



*Presented by:*  
Aditya Mahajan



# ATLIQ HARDWARES

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Consumer Goods Ad-hoc Insights

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# Project Description

## About the Company

- › **Atliq Hardwares** is one of the India's leading computer hardware manufacturers and are well –established in other countries outside India

## Problem Statement

- › The management have noticed that the **company lacks in getting the quick and good enough insights** in order to make smart and data informed decisions.
- › For this, they wanted to **expand their analyst team** by running a **SQL challenge** .

## Objective

- › **To answer 10 important ad-hoc requests** using SQL along with a presentation, using which the top-level management can **get high quality and accurate insights to take crucial business decisions.**

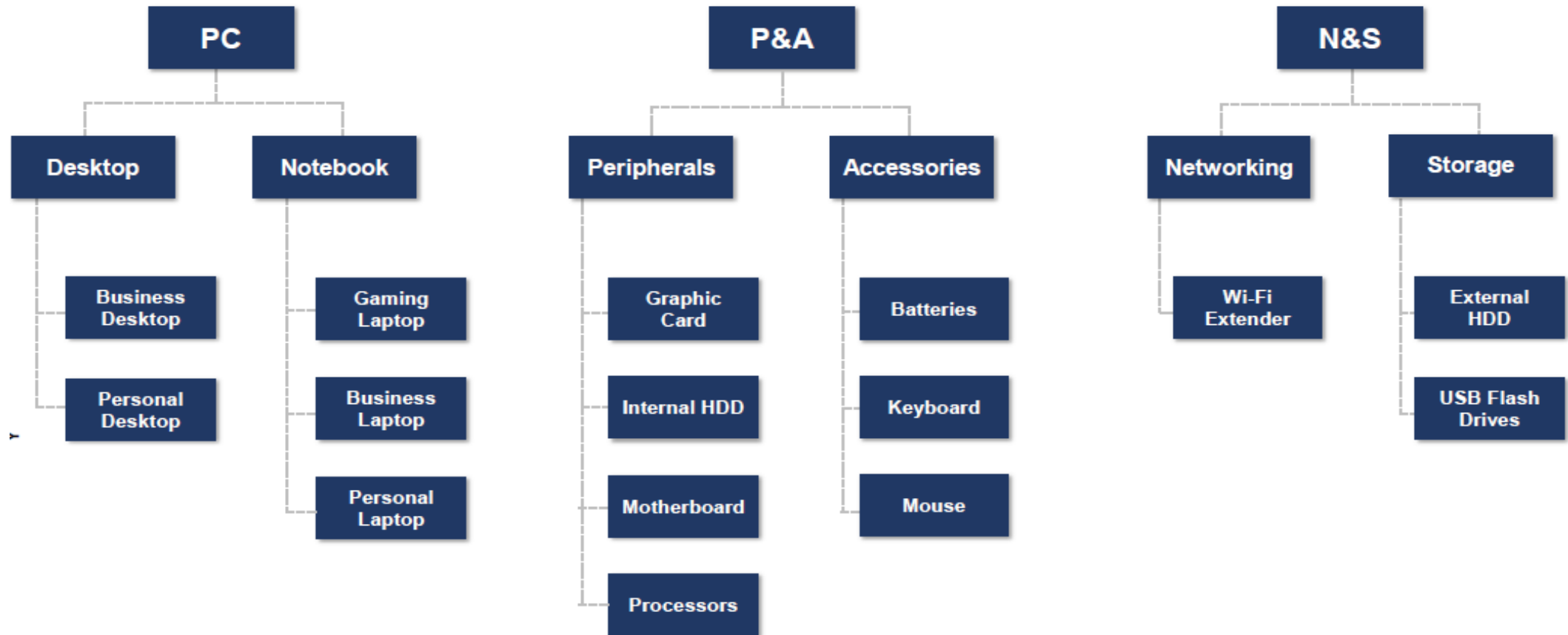
# Atliq Hardwares Overview

Atliq Hardwares has a wide presence across **27 countries** in **Asia Pacific, European Union, North America & Latin America** regions.



# Atliq Hardwares Product Lines

**Atliq Hardwares** has 3 main divisions (PC,P&A,N&S). Under each division there are 2 product segments which are followed by different product categories. In Total Atliq have **3 Product Divisions , 6 Product Segments and 15 product categories for computer hardware**.



# UNDERSTANDING THE DATASET

The dataset contains **6 tables** (2 dimension and 4 fact tables) having the **sales data** for **fiscal years 2020 and 2021**. The **fiscal year** in Atliq Hardwares starts from **1<sup>st</sup> September** and ends on **31<sup>st</sup> August**.

1

**Table Name:**  
dim\_customer

**Description:**  
Customer-specific data.

dim_customer
channel
customer
customer_code
market
platform
region
sub_zone

2

**Table Name:**  
dim\_product

**Description:** Product-specific data.

dim_product
category
division
product
product_code
segment
variant

3

**Table Name:**  
fact\_sales\_monthly

**Description:** Monthly sales for each product.

fact_sales_monthly
customer_code
date
$\Sigma$ fiscal_year
product_code
$\Sigma$ sold_quantity

4

**Table Name:**  
fact\_manufacturing\_cost

**Description:** Production cost specific data.

fact_manufacturing_cost
$\Sigma$ cost_year
$\Sigma$ manufacturing_cost
product_code

5

**Table Name:**  
fact\_gross\_price

**Description:** Gross price specific data.

fact_gross_price
$\Sigma$ fiscal_year
$\Sigma$ gross_price
product_code

6

**Table Name:**  
fact\_pre\_invoice\_deductions

**Description:** Pre-invoice deductions related data.

fact_pre_invoice_deductions
customer_code
$\Sigma$ fiscal_year
$\Sigma$ pre_invoice_discount_pct

# Ad-Hoc Requests

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Ten Ad-hoc Requests & Visualizations



## Request 1

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

## SQL Query Syntax

```
> SELECT DISTINCT(market) FROM dim_customer  
WHERE customer = 'Atliq Exclusive'  
AND region = 'APAC';
```

## Outcome

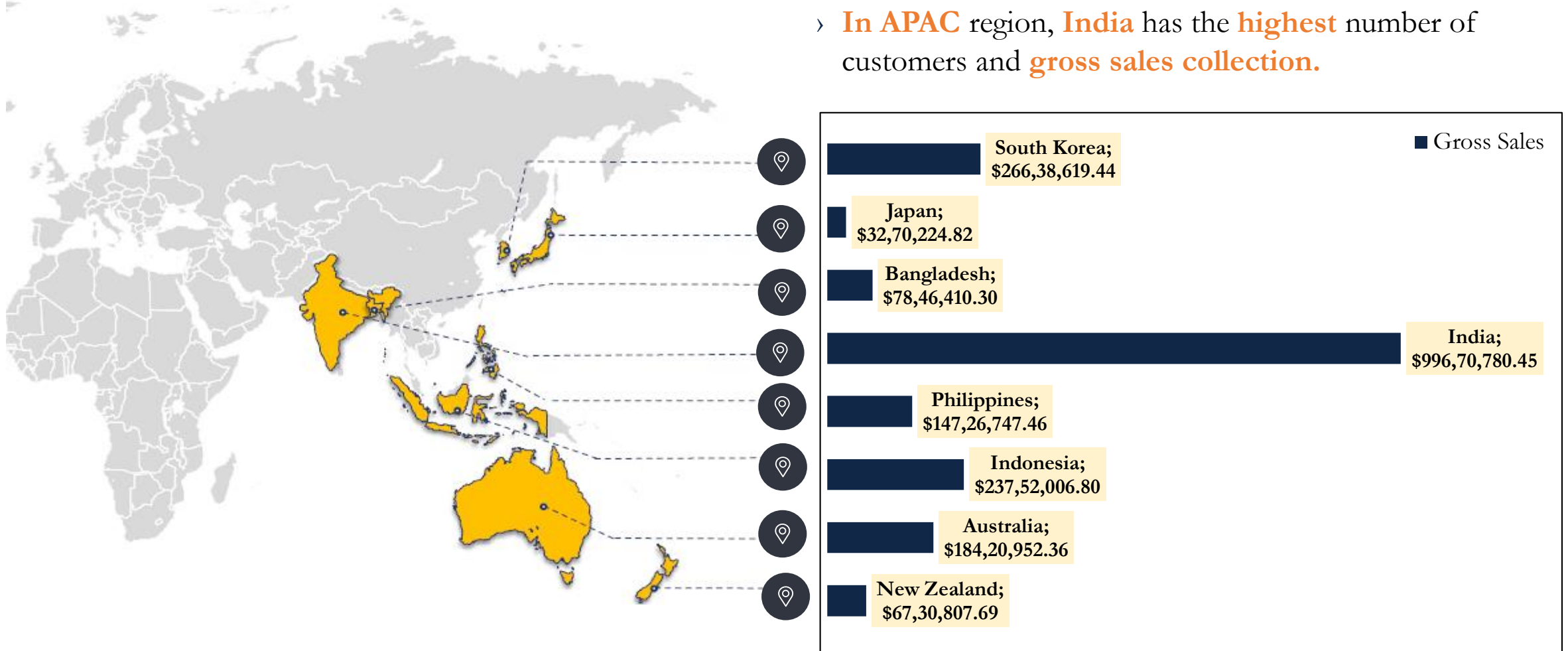
>

Market	
India	South Korea
Indonesia	Australia
Japan	New Zealand
Philippines	Bangladesh



# Visualization & Insights for Request-1

- › **Atliq Exclusive** operates its business in **8 countries of APAC region**.
- › In **APAC** region, **India** has the **highest** number of customers and **gross sales collection**.





## Request 2

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

## SQL Query Syntax

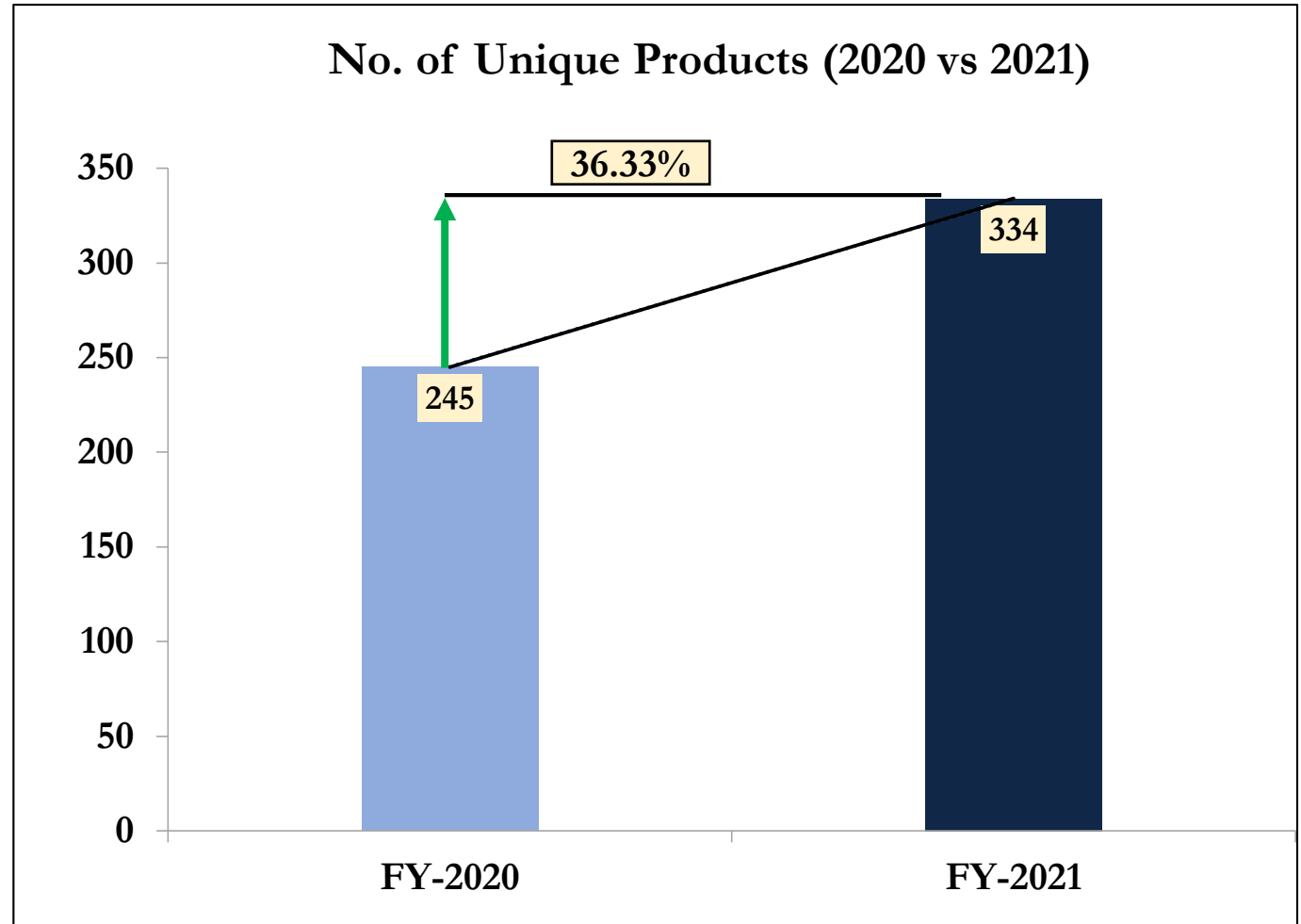
```
> with cte as
  (select
    count(distinct case when fiscal_year=2020 then product_code end )
    as Unique_product_2020,
    count(distinct case when fiscal_year=2021 then product_code end)
    as Unique_product_2021
  from fact_gross_price )
select Unique_product_2020,Unique_product_2021,
concat(round((Unique_product_2021-Unique_product_2020)*100/Unique_product_2020,2),'%')
as pct_change from cte
```

## Outcome

Unique_Products_2020	Unique_Products_2021	Percentage Change
245	334	36.33%

## Visualization & Insights for Request-2

- › **Atliq Hardwares** produced **245 unique products in FY-20** whereas it increased to **334** unique products in **FY-21**.
- › Out of 334 unique products in **FY-21**, **102 new products** are added in this year only and Out of 245 unique products in **FY-20**, **13 products** lasts for a year only.
- › With **89 more unique products** produced in **FY-21**, **Atliq Hardwares** has achieved a **36% increase from FY-20**, indicating commitment to future growth and innovation by **getting the right and in demand products in the market**.





## Request 3

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

## SQL Query Syntax

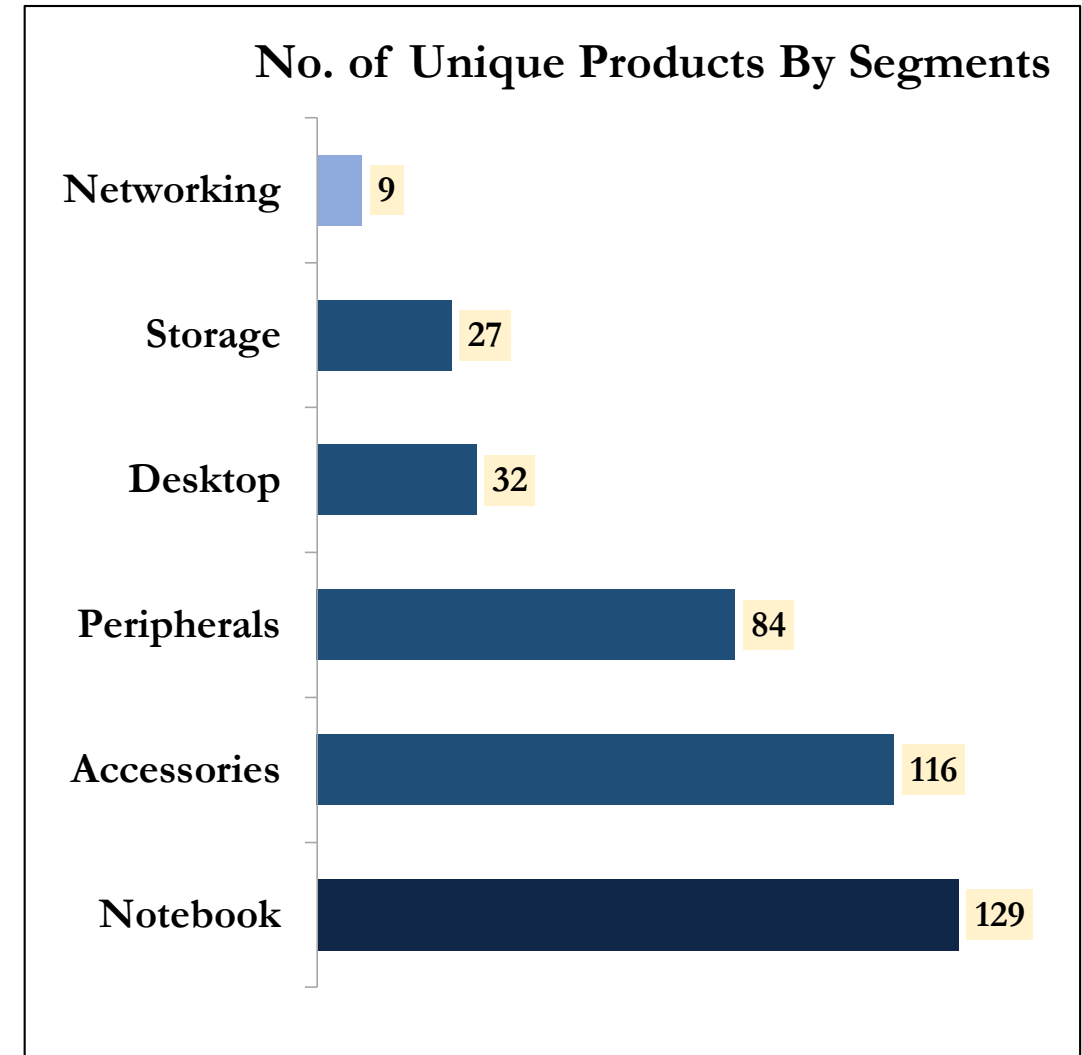
```
select segment,  
> count(distinct product_code) as product_count  
from dim_product  
group by segment  
order by product_count desc;
```

## Outcome

Segment	Product_Count
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9
<b>Total</b>	<b>397</b>

# Visualization & Insights for Request-3

- › Atliq Hardwares deals in **6 different product segments** as shown with **Notebook segment** has the **highest number** of unique products (129 nos.) with a **total share of 32.5%** whereas **Networking** has the **least number of unique products** (9 nos.) **around 2% share**.
- › It can be inferred that the **company is primarily focused on the Notebook segment**, followed by Accessories and Peripherals. This could be because these segments are in **high demand among customers, or because the company has expertise** in producing these types of products.
- › While, the **Desktop, Storage, and Networking** segments have relatively fewer products, indicating the **company may not be as focused on these areas, or that they are not as popular among at the customers**.





## Request 4

Which segment had the most increase in unique products in 2021 vs 2020?

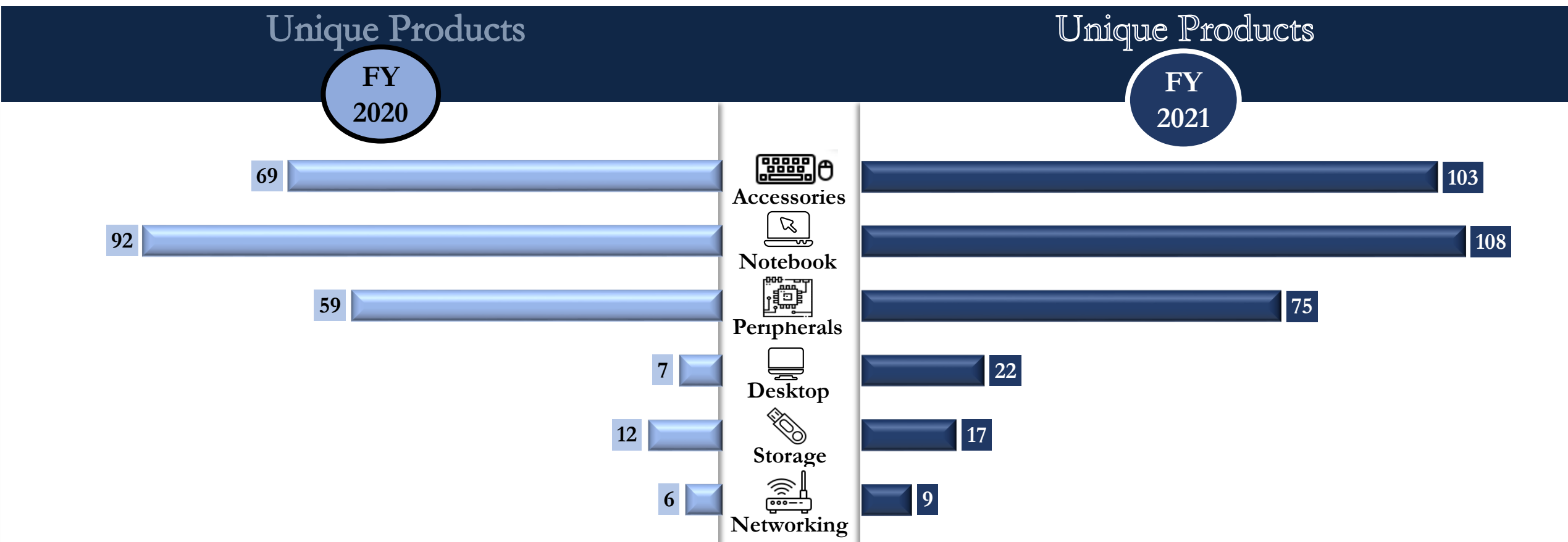
## SQL Query Syntax

```
select t1.segment,t1.product_count_2021,  
> t1.product_count_2020,(product_count_2021-product_count_2020)  
as Difference  
from(SELECT p.segment as Segment,  
          COUNT(DISTINCT case when fiscal_year=2020 then f.product_code end)  
          AS Product_count_2020,  
          COUNT(DISTINCT case when fiscal_year=2021 then f.product_code end)  
          AS Product_count_2021  
FROM fact_gross_price f  
join dim_product p on p.product_code=f.product_code  
group by segment) as t1  
order by difference desc
```

## Outcome

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	3	9	3

# Visualization & Insights for Request-4



Atliq Hardwares has broadened its product catalogue by **adding 89 new unique products** with Accessories has the most increase of **34 nos. for FY-21**. The company has **been expanding its product offerings across all segments in 2021**, with a particular focus on Accessories, Notebook, and Peripherals. The significant **increase in Desktop products** could indicate that the company is **exploring opportunities** in this segment as well.



## Request 5

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

## SQL Query Syntax

```
> select a.product_code, p.product,  
concat('$',round(a.manufacturing_cost,2)) as manufacturing_cost  
from fact_manufacturing_cost as a  
join dim_product p on  
a.product_code=p.product_code  
where a.manufacturing_cost=(select max(manufacturing_cost)  
from fact_manufacturing_cost)  
or a.manufacturing_cost=(select min(manufacturing_cost)  
from fact_manufacturing_cost)  
order by a.manufacturing_cost desc
```

## Outcome

Product_Code	Product	Manufacturing_Cost
A6120110206	AQ HOME Allin1 Gen 2	\$240.54
A2118150101	AQ Master wired x1 Ms	\$0.89



# Visualization & Insights for Request-5

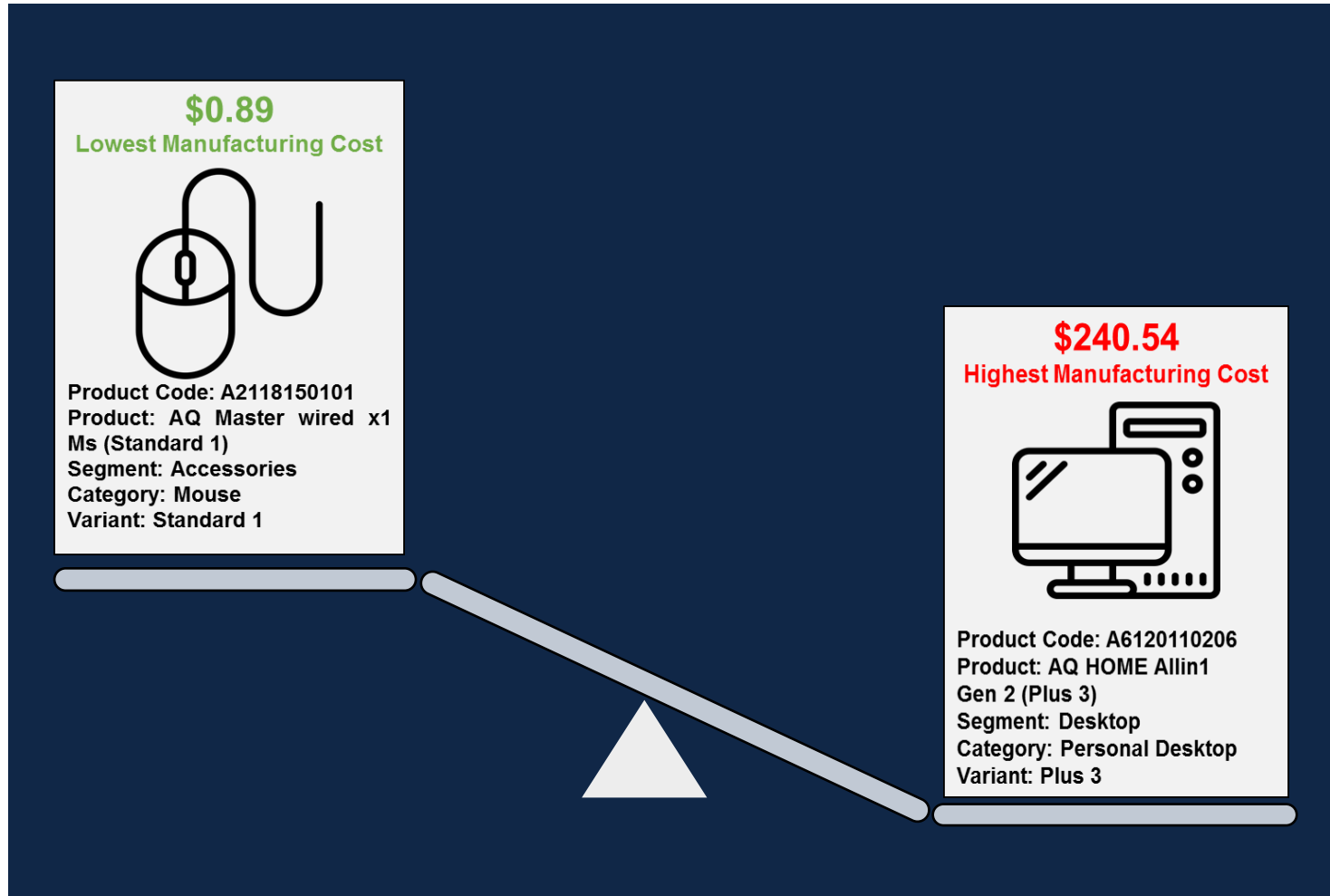
AQ HOME Allin1

Gen 2 (Plus 3)

Personal Desktop

Category

Highest  
manufacturing cost  
of \$240.54.



AQ Master wired x1  
Ms (Standard 1)

Mouse category

Lowest  
manufacturing cost  
of \$0.89.



## Request 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.

## SQL Query Syntax

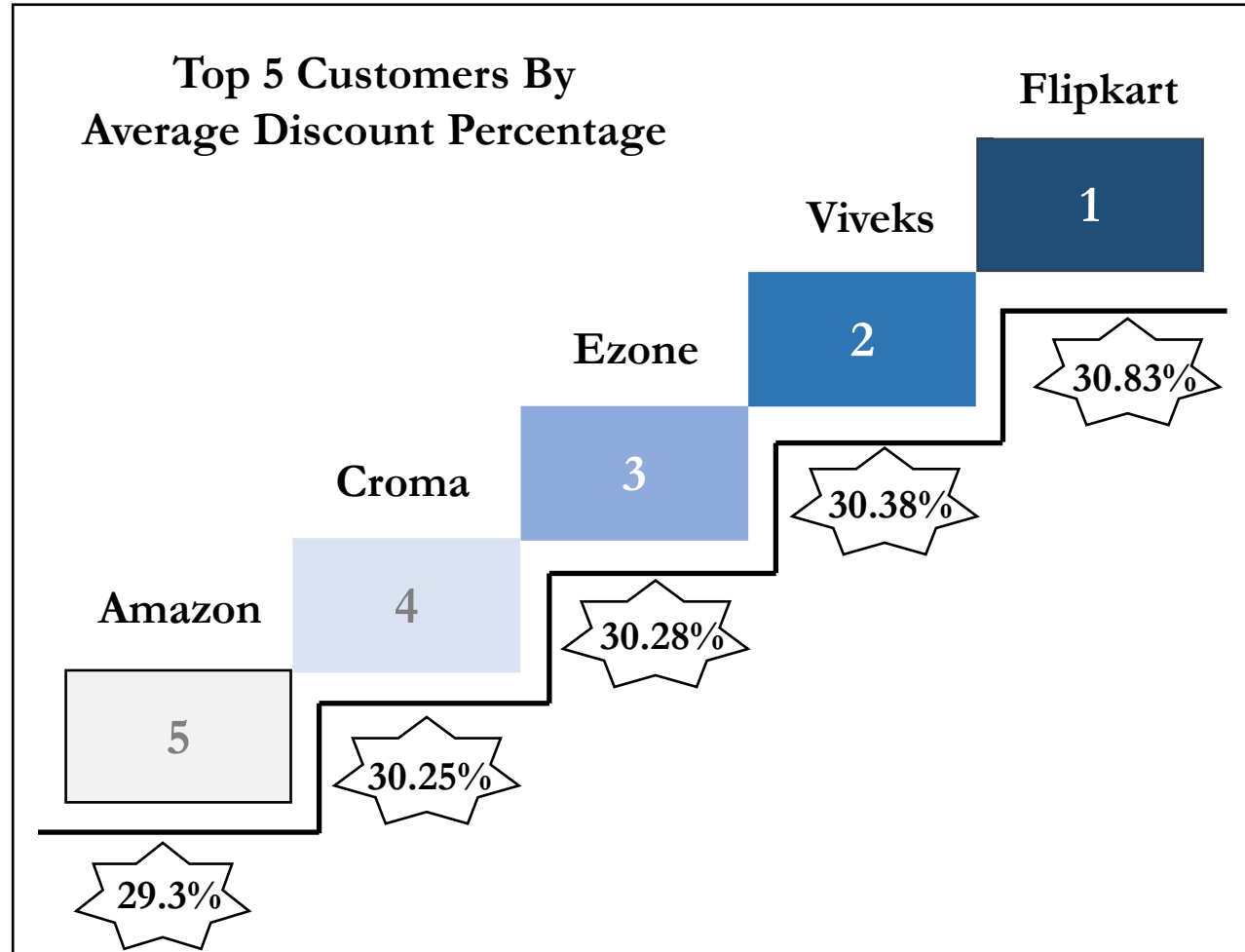
```
select b.customer_code,b.customer,  
concat(round(avg(pre_invoice_discount_pct)*100,2),'%')  
as average_discount_percentage  
from fact_pre_invoice_deductions a  
join dim_customer b  
on a.customer_code=b.customer_code  
where b.market="India" and a.fiscal_year=2021  
group by b.customer_code,b.customer  
order by avg(pre_invoice_discount_pct) desc  
limit 5
```

## Outcome

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 for Request-6

At the bottom of top 5 with average pre-invoice discount was **Amazon** 29.33% for the FY-21 in the Indian Market only.



The **maximum** average pre-invoice discount was given to **Flipkart** which is of **30.83%** for the FY-21 in the Indian Market only.



## 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.

## SQL Query Syntax

```
select monthname(date) as Month,year(date) as Year,  
concat('$',round(sum(c.gross_price*a.sold_quantity)/1000000,2),' M')  
as Gross_sales_Amount  
from fact_sales_monthly a  
join dim_customer b on a.customer_code=b.customer_code  
join fact_gross_price c on a.product_code=c.product_code  
and a.fiscal_year=c.fiscal_year  
where customer="Atliq Exclusive"  
group by monthname(date),year(date)  
order by Year
```

## Outcome

Month	Year	Gross_sales_Amount	
September	2019	\$ 4.50 M	
October	2019	\$ 5.14 M	
November	2019	\$ 7.52 M	
December	2019	\$ 4.83 M	
January	2020	\$ 4.74 M	
February	2020	\$ 4.00 M	
March	2020	\$ 0.38 M	
April	2020	\$ 0.40 M	
May	2020	\$ 0.78 M	
June	2020	\$ 1.70 M	
July	2020	\$ 2.55 M	
August	2020	\$ 2.79 M	

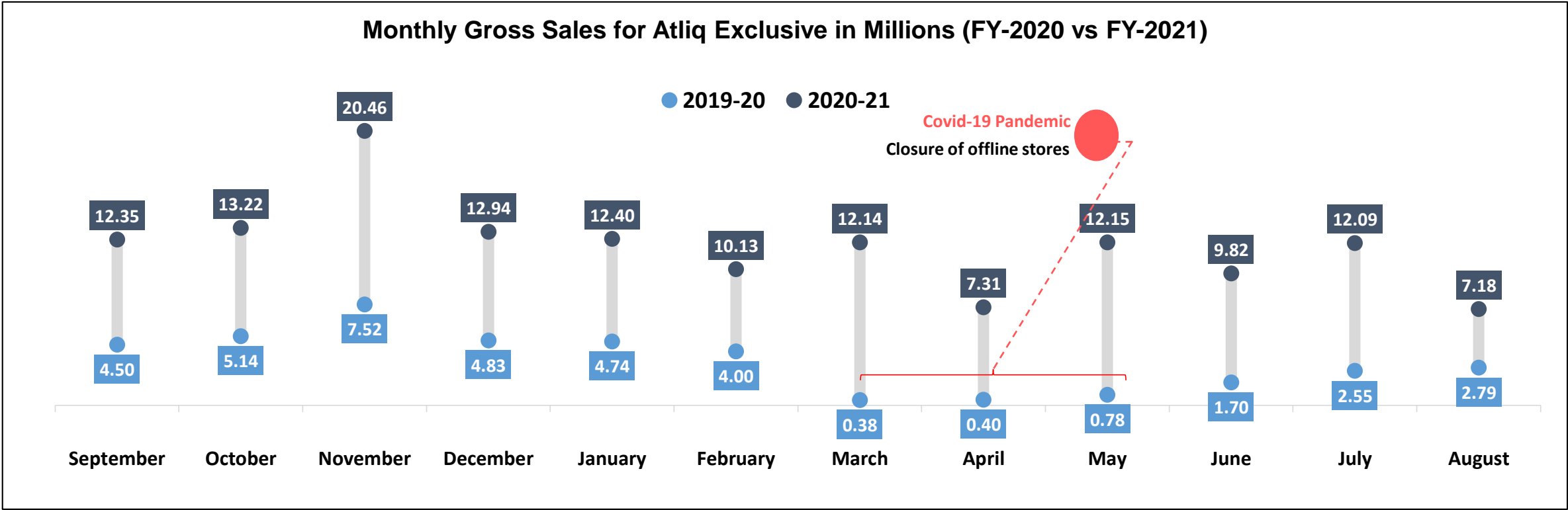
FY-20

Month	Year	Gross_sales_Amount	
September	2020	\$ 12.35 M	
October	2020	\$ 13.22 M	
November	2020	\$ 20.46 M	
December	2020	\$ 12.94 M	
January	2021	\$ 12.40 M	
February	2021	\$ 10.13 M	
March	2021	\$ 12.14 M	
April	2021	\$ 7.31 M	
May	2021	\$ 12.15 M	
June	2021	\$ 9.82 M	
July	2021	\$ 12.09 M	
August	2021	\$ 7.18 M	

FY-21

# Visualization & Insights for Request- 7

\*Note:- FY-20 starts from Sep-19 to Aug-20  
FY-21 starts from Sep-20 to Aug-21



In FY20, Atliq Exclusive gross sales were \$39.33 million, but in **FY21, it increased by 261% to \$142.19 million**. The onset of the **Covid-19 pandemic resulted in lower sales, with March 2020** recording the lowest sales of 0.38M. However, most months in FY21 had higher sales than the same months in FY20, indicating growth. **Despite challenges posed by Covid-19, the data suggests a positive trend in sales for FY21.**



## 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.

## SQL Query Syntax

```
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 maximum_total_sold_quantity  
from fact_sales_monthly  
where fiscal_year=2020  
group by quarter  
order by sum(sold_quantity) desc
```

## Outcome

Quarter	Total Sold Quantity
Q1	7005619
Q2	6649642
Q4	5042541
Q3	2075087

# Visualization & Insights for Request-8

**Total Quantity Sold = 5.04 Mn**  
(In Numbers)

**Q4**

**Q4-FY-20 (June, July, August)**

This quarter showed recovery and a steep rise of 142% in total products sold as compared to Q3 with an average sales of \$1.7M.

**Total Quantity Sold = 2.08 Mn**  
(In Numbers)

**Q3**

**Q3-FY-20 (March, April, May)**

Due to the impact of Covid-19, this quarter had the lowest number of units sold and also recorded the lowest sales for the fiscal year 2020 in the month of March, with only \$0.23 million in sales.

**Q1**

**Total Quantity Sold = 7.01 Mn**  
(In Numbers)

**Q1-FY-20 (Sep, Oct, Nov)**

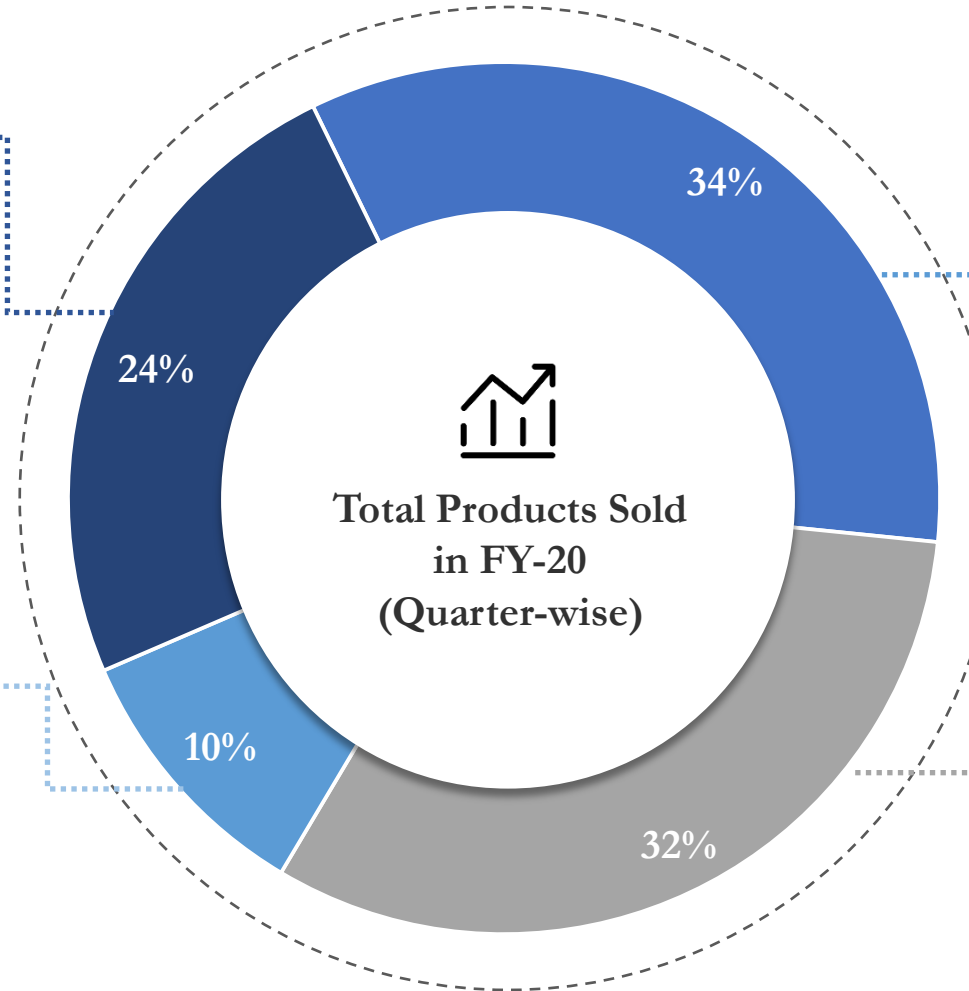
This quarter saw the most units sold in the FY-20., with steady Month on Month growth from 1.76M in Sep-19 to 3.05M in Nov-19.

**Q2**

**Total Quantity Sold = 6.65 Mn**  
(In Numbers)

**Q2-FY-20 (Dec, Jan, Feb)**

The quarter began with a record high in sales per month in December 2019, with 3.2 million in sales. However, with the onset of the Covid-19 pandemic, the sales for the next two months averaged at 1.7 million per month.



**\*Note:- FY-20 starts from Sep-19 to Aug-20**



## Request 9

Which **channel** helped to bring **more gross sales** in the **fiscal year 2021** and the **percentage of contribution**.

## SQL Query Syntax

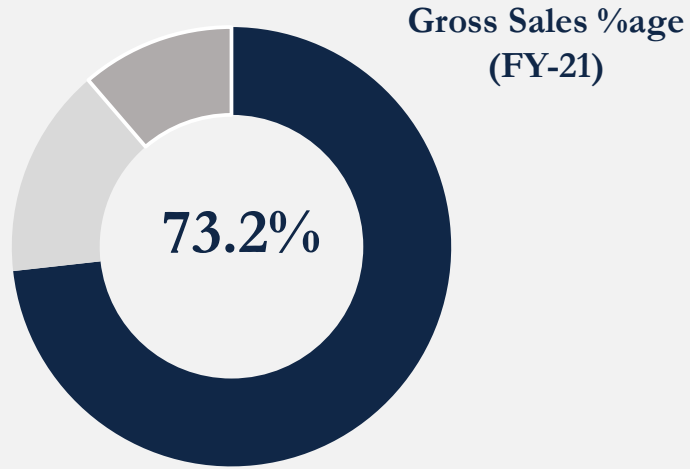
```
> with cte as (select c.channel as channel_,  
round(sum(p.gross_price *m.sold_quantity)/1000000,2) as gross_sales_mln  
from fact_sales_monthly m  
join fact_gross_price p on  
m.product_code=p.product_code and m.fiscal_year=p.fiscal_year  
join dim_customer c  
on m.customer_code=c.customer_code  
where m.fiscal_year=2021  
group by channel_)  
SELECT channel_,  
CONCAT('$',gross_sales_mln,' M') AS gross_sales,  
CONCAT(ROUND(gross_sales_mln/ SUM(gross_sales_mln) over () *100,2),'%') AS percentage  
FROM cte  
ORDER BY percentage DESC;
```

## Outcome

Channel_	Gross_Sales	Percentage
Retailer	\$1219.08 M	73.23%
Direct	\$257.53 M	15.47%
Distributor	\$188.03 M	11.30%

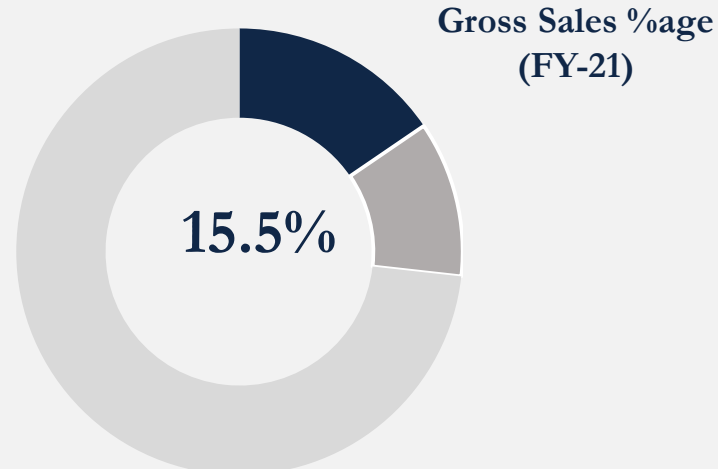


# Visualization & Insights for Request-9



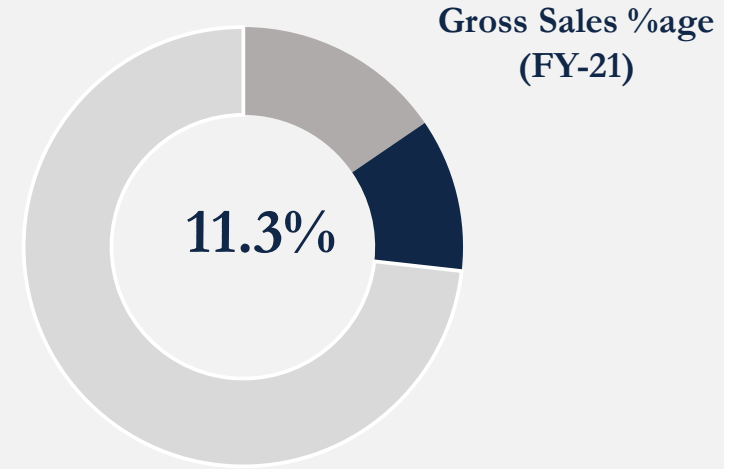
## RETAILER

Retailer channel has seen a significant **increase** from \$379.07 million in 2020 to \$1,219.08 million in 2021. Its **overall percentage contribution** to total sales has also **increased** from 70.73% in 2020 to 73.23% in 2021.



## DIRECT

The direct channel has seen an increase from \$96.43 million in 2020 to \$257.53 million in 2021. But **overall percentage contribution** to total sales has **decreased** from 17.99% in 2020 to 15.47% in 2021



## DISTRIBUTOR

Distributor channel has increased from \$60.44 million in 2020 to \$188.03 million in 2021. However, the distributor channel's **overall percentage contribution** to total sales has **remained relatively constant..**



## Request 10

Get the **Top 3 products** in **each division** that have a **high total\_sold\_quantity** in the **fiscal\_year 2021**.

## SQL Query Syntax

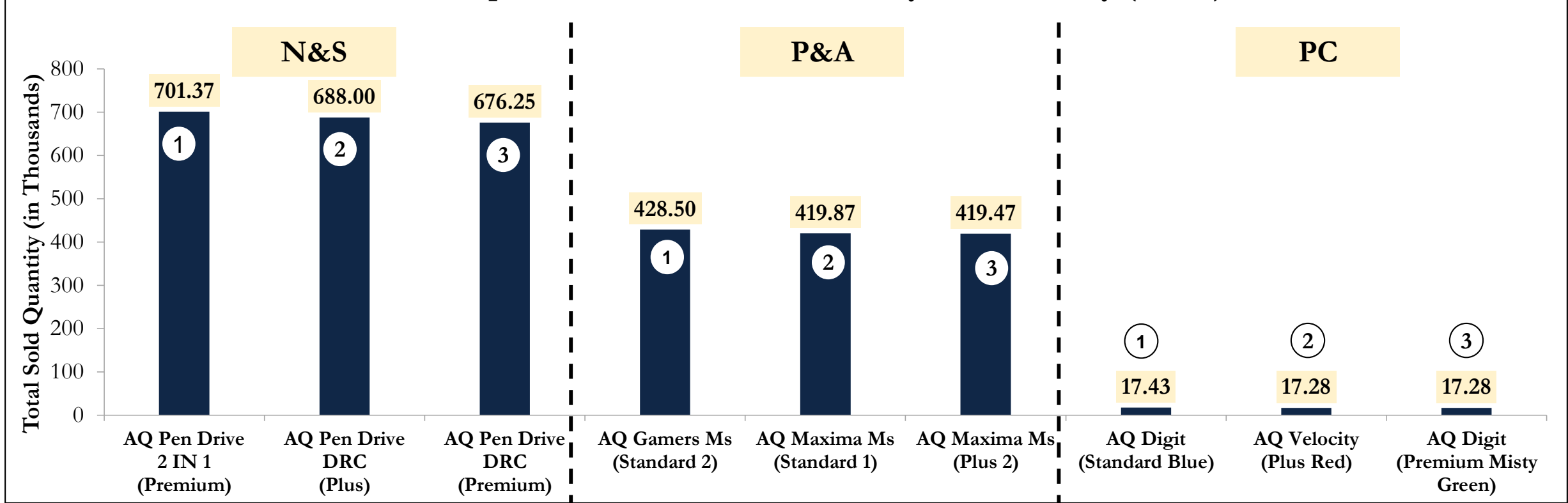
```
select* from (select b.division,b.product_code,b.product,  
sum(a.sold_quantity) as total_sold_quantity,  
> rank() over(partition by b.division order by sum(a.sold_quantity) desc)  
as rank_order from dim_product b  
join fact_sales_monthly a on b.product_code=a.product_code  
where fiscal_year=2021  
group by b.division,b.product_code,b.product) t1  
where t1.rank_order<4
```

## Outcome

> 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 for Request-10

Top 3 Products in each Division by Sold Quantity (FY-21)



In the **N & S division**, the **AQ Pen Drive 2 IN 1** was the highest-selling product with 701,373 units sold. In the **P & A division**, the **AQ Gamers Ms** was the highest-selling product with 428,498 units sold. And in the **PC division**, the **AQ Digit** was the highest-selling product with 17,434 units sold. The sales figures **suggest a higher demand for pen drives and gaming mouse**, as compared to other products. These insights provide an overview of the top-selling products for each division and can be used to inform marketing and production strategies.

Thank You