



AtliQ Hardware

# CONSUMER GOODS ANALYSIS

## AD - HOC INSIGHTS



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# ABOUT COMPANY

**AtliQ Hardware** is a global consumer electronics company specializing in the production and distribution of a wide range of hardware products, such as computers, smartphones, and other electronic devices across regions spanning APAC, LATAM, NA, and EU.



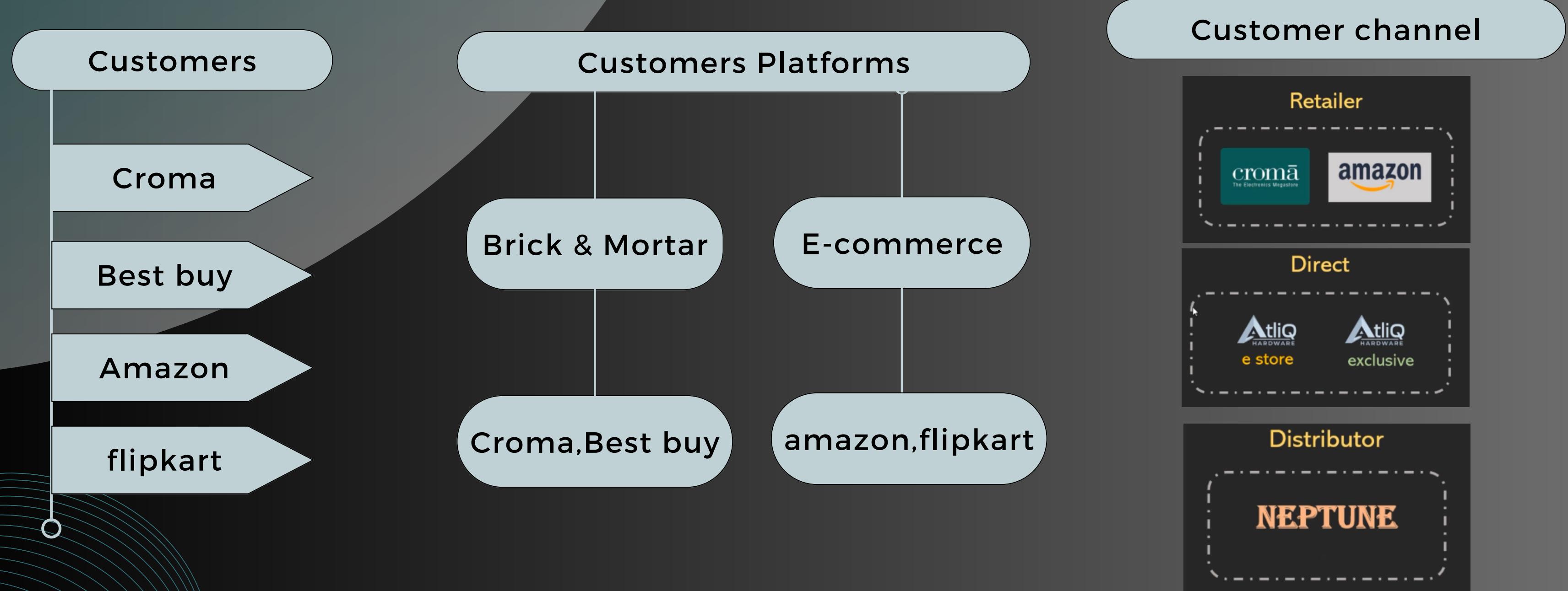
# PROBLEM STATEMENT

- AtliQ Hardware, a leading computer hardware producer, faced significant challenges due to a lack of actionable insights, which hindered effective decision-making.
- The management team struggled with gaining a clear understanding of key performance metrics, which led to inefficient operations and missed opportunities.
- To tackle these issues, the Data Analytics Director (Tony Sharma) expanded a data analytics team with several skilled junior data analysts. And was tasked to find critical insights for 10 ad hoc business requests using SQL

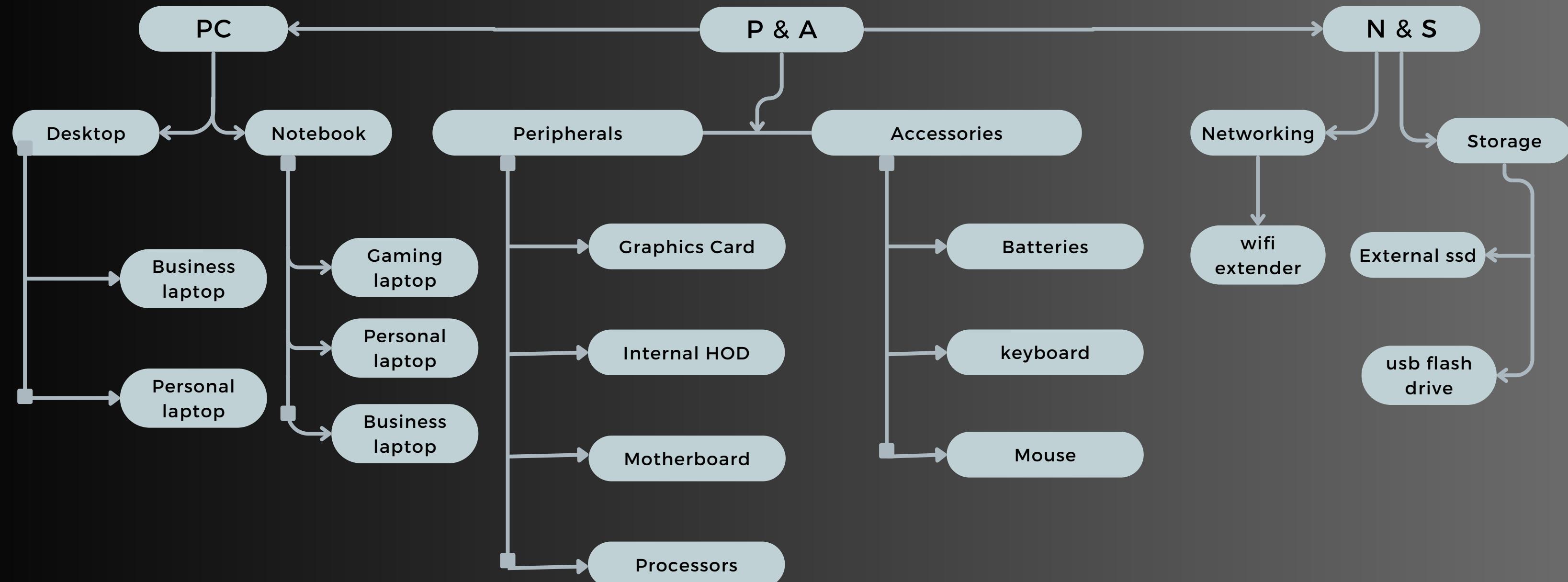


# ATLIQ HARDWARE -BUSINESS MODEL

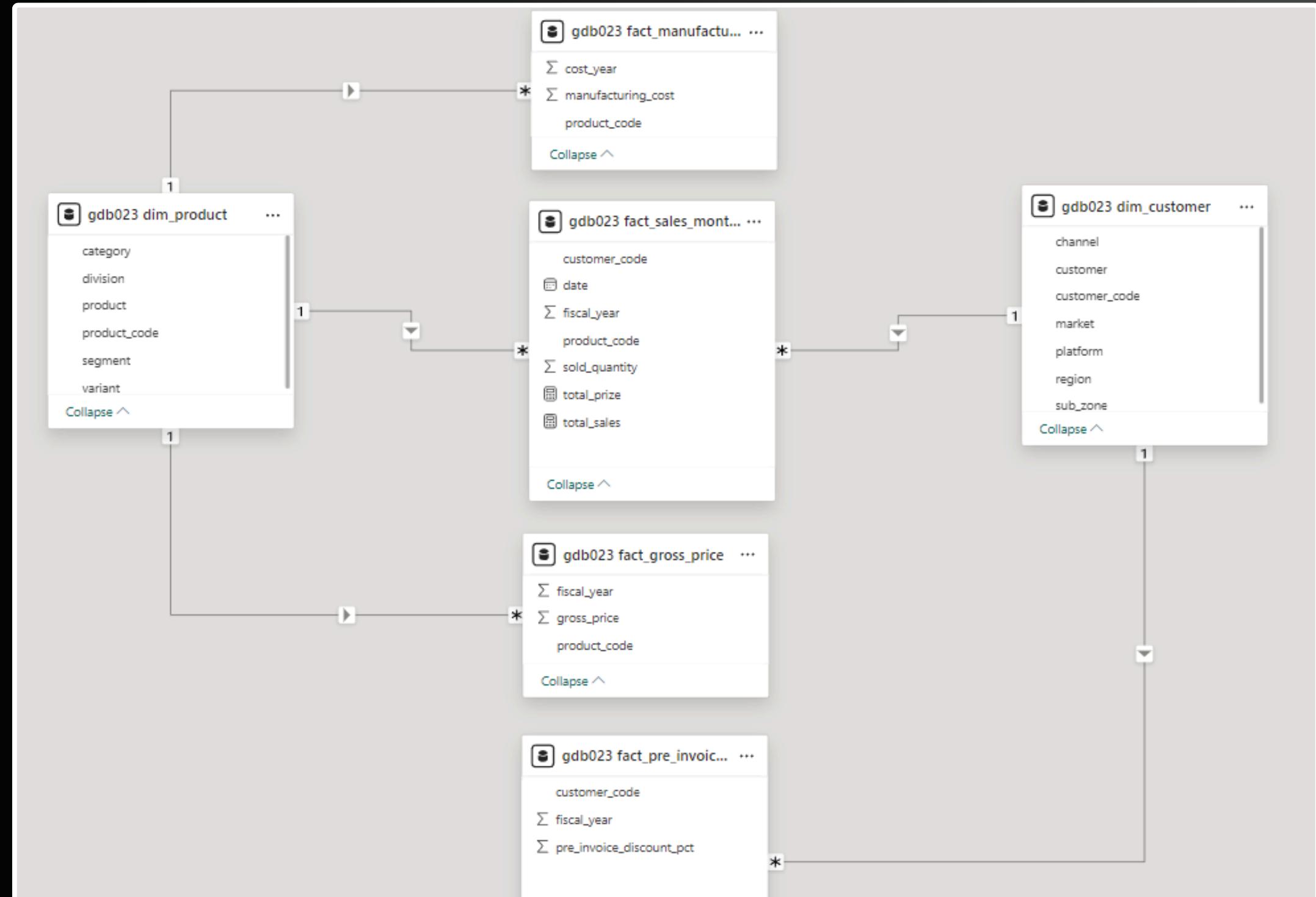
AtliQ Hardware gets its products to different types of customers through various platforms and channels, catering to both physical stores and online markets.



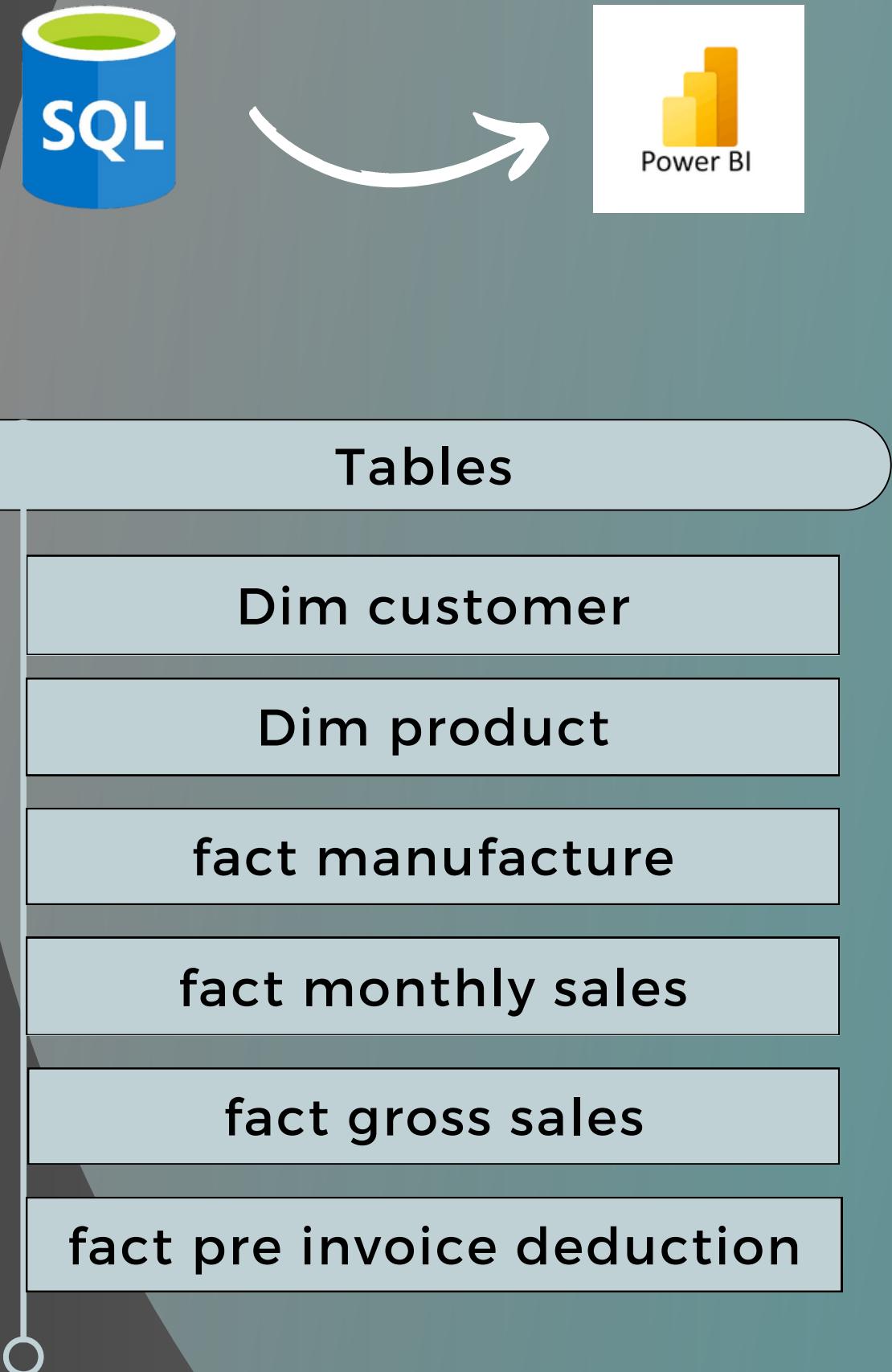
# ATLIQ'S PRODUCT DIVISION



# DATA SET AND TOOLS



This is the dataset/data model that I have worked on and it is a star schema (I built this schema in Power BI)



# AD HOC - REQUEST -1

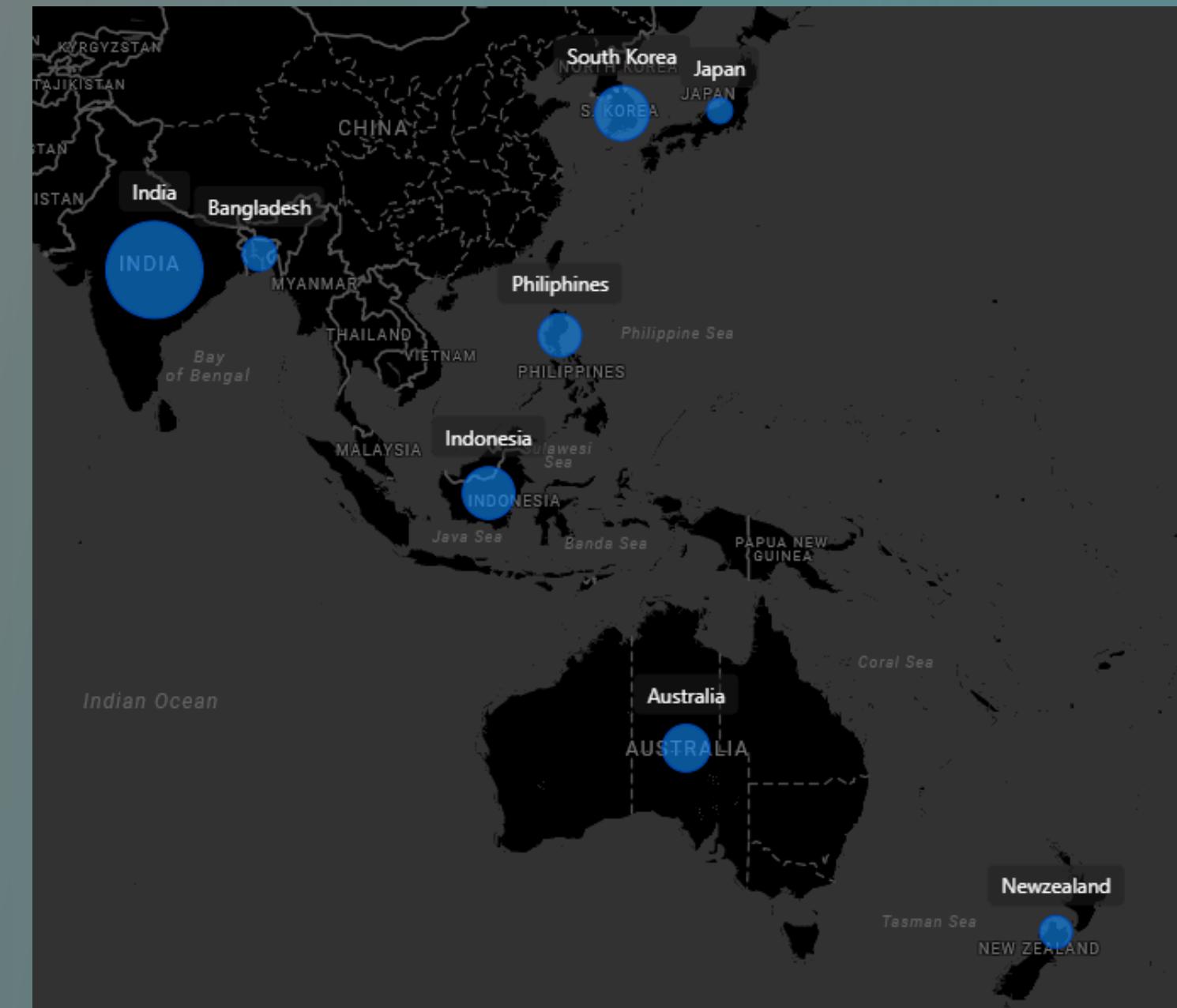
1. Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.

Query :

```
SELECT market
FROM gdb023.dim_customer
where region = "APAC" and customer = "Atliq Exclusive"
group by market;
```

Output :

market
India
Indonesia
Japan
Philippines
South Korea
Australia
Newzealand
Bangladesh



Insight :

The markets in which Atliq Exclusive operates its business in the APAC region are countries like India, Indonesia, Japan, Philippines, South Korea, Australia, New Zealand, and Bangladesh, with India being the most demanding market and Japan being the least demanding market.

## AD HOC - REQUEST -2

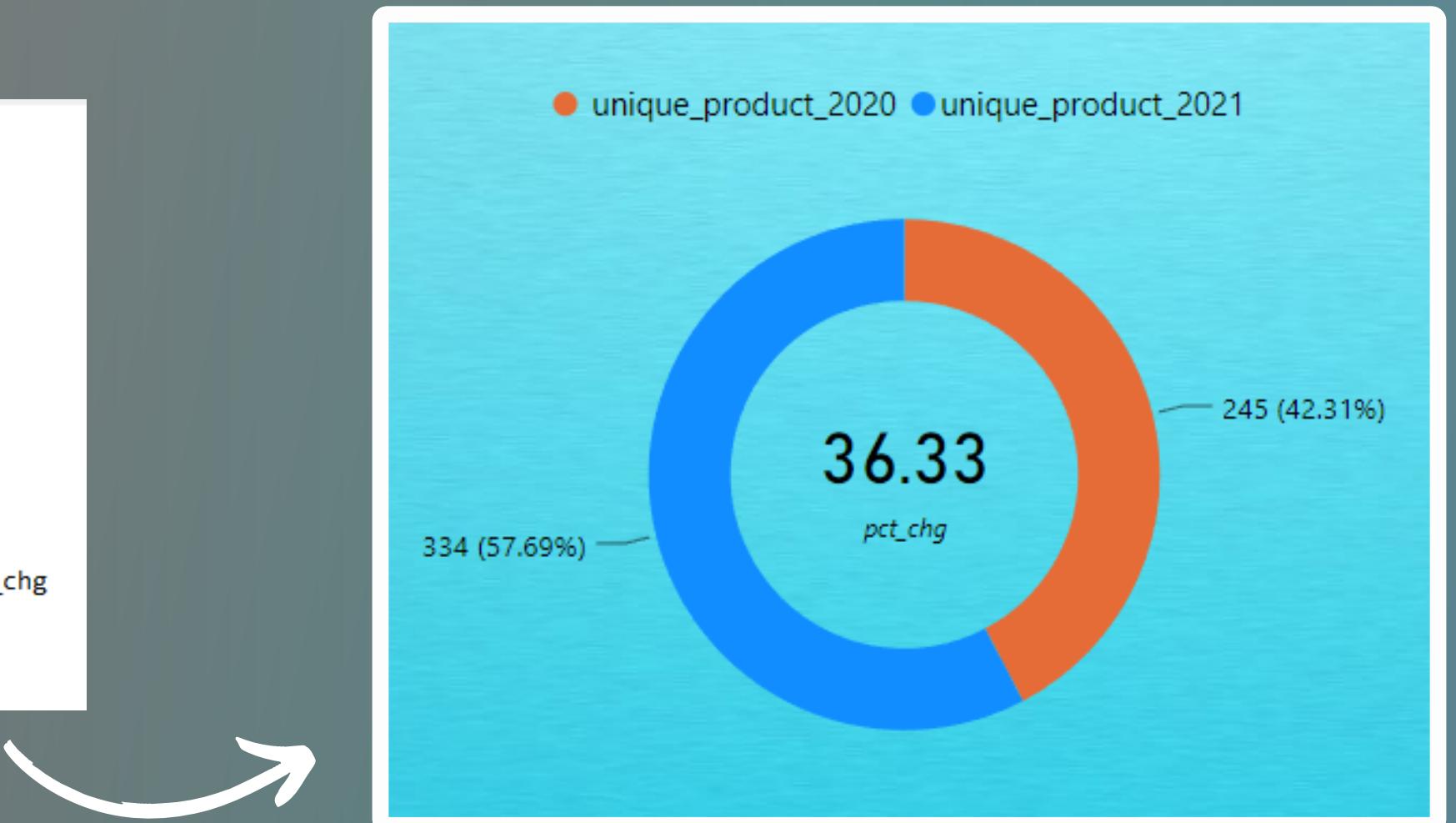
2. What is the percentage of unique product increase in 2021 vs. 2020? The final output contains these fields, unique\_products\_2020 unique\_products\_2021 percentage\_chg

Query :

```
with up_2020 as (
  select count(distinct(product_code)) as unique_product_2020
  from fact_sales_monthly
  where fiscal_year = "2020"
),
up_2021 as (
  select count(distinct(product_code)) as unique_product_2021
  from fact_sales_monthly
  where fiscal_year = "2021"
)
select *,round(((unique_product_2021-unique_product_2020)*100) / unique_product_2020,2) as pct_chg
from up_2020
cross join up_2021;
```

Output :

	unique_product_2020	unique_product_2021	pct_chg
▶	245	334	36.33



Note: Fiscal year 2020 is from Sept 2019 - Aug 2020  
Fiscal year 2021 is from Sept 2020 - Aug 2021

Insight :

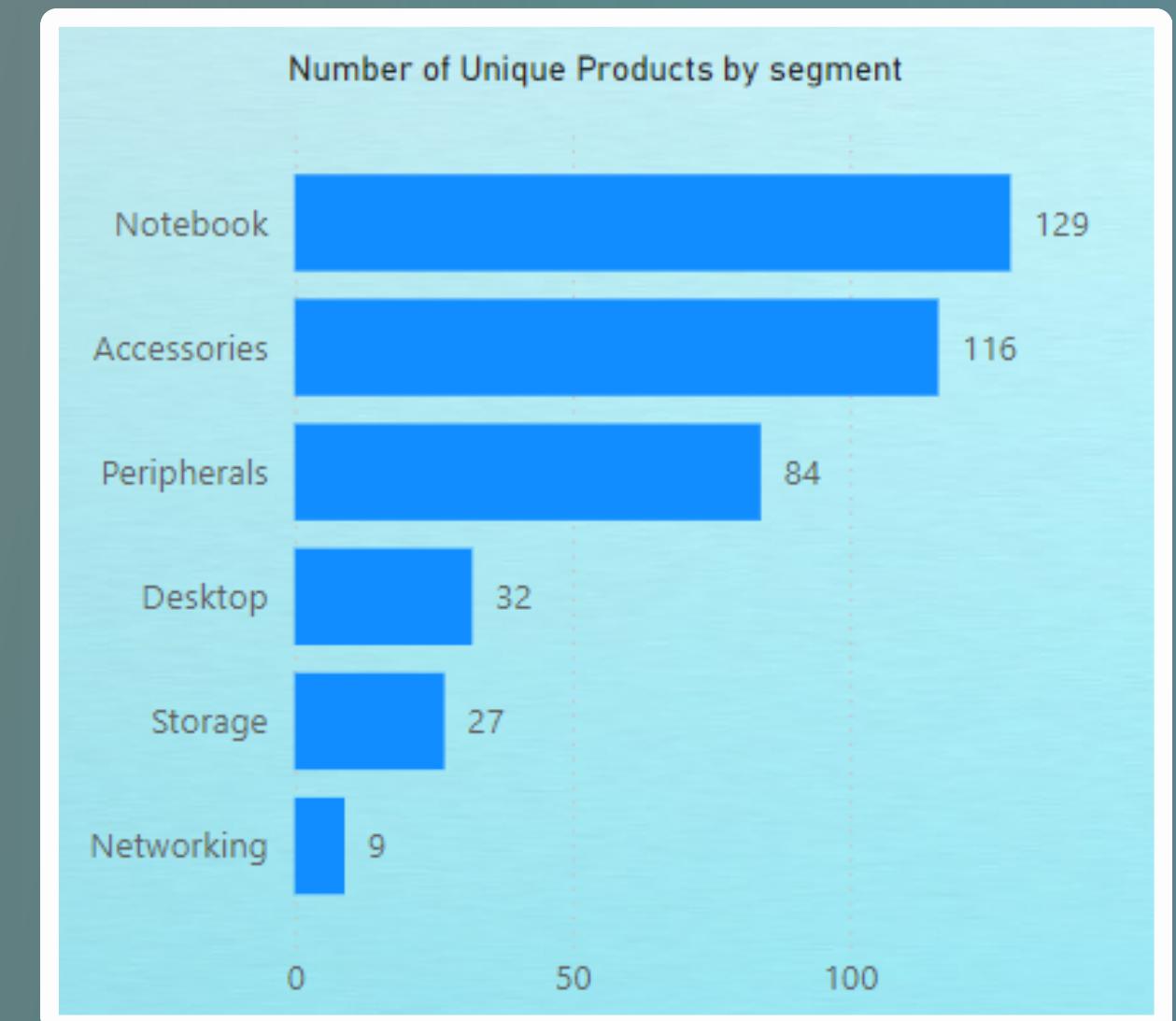
Here we can see that the unique products in the fiscal year 2020 was 245 and has increased to 334 in the fiscal year 2021 which indicates positive business growth of 36.33%

## AD HOC - REQUEST -3

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

Query :

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



Output :

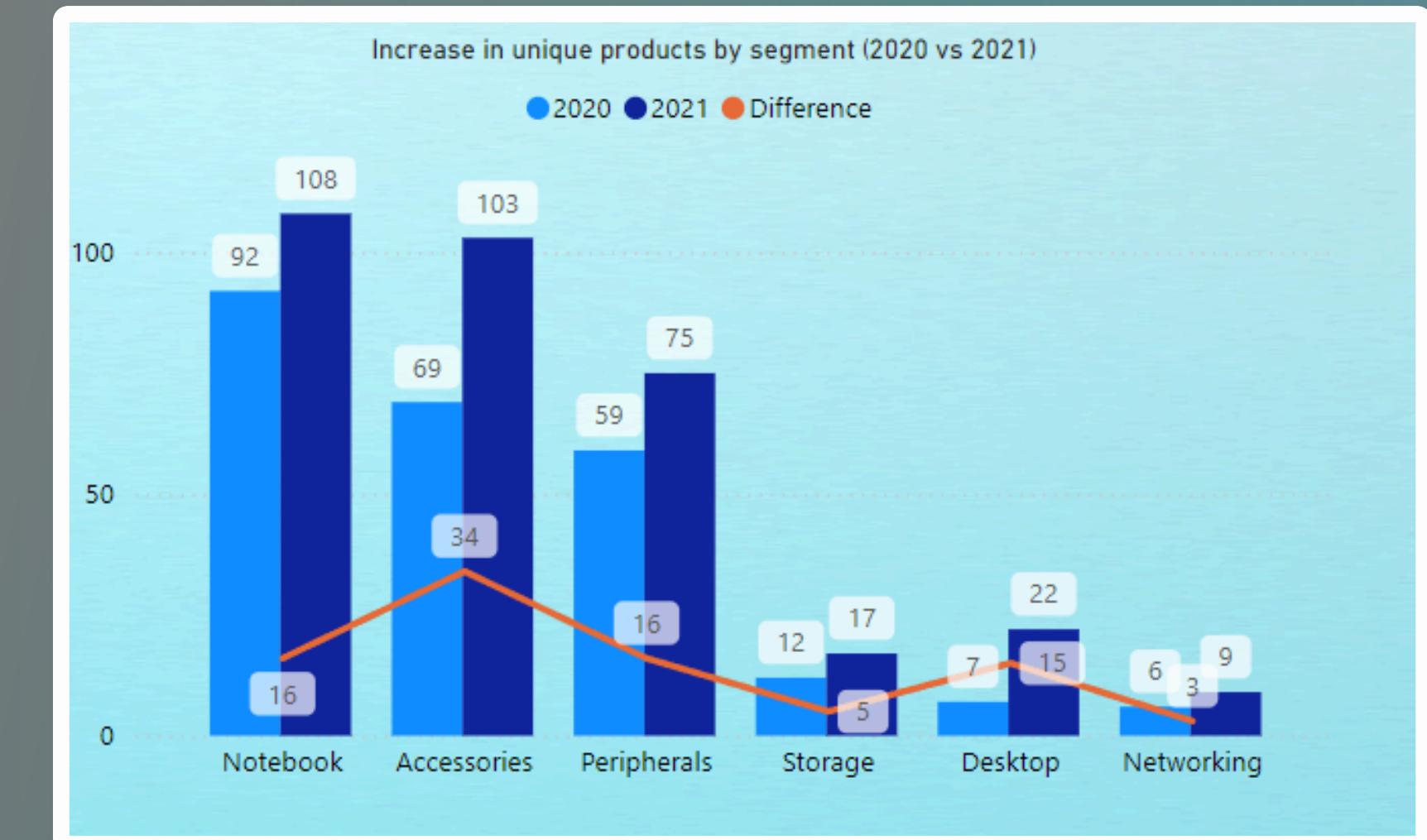
segment	product_count
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9

## AD HOC - REQUEST -4

4. 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

Query :

```
1 • with up_count_2020 as (
2   select
3     segment,
4     count(distinct(product_code)) as product_count_2020
5   from dim_product p
6   join fact_sales_monthly s using(product_code)
7   where s.fiscal_year = '2020'
8   group by segment
9   order by product_count_2020 desc
10 ),
11 • up_count_2021 as [
12   select
13     segment,
14     count(distinct(product_code)) as product_count_2021
15   from dim_product p
16   join fact_sales_monthly s using(product_code)
17   where s.fiscal_year = '2021'
18   group by segment
19   order by product_count_2021 desc
20 ]
21 *,
22 (product_count_2021 - product_count_2020) as Difference
23 from up_count_2020
24   join up_count_2021 using(segment)
```



Output :

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

Insight : Notebook, Accessories, Peripherals, have shown increase in production between years 2020 & 2021 with effective business growth whereas, Storage, Desktop, networking has shown least effective production growth

## AD HOC - REQUEST -5

5. Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields, product\_code, product manufacturing\_cost

Query :

```
with highest_mcost as(
  SELECT
    product,
    product_code,
    max(manufacturing_cost) as manufacture_cost
  FROM gdb023.fact_manufacturing_cost f
  join dim_product p using(product_code)
  group by p.product,product_code
  order by manufacture_cost desc
  limit 1
),
lowest_mcost as(
  SELECT
    product,
    product_code,
    min(manufacturing_cost) as manufacture_cost
  FROM gdb023.fact_manufacturing_cost f
  join dim_product p using(product_code)
  group by p.product,product_code
  order by manufacture_cost asc
  limit 1
) select * from highest_mcost
union
  select * from lowest_mcost;
```



AQ Home Allin1 Gen2



AQ Master wired x1 Ms

**AQ Home Allin1 Gen2** is the product  
that has the highest Manufacturing  
cost

**AQ Master wired x1 Ms** is the product  
that has the lowest Manufacturing  
cost

Output :

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

## AD HOC - REQUEST -6

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

Query :

```
• select
    customer,
    customer_code,
    round(avg(pre_invoice_discount_pct) *100,2)  as avg_discount_pct
from fact_pre_invoice_deductions f
join dim_customer c using(customer_code)
where fiscal_year = '2021' and market = 'india'
group by customer,customer_code
order by avg_discount_pct desc
limit 5;
```

Output :



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

Insight :

Here we can see that the maximum discount was given to Flipkart and the least discount was given to Amazon

## AD HOC - REQUEST -7

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

Month	fiscal_year	gross_sales
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



Reason - Peak  
Covid 19



## AD HOC - REQUEST -8

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

Query :

```
select
  case
    when month(s.date) in (9,10,11) then 'Q1'
    when month(s.date) in (12,1,2) then 'Q2'
    when month(s.date) in (3,4,5) then 'Q3'
    else 'Q4'
  end as QTR,
  concat(round(sum(sold_quantity)/1000000,2),'M') as total_sold_quantity
from fact_sales_monthly s
where fiscal_year = '2020'
group by QTR
order by 2 desc;
```

Output :

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



Q1 - Sept, Oct, Nov

Q2 - Dec, Jan, Feb

Q3 - Mar, Apr, May

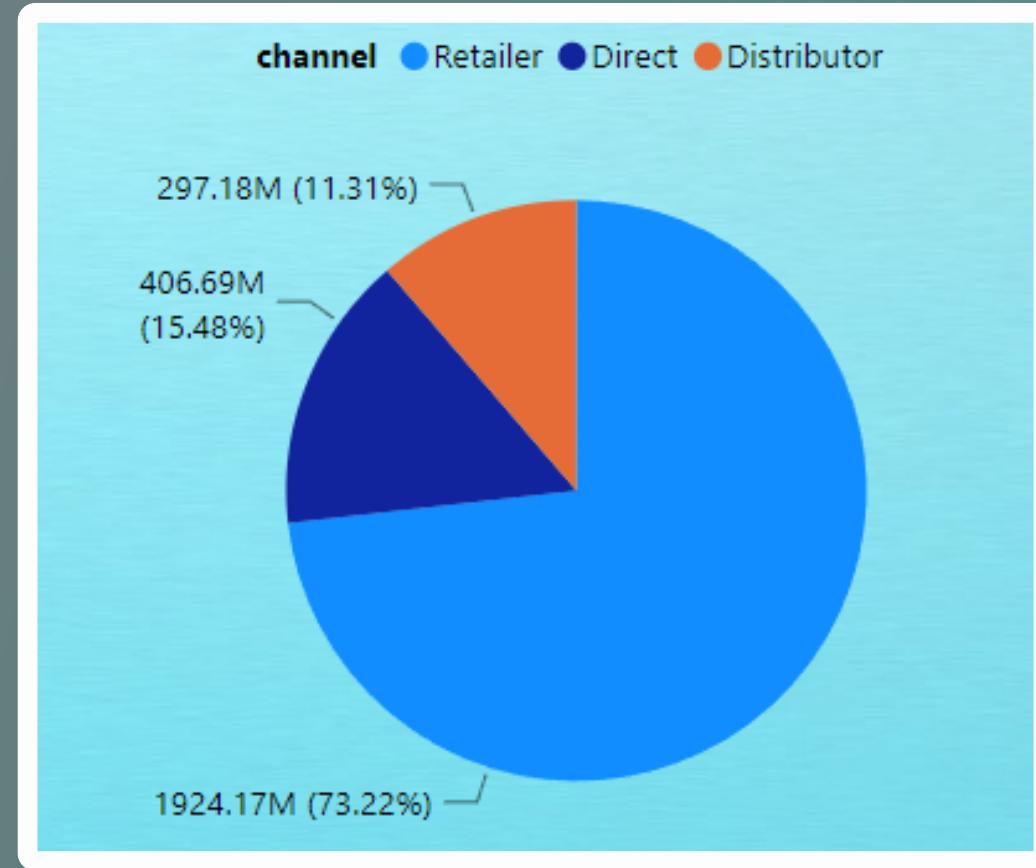
Q4 - Jun, Jul, Aug

## AD HOC - REQUEST -9

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

Query :

```
with cte as(
  select
    channel,
    round(sum(gross_price*sold_quantity)/1000000,2) as gross_sales_mln
  from
    fact_gross_price g
    join fact_sales_monthly s using(product_code)
    join dim_customer c using(customer_code)
  where s.fiscal_year = '2021'
  group by 1
) select
  channel,
  concat(gross_sales_mln,'M') as Gross_sales_mln,
  round((gross_sales_mln/sum(gross_sales_mln) over()) * 100,2) as pct
  from cte;
```



Output :

channel	Gross_sales_mln	pct
Direct	406.69M	15.48
Distributor	297.18M	11.31
Retailer	1924.17M	73.22

Insight :

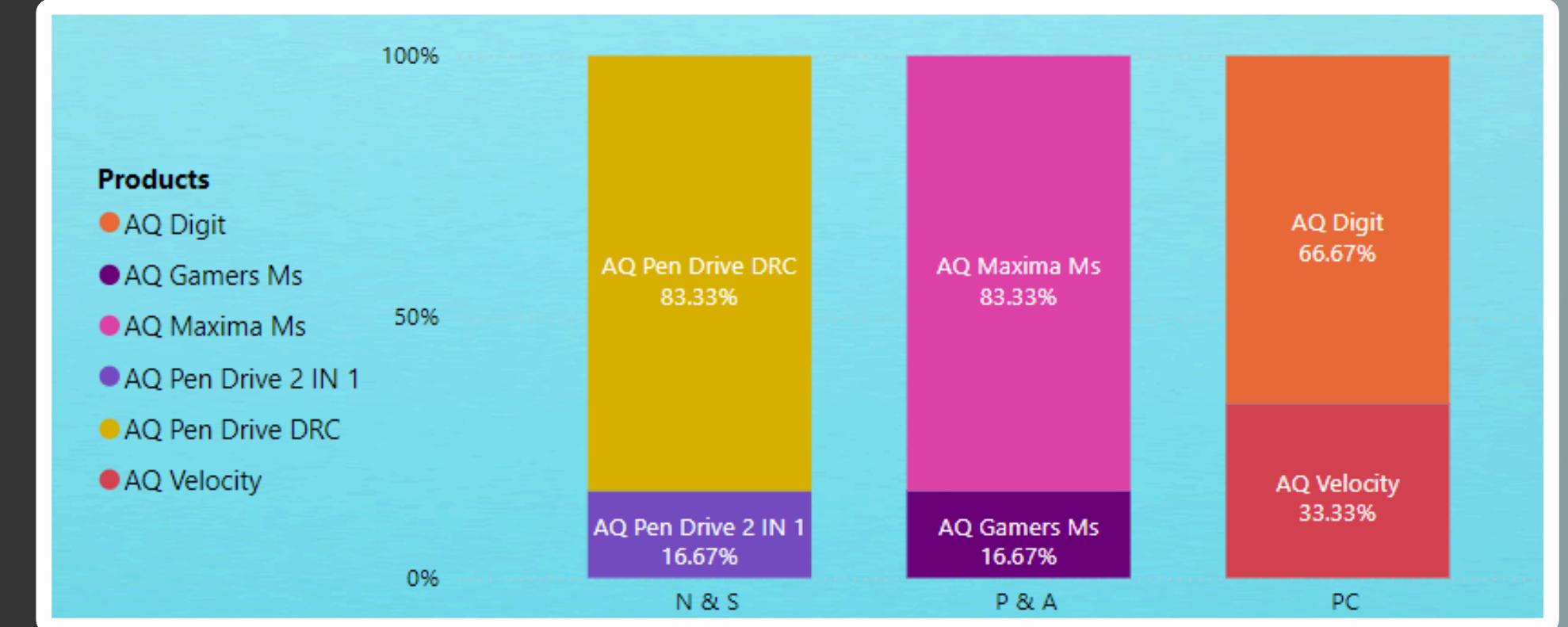
The maximum Gross sales are coming from **Retailer** which is **73.22%** of the total sales followed by **direct channel** of **15.48%**

# AD HOC - REQUEST -10

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

Query :

```
with cte as(
  select
    division,
    product_code,
    product,
    sum(sold_quantity) as total_sold_quantity,
    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 fiscal_year = '2021'
  group by 1,2,3
)
select division,
       product_code,
       product,
       total_sold_quantity,
       rank_order
from cte
where rank_order <= 3;
```



Output :

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

Insight: In the visuals we can see how the products are distributed in various divisions. Every division has a product of different variants which is appeared twice in the top three divisions

Thank you !