CONSUMER GOODS AD HOC INSIGHTS

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INTRODUCTION

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)

FISCAL YEAR

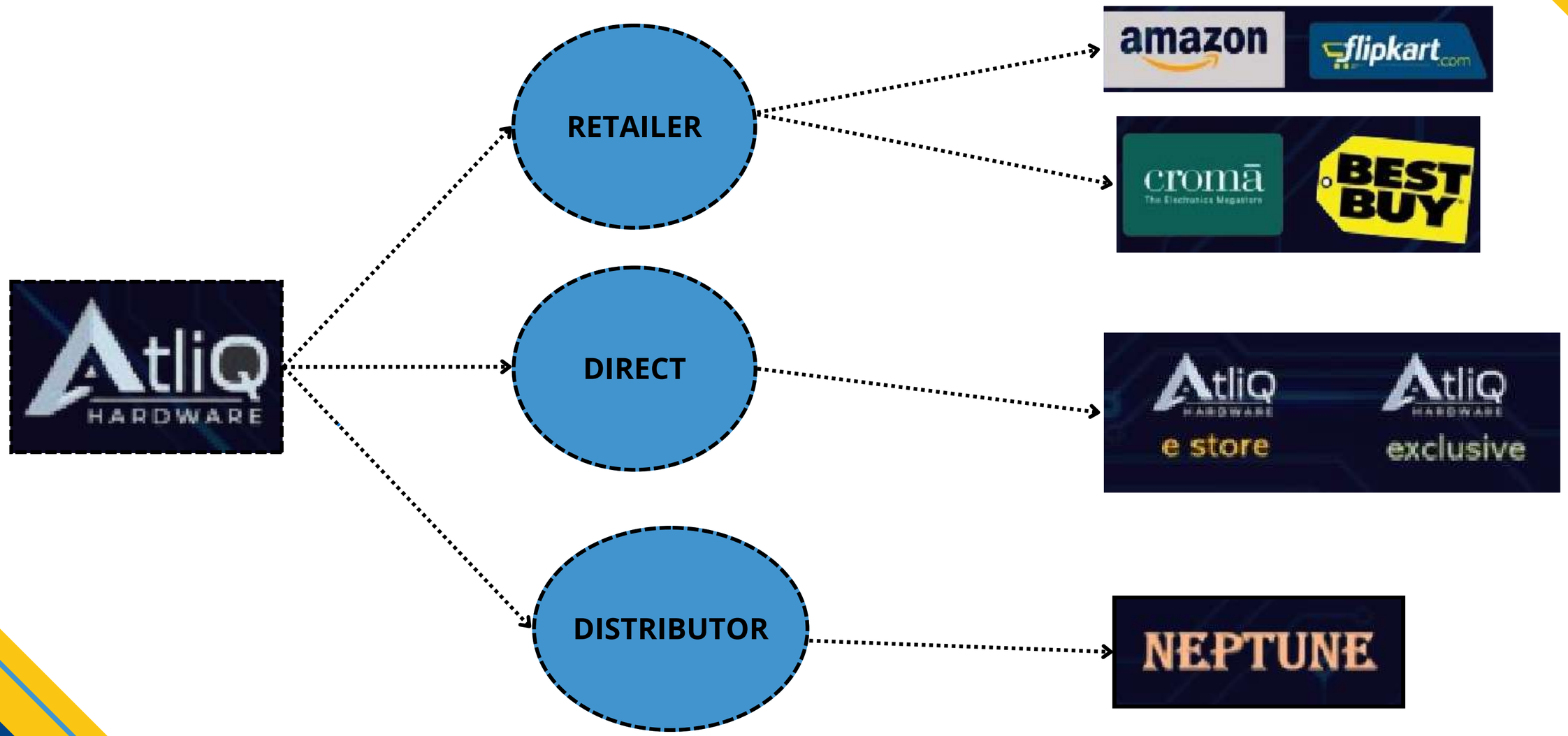
FY 2020

SEPTEMBER 2019 - AUGUST 2020

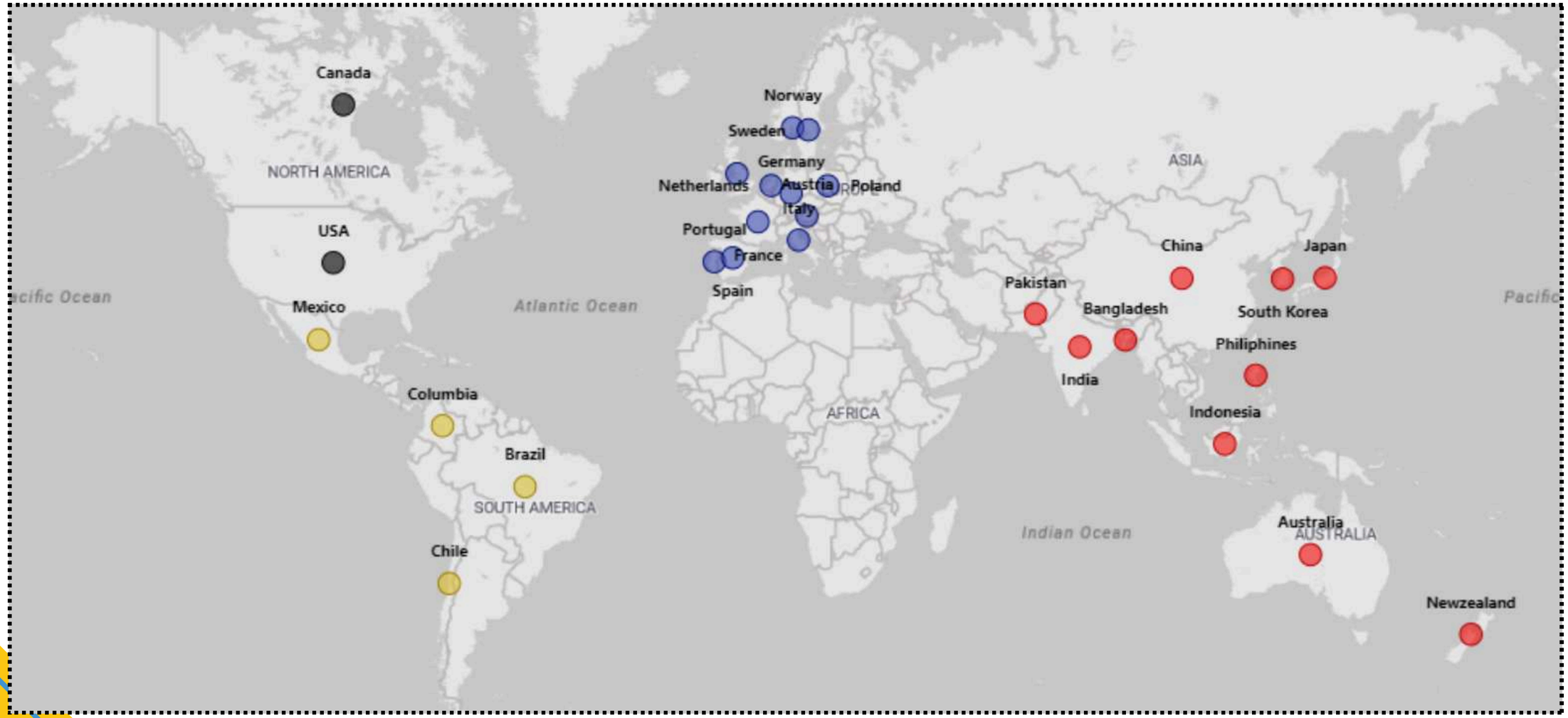
FY 2021

SEPTEMBER 2020 - AUGUST 2021

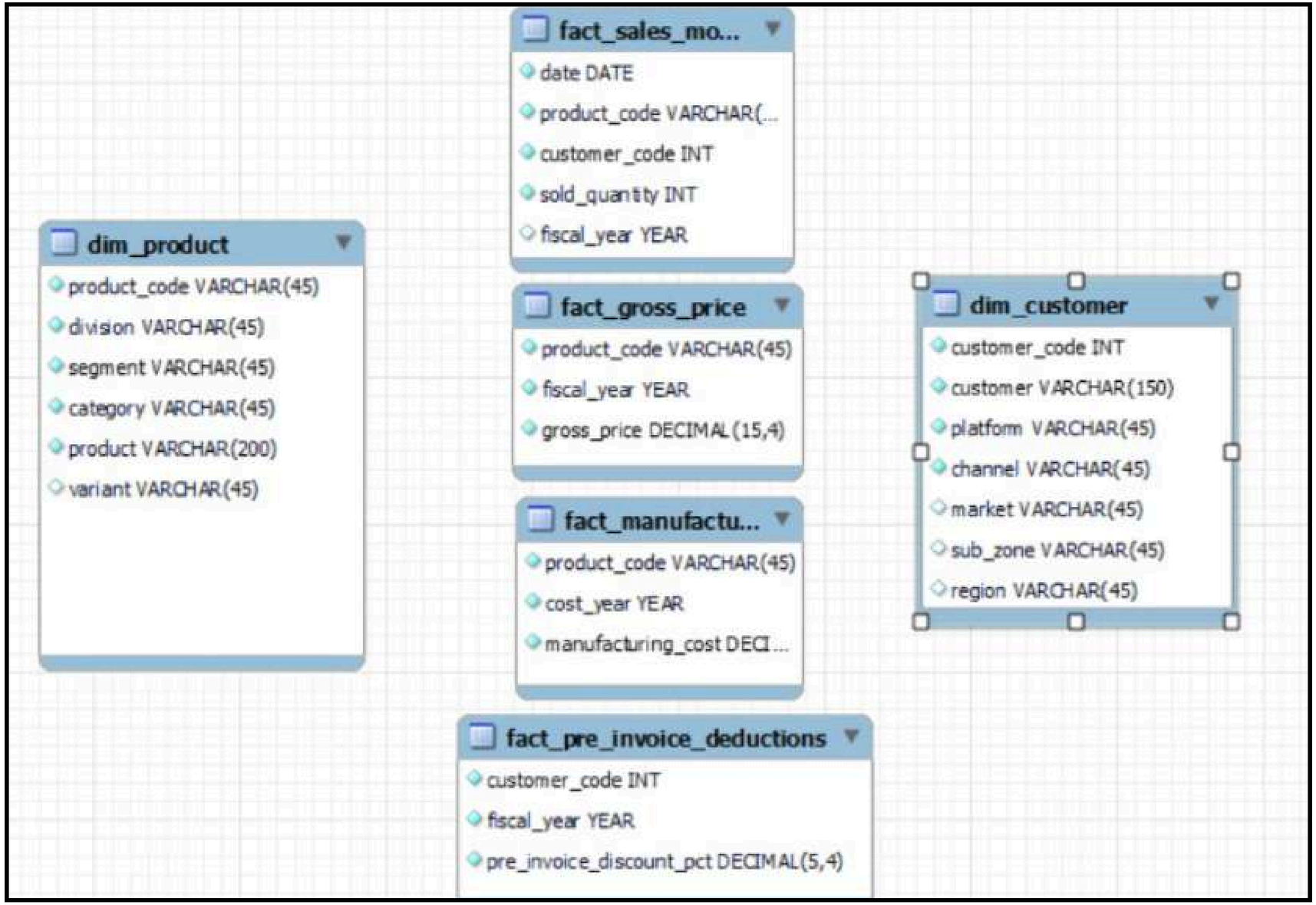
Atliq Hardware employs three distinct sales channels to distribute its hardware products effectively.



ATLIQ MARKET



DATA MODEL


fact_sales_mo...
date DATE
product_code VARCHAR(...
customer_code INT
sold_quantity INT
fiscal_year YEAR
dim_product
product_code VARCHAR(45)
division VARCHAR(45)
segment VARCHAR(45)
category VARCHAR(45)
product VARCHAR(200)
variant VARCHAR(45)
fact_gross_price
product_code VARCHAR(45)
fiscal_year YEAR
gross_price DECIMAL(15,4)
dim_customer
customer_code INT
customer VARCHAR(150)
platform VARCHAR(45)
channel VARCHAR(45)
market VARCHAR(45)
sub_zone VARCHAR(45)
region VARCHAR(45)
fact_manufactu...
product_code VARCHAR(45)
cost_year YEAR
manufacturing_cost DECI...
fact_pre_invoice_deductions
customer_code INT
fiscal_year YEAR
pre_invoice_discount_pct DECIMAL(5,4)

AD HOC REQUESTS

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

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.

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';
```

market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

VISUALIZATION | INSIGHTS

These are the markets within the APAC (Asia-Pacific) region where Atliq Hardware distributes and sells its products.

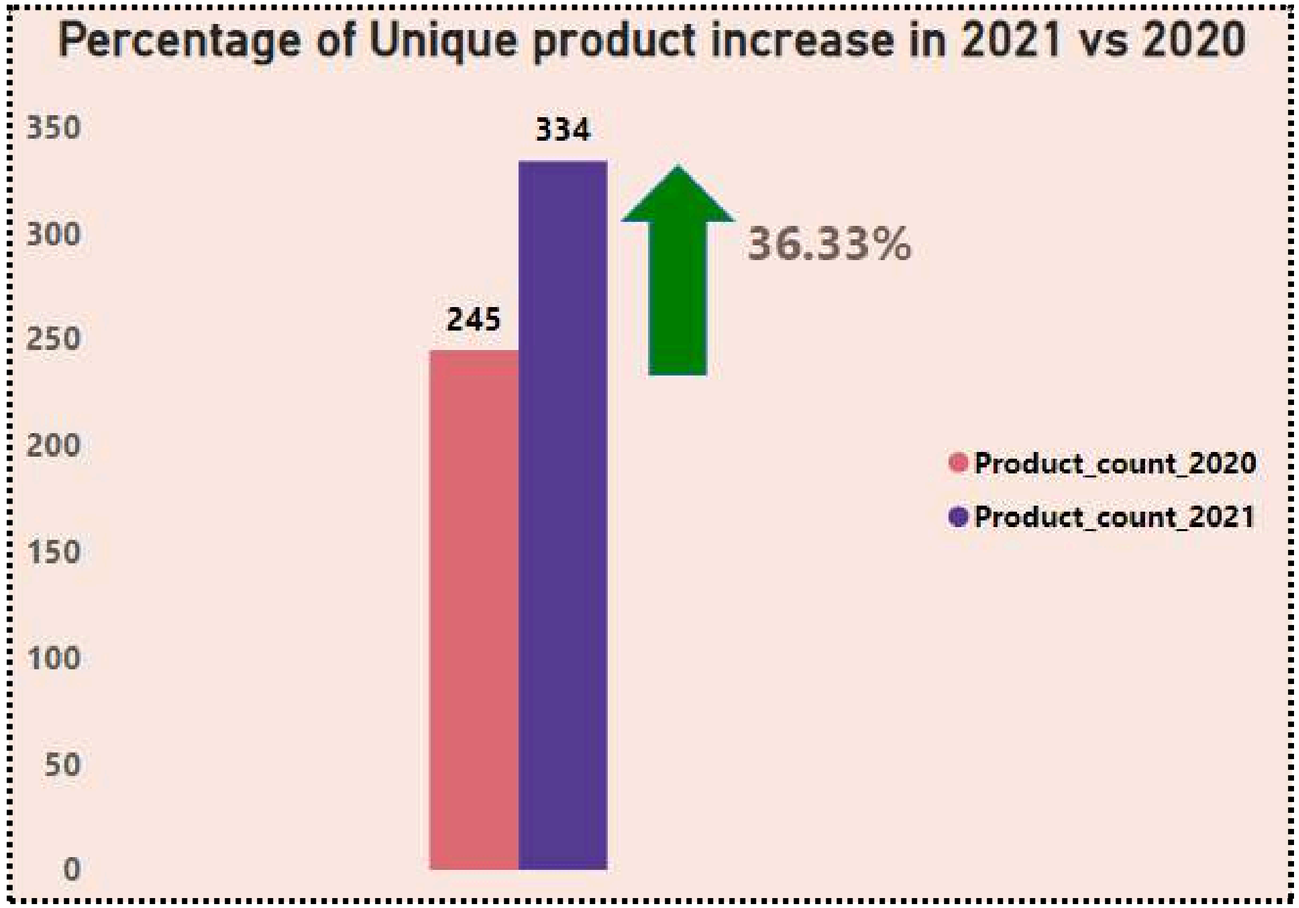
Request - 2

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

```
with cte1 as (select count(distinct product_code) as
unique_products_2020
from fact_sales_monthly
where fiscal_year=2020),
cte2 as (select count(distinct product_code) as
unique_products_2021
from fact_sales_monthly
where fiscal_year=2021)
select c1.unique_products_2020,unique_products_2021,
round((c2.unique_products_2021-c1.unique_products_2020)*100/c1.unique_products_2020,2)
as percentage_chg
from cte1 c1 join cte2 c2;
```

unique_products_2020	unique_products_2021	percentage_chg
245	334	36.33

VISUALIZATION | INSIGHTS



- **The Product increase in 2021 is 36.33%.**
- **Demand and production both increased**

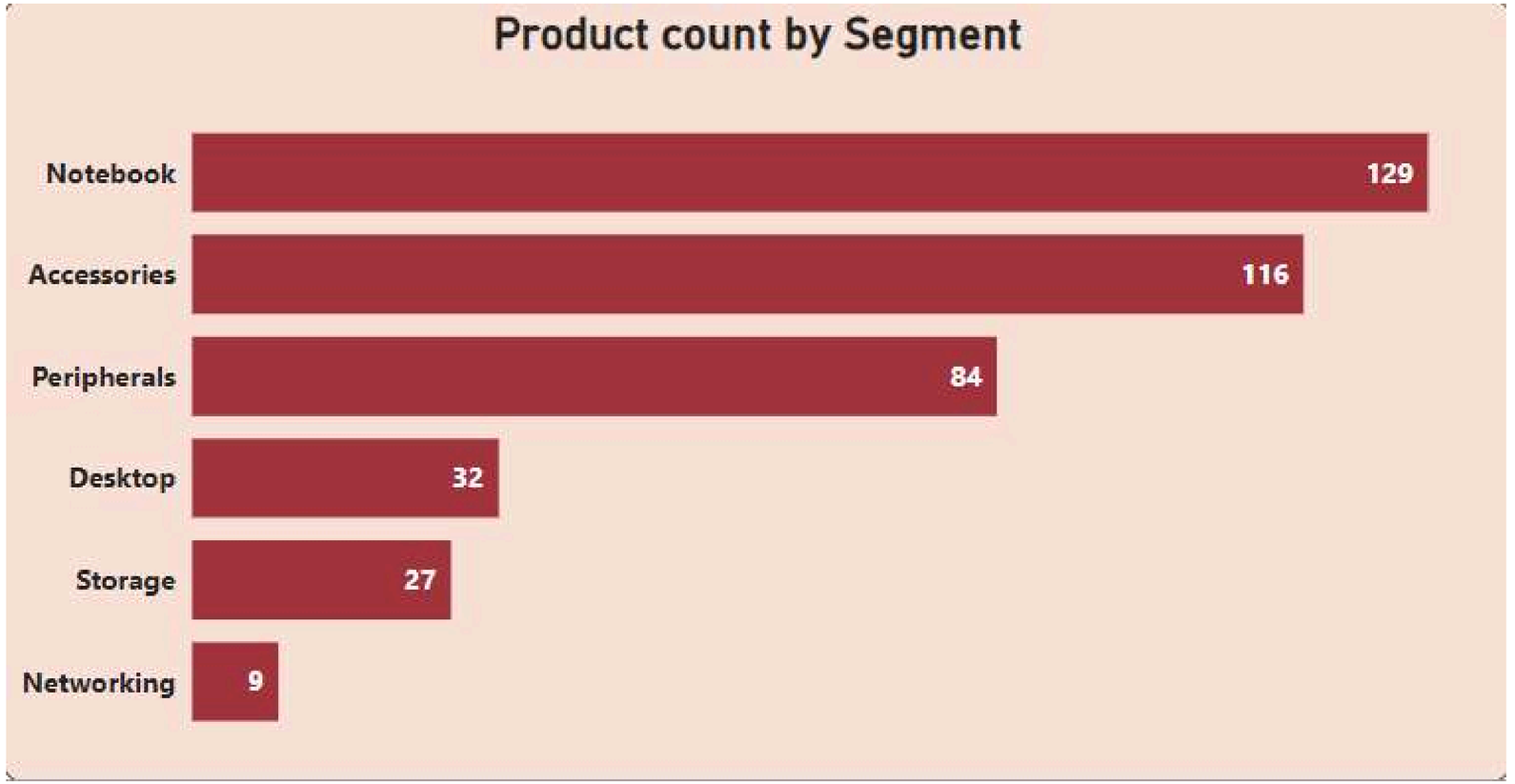
Request - 3

Provide a report with all the unique product counts for each segment and sort them in descending order of product counts. The final output contain 2 fields, segment, product_count

```
SELECT
    segment, COUNT(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

VISUALIZATION | INSIGHTS



- Notebooks, accessories, and peripherals account for 83% of the total production output.
- New products should be launched in the networking segment.

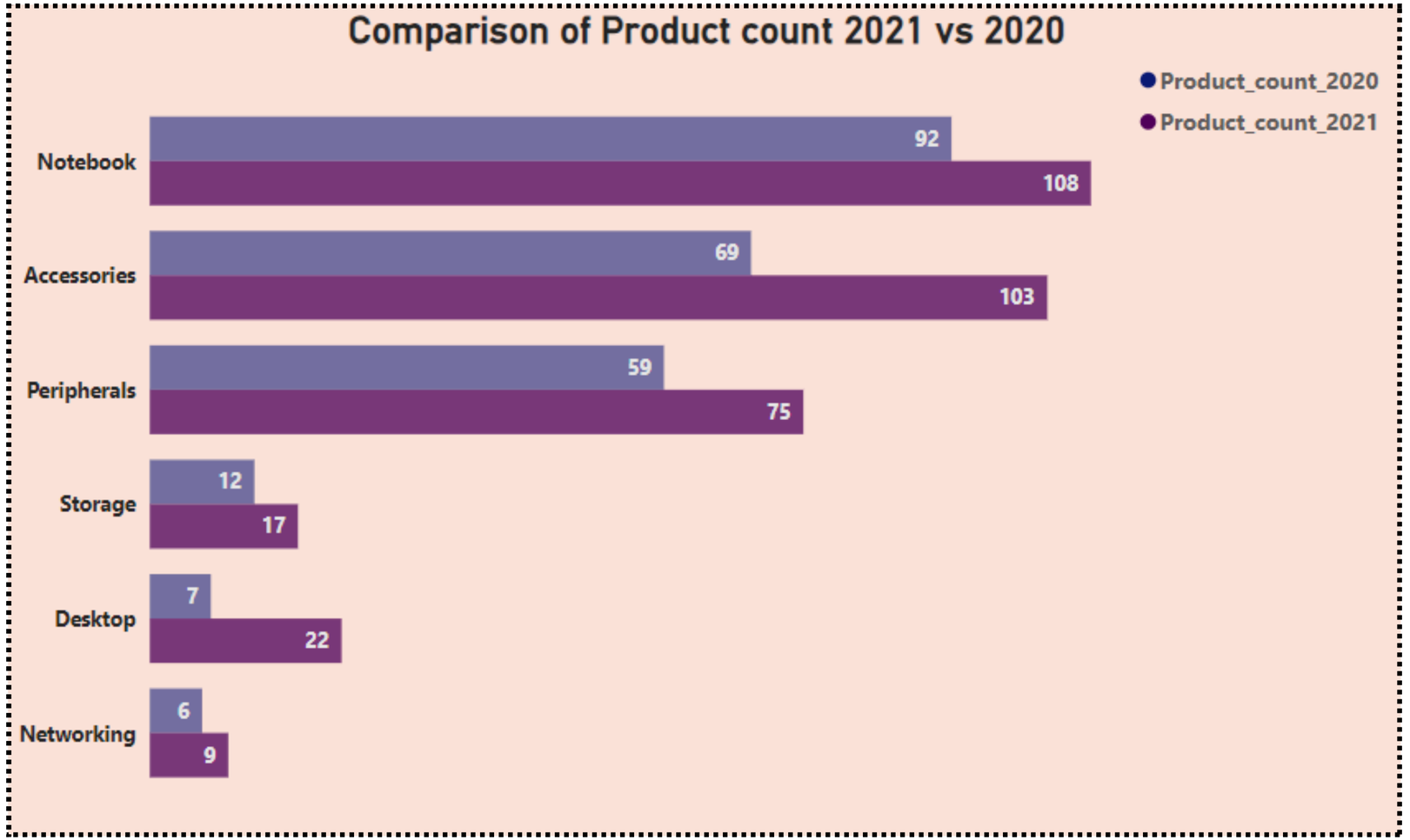
Request - 4

```sql
with cte1 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 s.fiscal_year="2020"
group by p.segment
),
cte2 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 s.fiscal_year="2021"
group by p.segment
)
Select c1.segment,product_count_2020,product_count_2021,
(product_count_2021-product_count_2020) as Difference
From cte1 c1
JOin cte2 c2
on c1.segment=c2.segment
order by  Difference desc;
```

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_2022 difference

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

VISUALIZATION | INSIGHTS



These are the markets within the APAC (Asia-Pacific) region where Atliq Hardware distributes and sells its products.

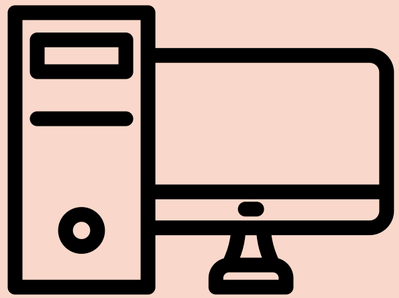
Request - 5

Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields, product_code, product, manufacturing_cost

```
SELECT
    m.product_code, p.product, m.manufacturing_cost
FROM
    fact_manufacturing_cost m
        LEFT JOIN
    dim_product p USING (product_code)
WHERE
    manufacturing_cost = (SELECT
            MIN(manufacturing_cost)
        FROM
            fact_manufacturing_cost)
        OR 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

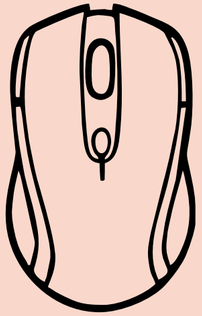
VISUALIZATION | INSIGHTS



240.54

Highest Manufacturing Cost

A6120110206AQ
HOME Allin1 Gen 2
Personal Desktop



0.89

Lowest Manufacturing Cost

A2118150101AQ
Master wired x1 M s
Mouse

- Mouse : AQ Master wired x1 Ms Mouse has the lowest manufacturing cost.
- Personal Desktop : AQ HOME Allin1 Gen 2 has the highest manufacturing cost.

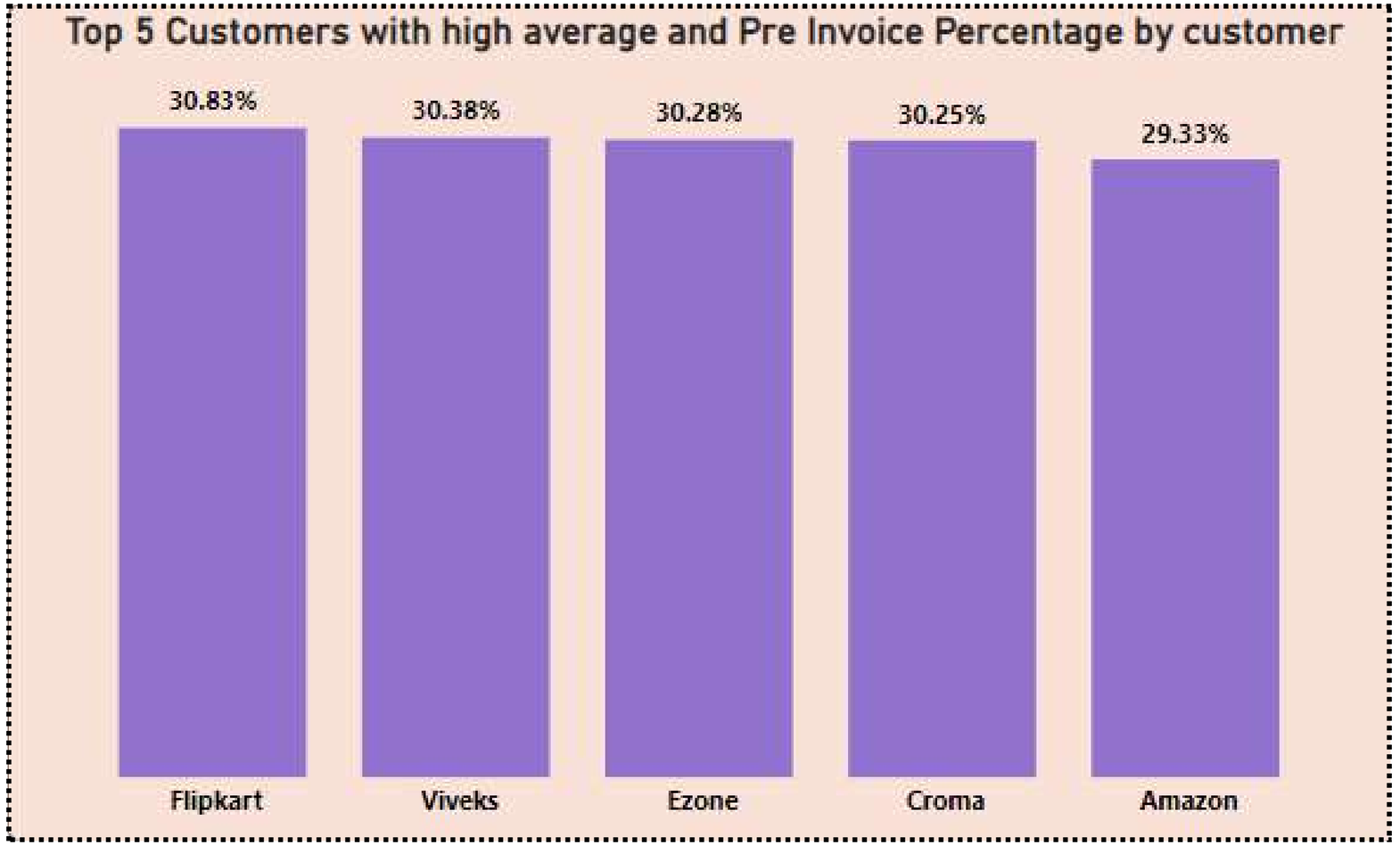
Request - 6

Generate a report which contains the top 5 customers who received and 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

```sql
SELECT
    d.customer_code,
    c.customer,
    ROUND(AVG(pre_invoice_discount_pct * 100), 2) AS average_discount_p
FROM
    fact_pre_invoice_deductions d
        JOIN
    dim_customer c USING (customer_code)
WHERE
    fiscal_year = '2021'
        AND market = 'India'
GROUP BY c.customer , d.customer_code
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

VISUALIZATION | INSIGHTS



In 2021, the average pre-invoice discount offered by the top five customers was comparable, with Flipkart providing the highest average discount at 30.83%

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

```sql
SELECT
    MONTHNAME(date) AS Month,
    YEAR(date) AS Year,
    ROUND(SUM(p.gross_price * s.sold_quantity), 2) AS Gross_Sales_Amount
FROM
    fact_gross_price p
        JOIN
    fact_sales_monthly s USING (product_code)
        JOIN
    dim_customer c USING (customer_code)
WHERE
    c.customer = 'Atliq Exclusive'
GROUP BY month , year
ORDER BY year;
```

Month	Year	Gross_Sales_Amount
September	2019	9092670.34
October	2019	10378637.60
November	2019	15231894.97
December	2019	9755795.06
January	2020	9584951.94
February	2020	8083995.55
March	2020	766976.45
April	2020	800071.95
May	2020	1586964.48
June	2020	3429736.57
July	2020	5151815.40
August	2020	5638281.83
September	2020	19530271.30
October	2020	21016218.21
November	2020	32247289.79
December	2020	20409063.18
January	2021	19570701.71

VISUALIZATION | INSIGHTS

- The lowest Gross sales total for both fiscal years is in March(2020).
- The highest Gross sales total for both fiscal years is in November (2020). 73.8% of the total Gross sales figure is in FY2021

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

```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,
    SUM(sold_quantity) AS Total_sold_quantity_mln
FROM
    fact_sales_monthly
WHERE
    fiscal_year = 2020
GROUP BY Quarters;
```

Quarters	Total_sold_quantity_mln
Q1	7005619
Q2	6649642
Q3	2075087
Q4	5042541

VISUALIZATION | INSIGHTS

- In FY 2020, Quarter 1 had the highest total units sold, while Quarter 3 had the lowest. (due to covid-lockdown)
- Among all months, December recorded the maximum sold quantity, whereas March had the minimum.
- Additionally, Quarter 1 contributed about 34% of the total units sold for the year.

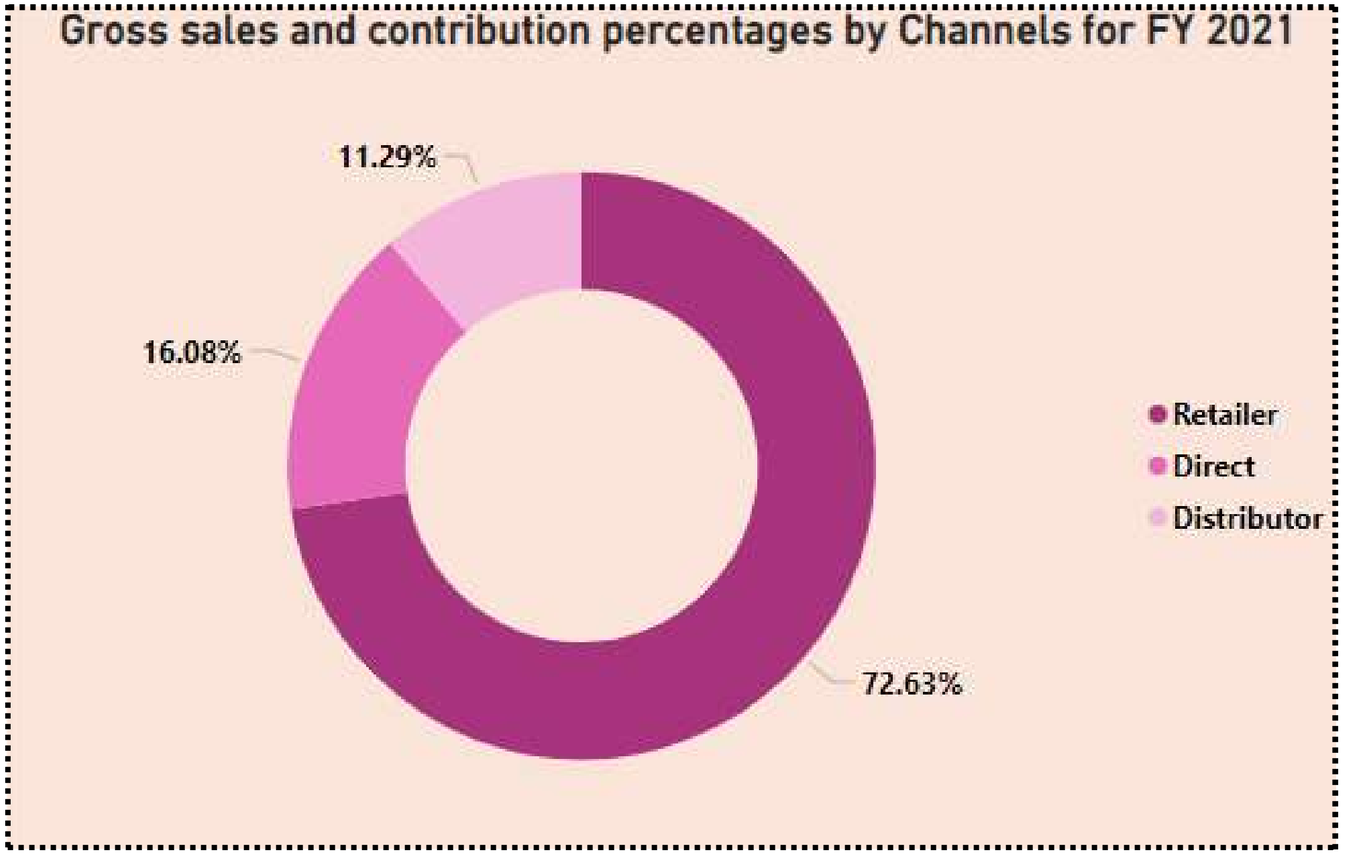
Request - 9

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

```
WITH cte1 AS (
    SELECT
        c.channel,
        ROUND(SUM((g.gross_price * s.sold_quantity)) / 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)
    GROUP BY
        c.channel
)
SELECT
    channel, Concat(Gross_Sales_Mln,'M') as Gross_Sales_Mln,
Concat(ROUND((Gross_Sales_Mln / SUM(Gross_Sales_Mln) OVER ()) * 100, 2),'%')
AS Percentage_Contribution
FROM
    cte1
Order by Gross_Sales_Mln;
```

channel	Gross_Sales_Mln	Percentage_Contribution
Retailer	1598.16M	72.62%
Distributor	248.47M	11.29%
Direct	353.96M	16.08%

VISUALIZATION | INSIGHTS



The Retailer channel was the most significant contributor to the company's sales, accounting for 72.63% of the total. In contrast, the Distributor channel contributed the least, with a share of just 11.29%.

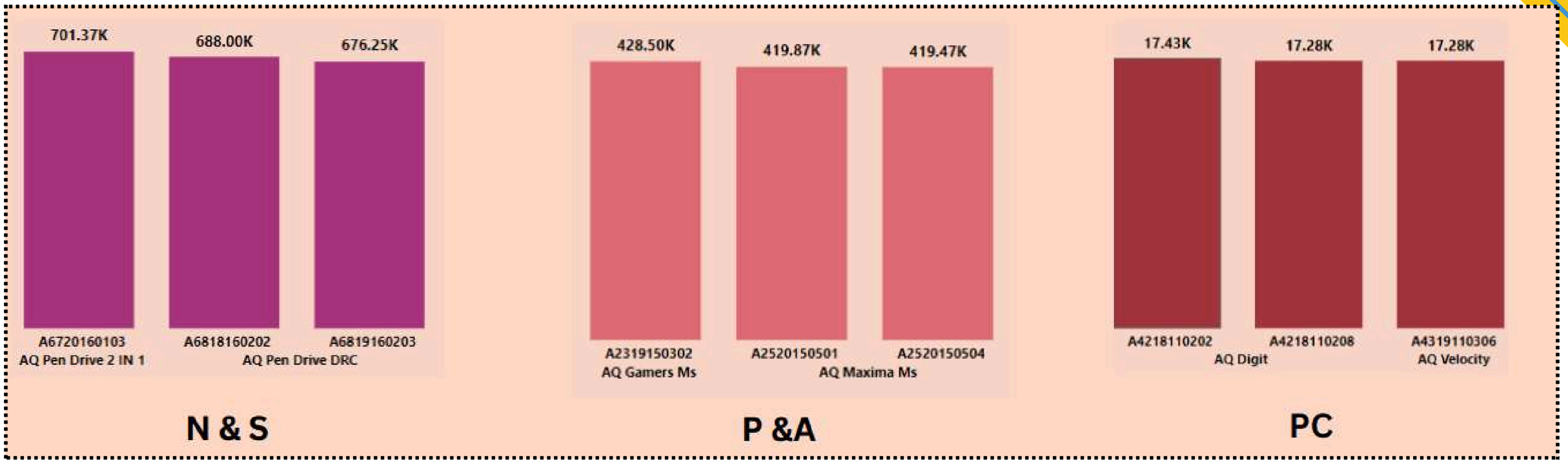
Request - 10

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

```
with cte1 as
(
Select p.division,s.product_code,p.product,
sum(sold_quantity) as Total_sold_quantity
From fact_sales_monthly s
join dim_product p
using(product_code)
where s.fiscal_year="2021"
group by p.division,s.product_code,p.product
),
cte2 as(
Select *,
rank() over(partition by division order by Total_sold_quantity desc)
 AS Rank_Order
From cte1)
Select *
From cte2
where Rank_Order<=3;
```

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

VISUALIZATION | INSIGHTS



Each division has a product with different variants that is featured twice in the top three products list for that division.

THANK YOU