



SQL Project

CONSUMER GOODS

AD-HOC INSIGHTS

by: Roshith Pulikkal



www.linkedin.com/in/roshith-pulikkal-9a173a332



[GitHub - RoshithPulikkal/Sales-Finance-Analytics](https://github.com/RoshithPulikkal/Sales-Finance-Analytics)



OVERVIEW

01

Problem Statement

02

AtliQ's Business

03

Input Dataset

04

Ad-hoc requests

05

Queries, results,
visualization & Insights

Problem Statement:

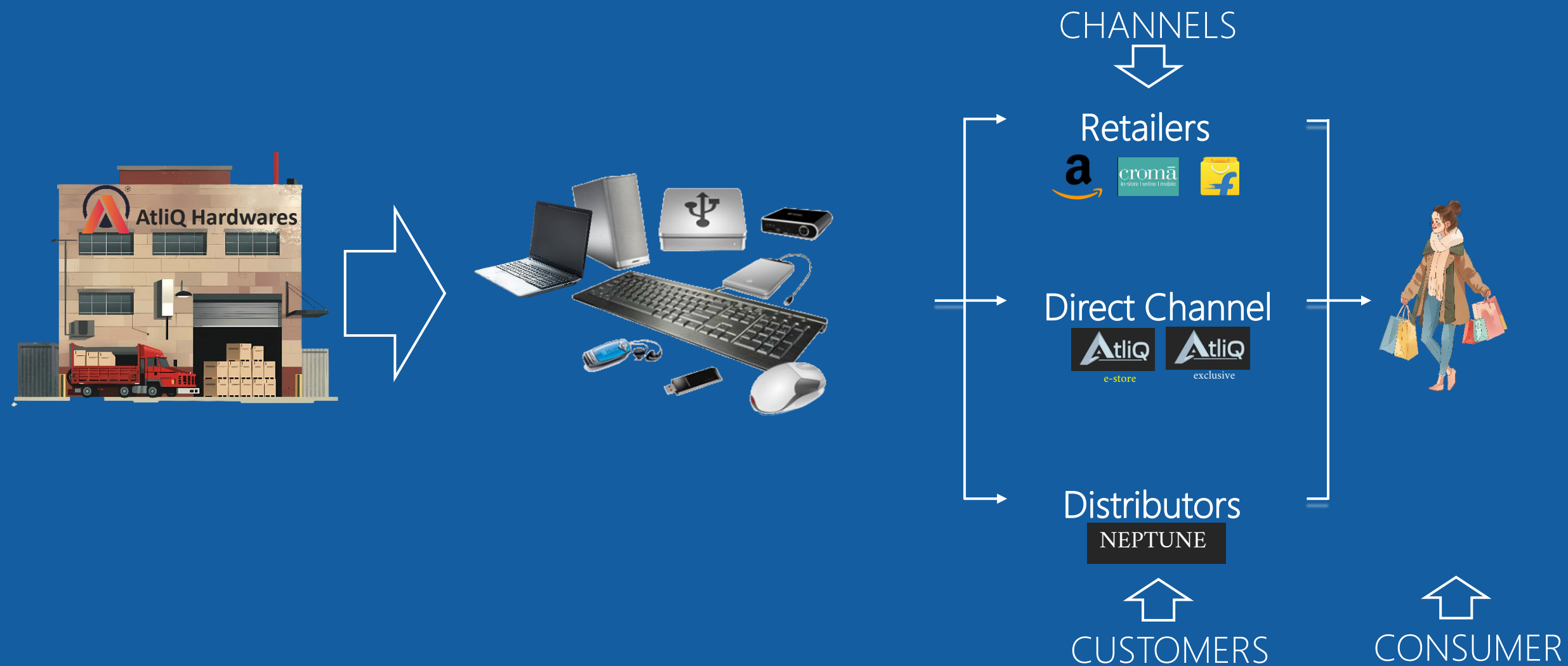
Empowering Data-Driven Decisions at AtliQ Hardwares

Atliq Hardwares (an Imaginary Company), a leading Indian computer hardware producer, lacks the necessary insights for swift, data-informed decision-making.

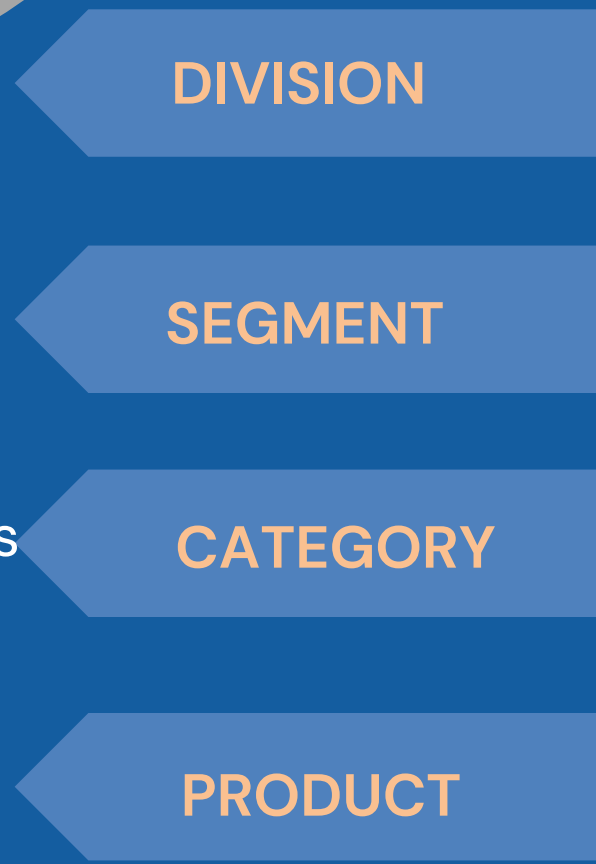
Management currently struggles with 10 urgent ad-hoc data requests, indicating a critical need for better data utilization.

This project aims to address this by executing SQL queries to fulfill these requests, then converting the results into clear visualizations for top-level management.

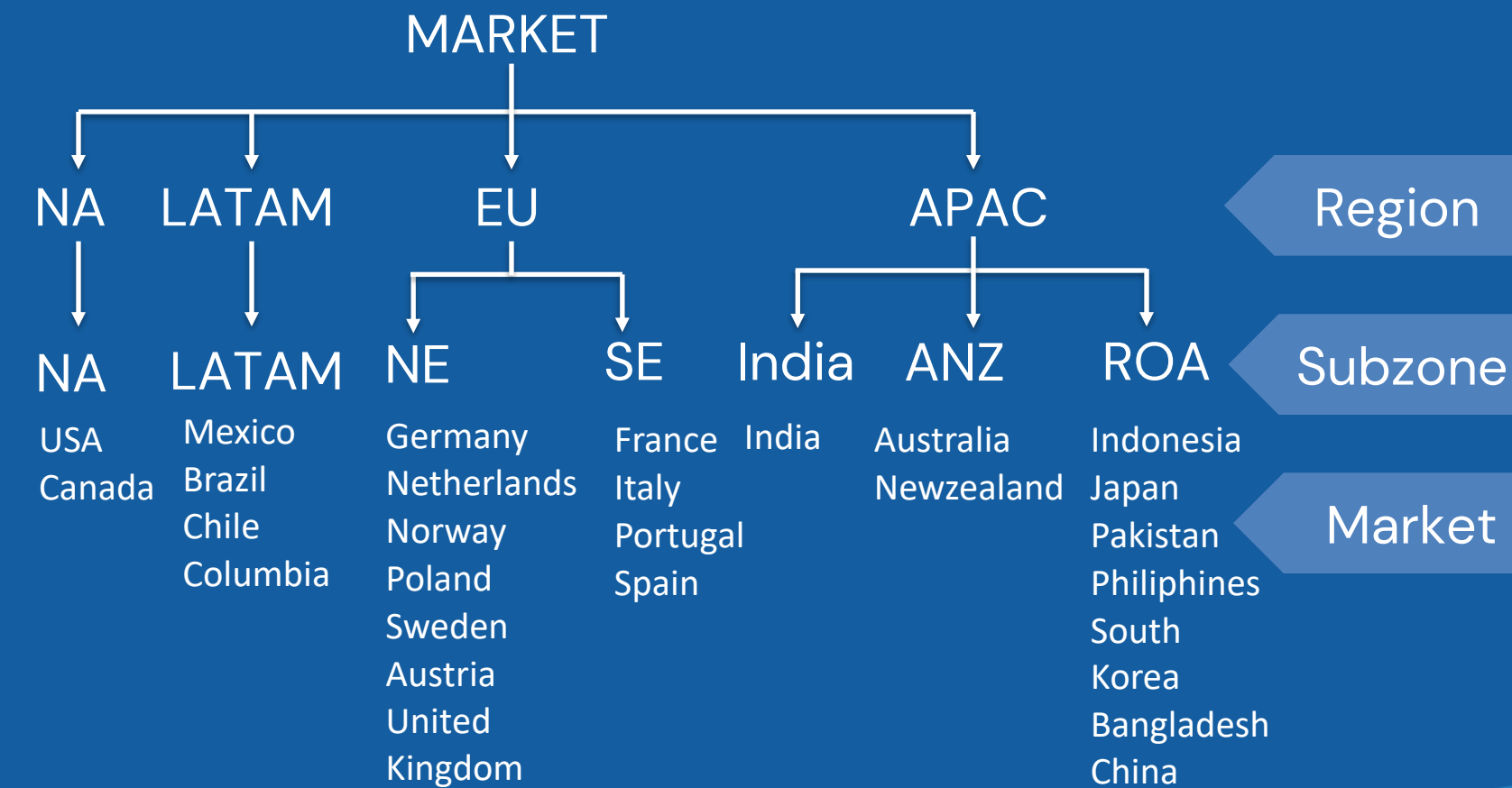
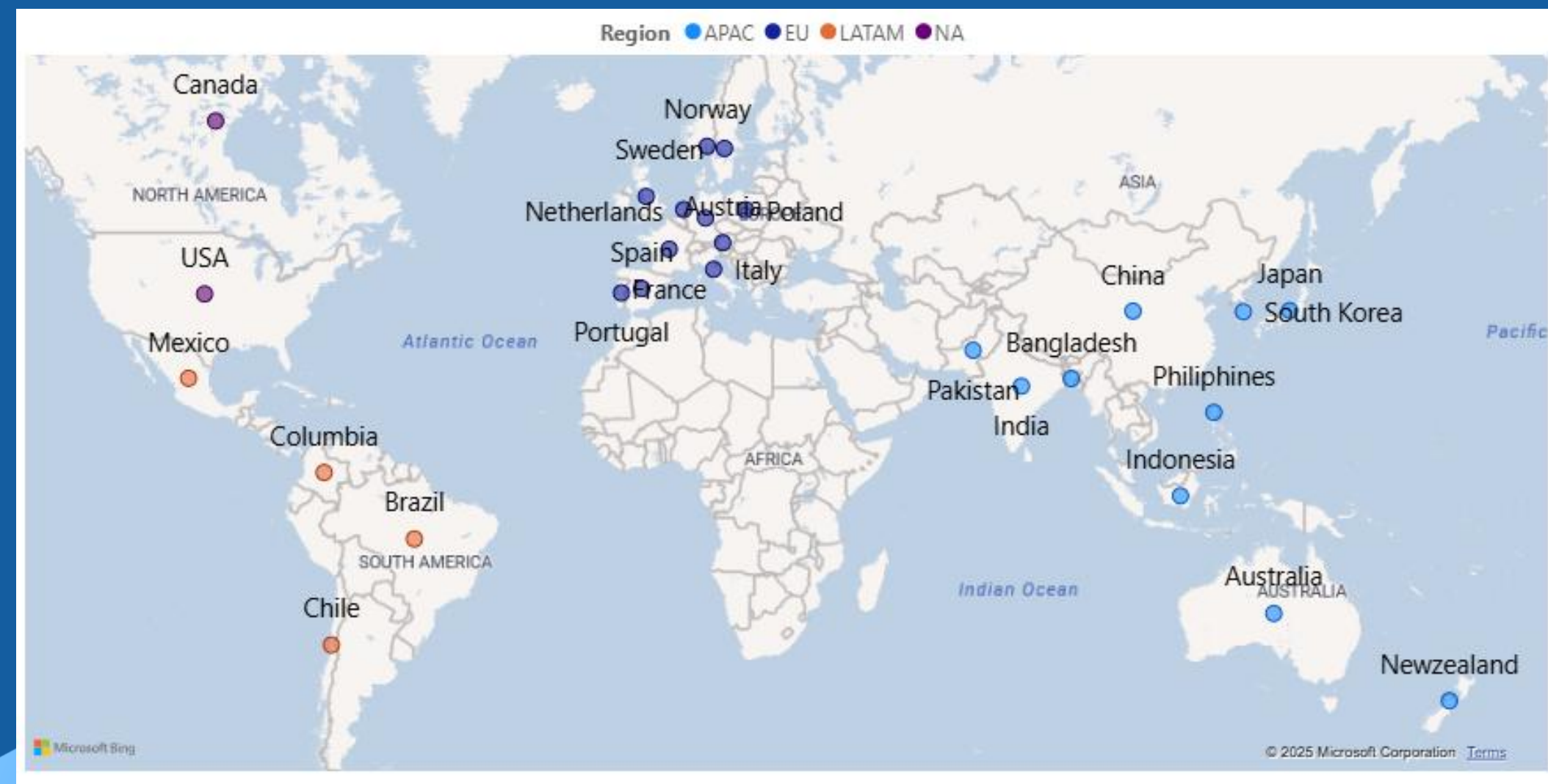
AtliQ's Business Model



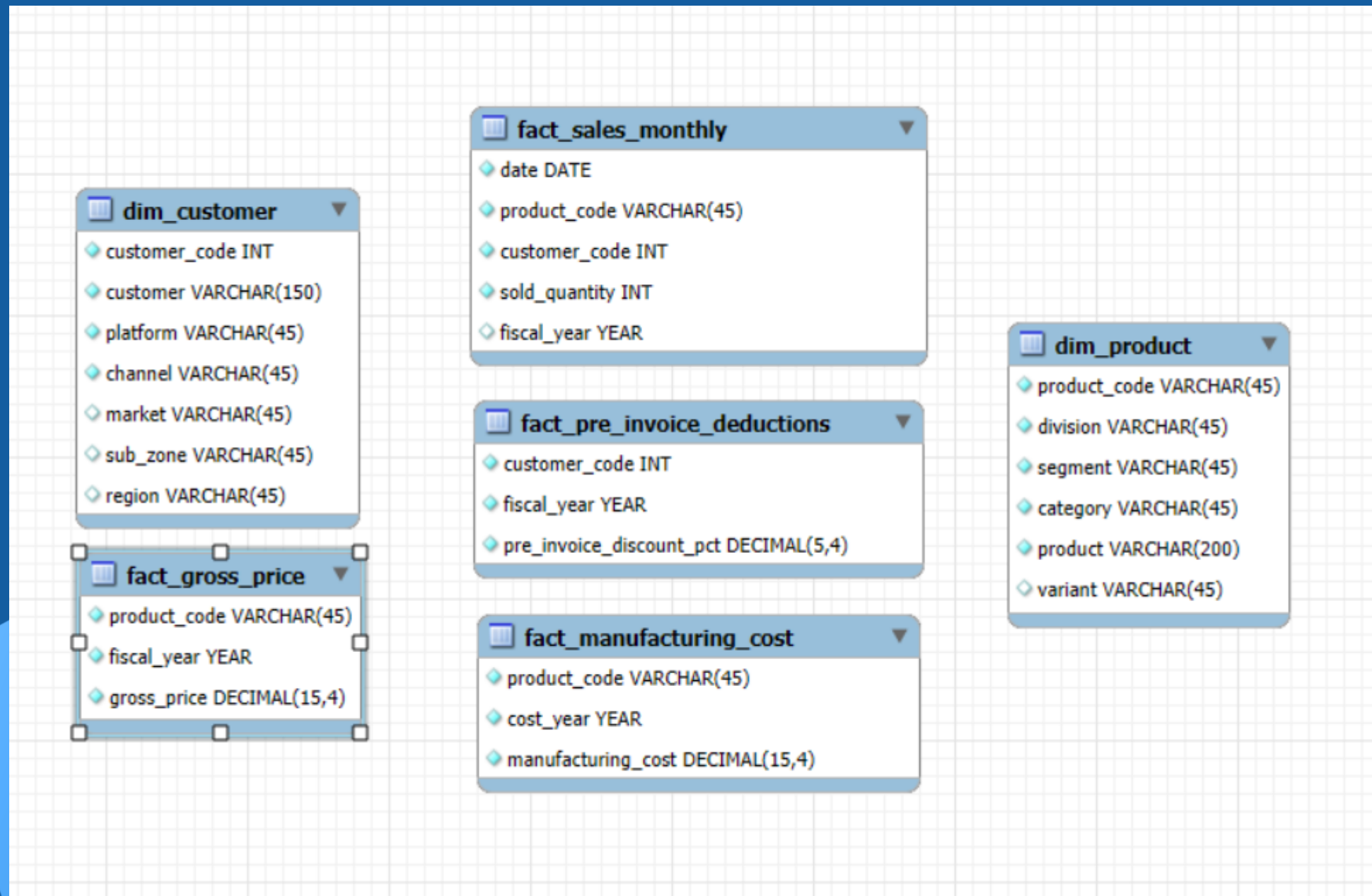
A collection of various electronic devices including a laptop, desktop tower, monitor, keyboard, mouse, and various peripherals like a USB drive and a small external device.



AtliQ's Market



Input Data



Input Data set consists of sales data for FY 2020 and 2021, along with dimension tables

Ad-hoc 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 and 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 and 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 and 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 and 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 and 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 and 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, product, total_sold_quantity and rank_order

Request 01

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

SQL Query

```
SELECT distinct market
FROM dim_customer
where
    customer = "Atliq exclusive" and
    region = "APAC"
```



Query result

market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

Insights AtliQ Exclusive has its presence in 8 major markets

Request

02

What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields,

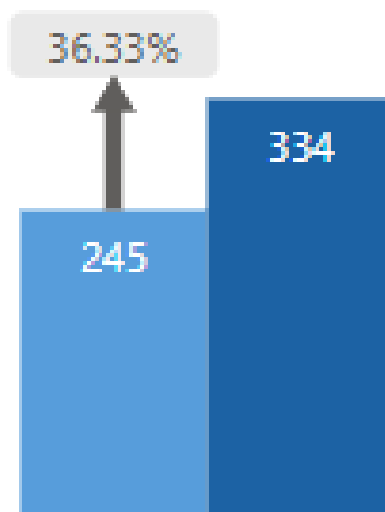
- unique_products_2020
- unique_products_2021
- percentage_chg

SQL Query

```
select
  Unique_products_2020,
  Unique_products_2021,
  round((unique_products_2021 - unique_products_2020) * 100.0 / unique_products_2020, 2) as Percentage_growth
from
  (select count(distinct product_code) as Unique_products_2020 from fact_sales_monthly where fiscal_year = 2020) Y2020,
  (select count(distinct product_code) as Unique_products_2021 from fact_sales_monthly where fiscal_year = 2021) Y2021
```

Query result

Unique_products_2020	Unique_products_2021	percentage_growth
245	334	36.33



● Unique_products_2020 ● Unique_products_2021

Insights

The substantial 36.33% growth in the number of unique products sold from 2020 to 2021 reflects the company's success in expanding its product range and addressing diverse customer demands

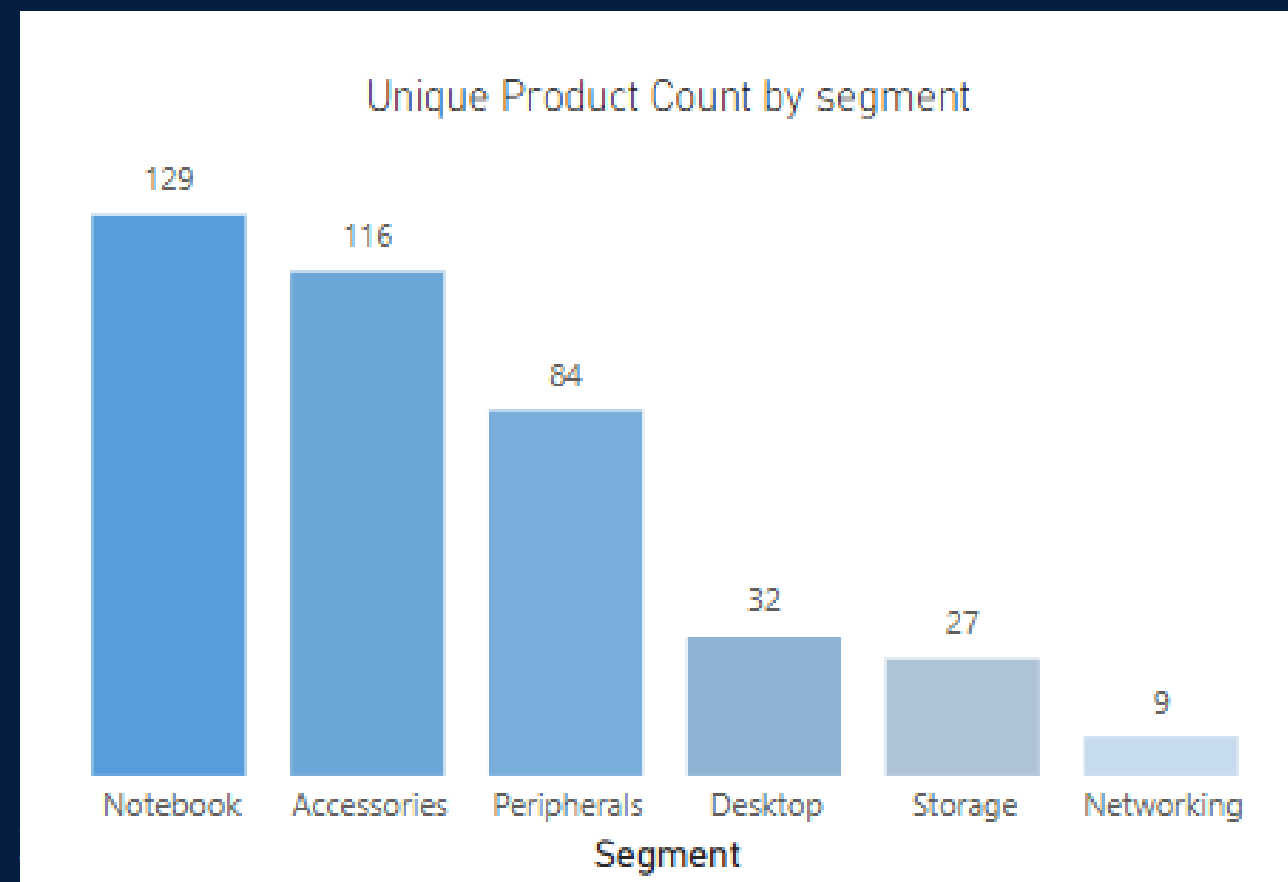
Request 03

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 Query

```
select
    segment,
    count(distinct product_code) as Product_Count
from dim_product
group by segment
order by Product_Count desc
```



Query result

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

Insights

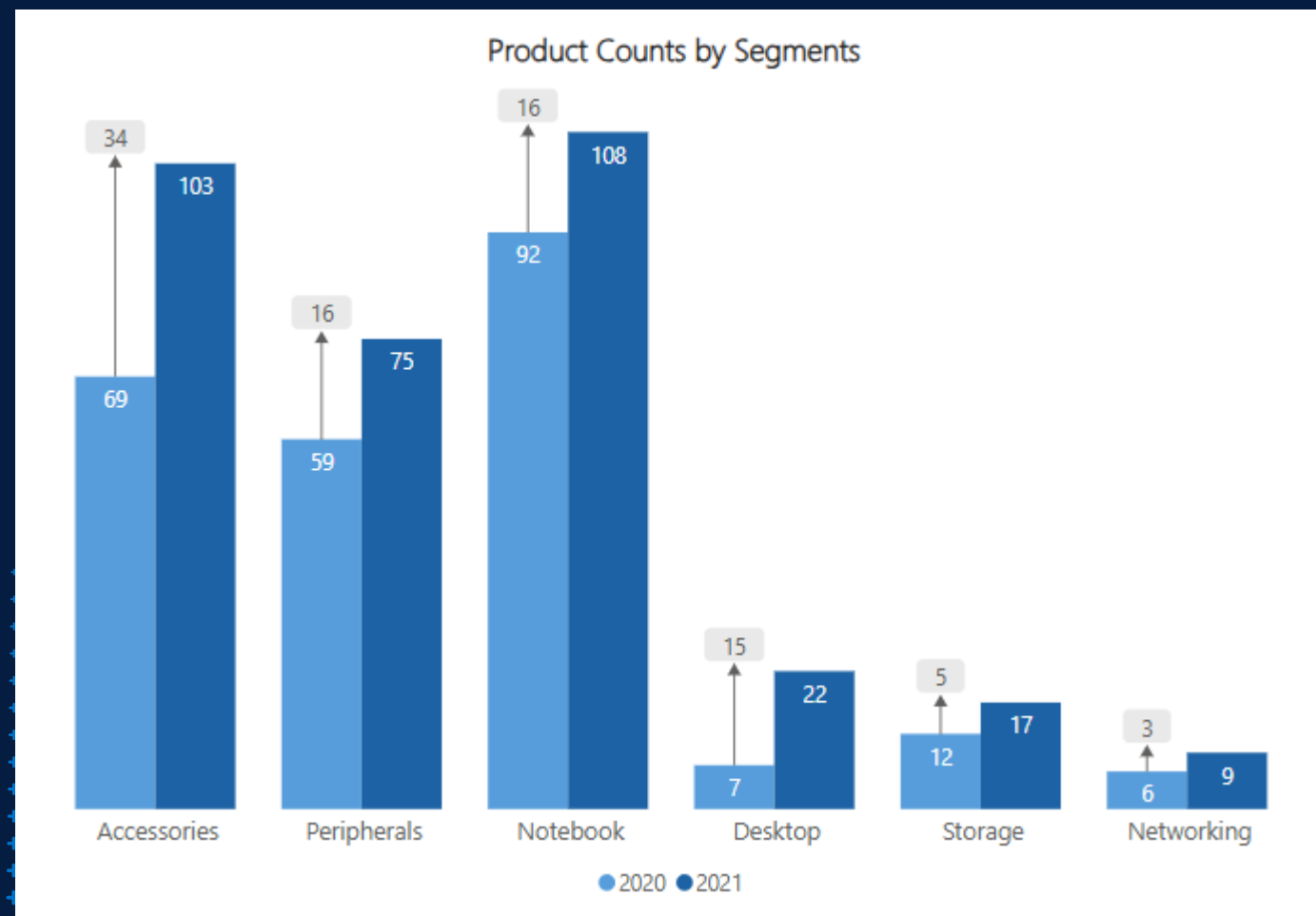
While the company boasts a strong presence in Notebooks and Accessories, there's a clear opportunity for growth or strategic focus in the Networking and Storage segments.

Request 04

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



SQL Query

```
with distinct_product_counts as
(
    select
        segment,
        count(distinct(case when fiscal_year = 2021 then s.product_code end)) as Product_Count_2021,
        count(distinct(case when fiscal_year = 2020 then s.product_code end)) as Product_Count_2020
    from fact_sales_monthly s
    join dim_product p using(product_code)
    group by segment
)
select *, Product_Count_2021 - Product_Count_2020 as Difference
from distinct_product_counts
order by Difference desc
```

Query result

segment	Product_Count_2021	Product_Count_2020	Difference
Accessories	103	69	34
Notebook	108	92	16
Peripherals	75	59	16
Desktop	22	7	15
Storage	17	12	5
Networking	9	6	3

Insights

Clearly, Accessories experienced the highest expansion in unique product offerings with 34 new additions. This strong growth was significantly supported by Notebooks and Peripherals (both adding 16 unique products), while Storage (5) and Networking (3) segments saw the most modest increases.

Request 05

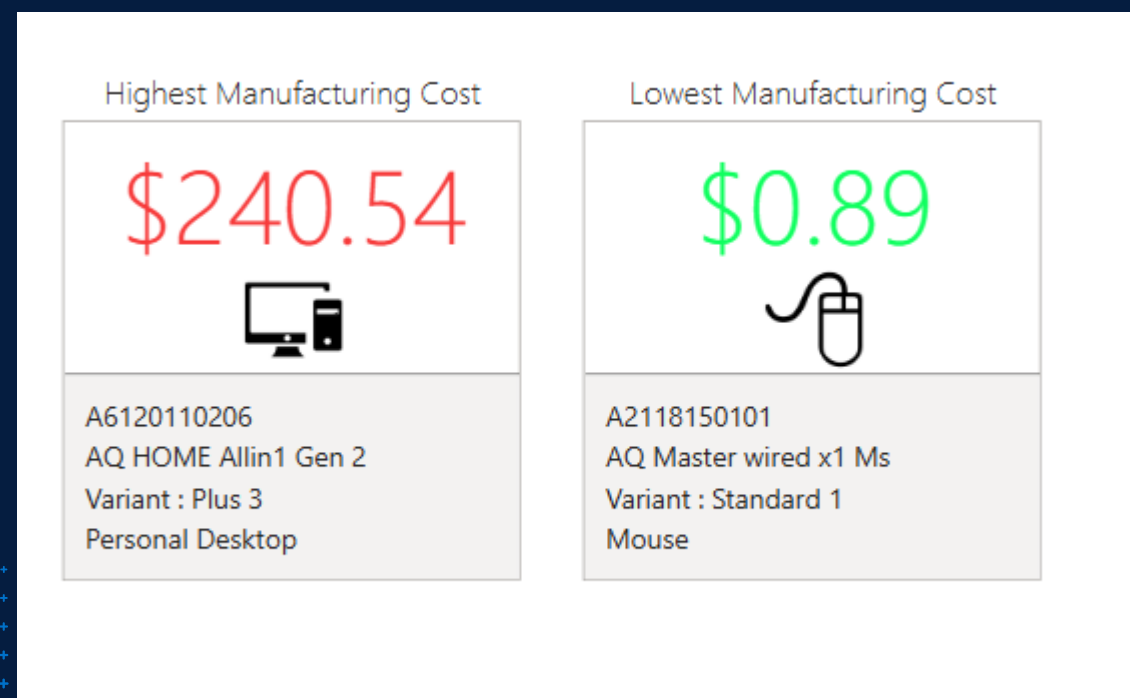
Get the products that have the highest and lowest manufacturing costs.

The final output should contain these fields,

- Product_code
- Product
- Manufacturing_cost

SQL Query

```
select p.product_code,  
       p.product,  
       cost_year,      -- added cost year for more clarity --  
       round(manufacturing_cost,2) as Manufacturing_cost  
from dim_product p  
join fact_manufacturing_cost m using(product_code)  
where      -- filtering for lowest and highest manufacturing cost --  
       manufacturing_cost in (  
           (select max(manufacturing_cost) from fact_manufacturing_cost),  
           (select min(manufacturing_cost) from fact_manufacturing_cost)  
       )  
order by manufacturing_cost desc
```



Query result

product_code	product	cost_year	Manufacturing_cost
A6120110206	AQ HOME Allin1 Gen 2	2021	240.54
A2118150101	AQ Master wired x1 Ms	2020	0.89

Insights

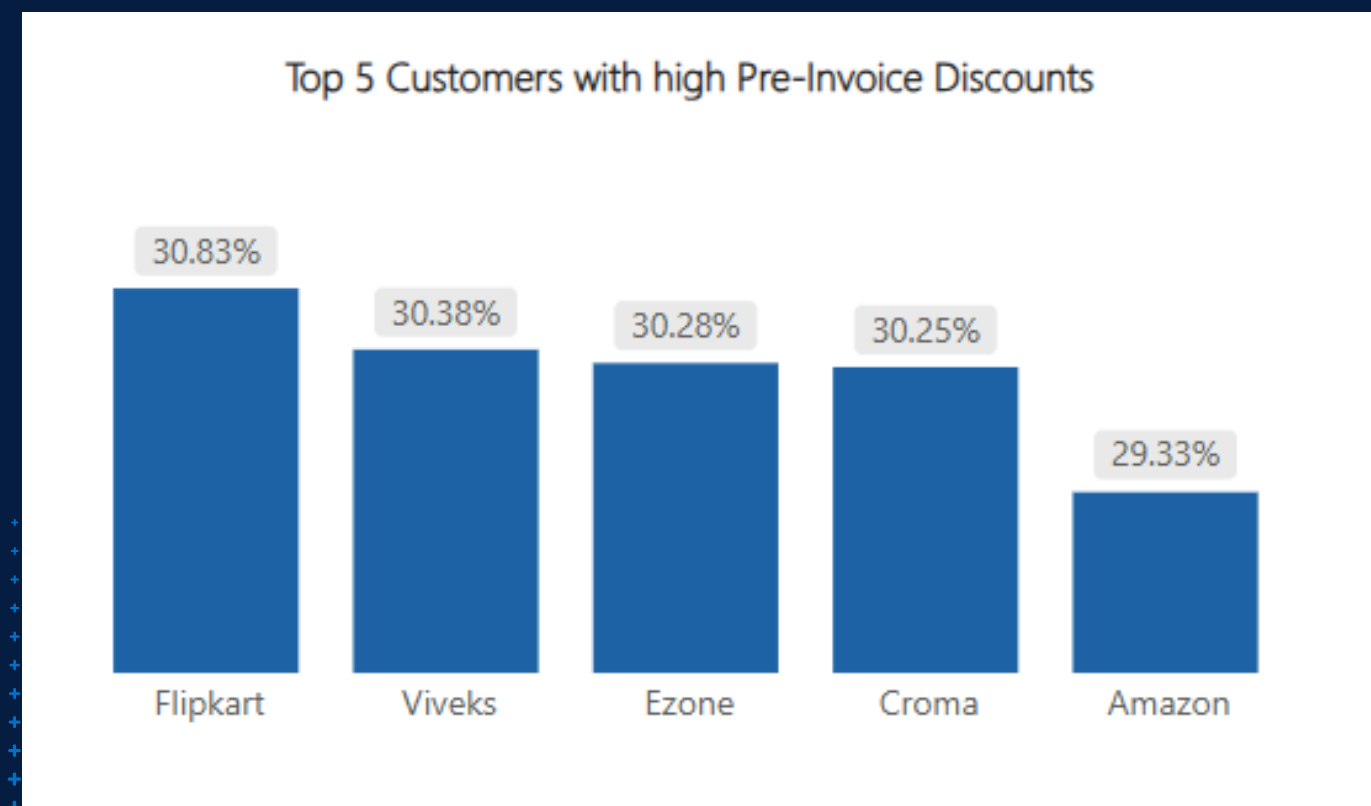
AQ HOME Allin1 Gen 2 has the highest manufacturing cost at \$240.54, while AQ Master wired x1 Ms has the lowest at \$0.89.

Request 06

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



Insights

With Flipkart receiving the highest average pre-invoice discount at 30.83%, and all major customers exceeding 29%, a strategic review is critical to balance aggressive marketing incentives with sustainable profitability.

SQL Query

```
select
    customer_code,
    customer,
    round(pre_invoice_discount_pct * 100,2) as Avg_discount_pct
from dim_customer
join fact_pre_invoice_deductions using (customer_code)
where market = "India" and fiscal_year = 2021
order by Avg_discount_pct desc
limit 5
```

Query result

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

Request 07

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

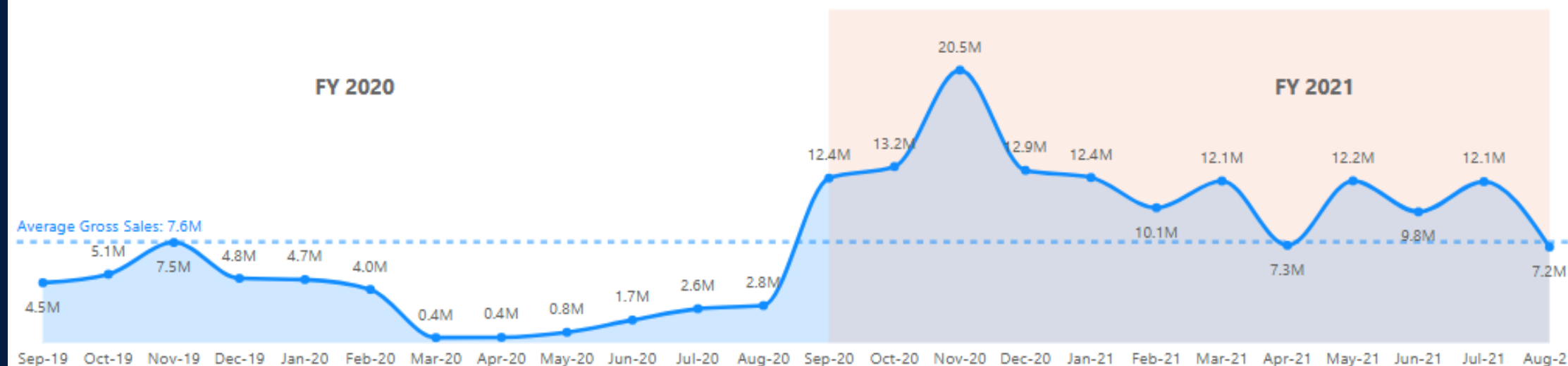
SQL Query

```
select
    monthname(date) as Month,
    year(date) as Year,
    fiscal_year,
    concat(round(sum(gross_price * sold_quantity/1000000),2), "M") as Gross_sales_amt -- Gross Sales in Millions --
from fact_sales_monthly s
join fact_gross_price g
    using(product_code, fiscal_year)
join dim_customer c using(customer_code)
where c.customer = "Atliq Exclusive"
group by year(date), monthname(date), fiscal_year
order by year, month(month)
```

Query result

Month	Year	fiscal_year	Gross_sales_amt
September	2019	2020	4.50M
October	2019	2020	5.14M
November	2019	2020	7.52M
December	2019	2020	4.83M
January	2020	2020	4.74M
February	2020	2020	4.00M
March	2020	2020	0.38M
April	2020	2020	0.40M
May	2020	2020	0.78M
June	2020	2020	1.70M
July	2020	2020	2.55M
August	2020	2020	2.79M
September	2020	2021	12.35M
October	2020	2021	13.22M
November	2020	2021	20.46M
December	2020	2021	12.94M
January	2021	2021	12.40M
February	2021	2021	10.13M
March	2021	2021	12.14M
April	2021	2021	7.31M
May	2021	2021	12.15M
June	2021	2021	9.82M
July	2021	2021	12.09M
August	2021	2021	7.18M

Gross Sales Amount for AtliQ Exclusive by Months



Insights

The sales trend for AtliQ Exclusive clearly shows a significant impact during the COVID-19 period, with a sharp decline in Gross Sales Amount observed in March and April 2020. However, this was followed by a strong and rapid recovery from mid-2020, leading to remarkably higher and sustained sales levels from September 2020 through 2021, demonstrating robust post-pandemic growth and resilience.

Request 08

In which quarter of 2020, got the maximum total_sold_quantity?

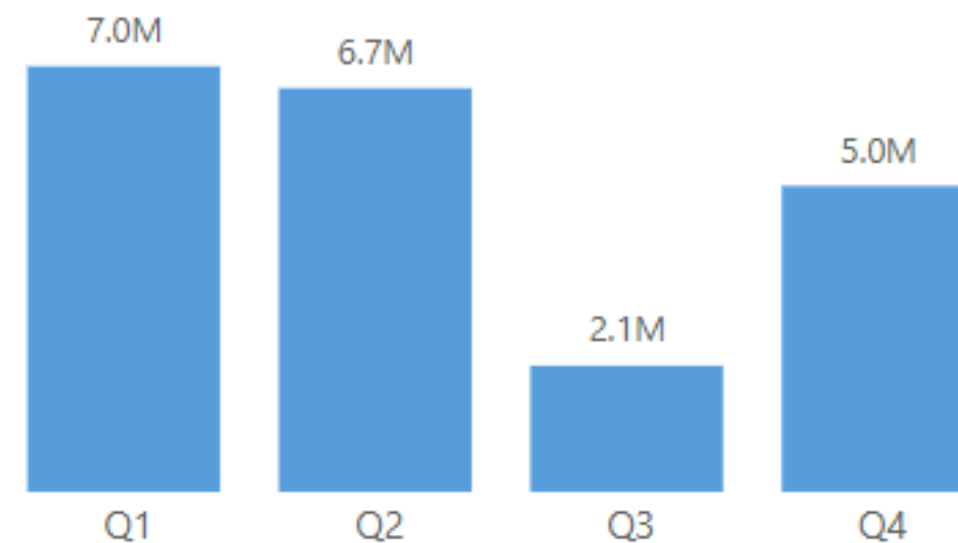
The final output contains these fields sorted by the total_sold_quantity,

- Quarter
- Total_Sold_Quantity

SQL Query

```
select
  case
    when month(date) in (9,10,11) then "Q1"      -- fiscal quarter --
    when month(date) in (12,1,2) then "Q2"
    when month(date) in (3,4,5) then "Q3"
    else "Q4"
  end as Qtr,
  concat(round(sum(sold_quantity)/1000000,2), "M") as Sold_Quantity_Mil  -- sold quantity in millions --
from fact_sales_monthly
where fiscal_year = 2020
group by Qtr
order by sold_quantity_mil desc
```

Sold Quantity by Quarter in FY 2020



Query result

Qtr	Sold_Quantity_Mil
Q1	7.01M
Q2	6.65M
Q4	5.04M
Q3	2.08M

Insights

In 2020, Q1 achieved the highest total sold quantity at 7.01 million units, significantly outperforming other quarters. Notably, Q3 experienced the lowest sales volume, indicating potential seasonal or market-related challenges during that period.

Request 09

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

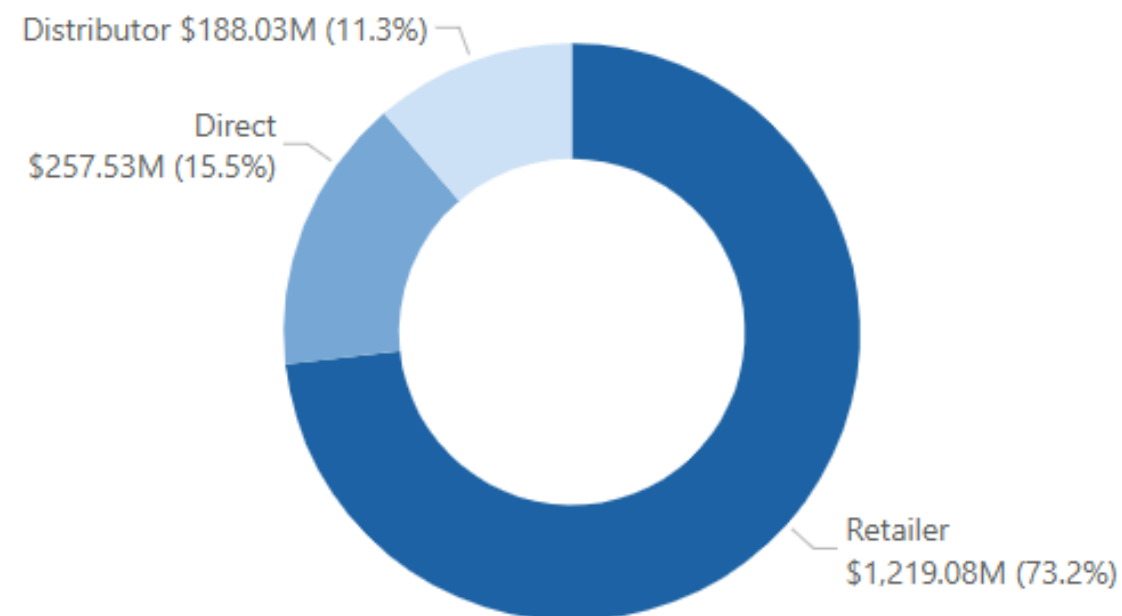
SQL Query

```
with channel_GS as -- channel wise gross sales CTE creation --
(
    select
        channel,
        concat(round(sum(sold_quantity * gross_price)/1000000, 2), "M") as Gross_sales_Mln
    from fact_sales_monthly s
    join dim_customer c using(customer_code)
    join fact_gross_price g using(product_code, fiscal_year)
    where s.fiscal_year = 2021
    group by channel
)
select *, round(sum(gross_sales_mln)*100/(sum(gross_sales_mln) over ()),2) as Pct_contribution -- adding % contribution --
from channel_GS
group by channel
order by Pct_contribution desc
```

Query result

channel	Gross_sales_Mln	Pct_contribution
Retailer	1219.08M	73.23
Direct	257.53M	15.47
Distributor	188.03M	11.3

Gross Sales contribution by Channels in 2021



Insights

In Fiscal Year 2021, the Retailer channel was overwhelmingly the dominant contributor to gross sales, accounting for a significant 73.23% (1219.08M). This indicates a strong reliance on traditional retail partnerships, with Direct and Distributor channels playing smaller, yet notable, supporting roles.

Request 10

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

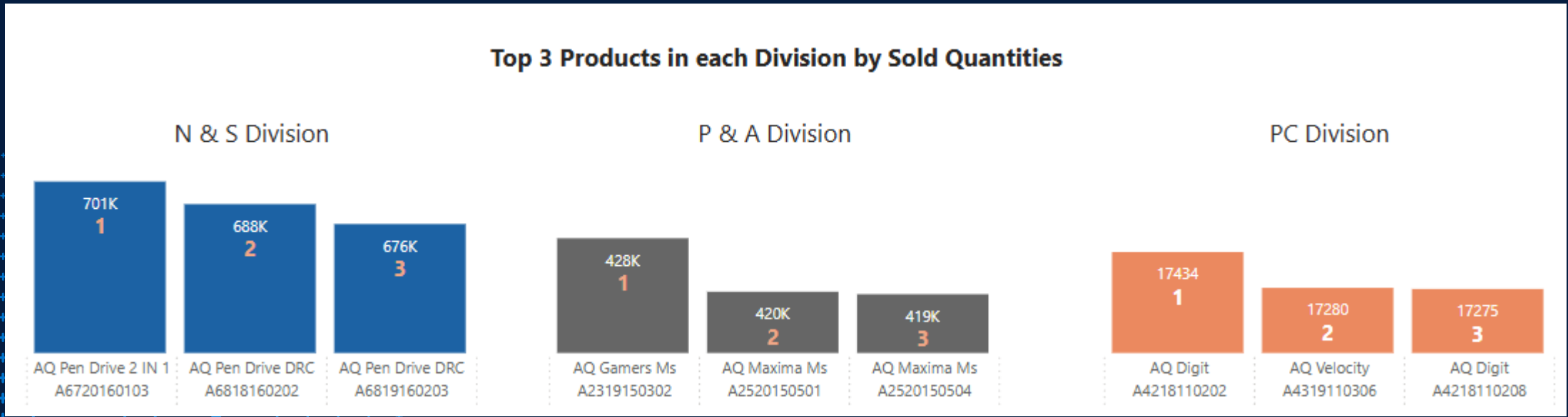
The final output contains these fields,

- Division
- Product_code
- Product, total_sold_quantity
- Rank_order

SQL Query

```
with product_sold_qty as -- creating products table with total qty sold --
(
  select division, product_code, product, sum(sold_quantity) as Sold_qty
  from fact_sales_monthly s
  join dim_product p using(product_code)
  where fiscal_year = 2021
  group by product_code, product, division
),
ranked_products as -- adding ranks to products within each division --
(
  select division,
         product_code, product,
         sold_qty,
         dense_rank() over(partition by division order by sold_qty desc) as rank_order
  from product_sold_qty
)

select division, product_code, product, sold_qty, rank_order
from ranked_products
where rank_order <= 3 -- filtering for top 3 ranks --
```



Query result

division	product_code	product	sold_qty	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

Insights

In FY21, Network & Storage (N & S) leads significantly in top product sales, with its pen drives exceeding 670k units. Peripherals & Accessories (P & A) follows, while PC division's top products show notably lower volumes (around 17k units), indicating a substantial sales disparity across divisions.

Thank You

by Roshith Pulikkal



www.linkedin.com/in/roshith-pulikkal-9a173a332



[GitHub - RoshithPulikkal/Sales-Finance-Analytics](https://github.com/RoshithPulikkal/Sales-Finance-Analytics)