CONSUMER GOODS AD_HOC INSIGHTS SQL-Project

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ATLIQ ’S BUSINESS MODEL

- AtliQ Hardware stands as a prominent producer of computer hardware in India, successfully expanding its reach to other countries as well.
- The company focuses on manufacturing and distributing an extensive variety of high-quality hardware products.
- Our product lineup features personal computers, printers, microphones, and a range of computer accessories, catering to the needs of customers globally.

PROBLEM STATEMENT

- The management observed that they did not have enough insights to make rapid and sensible data-driven decisions.
- They intend to grow their data analytics team by adding a few younger data analysts.

OBJECTIVE

- To fulfil 10 AD-Hoc business requests, execute SQL queries to extract relevant data and create actionable insights.
- The findings will be presented in a dashboard designed specifically for top-level management to facilitate successful data-driven decision-making.

Request 1 : Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.

```
select distinct(market)
from dim_customer
where customer = "Atliq Exclusive"
and region = "APAC"
```

Market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

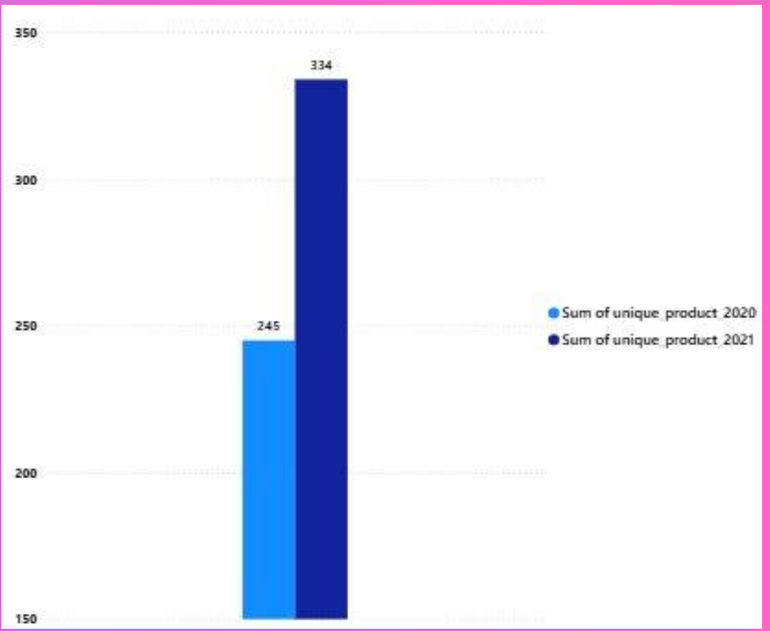
Insights

Atliq Exclusive is well-established in **8 APAC** (Asia-Pacific) region, including

- India,
- Indonesia,
- Japan,
- Philippines,
- South Korea,
- Australia,
- New Zealand and Bangladesh

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

```
SELECT X.A AS unique_product_2020,
       Y.B AS unique_product_2021,
       ROUND(((B-A)*100/A),2) AS percentage_chg
FROM
(
(SELECT COUNT(DISTINCT(product_code)) AS A  From fact_sales_monthly WHERE  fiscal_year = 2020) X ,
(SELECT COUNT(DISTINCT(product_code)) AS B From fact_sales_monthly WHERE  fiscal_year = 2021 ) Y
);
```



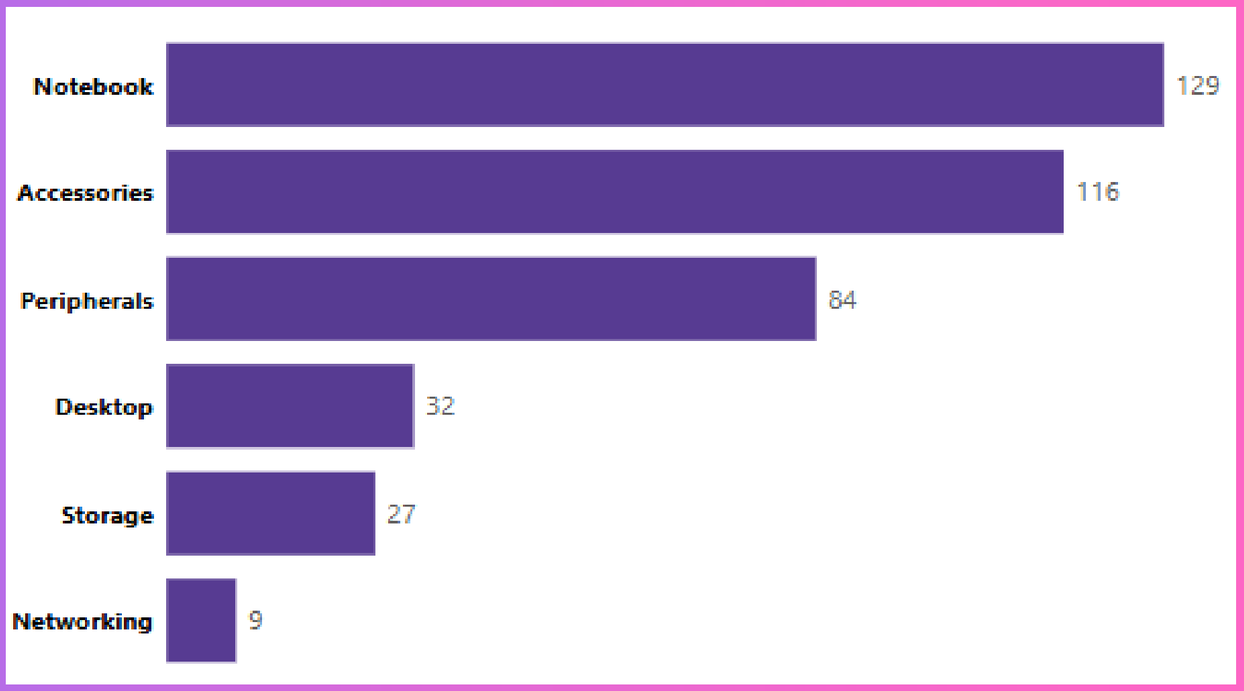
unique_product_2020	unique_product_2021	percentage_chg
245	334	36.33

Insights: In 2021, there was a **36.33% year-over-year increase in the number of unique products**, climbing from 245 to 334.

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
SELECT
    DISTINCT(segment),
        count(Distinct(product_code)) as product_count
from dim_product
group by segment
order by product_count DESC;
```

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

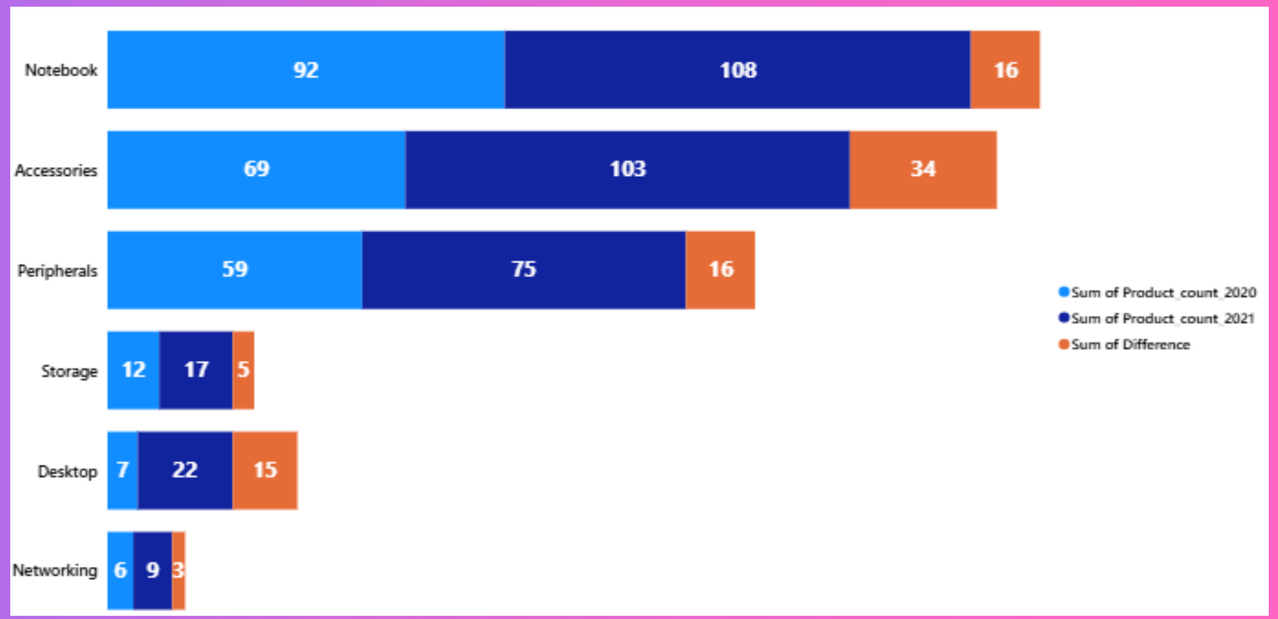


Insights: Among six segments, Notebooks had the most products (129) and Networking the fewest (9).

Request 4 : Segment with the Most Increase in Unique Products (2021 vs. 2020)

```sql
with CTE1 AS (SELECT
        P.segment AS A,
        count(Distinct(fs.product_code)) as B
        from dim_product p, fact_sales_monthly fs
        where p.product_code = fs.product_code
        group by fs.fiscal_year , p.segment
        having fiscal_year = "2020"),
CTE2 AS (SELECT
        P.segment as C,
        count(Distinct(fs.product_code)) as D
        from dim_product p, fact_sales_monthly fs
        where p.product_code = fs.product_code
        group by fs.fiscal_year , p.segment
        having fiscal_year = "2021")
SELECT
        CTE1.A as segment,
        CTE1.B AS Product_count_2020,
        CTE2.D AS Product_count_2021,
        (CTE2.D - CTE1.B) as Difference
FROM CTE1,CTE2
WHERE CTE1.A = CTE2.C
order by Difference DESC ;
```

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



Insights: Product growth varied across segments, with Accessories leading in absolute growth (+34, +49%), Desktops showing the highest relative increase (+214%), steady gains in Notebooks and Peripherals (+16 each), and minimal expansion in Storage (+5) and Networking (+3)..

Request 5: Products with Highest and Lowest Manufacturing Costs

```sql
select
        mc.product_code,
        p.product,
        mc.manufacturing_cost
from fact_manufacturing_cost mc
join dim_product p using (product_code)
having
    mc.manufacturing_cost
    in (
        (select min(manufacturing_cost) from fact_manufacturing_cost),
        (select max(manufacturing_cost) from fact_manufacturing_cost)
        );
```

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

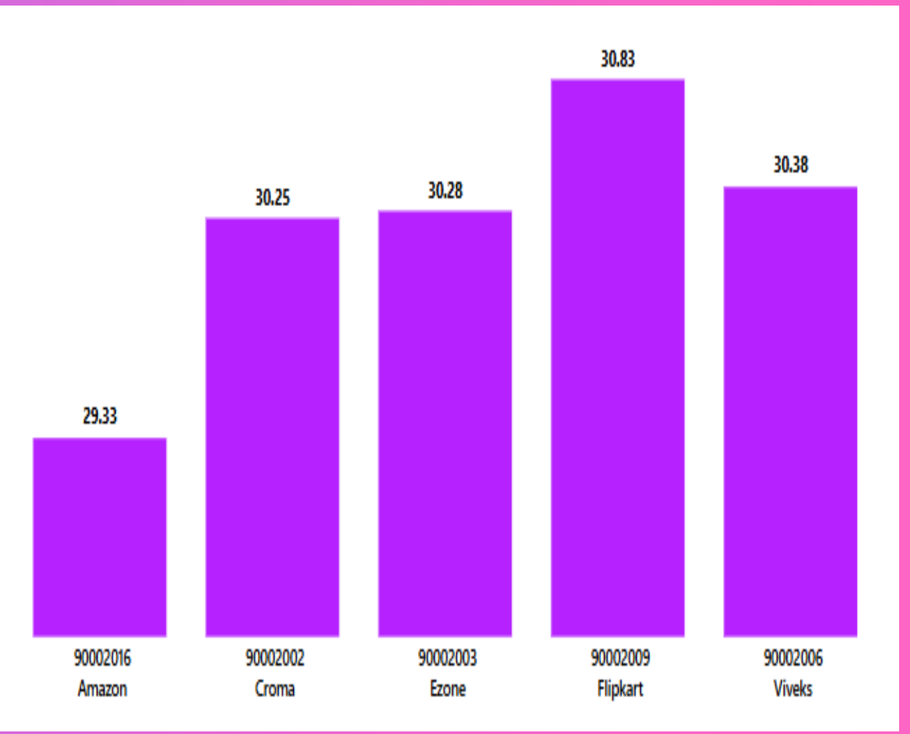
Insights:

AQ Master wired x1Ms' had the lowest manufacturing cost at 0.89, whereas 'AQ HOMEAllin1Gen2' had the highest at 240.54.".

Request 6: Top 5 Customers with High Pre-Invoice Discount in 2021 (Indian Market)

```sql
select
        ps.customer_code,
        c.customer ,
        round(avg(pre_invoice_discount_pct)*100,2) as average_discount_percentage
from fact_pre_invoice_deductions ps
join dim_customer c using (customer_code)
where c.market = "India" and
    ps.fiscal_year = 2021
group by
        ps.customer_code,
        c.customer
order by average_discount_percentage DESC
limit 5 ;
```

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

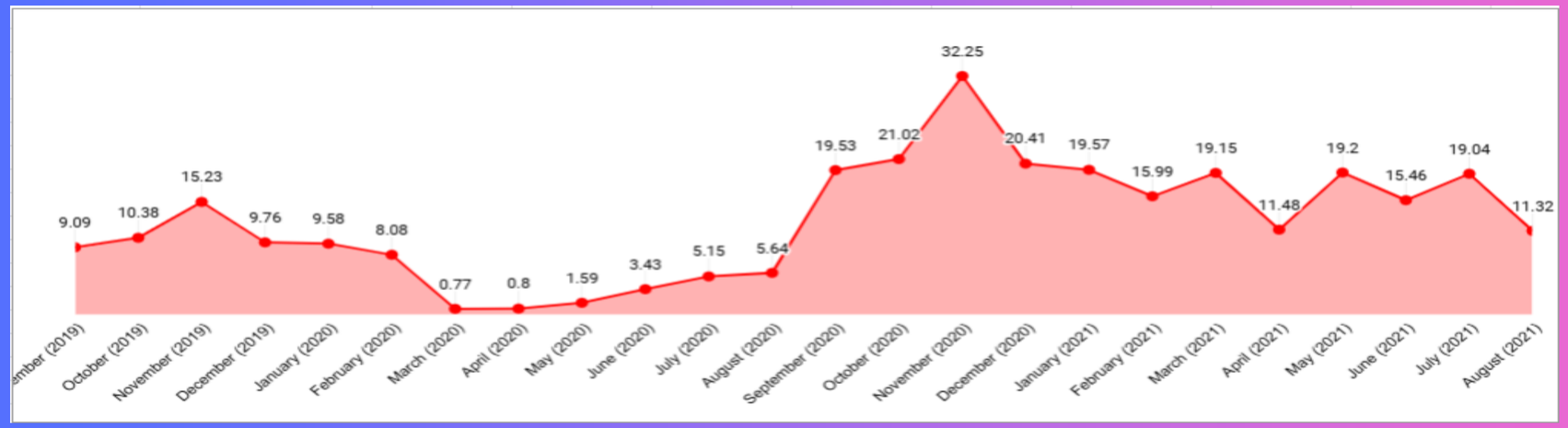


Insights: In 2021, Flipkart had the highest average pre-invoice discount in India at 30.83%, while Amazon's was the lowest at 29.33%

Request 7: Gross Sales Amount for "Atliq Exclusive" by Month

```sql
select
    MONTHNAME(s.date) as month,
    s.fiscal_year as year,
    concat(round(sum(s.sold_quantity *g.gross_price)/1000000,2), "M") as Gross_sales_Amount
from fact_sales_monthly s
join fact_gross_price g using (product_code)
join dim_customer c using (customer_code)
where c.customer = "Atliq Exclusive"
group by month, year
order by year ASC;
```

month	year	Gross_sales_Amount
September	2020	9.09M
October	2020	10.38M
November	2020	15.23M
December	2020	9.76M
January	2020	9.58M
February	2020	8.08M
March	2020	0.77M
April	2020	0.80M
May	2020	1.59M
June	2020	3.43M
July	2020	5.15M
August	2020	5.64M
September	2021	19.53M
October	2021	21.02M
November	2021	32.25M
December	2021	20.41M
January	2021	19.57M
February	2021	15.99M
March	2021	19.15M
April	2021	11.48M
May	2021	19.20M
June	2021	15.46M
July	2021	19.04M
August	2021	11.32M



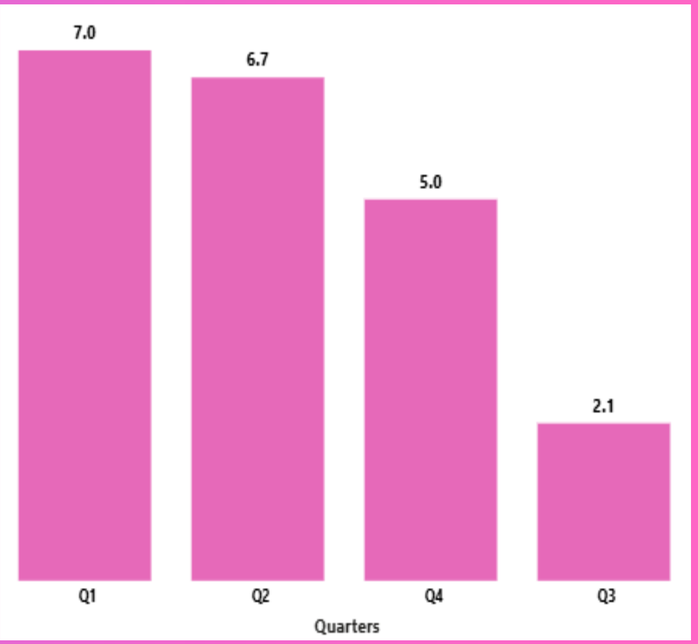
Insights:

- November 2020 (FY2021) saw the highest gross sales of 32.25M.
- March 2020 (FY2020) recorded the lowest gross sales at 0.77M.

Request 8: Quarter with Maximum Total Sold Quantity in 2020

```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 Quarters,
concat(round(sum(sold_quantity)/1000000,2), "M") as total_sold_quantity
from fact_sales_monthly
where fiscal_year = 2020
group by Quarters
order by total_sold_quantity  DESC
```

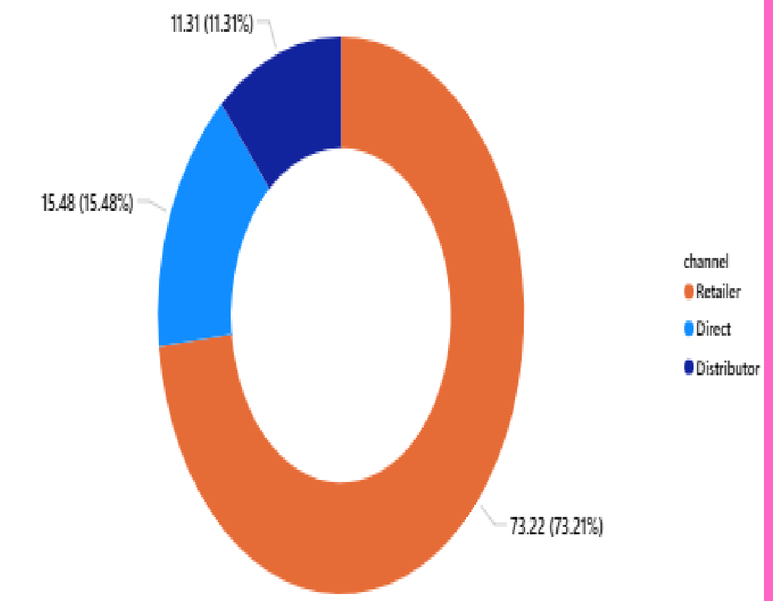
	Quarters	total_sold_quantity
▶	Q1	7.01M
	Q2	6.65M
	Q4	5.04M
	Q3	2.08M



Insights: In 2020, "Q1" recorded the highest sales quantity, while "Q3" had the lowest

Request 9: Channel with Highest Gross Sales in 2021

```sql
WITH CTE1 AS
(SELECT
        c.channel,
        ROUND(SUM(g.gross_price * s.sold_quantity) / 1000000, 2) AS gross_sales_mln
    FROM fact_sales_monthly s
    JOIN fact_gross_price g ON s.product_code = g.product_code
    JOIN dim_customer c ON c.customer_code = s.customer_code
    WHERE s.fiscal_year = 2021
    GROUP BY c.channel
)
SELECT
    channel,
    gross_sales_mln,
    ROUND((gross_sales_mln / sum(gross_sales_mln) over()) *100,  2) AS Percentage
FROM CTE1
ORDER BY Percentage DESC;
```



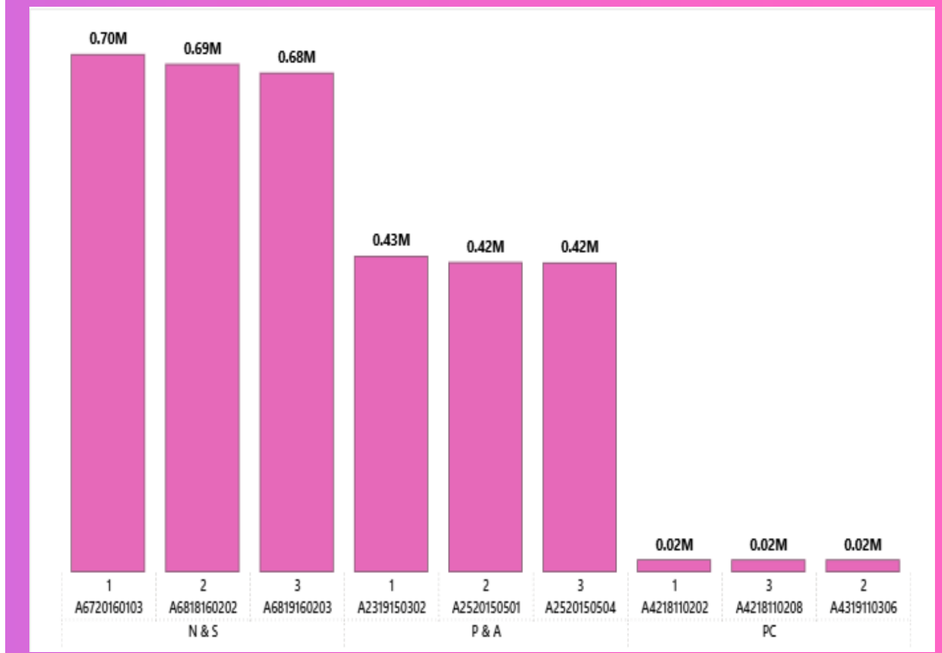
	channel	gross_sales_mln	Percentage
▶	Retailer	1924.17	73.22
	Direct	406.69	15.48
	Distributor	297.18	11.31

Insights: In 2021, Channel Retailers accounted for 73.22% of total gross sales, while Distributors contributed the lowest at 11.31%.

Request 10: Top 3 Products in Each Division with High Total Sold Quantity in 2021

```sql
with product_sales as
    (select
        p.division,
        p.product_code,
        p.product,
        round(sum(s.sold_quantity),2) 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
        using (product_code)
        where s.fiscal_year = 2021
        group by    p.division,
                    p.product_code,
                    p.product
    )
select
        division,
        product_code,
        product,
        total_sold_quantity,
        rank_order
from product_sales
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	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



Conclusion

Data-Driven Perspective

- Executed complex SQL queries to extract actionable insights from raw datasets
- Analyzed patterns in sales performance, discount utilization, and product segment.

Domain Perspective

- Focused on the Consumer Goods industry, analyzing AtliQ Hardware's APAC region operations
- Highlighting market trends, customer behavior, and top-performing segments.

Insight-Driven Perspective

- Transformed 10 unique business problems into effective analytical frameworks.
- Delivered data-driven solutions to support strategic decisions.

Professional Growth Perspective

- Advancing proficiency in SQL and business analytics.
- Strengthening problem-solving and storytelling skills to deliver actionable business insights.

Thank You!