Consumer Goods Ad_Hoc Insights

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Introduction :

Atliq Hardwares (imaginary company) is one of the leading computer hardware producers in India and well expanded in other countries too.

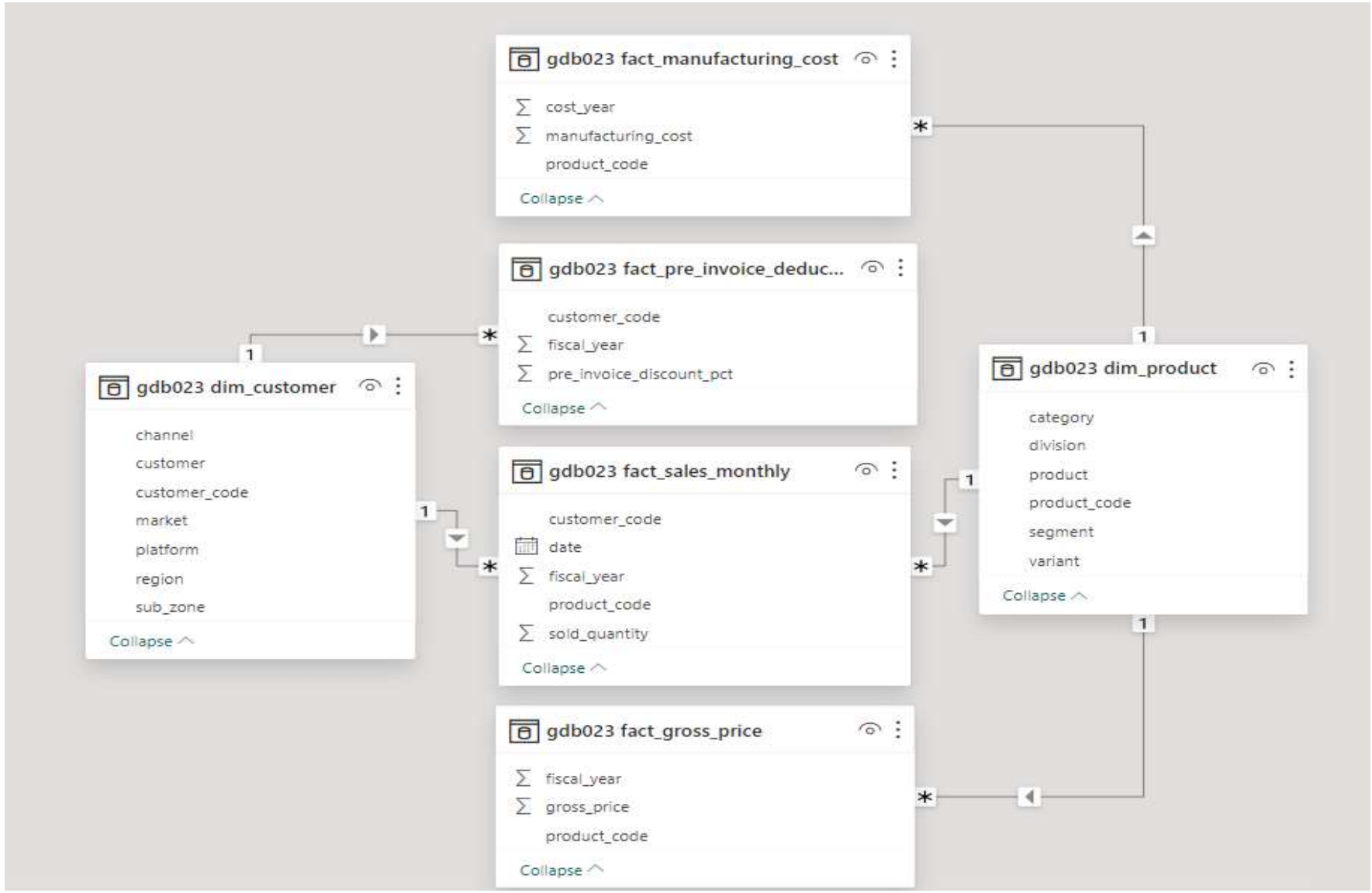
Objective :

The management noticed that they do not get enough insights to make quick and smart data informed decisions.

The company has identified 10 specific Ad Hoc request for which they are seeking valuable insights.

In this project , I have solved the 10 Ad Hoc requests and presented my insights.

Data Model And Tools :



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

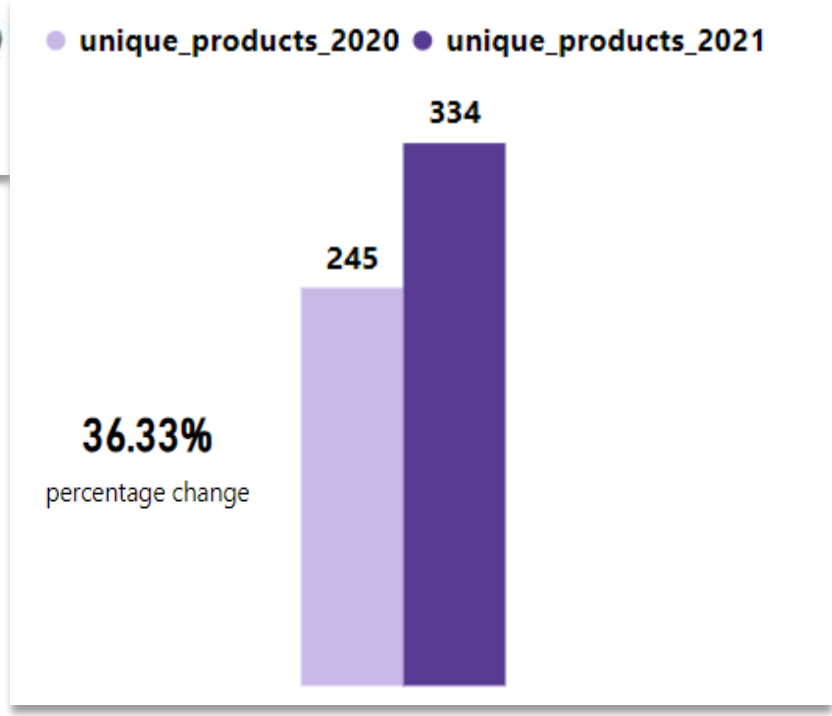
```
Select
      Distinct market
From dim_customer
where customer = "Atliq Exclusive" And region = "APAC";
```

market
India
Indonesia
Japan
philippines
South Korea
Australia
New Zealand
Bangladesh

Atliq Exclusive operates its business in eight different markets in APAC region

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

```sql
With CTE1 AS
(select
       Count(distinct Case
             when fiscal_year = 2020 Then product_code End) AS unique_products_2020,
       Count(distinct Case
             when fiscal_year = 2021 Then Product_code End) As unique_products_2021
From fact_sales_monthly)
Select
      unique_products_2020,
      unique_products_2021,
      Concat(Round((unique_products_2021-unique_products_2020)/unique_products_2020*100,2),"%")
      AS percentage_chg
From CTE1;
```

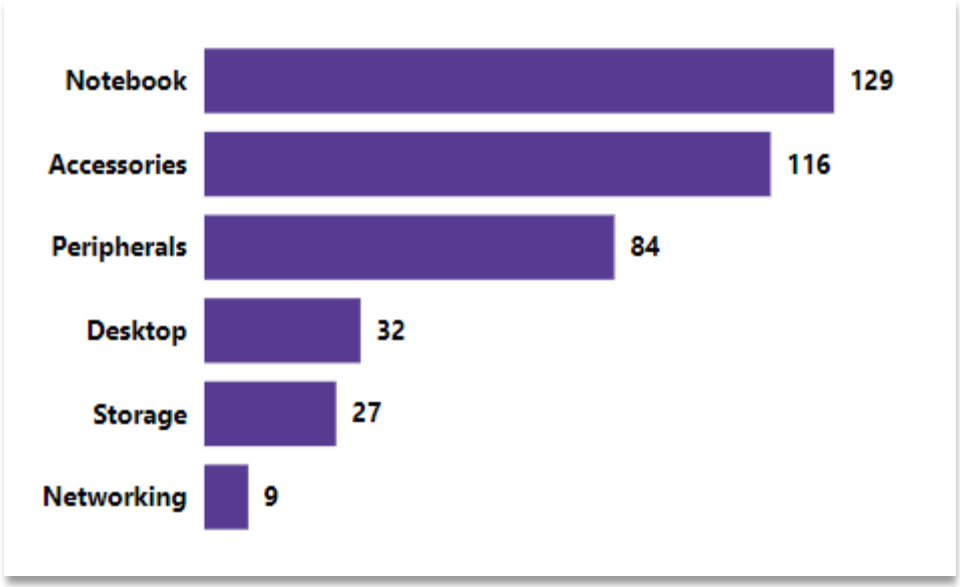


There was a significant increase in unique products, with 334 in 2021 compared to 245 in 2020.
The percentage change represents a growth of 36.33% in unique products from one year to the next

3) Provide a report with all the unique product counts for each segment and sort them in descending order of product counts.

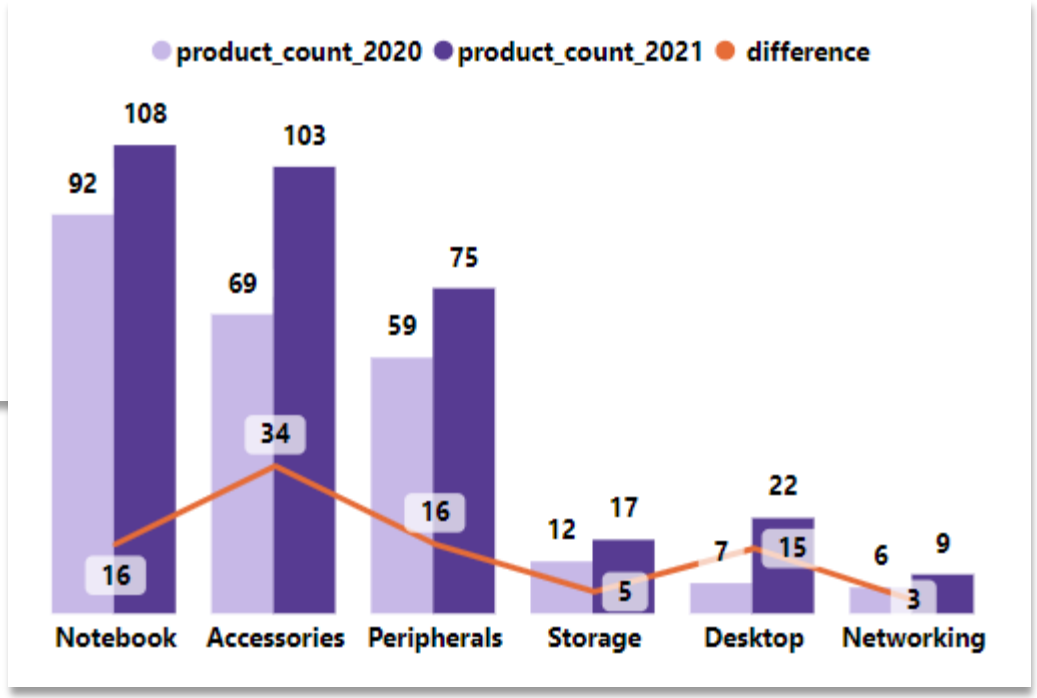
```
Select
      segment,
      count(distinct product_code) AS product_counts
From dim_product
Group by segment
Order by product_counts DESC;
```

The "Notebook" segment has the highest product count, with 129 products.
The "Networking" segment has the smallest product count with only 9 products.



4) Follow-up: Which segment had the most increase in unique products in2021 vs 2020?

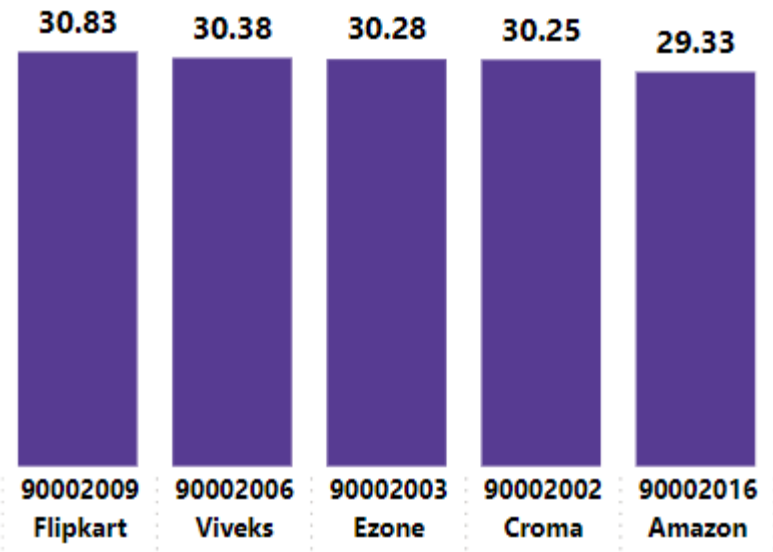
```sql
With CTE1 AS
(Select
      p.segment,
      count(distinct case
            When s.fiscal_year = 2020 Then p.product_code End) AS product_count_2020,
      count(distinct case
            when s.fiscal_year = 2021 Then p.product_code End) AS product_count_2021
From dim_product p Join fact_sales_monthly s Using (product_code)
Group by p.segment)
Select
       segment,
       product_count_2020,
       product_count_2021,
       (product_count_2021 - product_count_2020) AS difference
From CTE1
Order by difference DESC;
```



The "Accessories" segment saw a significant increase in product counts, with 34 more products in 2021 compared to 2020.

5) 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.

```
Select
      i.customer_code, c.customer,
      round(avg(i.pre_invoice_discount_pct)*100,2) AS Avg_discount_percent
From dim_customer c Join fact_pre_invoice_deductions i  Using (customer_code)
Where fiscal_year = 2021 and c.market = "India"
group by i.customer_code, c.customer
Order by Avg_discount_percent DESC
Limit 5;
```



During FY2021, Flipkart made the highest customer contribution with an impressive 30.83%, whereas Amazon's customer contribution was at its lowest, with a figure of 29.33%

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

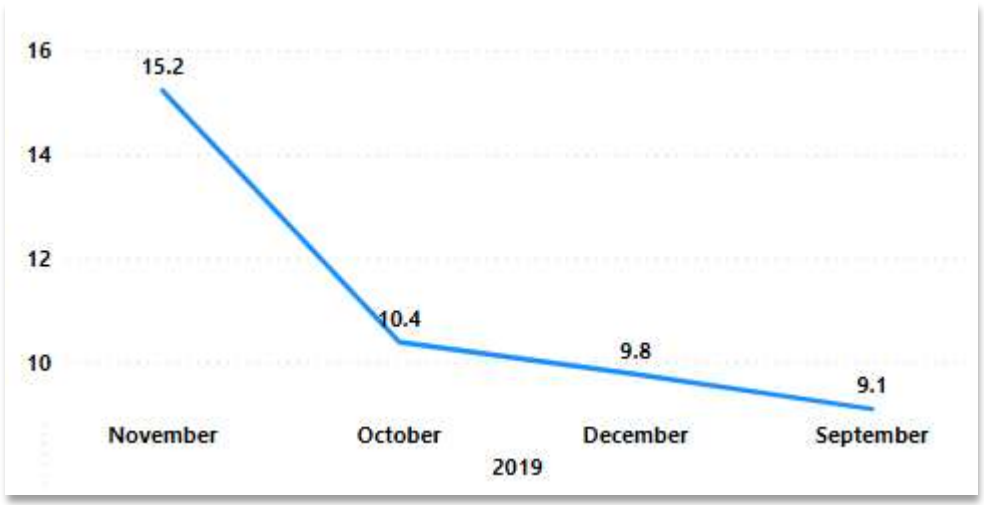
6) Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month. This analysis helps to get an idea of low and high-performing months and take strategic decisions.

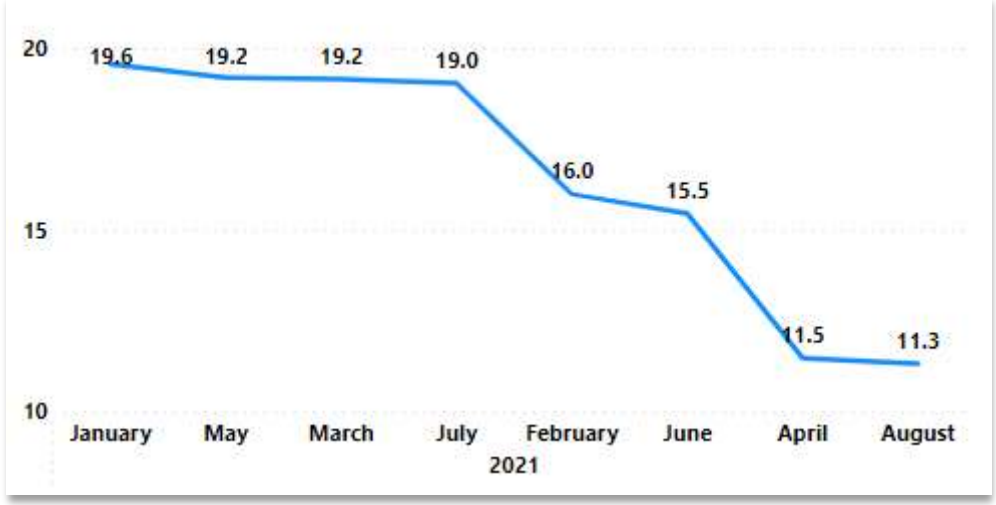
```
Select
      monthname(s.date) AS `Month`,
      Year(s.date) AS `Year`,
      Round(Sum(s.sold_quantity*g.gross_price)/1000000,2) AS Gross_sales_Amount_Million
From
     fact_gross_price g
Join
     fact_sales_monthly s ON  g.product_code  = s.product_code
Join
      dim_customer c ON s.customer_code = c.customer_code
Where customer = "Atliq Exclusive"
Group by `Month`,`Year`
Order by `Year` ASC;
```

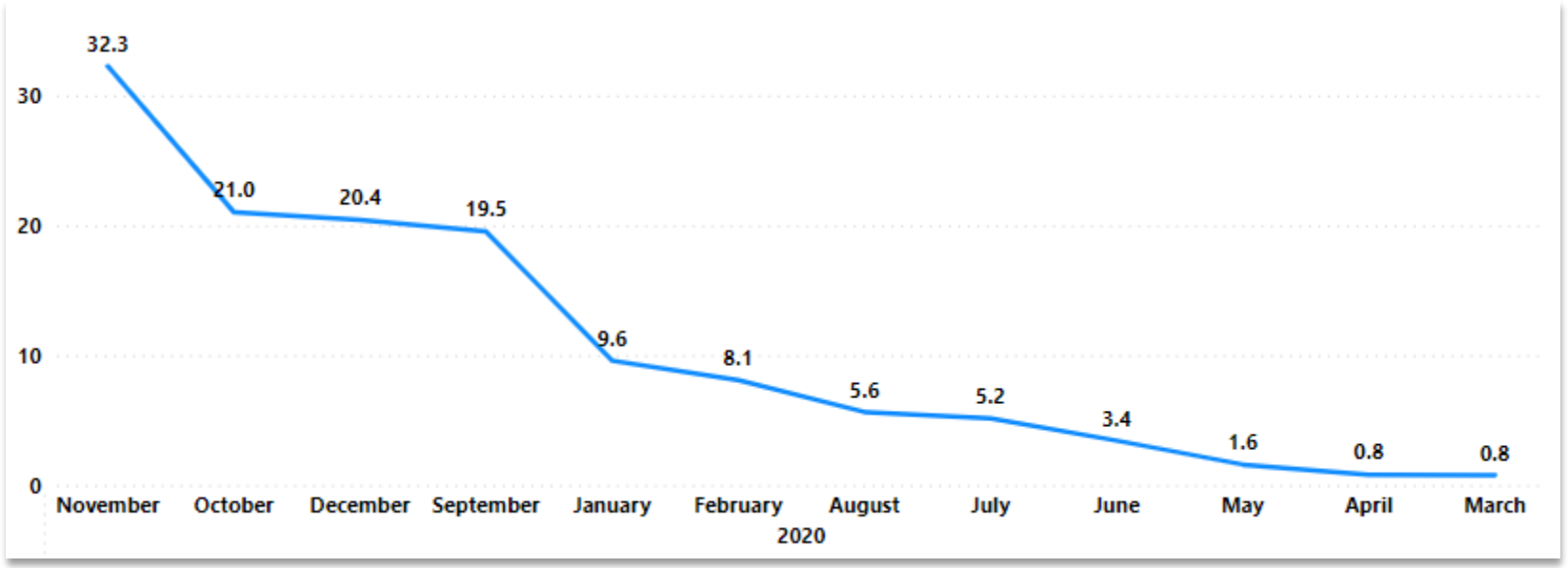
Month	Year	Gross_sales_Amount_Million
September	2019	9.09
October	2019	10.38
November	2019	15.23
December	2019	9.76
January	2020	9.58
February	2020	8.08
March	2020	0.77
April	2020	0.80
May	2020	1.59
June	2020	3.43
July	2020	5.15
August	2020	5.64
September	2020	19.53
October	2020	21.02
November	2020	32.25
December	2020	20.41
January	2021	19.57
February	2021	15.99
March	2021	19.15
April	2021	11.48
May	2021	19.20
June	2021	15.46
July	2021	19.04
August	2021	11.32

In 2019,highest sales in November and lowest sales in September.
The highest sales in November 2020, whereas march 2020 recorded the lowest sales.

In 2021, highest sales in January and lowest in august month.


16
14
12
10
15.2
10.4
9.8
9.1
November
October
December
September
2019

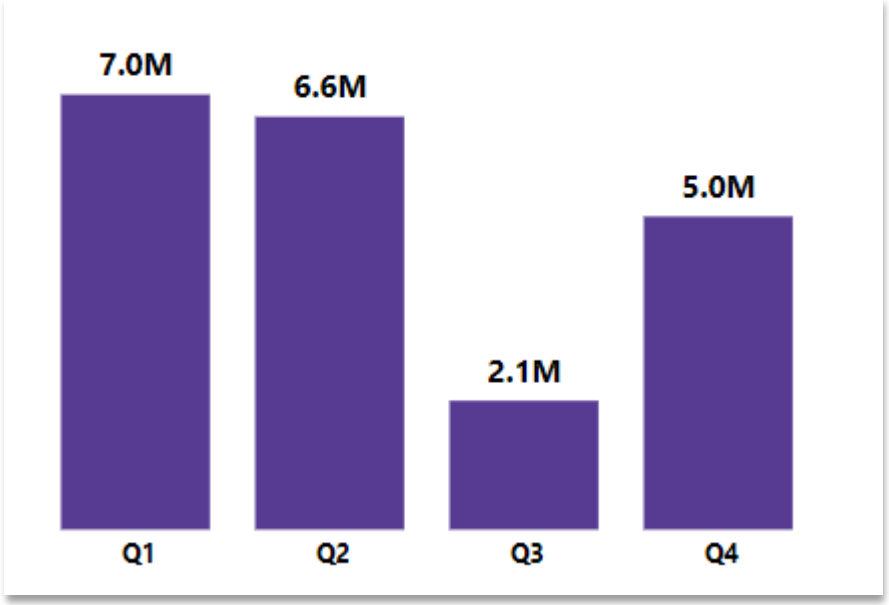

20
15
10
19.6
19.2
19.2
19.0
16.0
15.5
11.5
11.3
January
May
March
July
February
June
April
August
2021


30
20
10
0
32.3
21.0
20.4
19.5
9.6
8.1
5.6
5.2
3.4
1.6
0.8
0.8
November
October
December
September
January
February
August
July
June
May
April
March
2020

7) In which quarter of 2020, got the maximum total_sold_quantity?

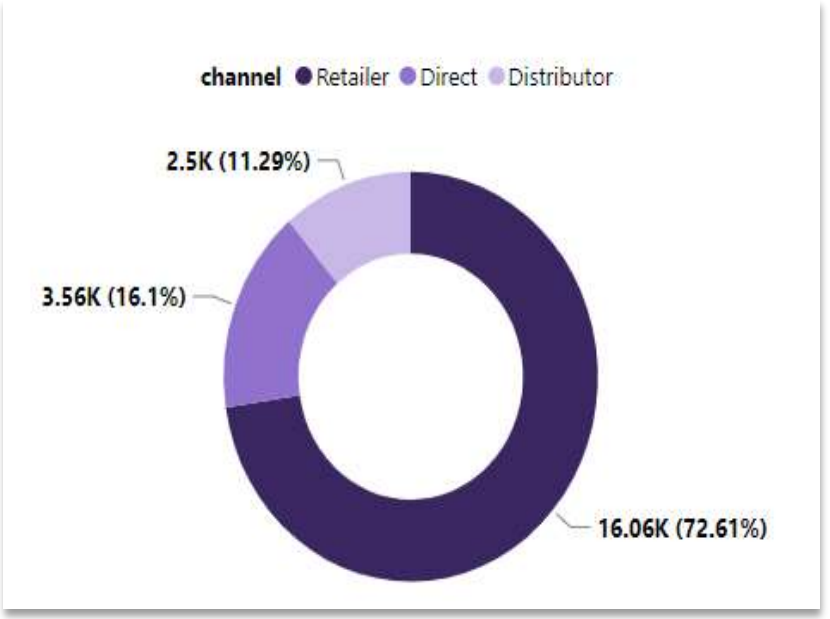
```sql
Select
      Case
      When Month(date) IN (9,10,11)  Then "Q1"
      When Month(date) IN (12,1,2) Then "Q2"
      When Month(date) IN (3,4,5) Then "Q3"
      Else "Q4"
      End AS `Quarter`,
      Sum(sold_quantity) AS total_sold_quantity
From fact_sales_monthly
Where fiscal_year = 2020
Group by `Quarter`
Order by total_sold_quantity DESC;
```

Total sold quantity was maximum in quarter 1 and was minimum in quarter 3



8) Which channel helped to bring more gross sales in the fiscal year 2021and the percentage of contribution?

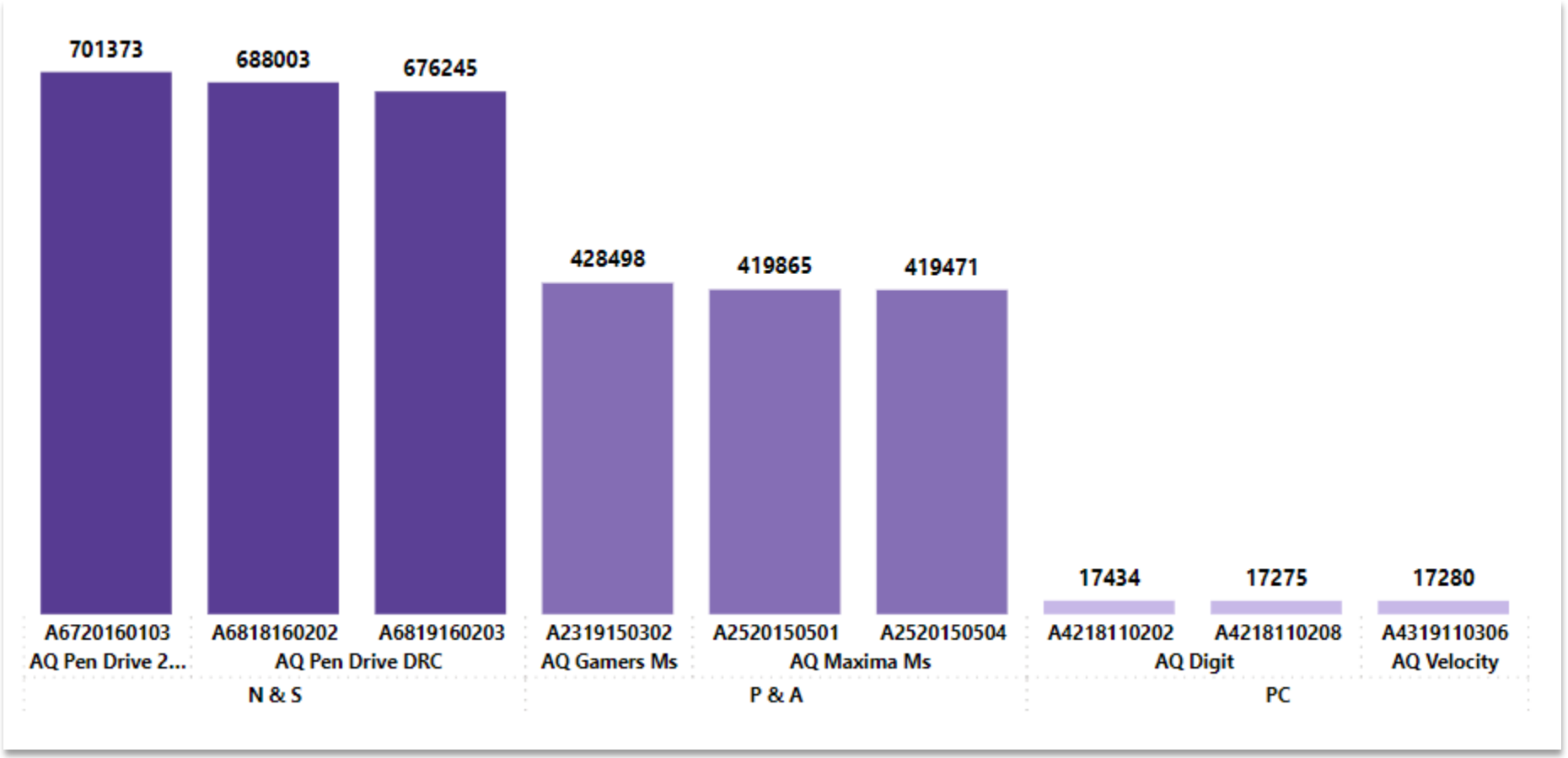
```sql
With CTE1 AS
(Select
      channel,
      Round(sum(s.sold_quantity*g.gross_price)/100000,2) AS Gross_Sales_Million
From
     dim_customer c
Join
     fact_sales_monthly s ON c.customer_code = s.customer_code
Join
     fact_gross_price g  ON s.product_code = g.product_code
Where g.fiscal_year = 2021
Group by channel)
Select
       channel,
       Gross_Sales_Million,
       concat(Round((Gross_Sales_Million/(select sum(Gross_Sales_Million) From CTE1)*100),2),"%")
       AS Percentage
From
     CTE1
Order by Percentage DESC;
```



Retailer channel helped to bring more gross sales in fiscal year 2021 with 72.61% of contribution.

9) Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021?

```
With CTE1 AS
(Select
      Division,
      product_code,
      product,
      sum(sold_quantity) AS Total_sold_Quantity,
      Dense_Rank() Over (partition by Division Order by sum(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 Division, product_code, product)
Select *
From CTE1
where Rank_Order<=3;
```



Top 3 Products in N & S division

Top 3 Products in P & A division

Top 3 Products in PC division

10) Get the products that have the highest and lowest manufacturing costs.

```sql
select m.product_code, p.product, m.manufacturing_cost
from dim_product p
join fact_manufacturing_cost m
on p.product_code=m.product_code
where manufacturing_cost
in(
 select max(manufacturing_cost) from fact_manufacturing_cost
 union
 select min(manufacturing_cost) from fact_manufacturing_cost
 )
order by manufacturing_cost desc;
```

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

AQ HOME Allin1 Gen 2" has a relatively higher manufacturing cost of 240.5364.
In contrast, "AQ Master wired x1 Ms" has a significantly lower manufacturing cost of 0.892.

Thank You