

AtliQ Hardware

Consumer Goods Ad-hoc Insights

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About Company and Problem Statement

About AtliQ Hardware and Background

AtliQ Hardware, a leading hardware company specializing in PCs, printers, mice, and computers with a global reach.

However, the management noticed that they do not get enough insights to make quick and smart data-informed decisions. They want to expand their data analytics team by adding several junior data analysts. Tony Sharma, their data analytics director wanted to hire someone who is good at both tech and soft skills. Hence, he decided to conduct a SQL challenge which will help him understand both the skills.

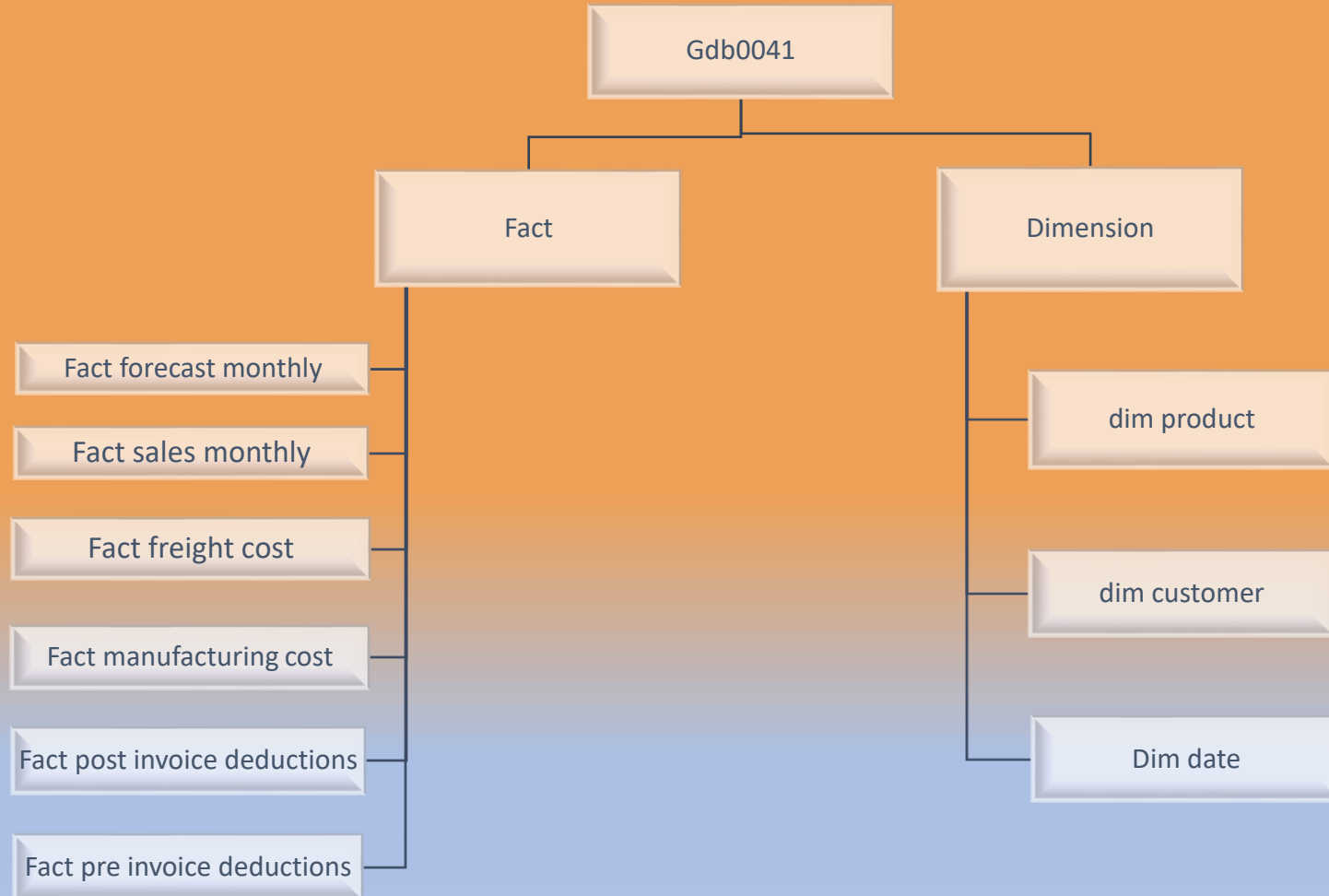
Problem and Approach

There are 10 Ad-hoc requests for which the company need insights and we have to run efficient SQL queries to answer these requests, convert it into visualizations and present them to the top management.

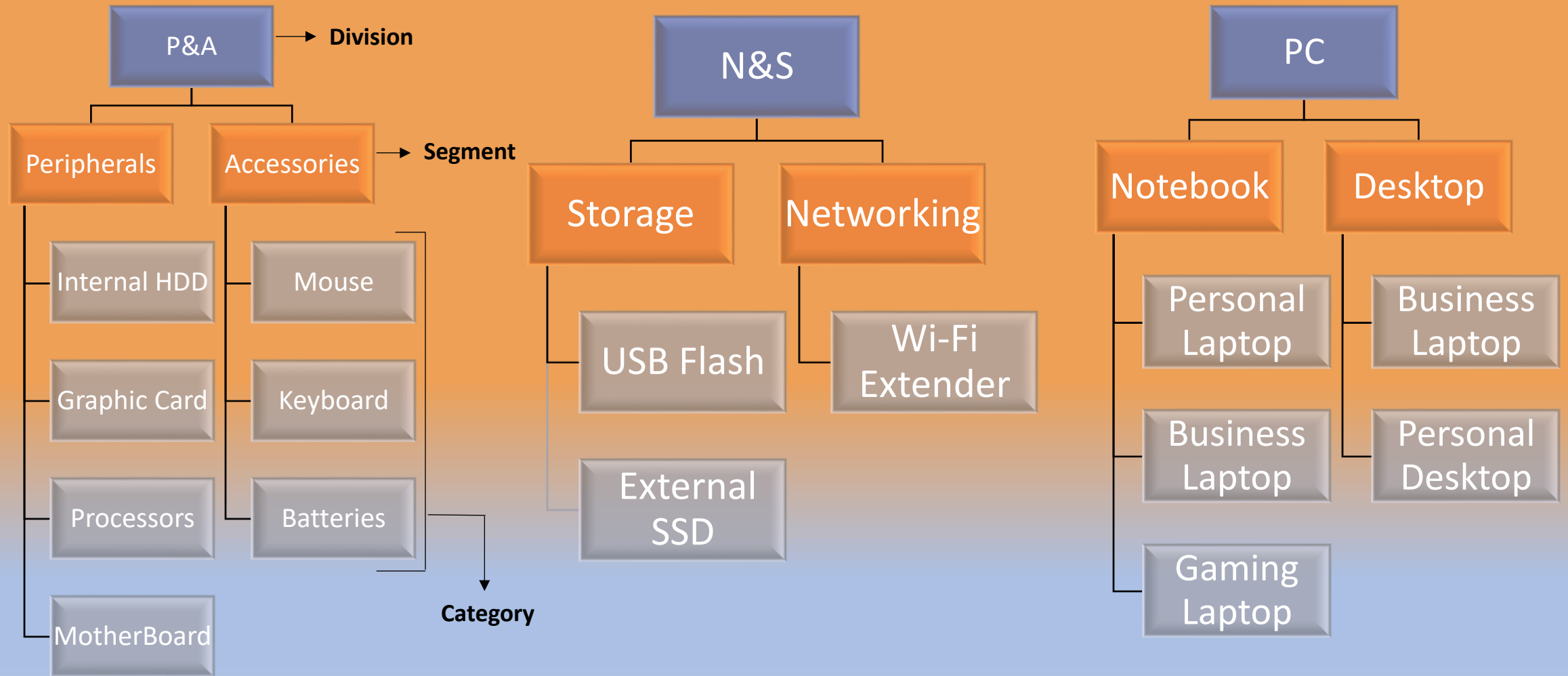
Fiscal Year

The Fiscal Year for AtliQ Hardware is from September to August.

DATA SETS



Product Hierarchy



5

Ad-hoc
requests,
queried results,
Insights and
Visualization



Request 1:

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

OUTPUT

	market
▶	India
	Indonesia
	Japan
	Philippines
	South Korea
	Australia
	Newzealand
	Bangladesh

Note : In the above query get_fy is a User defined Function

Query:

```
SELECT distinct(market)
FROM dim_customer
where region = "APAC"
and
customer = "Atliq Exclusive"
```

Insights

In **APAC** region, **Atliq Exclusive** has established its presence in **8** markets.



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,
pct_change.

OUTPUT

	unique_product_2020	unique_product_2021	pct_change
►	245	334	36.33

Query:

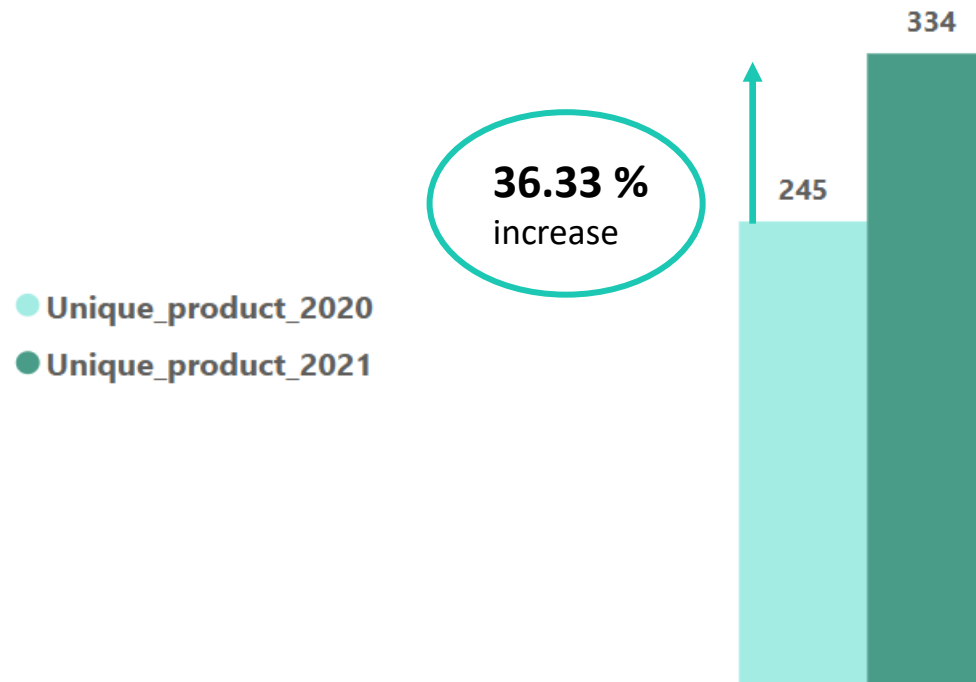
```
with unq_20 as(  
SELECT  
count(distinct product_code) as unique_product_2020  
from fact_sales_monthly  
where fiscal_year = 2020),
```

```
unq_21 as(  
SELECT  
count(distinct product_code) as unique_product_2021  
from fact_sales_monthly  
where fiscal_year = 2021)
```

```
select  
unique_product_2020,  
unique_product_2021,  
round((unique_product_2021-  
unique_product_2020)*100/(unique_product_2020),2)  
as pct_change  
from unq_20  
join unq_21
```

Insights

In **FY 2020**, AtliQ Hardware had a total of **245** products, but in **FY 2021**, count increased by **36%** to **334** products.



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.

OUTPUT

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

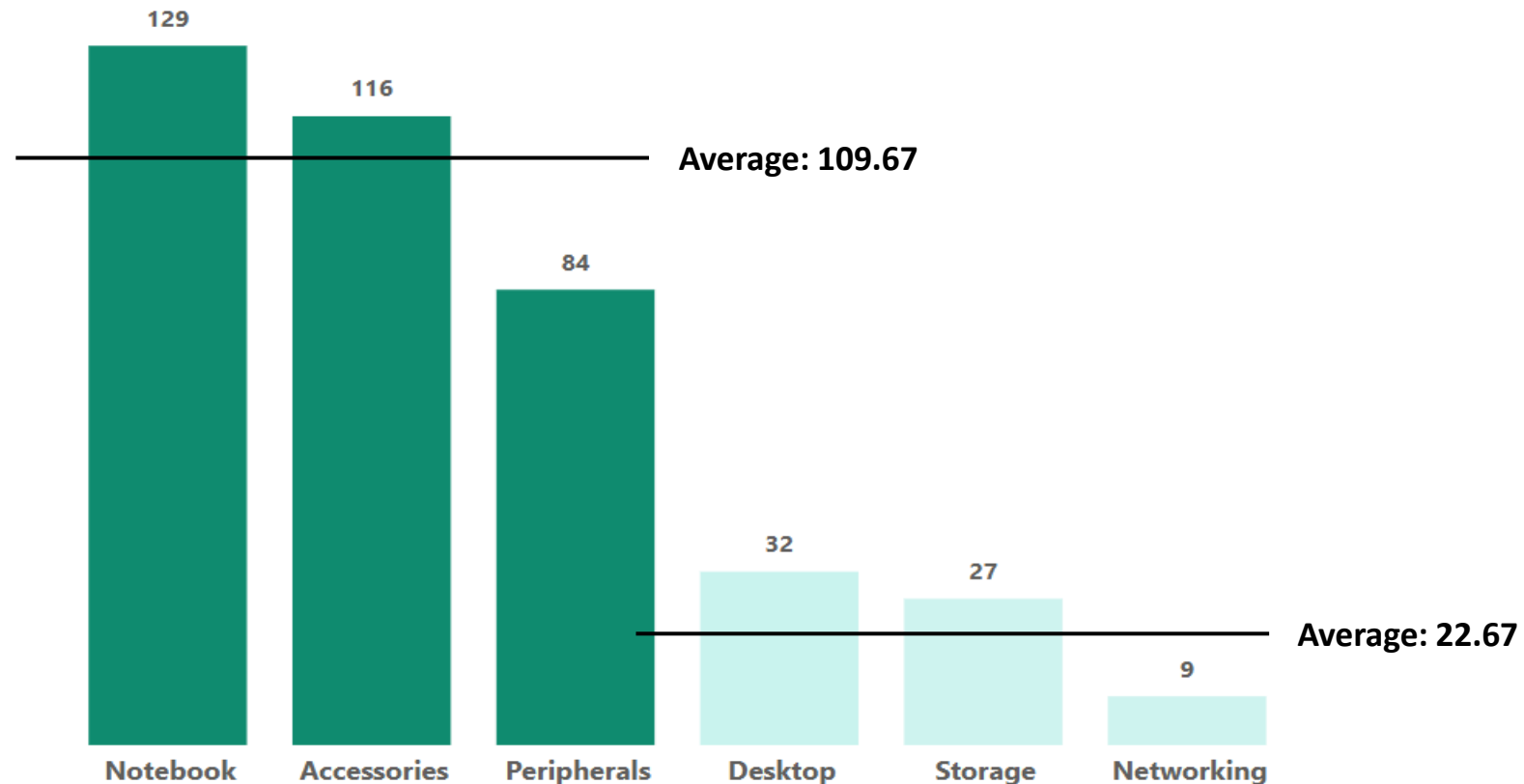
Query:

```
SELECT  
segment,  
count(distinct product_code)  
as product_count  
FROM dim_product  
group by segment  
order by product_count desc
```

Insights

AtliQ Hardware provide a wide range of products under segments **Notebook**, **Accessories** and **Peripherals**, with an average around **109 produts in each segment**.

Howerver still need to diversify production in segments like **Desktop**, **Networking** and **Storage** which has an average of only **23 products per segment**.



Request 4:

4. Follow-up: Which segment had the most increase in unique products in 2021?

The final output contains these fields,
segment,
product_count_2020,
product_count_2021,
difference

OUTPUT

	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

Query:

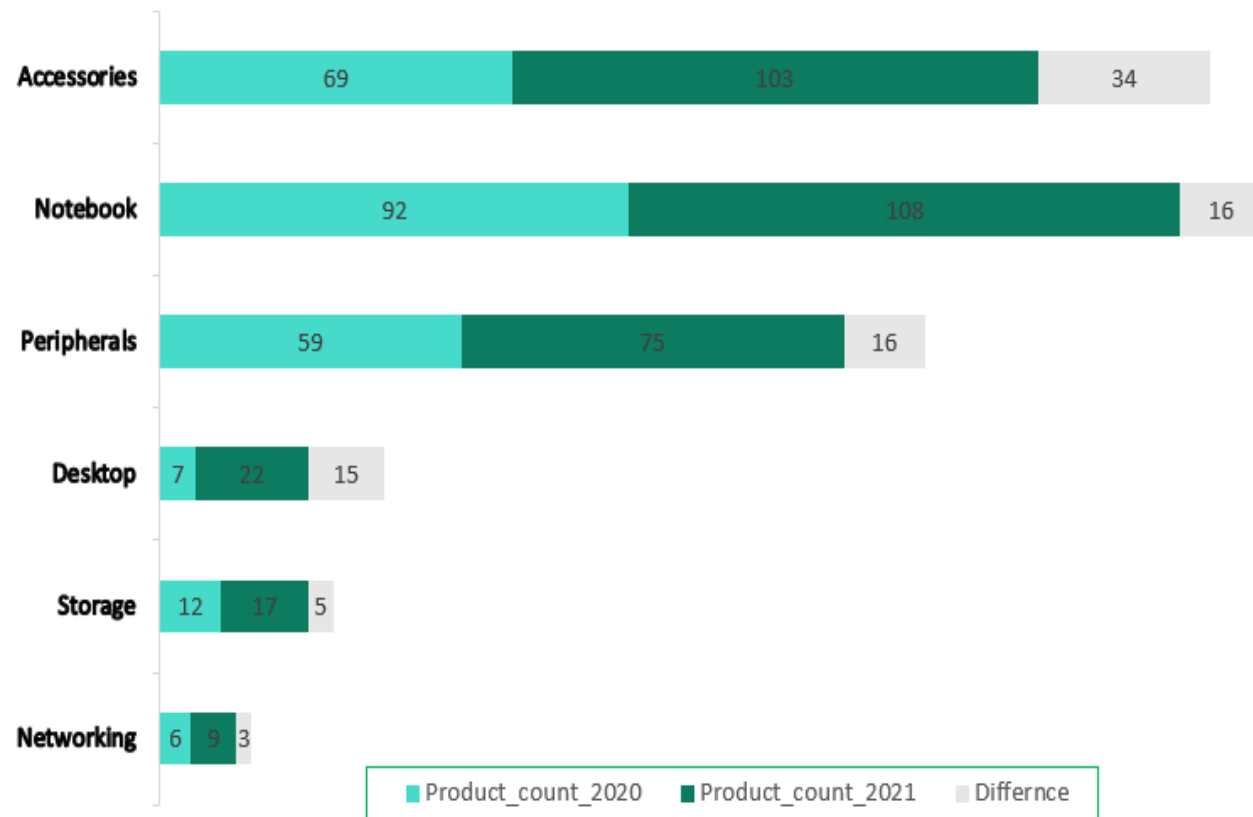
```
with count_2020 as (  
  SELECT s.fiscal_year, p.segment,  
         count(distinct p.product_code) as product_count_2020  
  FROM gdb023.dim_product p  
  join fact_sales_monthly s  
  on p.product_code = s.product_code  
  where s.fiscal_year = 2020  
  group by segment  
  order by product_count_2020 desc),
```

```
count_2021 as (  
  SELECT s.fiscal_year, p.segment,  
         count(distinct p.product_code) as product_count_2021  
  FROM gdb023.dim_product p  
  join fact_sales_monthly s  
  on p.product_code = s.product_code  
  where s.fiscal_year = 2021  
  group by segment  
  order by product_count_2021 desc)
```

```
select  
  C20.segment as Segment,  
  product_count_2020,  
  product_count_2021,  
  (product_count_2021-product_count_2020) as difference  
from count_2020 as C20  
join count_2021 as C21  
on C20.segment = C21.segment  
order by difference desc
```

Insights

In 2021, AtliQ Hardware introduced **34 new products** to the market in accessories segment.



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

OUTPUT

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

Query:

```
(SELECT  
p.product_code, p.product,  
m.manufacturing_cost  
FROM dim_product p  
join fact_manufacturing_cost m  
on p.product_code = m.product_code  
order by manufacturing_cost desc  
limit 1)
```

Union

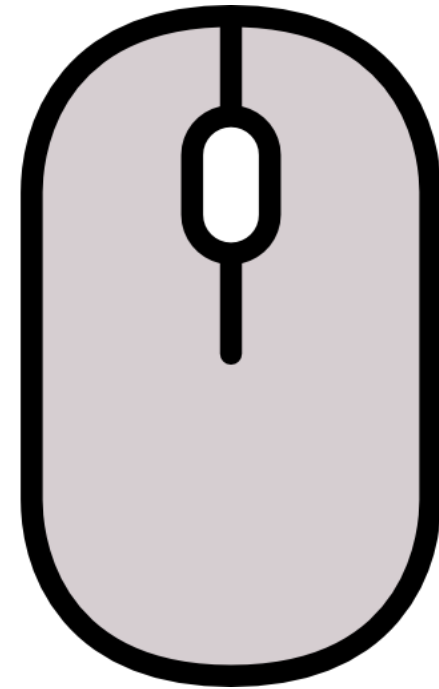
```
(SELECT  
p.product_code, p.product,  
m.manufacturing_cost  
FROM dim_product p  
join fact_manufacturing_cost m  
on p.product_code = m.product_code  
order by manufacturing_cost asc  
limit 1)
```

Insights

The Highest and Lowest manufacturing cost products for AtliQ hardware are **AQ Home Allin Gen 2 (plus 3) (Personal Desktop)** and **AQ Master Wired x1 Ms (Standard 1) (Mouse)** with costs of **240.53\$** and **0.89\$** respectively.



AQ Home Allin Gen 2 (plus 3)
Personal Desktop



AQ Master Wired x1 Ms (Standard 1)
Mouse

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`

OUTPUT

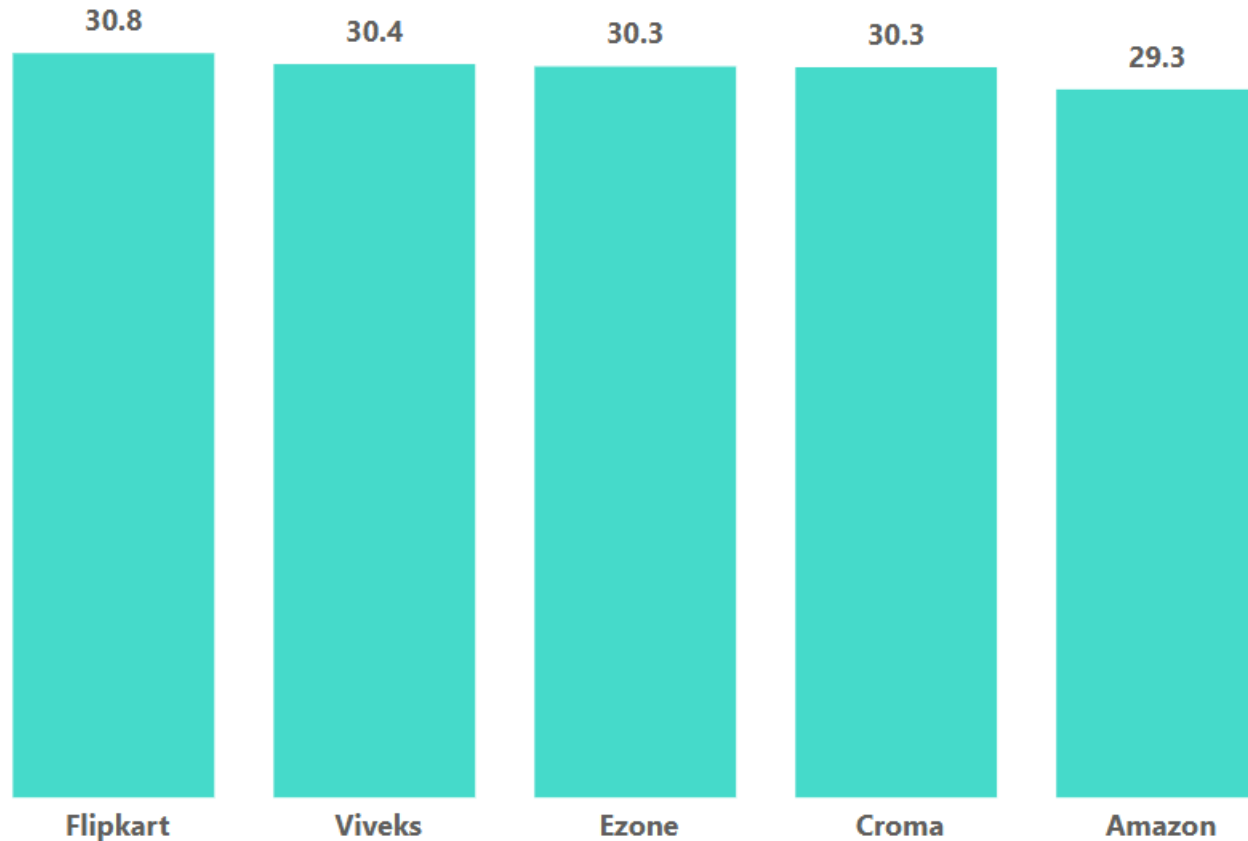
	customer_code	customer	avg_discount_pct
▶	90002009	Flipkart	30.83
	90002006	Viveks	30.38
	90002003	Ezone	30.28
	90002002	Croma	30.25
	90002016	Amazon	29.33

Query:

```
SELECT  
c.customer_code,  
c.customer,  
round(avg(pre.pre_invoice_discount_pct*100),2)  
as avg_discount_pct  
FROM dim_customer c  
join fact_pre_invoice_deductions pre  
on c.customer_code = pre.customer_code  
where pre.fiscal_year = 2021 and c.market = "India"  
group by c.customer_code, customer  
order by avg_discount_pct desc  
limit 5;
```

Insights

In 2021, AtliQ Hardware offered nearly offered same pre-invoice discount to each of **top 5 customers**, given that **Flipkart** is the most discounted customer in the Indian market with around **31%**.



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

OUTPUT

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

Query:

select

month,

fiscal_year,

Gross_sales_amount

FROM

(SELECT

monthname(s.date) **as** month,

month(date_add(s.date, interval 4 month)) **as**

month_number,

s.fiscal_year,

concat(round(sum(g.gross_price*s.sold_quantity)/1000000
,2),"M") as Gross_sales_amount

FROM

fact_sales_monthly s

join fact_gross_price g

on s.product_code = g.product_code **and** s.fiscal_year =
g.fiscal_year

join dim_customer c

on s.customer_code = c.customer_code

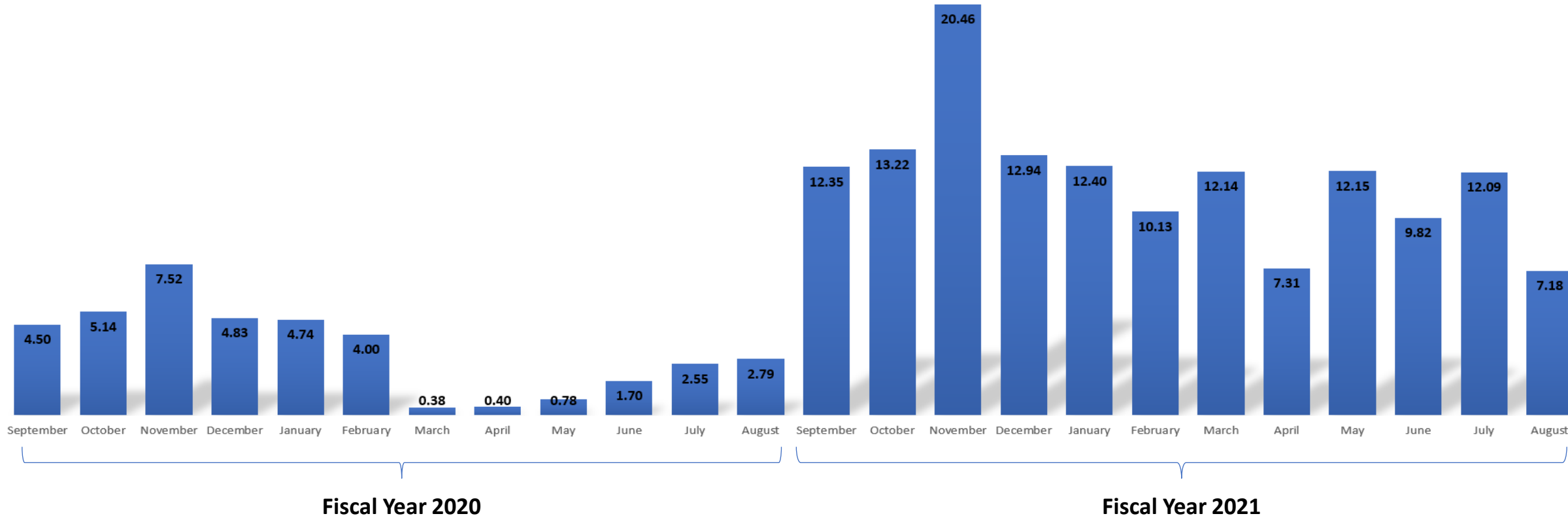
where customer = "Atliq Exclusive"

group by month,fiscal_year

order by fiscal_year, month_number) Gross_sales_Atliq

Insights

For AtliQ Hardware, March 2020 marked the lowest gross sales. It is very evident that the lower gross sales between March to August are because of COVID-19. However it is very good sign that the gross sales increased quickly after August and reached the highest value since the last two years in November.



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

OUTPUT

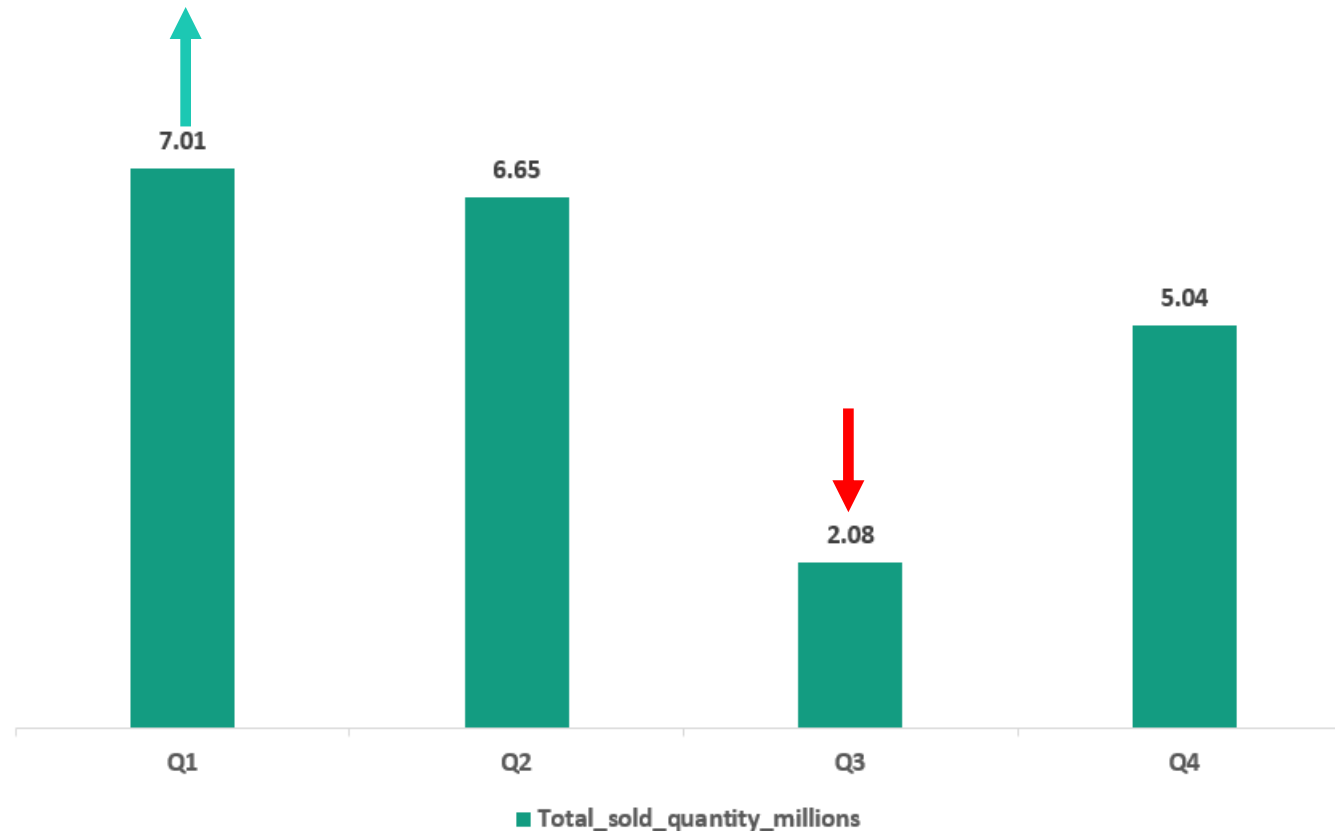
	quarters	total_sold_quantity_mln
►	Q1	7.01
	Q2	6.65
	Q3	2.08
	Q4	5.04

Query:

```
with cte as(  
  SELECT  
    quaters(date) as quaters,  
    fiscal_year,  
    sum(sold_quantity) as total_sold_quantity  
  FROM  
    fact_sales_monthly  
  where fiscal_year = 2020  
  group by quaters)  
  
  select  
    quaters,  
    round((total_sold_quantity/1000000),2)  
  as total_sold_quantity_mln  
  from cte
```

Insights

From the previous insight, we observed that **the gross sales amount** was lowest during **March, April, and May** due to the impact of **COVID-19**. The visual below confirms this trend, showing that **Q3** which includes these months also recorded the lowest total quantity sold.



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

OUTPUT

	channel	gross_sales_mln	pct
▶	Retailer	1219.08	73.23
	Direct	257.53	15.47
	Distributor	188.03	11.30

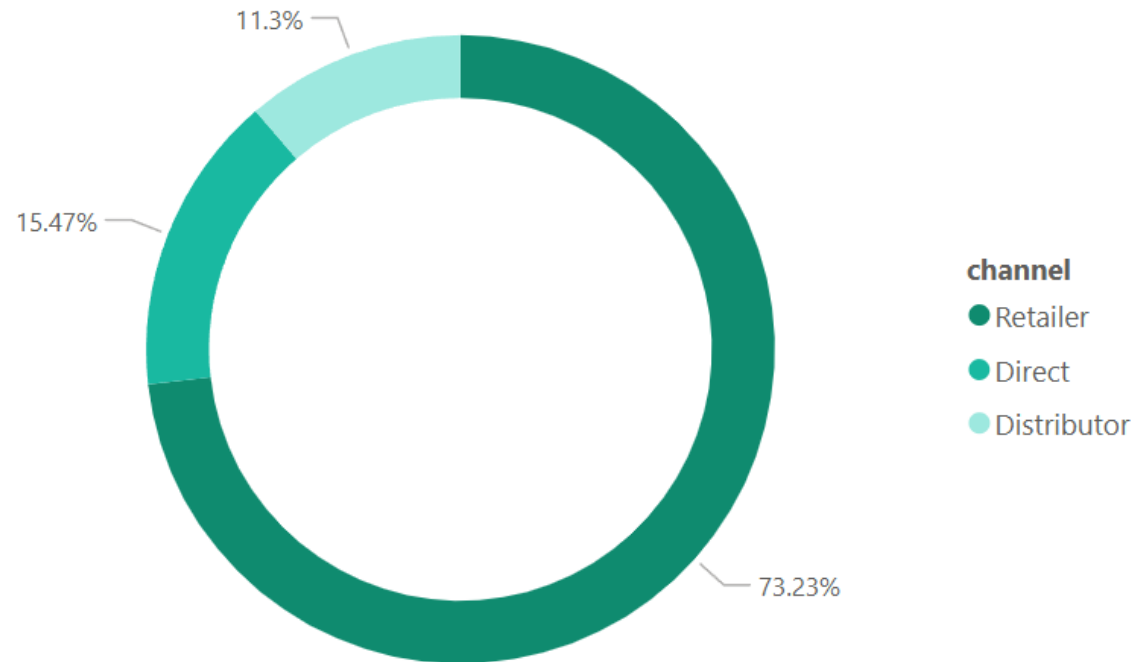
Query:

```
with X as(
SELECT
c.channel,
Round
(sum((s.sold_quantity*g.gross_price)/(1000000)),2)
as gross_sales_mln
FROM fact_sales_monthly s
join dim_customer c
on c.customer_code = s.customer_code
join fact_gross_price g
on g.product_code = s.product_code
where s.fiscal_year = 2021 and g.fiscal_year =
s.fiscal_year
group by c.channel)

select *,
round((gross_sales_mln)*100/sum(gross_sales_mln)
over(),2) as pct
from X
order by gross_sales_mln desc
```

Insights

The sales majorly happened through **retailers**, which is **73.23 %** of the total sales.



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

OUTPUT

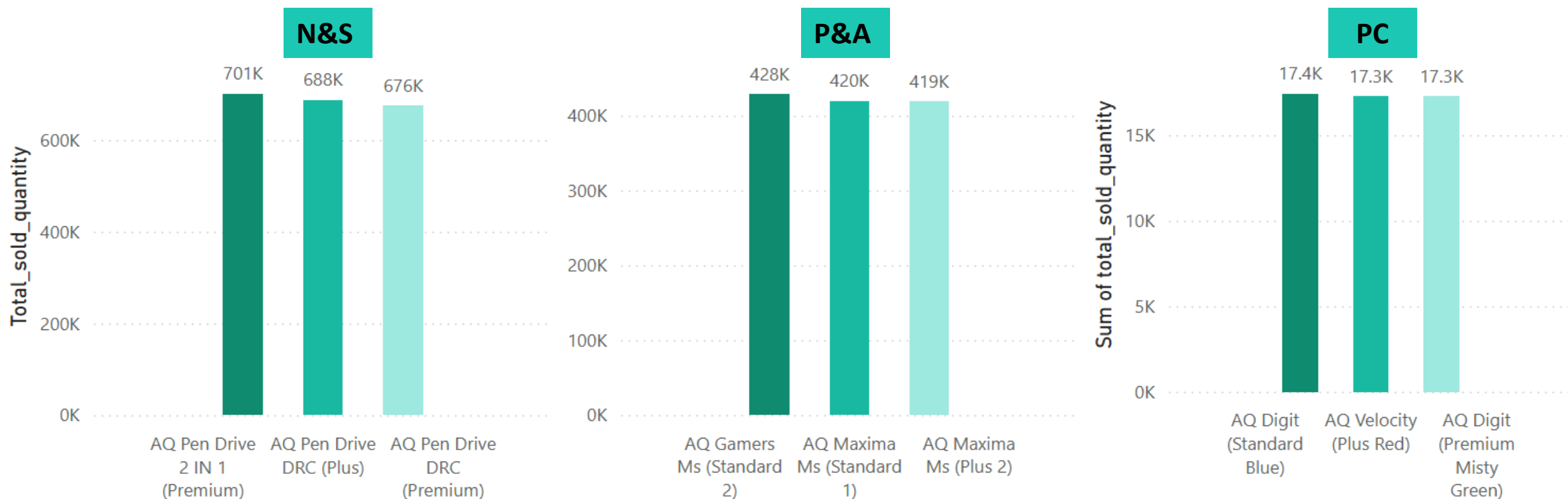
	division	product_code	product	variant	total_sold_quantity	rnk_order
▶	N & S	A6720160103	AQ Pen Drive 2 IN 1	Premium	701373	1
	N & S	A6818160202	AQ Pen Drive DRC	Plus	688003	2
	N & S	A6819160203	AQ Pen Drive DRC	Premium	676245	3
	P & A	A2319150302	AQ Gamers Ms	Standard 2	428498	1
	P & A	A2520150501	AQ Maxima Ms	Standard 1	419865	2
	P & A	A2520150504	AQ Maxima Ms	Plus 2	419471	3
	PC	A4218110202	AQ Digit	Standard Blue	17434	1
	PC	A4319110306	AQ Velocity	Plus Red	17280	2
	PC	A4218110208	AQ Digit	Premium Misty Green	17275	3

Query:

```
with cte1 as(
SELECT
p.division,
p.product_code,
p.product, p.variant,
sum(s.sold_quantity)as total_sold_quantity
FROM fact_sales_monthly s
join dim_product p
on p.product_code = s.product_code
where fiscal_year = 2021
group by product_code, product),
cte2 as(
select *,
dense_rank() over(partition by division order by
total_sold_quantity desc) as rnk_order
from cte1)
select *
from cte2
where rnk_order <=3
```

Insights

- The top selling products in **N&S** division were **Pen drives**, which were around **700k** in quantity.
- The top selling products in **P&A** division were **Mouse**, which were around **400k** in quantity.
- The top selling products in **PC** division were **Personal laptops**, which were around **17K** in quantity.



THANK YOU!

Business Insight 360 (FMCG)



BUSINES INSIGHT 360



FINANCE



SALES



MARKETING



SUPPLY CHAIN



EXECUTIVE



FILTERS



Select Benchmak (BM)

vs LY

vs Target

2019

2020

2021

2022 EST

Q1

Q2

Q3

Q4

YTD

YTG

Region/Country

All

customer

All

segment/Category/Product

All

Abbreviations

FCA = Forecast Accuracy

BM = Benchmark | LY=Last Year

GM = Gross Margin | NS = Net Sales

NP= Net Profit | Chg = Change

All values in Million ₹

NS ₹

₹ 3.74bn

BM : ₹823.85M

+353.5

GM %

38.08%

BM : 36.49%

+4.18%

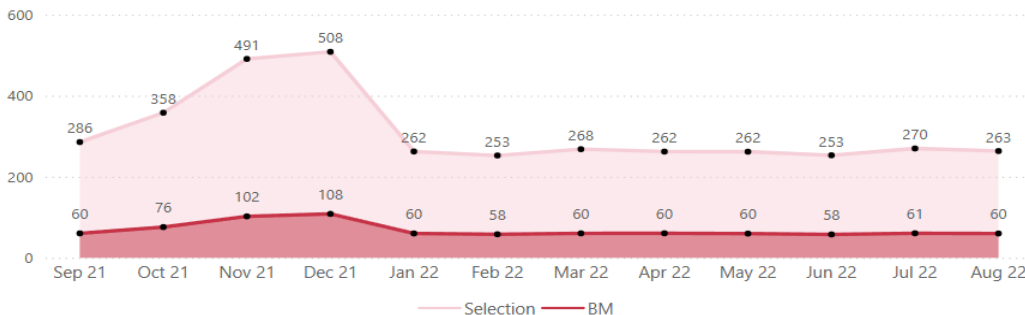
Net profit %

-13.98%

BM : -6.63%

-110.79%

Net sales performance over time



Top / Bottom Products & Customers by Net sales

Primary Parameter

☒ Region

☐ Category

Secondary Parameter

☐ Market

☒ Product

Region

Values

Chg %

APAC

1923.77

335.27

NA

1022.09

474.40

EU

775.48

286.26

LATAM

14.82

368.40

Total

3736.17

353.50

Profit & Loss Statement

Line Item	2022 EST	BM	chg	chg %
Gross Sales	7,370.14	1,664.64	5,705.50	342.75
Pre Invoice Deduction	1,727.01	392.50	1,334.51	340.00
Net Invoice Sales	5,643.13	1,272.13	4,370.99	343.59
- Post Discounts	1,243.54	281.64	961.90	341.54
- Post Deductions	663.42	166.65	496.77	298.09
Total Post Invoice Deduction	1,906.95	448.29	1,458.67	325.39
Net Sales	3,736.17	823.85	2,912.32	353.50
- Manufacturing Cost	2,197.28	497.78	1,699.50	341.42
- Freight Cost	100.49	22.05	78.43	355.64
- Other Cost	15.52	3.39	12.14	358.03
Total COGS	2,313.29	523.22	1,790.07	342.13
Gross Margin	1,422.88	300.63	1,122.25	373.30
Gross Margin %	38.08	36.49	1.59	4.37
GM / Unit	15.76	5.99	9.77	162.95
Operational Expense	-1,945.30	-355.28	-1,590.02	447.54
Net Profit	-522.42	-54.65	-467.77	855.93
Net Profit %	-13.98	-6.63	-7.35	110.79

Hospitality Analysis

