# Atliq Hardware

**consumer goods ad hoc analysis**

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# Introduction

## 01

### Our Company

Atliq Hardwares (imaginary company) is one of the leading computer hardware producers in India.

## 02

### Problem

The Management lacks sufficient insights for quick and smart data-informed decisions. There are 10 ad-hoc requests for which the company needs answers.

## 03

### Approach

We will utilize SQL to address these requests, transform the results into compelling visualizations, and present actionable insights to top-level management for informed decision-making.

**Request 1**

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

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

## Atliq Exclusive's operating markets in APAC region

Atliq Exclusive operates in 8 APAC markets India, Indonesia, Japan, Philippines, South Korea, Australia, New Zealand, Bangladesh
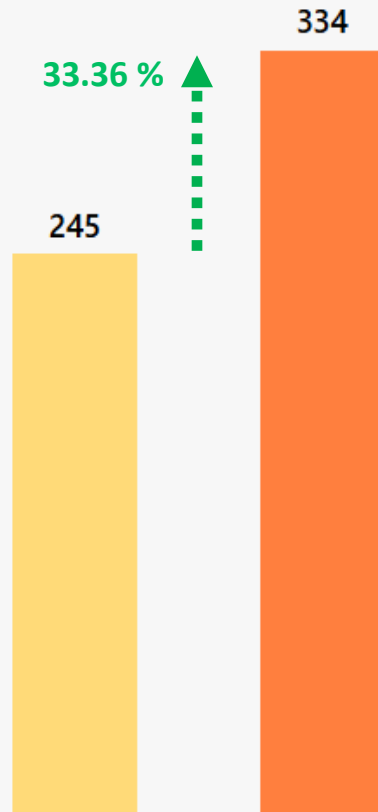
**Request 2**

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

```sql
WITH cte1 AS
(
SELECT
    count(DISTINCT product_code) unique_products_2020
FROM
    fact_sales_monthly
WHERE
    fiscal_year = 2020)
,
cte2 AS
(
SELECT
    count(distinct product_code) unique_products_2021
FROM
    fact_sales_monthly
WHERE
    fiscal_year = 2021)

SELECT
    *, ROUND((unique_products_2021 - unique_products_2020)*100/unique_products_2020, 2) pct_change
FROM
    cte1 CROSS JOIN cte2 ;
```

# Unique Product Growth 2020 vs 2021



legend: ● unique_products_2020  ● unique_products_2021

334

33.36 %

245

- Unique products grew by 36.33% from 2020 to 2021.

- It reflects Atliq Hardware's focus on innovation and addressing market demands.

**Request 3**

Provide a report with all the unique product counts for each segment

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

# Segment-wise Unique Product Counts
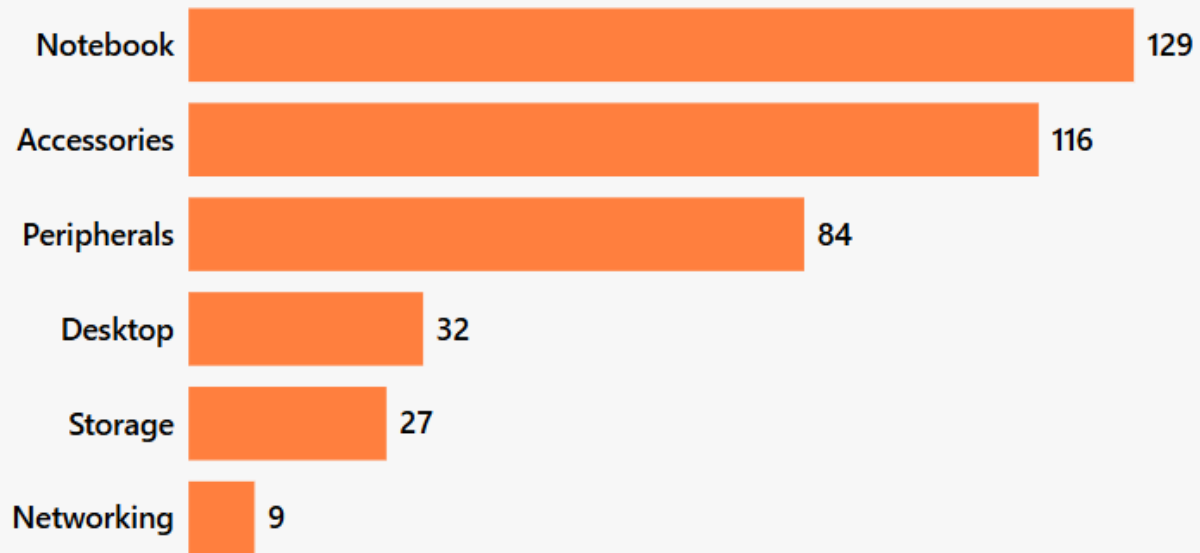


- Notebook leads in variety with 129 unique products, followed by Accessories 116 and Peripherals 84 indicating high demand.

- Networking 9 and Storage 27 have fewer products, signaling potential for expansion.

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

```sql
WITH cte1 AS
(
SELECT
    segment, count(DISTINCT s.product_code) product_count_2020
FROM
    fact_sales_monthly s JOIN dim_product p USING(product_code)
WHERE
    fiscal_year = 2020
GROUP BY
    segment),
cte2 AS
(
SELECT
    segment,count(DISTINCT s.product_code) product_count_2021
FROM
    fact_sales_monthly s JOIN dim_product p USING(product_code)
WHERE
    fiscal_year = 2021
GROUP BY
    segment)

SELECT
    cte1.segment, product_count_2020, product_count_2021,
    (product_count_2021 - product_count_2020) difference
FROM
    cte1 JOIN cte2 USING (segment)
ORDER BY
    difference DESC;
```

# Segment Growth Analysis 2020 vs 2021

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

In 2021, Accessories had the highest increase in unique products, producing 69 more unique products that is 49 % more than 2020.

**Request 5**

**Get the products that have the highest and lowest manufacturing costs**

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

# Manufacturing Cost Extremes

$ 240.54

$ 0.89

Personal desktop (AQ HOME Allin1 Gen 2) has the highest manufacturing cost
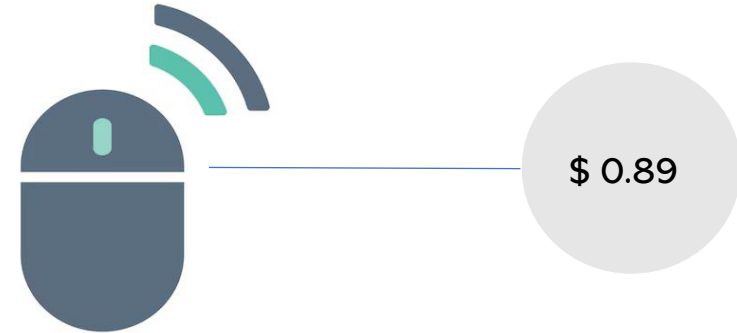
Mouse (AQ Master wired x1 Ms) has the lowest manufacturing cost

**Request 6**

Top 5 customers who received highest average pre_invoice_discount_% for FY 2021 in the Indian market

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

# Top Customers by highest pre_invoice_discount
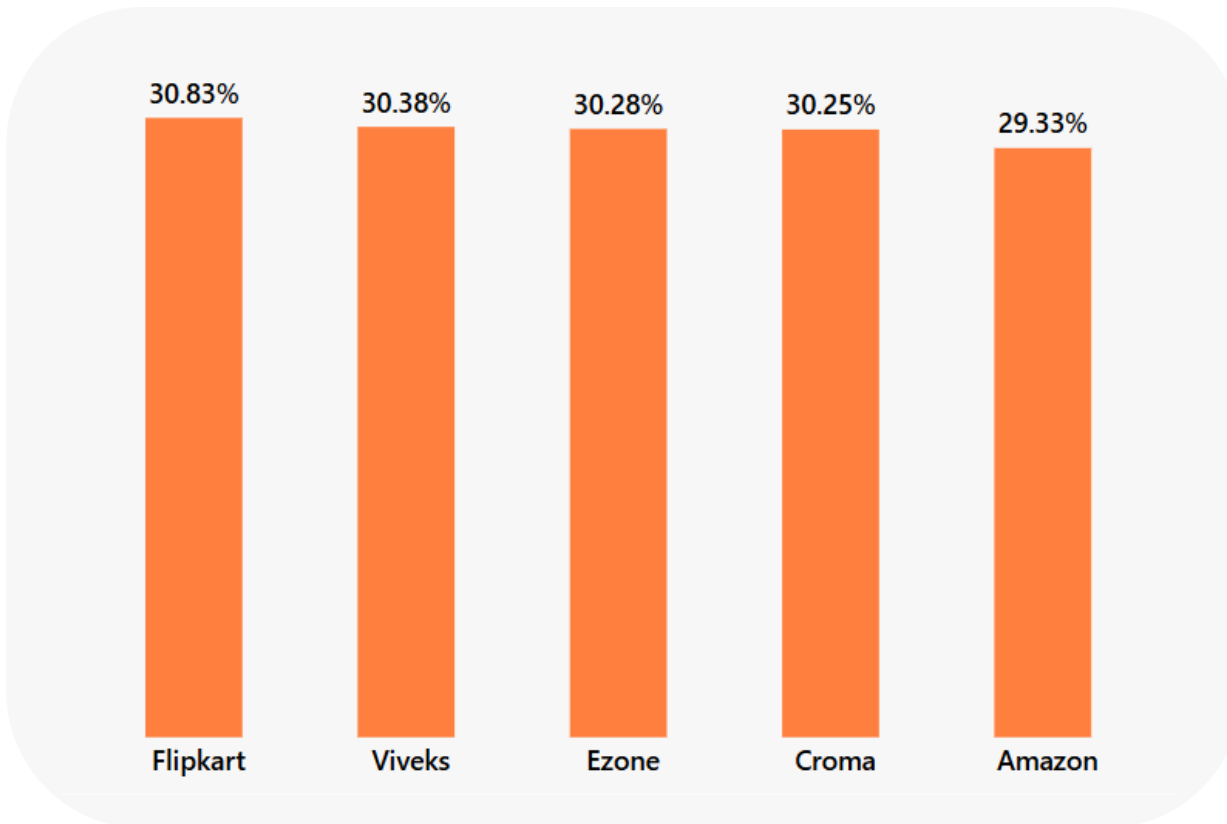


- Flipkart received the highest average pre-invoice discount, indicating a strong strategic partnership.

- Amazon received the lowest average pre invoice discount at 29.33%.

**Request 7**

Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month

```sql
SELECT
    MONTHNAME(s.date) Month,
    s.fiscal_year Year,
    SUM(gross_price * sold_quantity)/1000000 gross_sales_mln
FROM
    fact_gross_price g
        JOIN
    fact_sales_monthly s USING (product_code)
        JOIN
    dim_customer c USING (customer_code)
WHERE
    customer = 'Atliq Exclusive'
GROUP BY Month , Year
order by year;
```

# Atliq exclusive's gross sales monthly trend
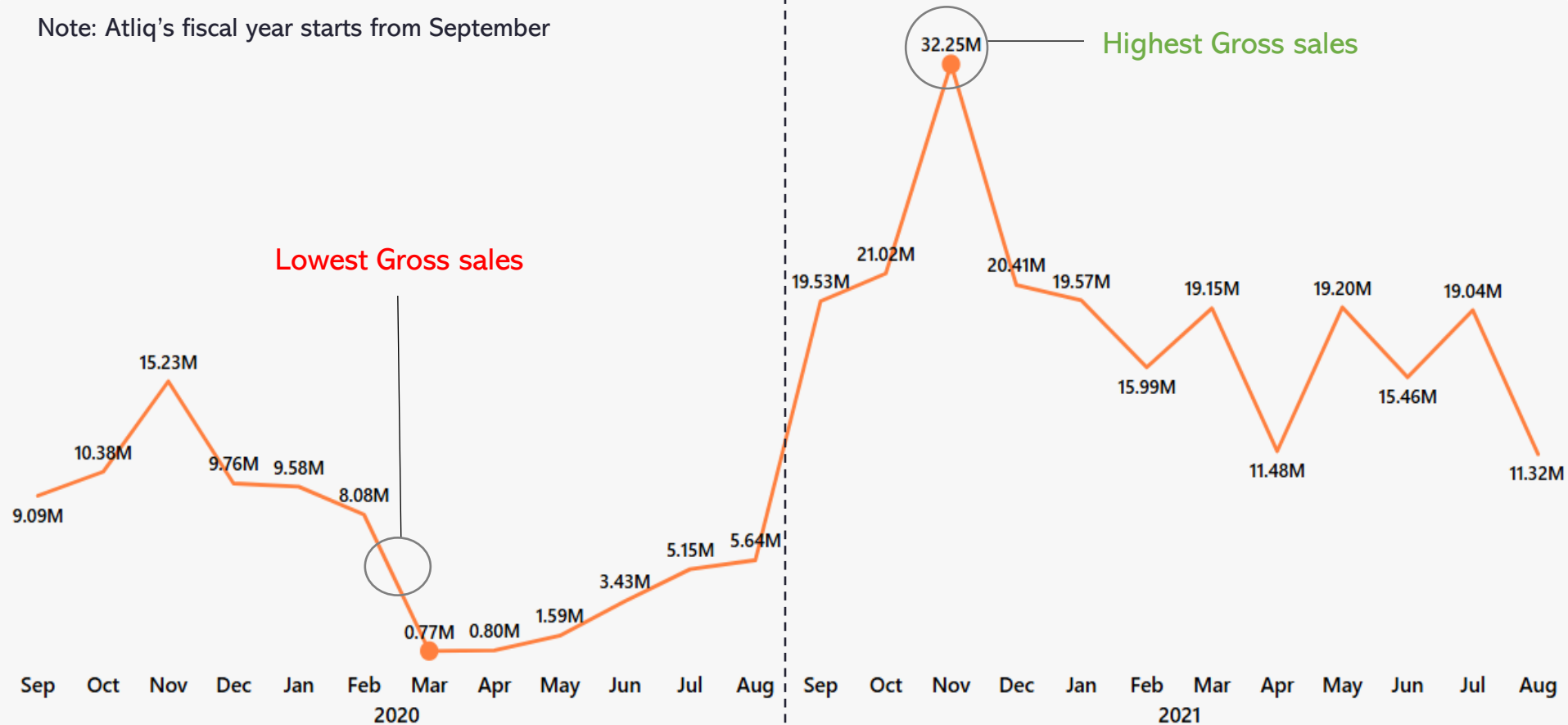


- It is quite evident that sales in March 2020 was significantly less because of covid-19.

- Sales rose significantly from 2020 to 2021, peaking at 32.25 million in November 2021.

**Request 8**

In which quarter of 2020, got the maximum total_sold_quantity?

```sql
WITH CTE AS
(
SELECT
    sold_quantity,
    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 Quarters
FROM
    fact_sales_monthly
WHERE
    fiscal_year = 2020
)
SELECT
    Quarters,
    concat(round(sum(sold_quantity)/1000000,2), " M") total_sold_quantity
FROM
    CTE
GROUP BY Quarters;
```

# Quarterly sales (quantity) performance 2020
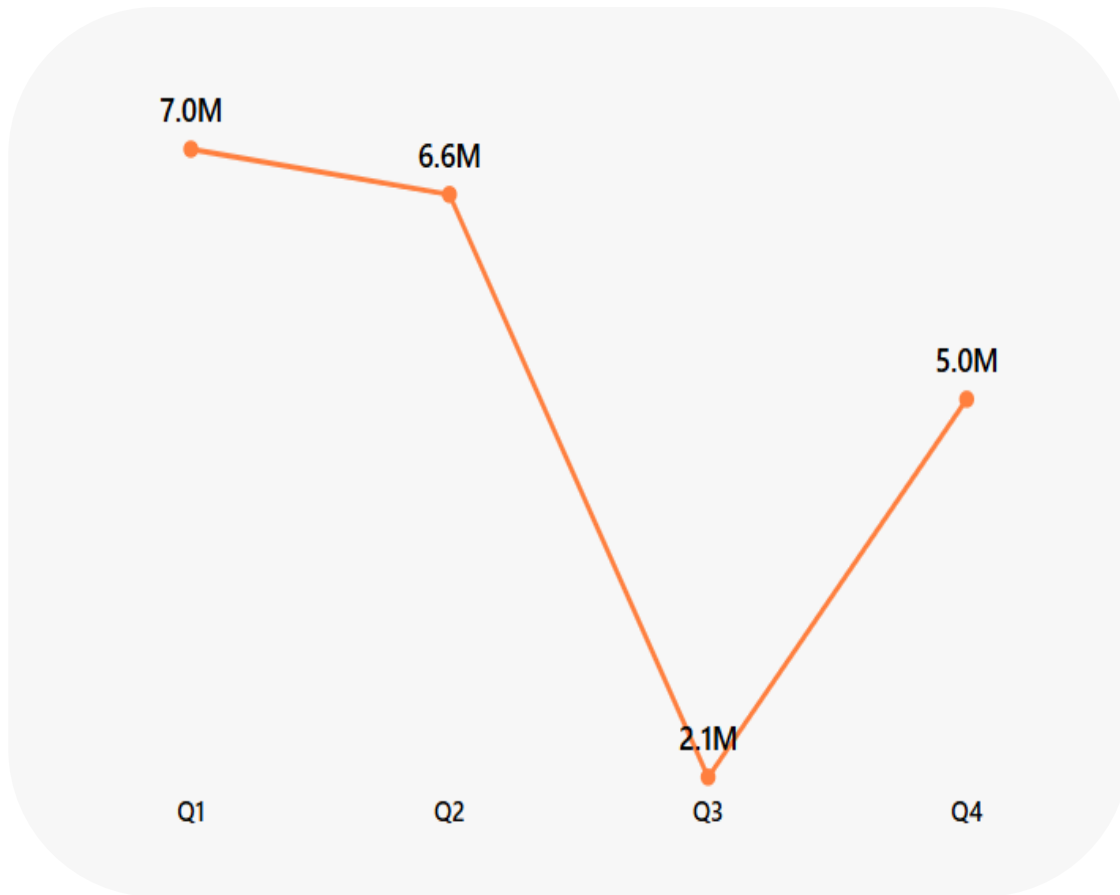


- **Q1 2020** recorded the highest total sold quantity at 7.01 million, showing strong early-year performance.

- **Q3 2020** sales dropped to 2.1 million, aligning with the peak of COVID-19 disruptions.

- **Q4 2020** saw a rebound due to increased demand for desktops and accessories as students shifted to online learning.

**Request 9**

**Which channel generated more gross sales in FY 2021 and the percentage of contribution?**

```sql
WITH cte AS (
SELECT
    c.channel,
    concat(ROUND(SUM(gross_price * sold_quantity) / 1000000,2), " M") 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 * 100/sum(gross_sales_mln) OVER(),2) percentage
FROM cte
ORDER BY percentage DESC;
```

# Channel-wise gross sales and percentage contribution
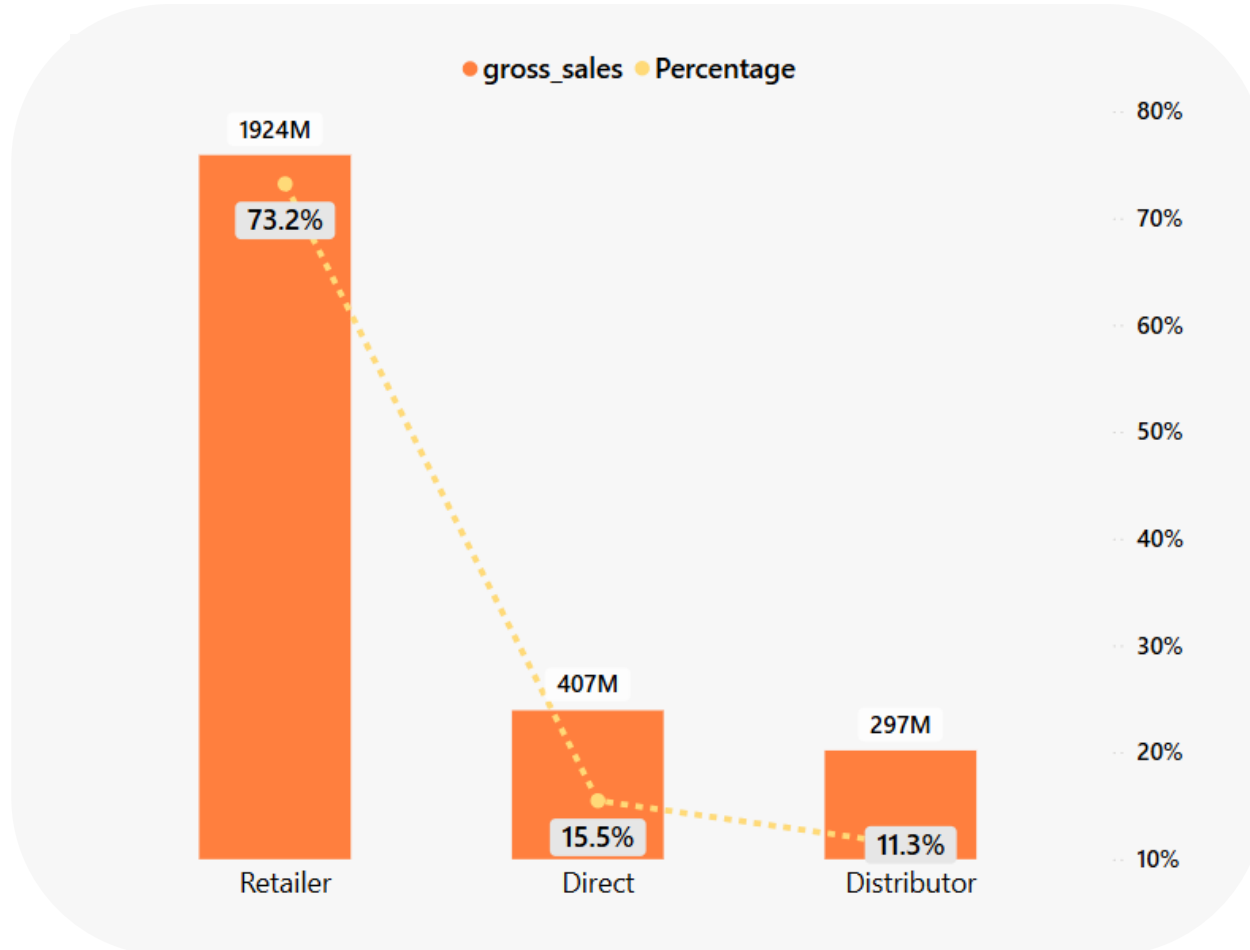


- Retailer Channel generated the highest gross sales, contributing to 73.23% of the total sales

- Direct Sales accounted for 15.4% while Distributor Channel contributed the smallest share at 11.3% of the total sales.

**Request 10**

Get the Top 3 products in each division that have a high total_sold_quantity in the FY 2021?

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

# Top 3 products (sold_quantity) by each division in FY 2021

| division | product | product_code | Total_sold_qty | rank_order |
|----------|---------|--------------|----------------|------------|
| N & S | AQ Pen Drive 2 IN 1 | A6720160103 | 701,373.00 | 1 |
| N & S | AQ Pen Drive DRC | A6818160202 | 688,003.00 | 2 |
| N & S | AQ Pen Drive DRC | A6819160203 | 676,245.00 | 3 |
| P & A | AQ Gamers Ms | A2319150302 | 428,498.00 | 1 |
| P & A | AQ Maxima Ms | A2520150501 | 419,865.00 | 2 |
| P & A | AQ Maxima Ms | A2520150504 | 419,471.00 | 3 |
| PC | AQ Digit | A4218110202 | 17,434.00 | 1 |
| PC | AQ Digit | A4218110208 | 17,275.00 | 3 |
| PC | AQ Velocity | A4319110306 | 17,280.00 | 2 |

- N & S division : AQ Pen Drive 2 IN 1(USB flash drives) led with 701 K units sold, followed by AQ Pen Drive DRC variants.

- P & A division : AQ Gamers Ms (Mouse) topped with 428.4 K units, with two AQ Maxima Ms variants close behind.

- PC division : AQ Digit (Personal laptop) led with 17.4 K units, narrowly ahead of AQ Velocity.

# Thank You !

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