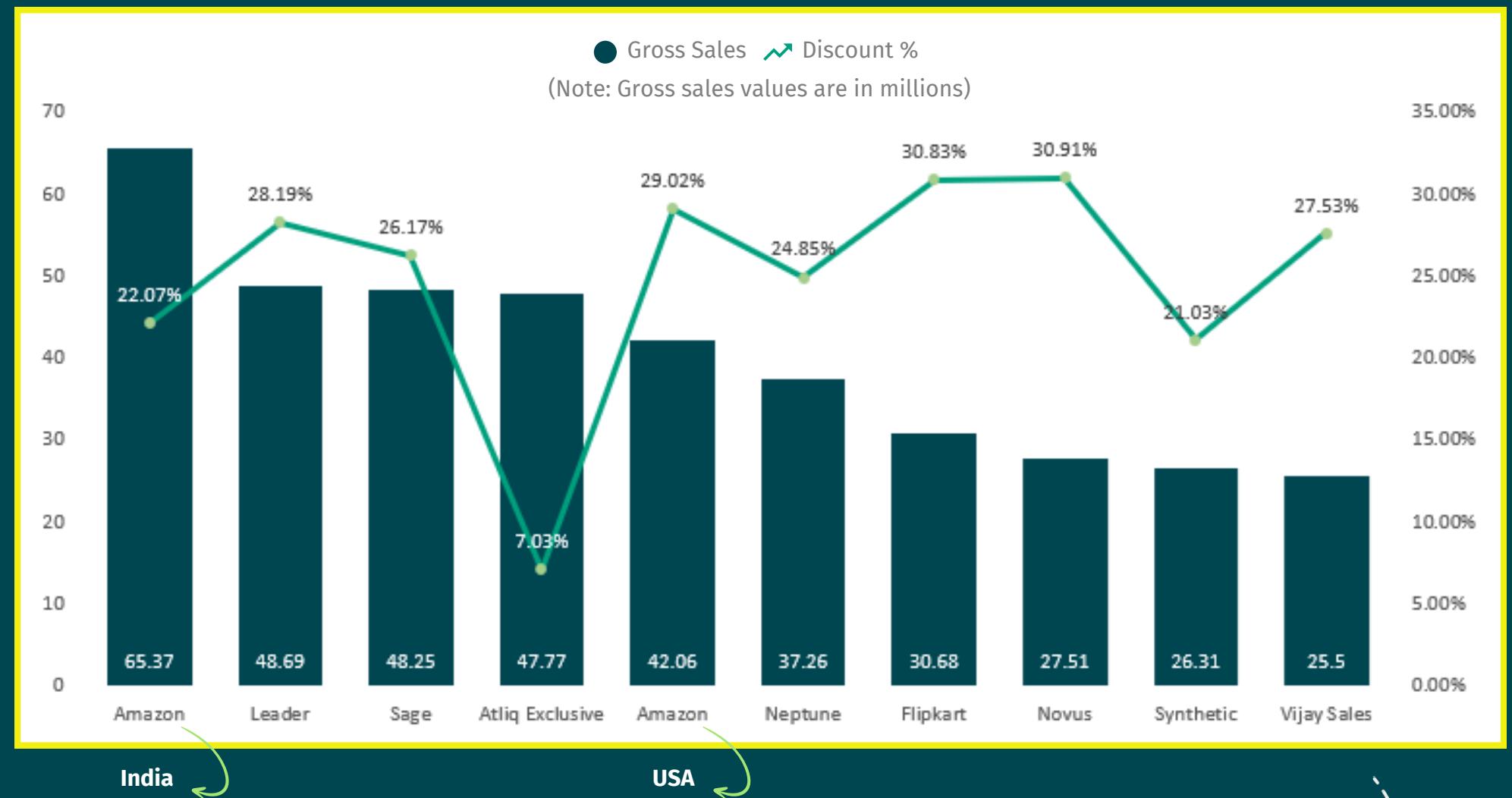
SQL Query

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Graphical Depiction



Strategic Insights



Top Customer: Amazon India led gross sales in 2021 with **\$65.37 million**, selling nearly **2 million units** with a **22% discount rate**.

Strong Regional Players: South Korea's **Leader** and **Sage** both recorded significant gross sales, around **\$48 million** each, benefiting from discount rates of **28%** and **26%**, respectively.

Discount-Sales Relationship: Despite having a lower discount rate (**7%**), **AtliQ Exclusive** achieved **\$47.77 million** in gross sales, showcasing its effective market presence in India.

India's Dominance: Four Indian customers (**Amazon India**, **AtliQ Exclusive India**, **Flipkart**, **Vijay Sales**) ranked **in the top 10**, demonstrating the impact of competitive discounting strategies and the strength of India's market.

**Top 10 Customers
by Gross Sales - FY 21
(With Discount %)**

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Project Result

Project Outcome

Market Presence and Product Innovation: AtliQ Hardware continues to expand its market presence, particularly in the APAC region, driven by strong product performance. In 2021, the company launched 102 new products, particularly in notebooks, accessories, and peripherals, showcasing its commitment to innovation and growth in key segments.

Product Distribution and Segments: Notebooks, accessories, and peripherals dominate the portfolio, accounting for 82.87% of total product offerings. However, there is significant opportunity to enhance performance in underperforming segments such as desktops, storage, and networking, particularly in less profitable regions.

Manufacturing and Cost Management: Manufacturing cost analysis highlights variability, underscoring opportunities for cost optimization. By focusing on cost efficiencies in underperforming regions, AtliQ can refine pricing strategies to improve overall profitability.

Customer Discount Strategies: In 2021, Amazon in India received the highest gross sales with a relatively moderate discount rate, contrasting with Flipkart's higher discounts. This highlights the importance of balancing discount strategies to ensure both sales volume and profitability across key customers.

Channel and Sales Performance: Retailer channels have proven to be the most effective, contributing 75% to FY 2021 gross sales. However, Direct sales have shown strong average order size growth. Strategic planning around peak sales months, like November 2020, can further optimize sales performance across all channels.

Recommendations

Diversify and Strengthen Underperforming Segments: Develop and market products in desktops, storage, and networking segments, especially in regions showing potential, to create a more balanced and profitable product portfolio.

Enhance Premium Product Offerings: Expand premium product lines in accessories, notebooks, and peripherals to capitalize on high-profit opportunities, particularly in the most profitable regions such as APAC.

Refine Discount Strategies: Optimize discount rates for top customers to maximize profitability, balancing volume and margins. Focus on markets where moderate discounts have driven strong sales performance (e.g., Amazon in India).

Expand Retail and E-Commerce Partnerships: Strengthen retailer relationships while expanding e-commerce reach, focusing on improving order frequency and size to boost overall channel efficiency.

Strategic Planning for Peak Sales Periods: Leverage peak sales data to optimize inventory, marketing, and promotions around high-performing months like November, ensuring alignment with key sales channels and customer trends.

THANK YOU

