



# Consumer Goods Analytics

Presented by: Swapnil Alaspure



# Agenda!

- ☐ About AtliQ Hardware
- ☐ Project Over-View & Problem Statement
- ☐ AtliQ Business Model
- ☐ Data Over-View
- ☐ Ad-Hoc Request



## About AtliQ Hardware

- ❑ AtliQ Hardware is a leading hardware firm master and specializing in making Pc's, Printers, Mice {Mouse}, Computers and more with a international reach.



# Project Over-View

- ☐ In this project, I will be working with a data related to consumer goods.
- ☐ The goal is to answer 10 specific Ad-Hoc Request using SQL Queries.

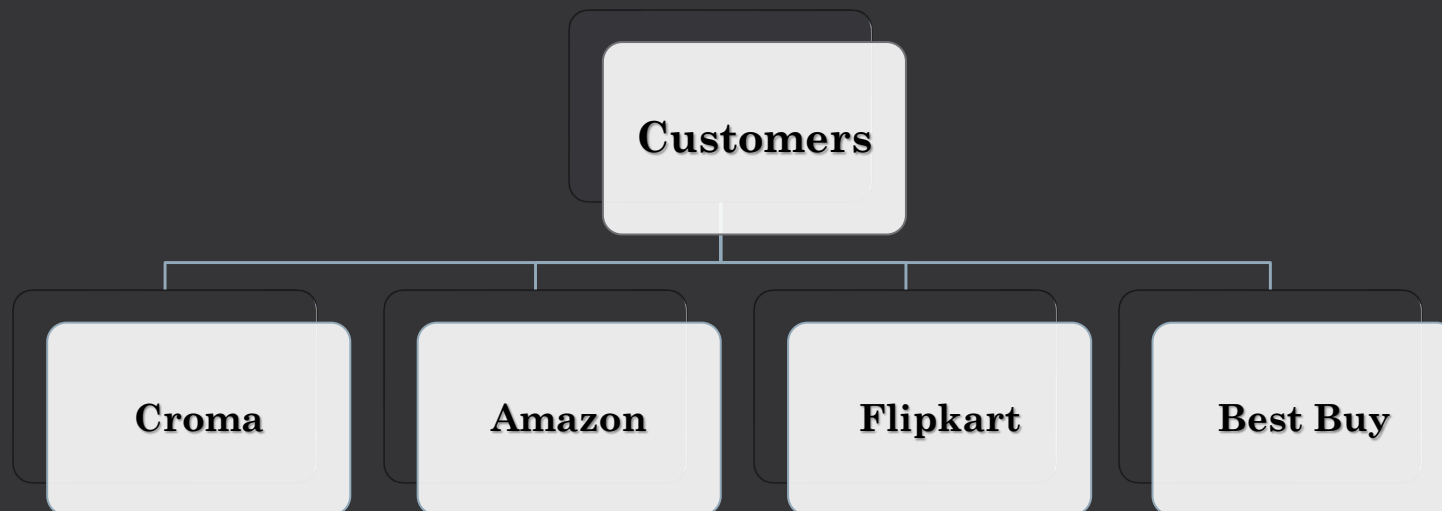


# Problem Statement

- ❑ AtliQ Hardware is a leading hardware firm master and specializing in making Pc's, Printers, Mice {Mouse}, Computers and more with a international reach faced a major challenge.
- ❑ They need a quick and data informed decision to stay in the competitive ever evolving market.
- ❑ The management observed that they were missing crucial insight for strategic moves.

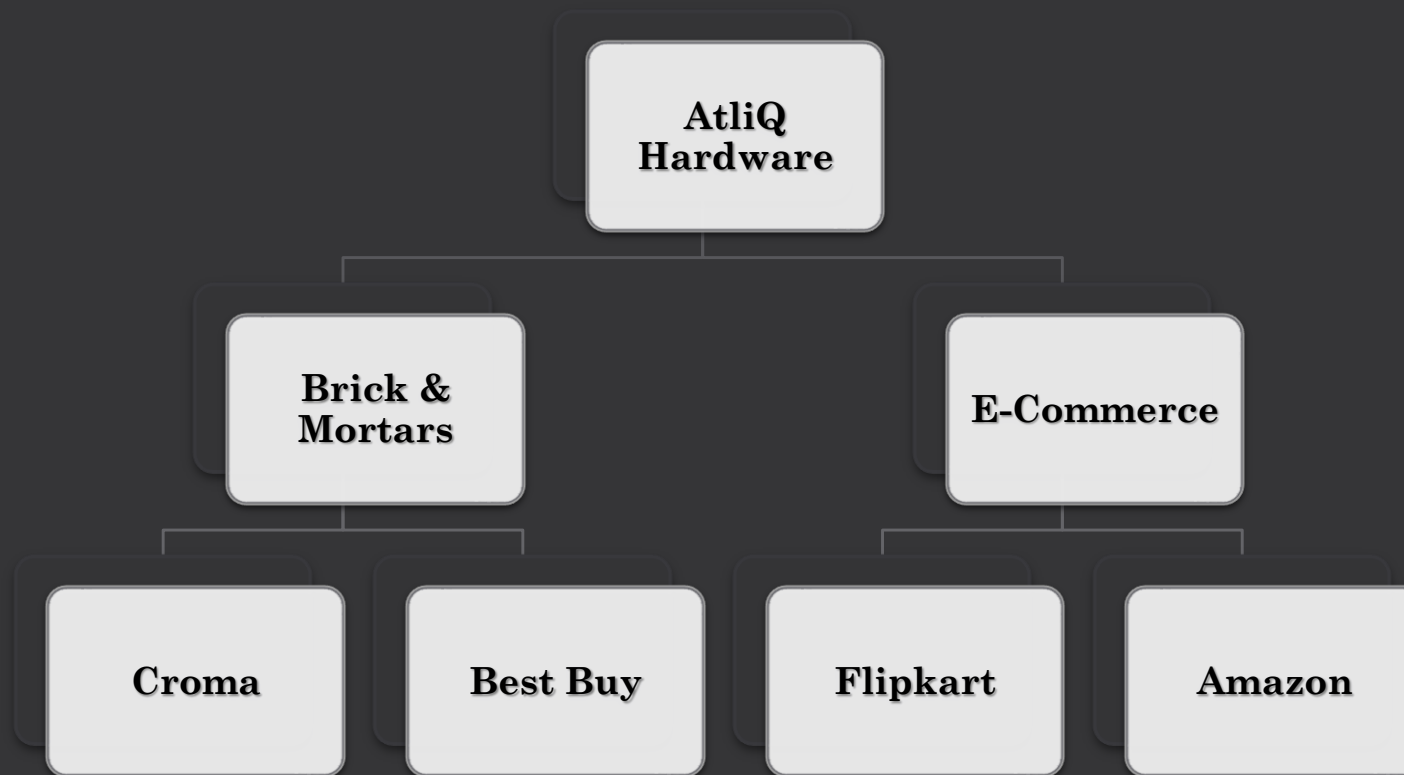


# Business Model



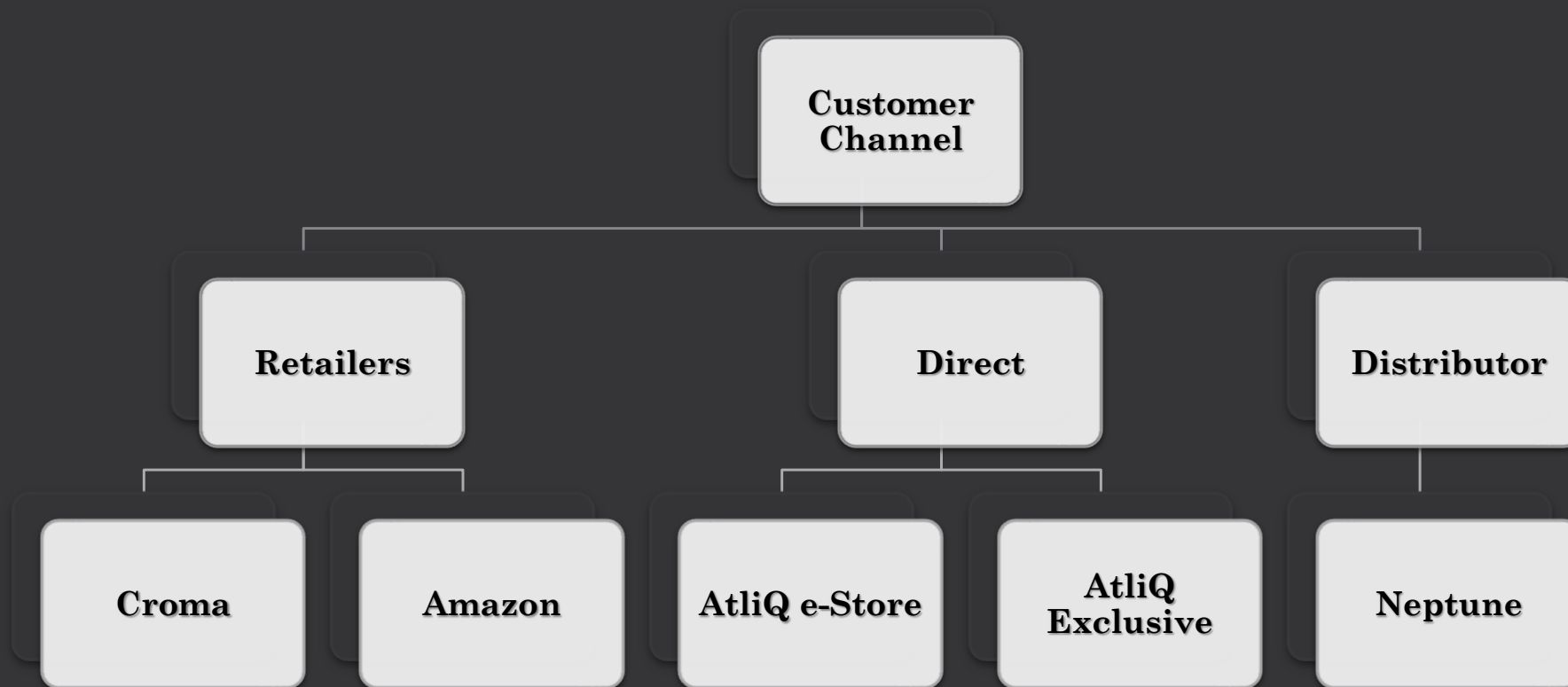


# Business Model





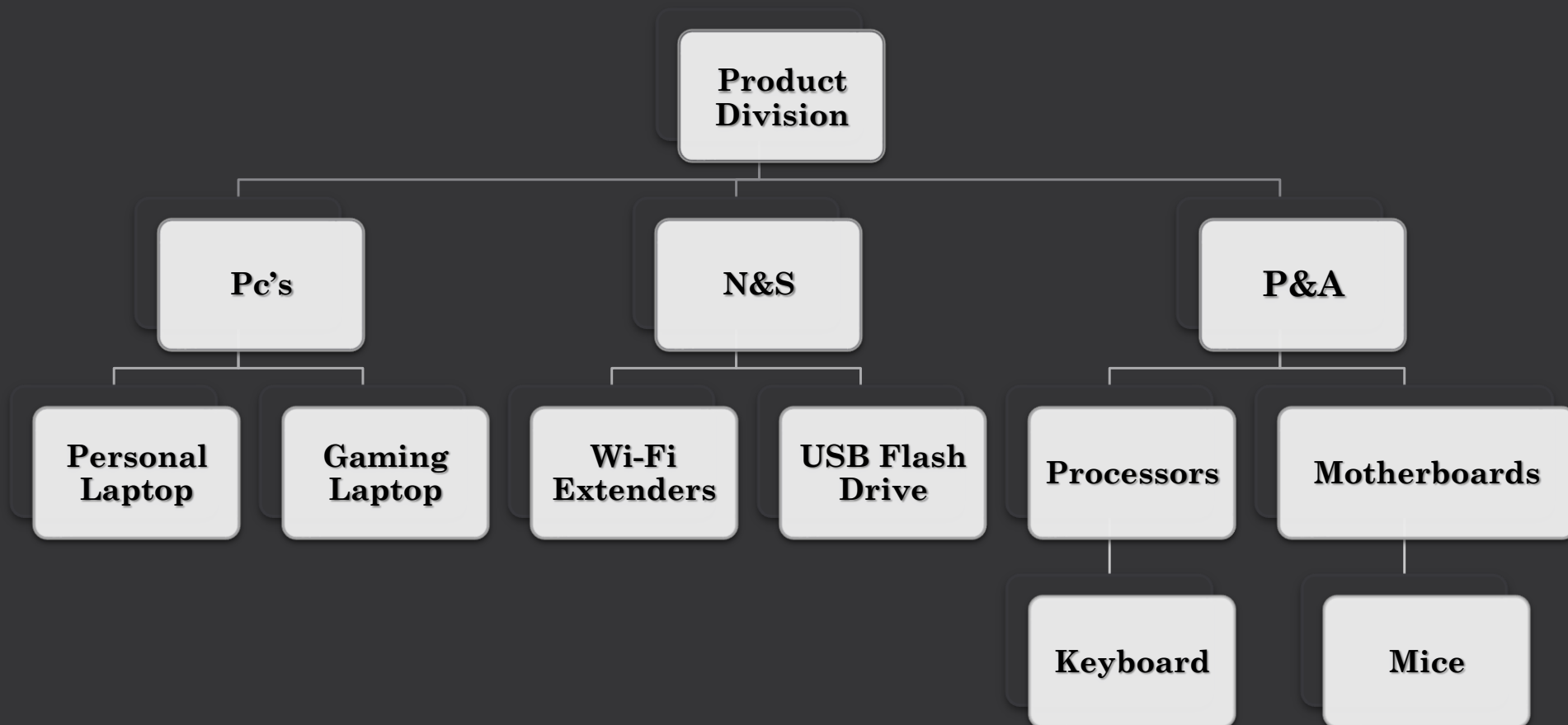
# Business Model





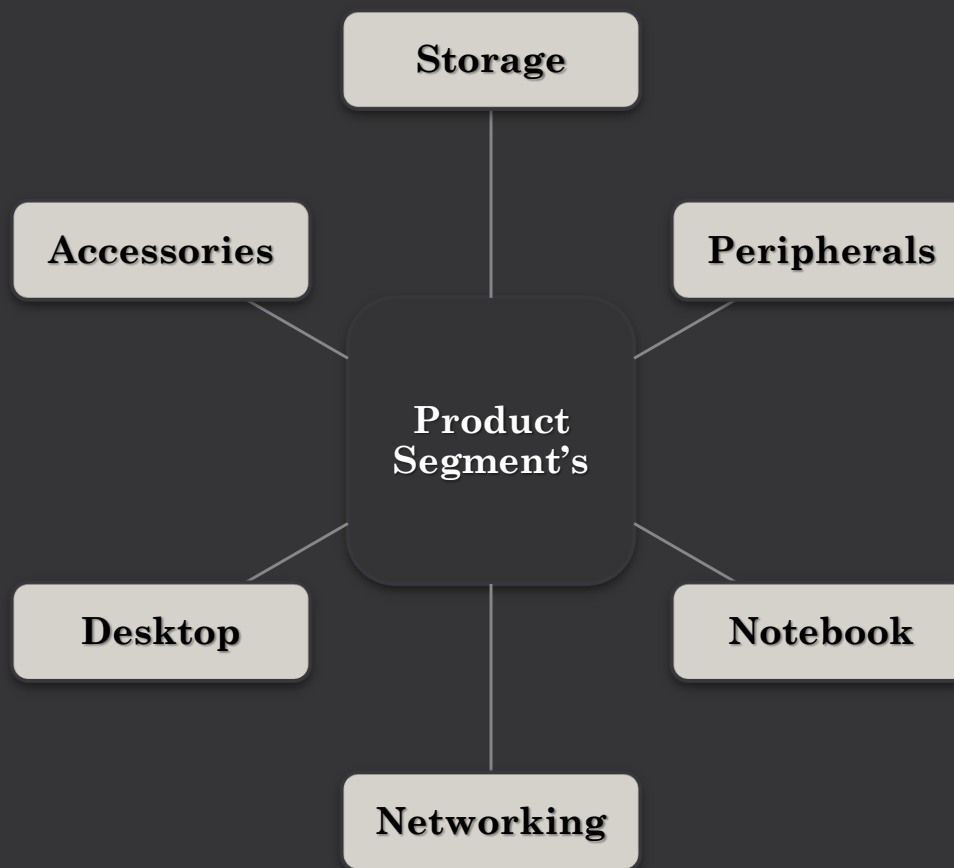


# Business Model





# Business Model





# Data Over-View

❑ I obtained data from Codebasics for 2019-2020 and loaded it into my SQL database to extract insights. The database includes six main tables:

- ✓ 1. dim customer: Customer data (codes, names, platforms, channels, markets, regions, sub-zones).
- ✓ 2. dim product: Product data (codes, divisions, segments, categories, names, variants).
- ✓ 3. fact gross price: Gross prices by product and fiscal year.
- ✓ 4. fact manufacturing cost: Manufacturing costs by product and year.
- ✓ 5. fact pre invoice deductions: Pre-invoice discounts by customer and year.
- ✓ 6. fact sales monthly: Monthly sales data by date, product, customer, quantity, and fiscal year.



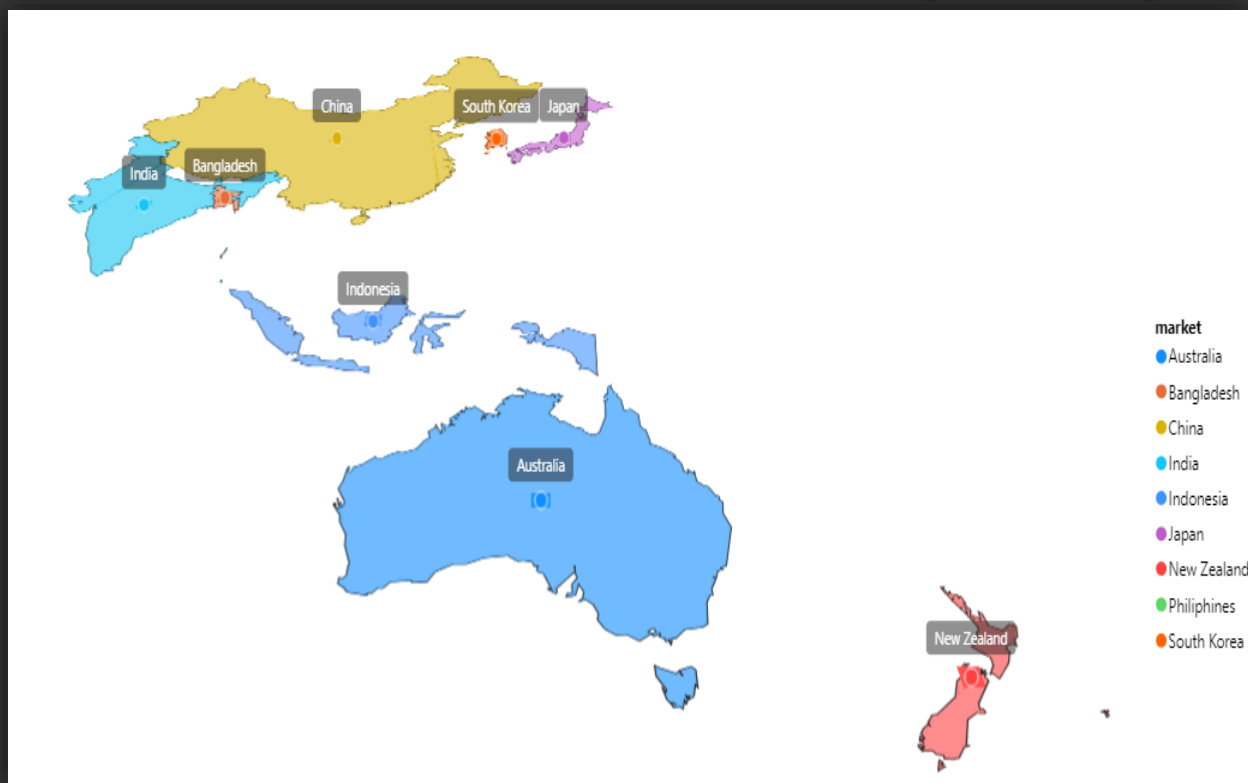
# Ad-Hoc Request

❑ 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
Newzealand
Bangladesh

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



## ❑ Insight

- AtliQ has a presence in several countries in the APAC region, including India, Indonesia, New Zealand, China, Japan, Bangladesh, and Australia.
- This reflects a strong market presence and adaptability to different cultural and economic contexts in the Asia-Pacific 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

```
WITH Cte20 AS (  
    SELECT  
        COUNT(DISTINCT product_code) AS Unique_Prod_2020  
    FROM fact_sales_monthly  
    WHERE fiscal_year = '2020'  
),  
Cte21 AS (  
    SELECT  
        COUNT(DISTINCT product_code) AS Unique_Prod_2021  
    FROM fact_sales_monthly  
    WHERE fiscal_year = '2021'  
)  
SELECT  
    Cte20.Unique_Prod_2020,  
    Cte21.Unique_Prod_2021,  
    ROUND(  
        (  
            (Unique_Prod_2021 - Unique_Prod_2020) / Unique_Prod_2020  
        ) * 100, 2  
    ) AS Percentage_Chng  
FROM Cte20, Cte21;
```

Unique_Prod_2020	Unique_Prod_2021	Percentage_Chng
245	334	36.33



- ❑ 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

Unique_Prod_2020	Unique_Prod_2021	Percentage_Chng
245	334	36.33

## ❑ Insight

- There is 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 the previous year to the current year.
- This increase in products suggests a focus on expanding product offerings, which can attract a broader customer base and potentially boost sales and revenue.
- It is a positive indicator of business growth and adaptability to changing market demands.



- ❑ 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

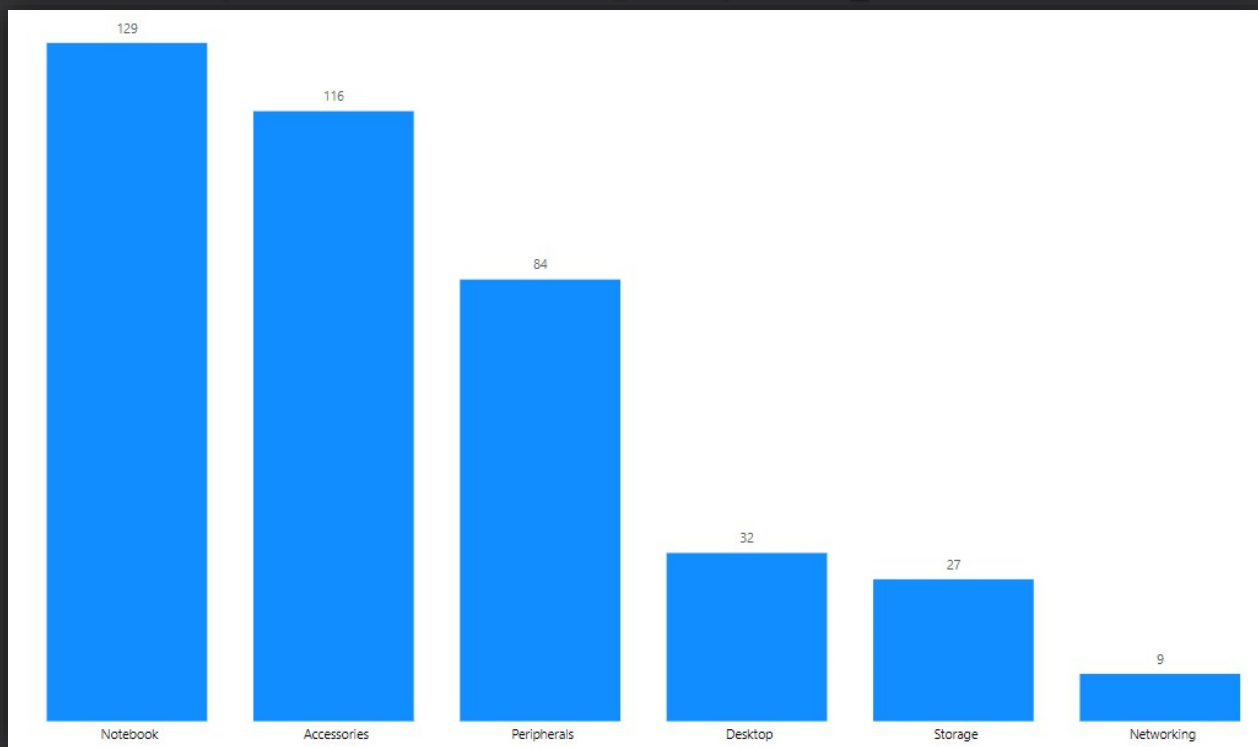
```
SELECT segment, COUNT(DISTINCT(product_code)) AS `Product Count`  
FROM dim_product  
GROUP BY segment  
ORDER BY `Product Count` DESC;
```

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





- ❑ 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



## ❑ Insight

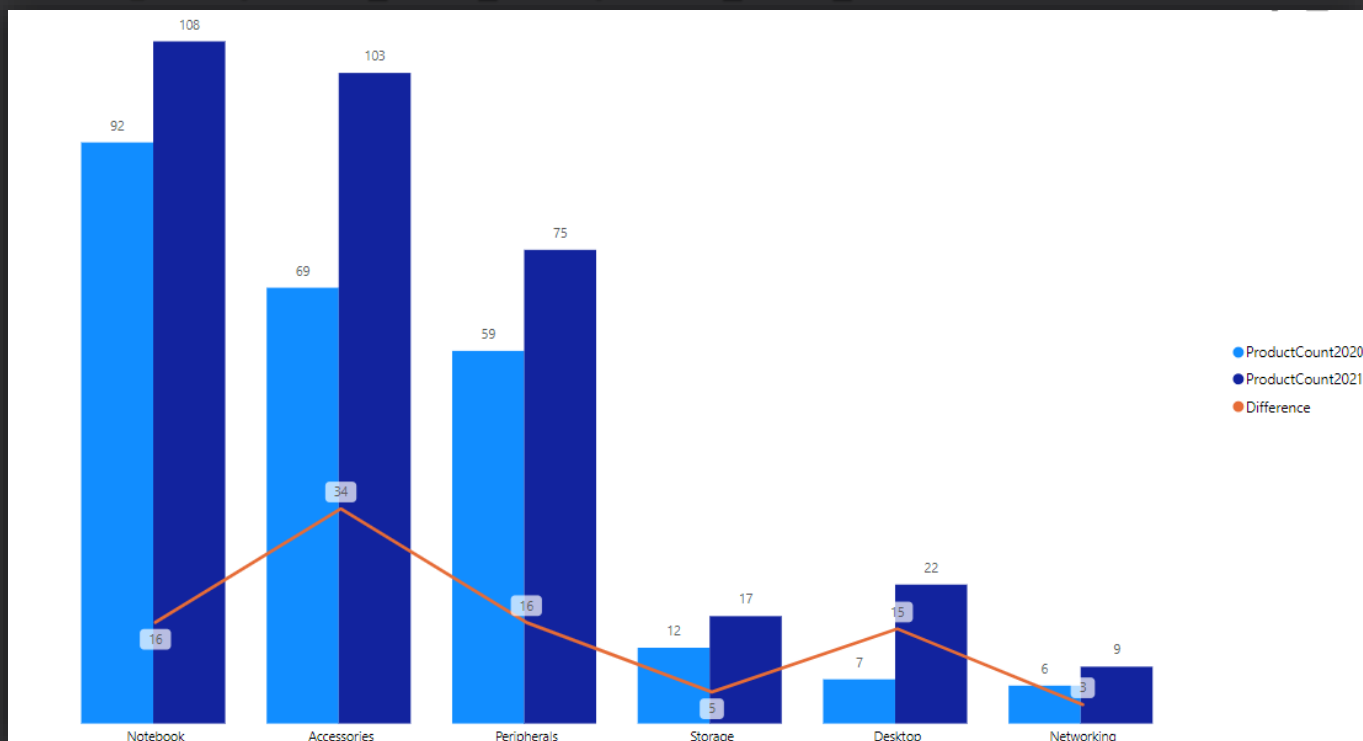
- The notebook segment has the highest product count with 129 products.
- The networking segment has the smallest product count with only 9 products.
- These insights indicate the diversity and product offering within each segment, with notebooks and accessories offering a wide range of options, whereas networking has a more limited selection.
- This variety in product offerings allows catering to various customer preferences and needs across different segments.

❑ 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

```
WITH Cte20 AS (
    SELECT
        P.segment,
        COUNT(
            DISTINCT(P.product_code)
        ) AS 'ProductCount2020'
    FROM dim_product P
    LEFT JOIN fact_sales_monthly F ON
        P.product_code = F.product_code
    WHERE fiscal_year = '2020'
    GROUP BY segment
),
Cte21 AS (
    SELECT
        P.segment,
        COUNT(
            DISTINCT(P.product_code)
        ) AS 'ProductCount2021'
    FROM dim_product P
    LEFT JOIN fact_sales_monthly F ON
        P.product_code = F.product_code
    WHERE fiscal_year = '2021'
    GROUP BY segment
)
SELECT
    Cte21.segment,
    Cte20.ProductCount2020,
    Cte21.ProductCount2021,
    (Cte21.ProductCount2021 - Cte20.ProductCount2020) AS Difference
FROM Cte20
LEFT JOIN Cte21
ON Cte20.segment = Cte21.segment
ORDER BY Difference DESC;
```

segment	ProductCount2020	ProductCount2021	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

❑ 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



## ❑ Insight

- The Accessories category saw a significant increase in product count with 34 more products in 2021 Vs 2020.
- These insights indicate a general trend of product portfolio growth, particularly in the Accessories and Notebook segment which indicate a strategy to cater to a broader range of customer preferences.
- The growth in product variety may enhance market competitiveness and offer customer more choices.



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

```
SELECT
    F.product_code,
    F.manufacturing_cost,
    P.product
FROM fact_manufacturing_cost F
LEFT JOIN dim_product P
ON F.product_code = P.product_code
WHERE manufacturing_cost = (SELECT MAX(manufacturing_cost) AS `Highest Manufacturing Cost` FROM fact_manufacturing_cost)
    OR
    manufacturing_cost = (SELECT MIN(manufacturing_cost) AS `Highest Manufacturing Cost` FROM fact_manufacturing_cost);
```

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



- ❑ 5. Get the products that have the highest and lowest manufacturing costs. The final output should contain these fields, `product_code`  
`product manufacturing_cost`

## ❑ Insight

- AQ HOME ALLIN 1 GEN 2 has a relatively higher manufacturing cost of 240.53.
- AQ MASTER WIRED x1 MS has a significantly lower manufacturing cost of 0.89



- ❑ 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

```
SELECT
    F.customer_code,
    ROUND(AVG(F.pre_invoice_discount_pct) * 100, 2) AS Average_High_Pre_Invoice_Discount
FROM fact_pre_invoice_deductions F
LEFT JOIN dim_customer D
    USING(customer_code)
WHERE F.fiscal_year = 2021
    AND D.market = 'India'
GROUP BY F.customer_code
ORDER BY Average_High_Pre_Invoice_Discount DESC
LIMIT 5;
```

customer_code	Average_High_Pre_Invoice_Discount
90002009	30.83
90002006	30.38
90002003	30.28
90002002	30.25
90002016	29.33



- ❑ 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`

## ❑ Insight

- Flipkart has the highest average pre-invoice discount percentage at 30.83%.
- Amazon has a comparatively lower average discount at 29.33%.
- These insights indicate varying discount strategies among customers, with Flipkart and Vivek's offering the highest average discount, potentially attracting cost-conscious shoppers.
- Amazon provides relatively lower discounts, suggesting a different pricing strategy or a customer base less sensitive to discounts.
- These insights can be valuable for adjusting discount strategies and understanding customer preferences.



- ❑ 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

```
SELECT
    MONTHNAME(S.date) AS Month,
    S.fiscal_year AS YearS,
    ROUND(SUM(F.gross_price * S.sold_quantity), 2) AS 'Gross Sale Amount'
FROM fact_gross_price F
JOIN fact_sales_monthly S
    ON F.product_code = S.product_code
JOIN dim_customer D
    ON S.customer_code = D.customer_code
WHERE D.customer = 'Atliq Exclusive'
GROUP BY MONTH(S.date), MONTHNAME(S.date), S.fiscal_year
ORDER BY S.fiscal_year, MONTH(S.date);
```

Month	YearS	Gross Sale Amount
January	2020	9584951.94
February	2020	8083995.55
March	2020	766976.45
April	2020	800071.95
May	2020	1586964.48
June	2020	3429736.57
July	2020	5151815.40
August	2020	5638281.83
September	2020	9092670.34
October	2020	10378637.60
November	2020	15231894.97
December	2020	9755795.06
January	2021	19570701.71
February	2021	15986603.89
March	2021	19149624.92
April	2021	11483530.30
May	2021	19204309.41
June	2021	15457579.66
July	2021	19044968.82
August	2021	11324548.34
September	2021	19530271.30
October	2021	21016218.21
November	2021	32247289.79
December	2021	20409063.18



- ❑ 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



## ❑ Insight

- Nov 21 had the highest gross sales amount, reaching \$32,247,289.79.
- In contrast, the fiscal year 2021 started with lower sales in September but still had a significant peak in November.
- There is notable seasonality in sales, with November being a consistently strong month.
- The months of March and April in fiscal year 2020 had relatively low sales, which improved in fiscal year 2021.
- These insights can guide strategic decisions such as focusing marketing efforts and inventory planning around the peak sales months and addressing potential challenges during lower sales months.

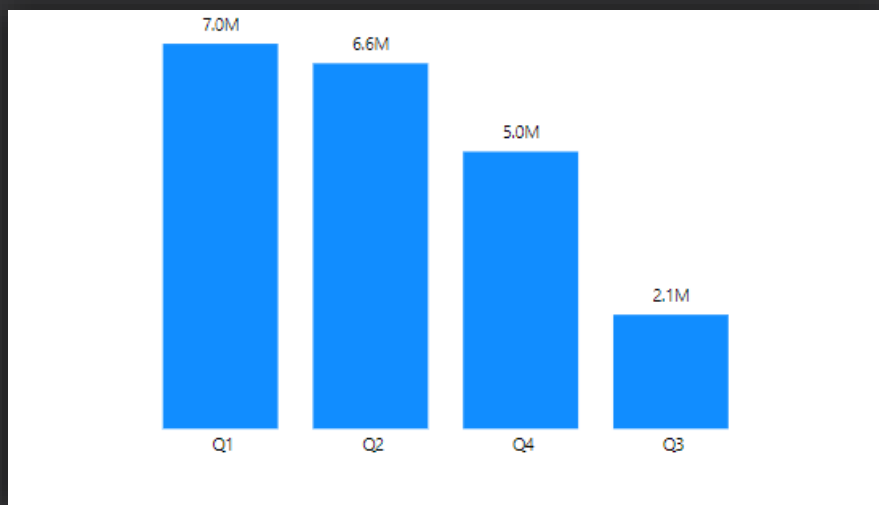
- ❑ 8. In which quarter of 2020, got the maximum total\_sold\_quantity? The final output contains these fields sorted by the total\_sold\_quantity, Quarter total\_sold\_quantity

```
SELECT
CASE
    WHEN MONTH(date) IN (9,10,11) THEN 'Q1'
    WHEN MONTH (date) IN (12,01,02) THEN 'Q2'
    WHEN MONTH (date) IN (03,04,05) THEN 'Q3'
    ELSE 'Q4'
END AS Quarters,
SUM(sold_quantity) AS `Total Sold Qty`
FROM fact_sales_monthly
WHERE fiscal_year = '2020'
GROUP BY Quarters
ORDER BY `Total Sold Qty`;
```

Quarters	Total Sold Qty
Q3	2075087
Q4	5042541
Q2	6649642
Q1	7005619



❑ 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



## ❑ Insight

- The highest total sold quantity is in Q1, with 7.01 Millions
- These insights highlight a seasonal variation in sales, with Q1 and Q2 being the strongest quarters and Q3 begin the weakest.
- This info is valuable for planning inventory and marketing strategies to align with seasonal demand.

- ❑ 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

```
WITH A AS (
    SELECT
        C.channel,
        ROUND(SUM(G.gross_price*S.sold_quantity)/100000,2) AS Gross_Sales_Million
    FROM fact_sales_monthly S
    JOIN dim_customer C USING (customer_code)
    JOIN fact_gross_price G USING (product_code)
    WHERE S.fiscal_year = 2021
    GROUP BY C.channel)
SELECT
    channel,
    Gross_Sales_Million,
    ROUND((Gross_Sales_Million/(SELECT SUM(Gross_Sales_Million) FROM A))*100,2)
AS PCT
FROM A
ORDER BY Gross_Sales_Million DESC;
```

channel	Gross_Sales_Million	PCT
Retailer	19241.70	73.22
Direct	4066.87	15.47
Distributor	2971.76	11.31



- ❑ 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

channel	Gross_Sales_Million	PCT
Retailer	19241.70	73.22
Direct	4066.87	15.47
Distributor	2971.76	11.31

## ❑ Insight

- The Retailer channel accounts for the majority of sales, contributing to 73.22% of gross sales.
- The Direct channel also plays a significant role, representing 15.47% of gross sales.
- The Distributor channel contributes 11.31% of gross sales.
- A significant focus on the Retailer channel suggests that it is the primary revenue generator.
- Diversification and growth opportunity may be explored in the Direct and Distributor channels to further maximize sales.

❏ 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

```
WITH B AS (
    SELECT
        Q.division,
        S.product_code,
        Q.product,
        SUM(S.sold_quantity) AS Total_Sold_Qty,
        RANK() OVER(PARTITION BY Q.division ORDER BY SUM(S.sold_quantity) DESC ) AS 'Rank_Order'
    FROM dim_product Q JOIN fact_sales_monthly S
    USING (product_code)
    WHERE S.fiscal_year = 2021
    GROUP BY Q.division,S.product_code,Q.product)

SELECT *
FROM B
WHERE Rank_Order
IN (1,2,3)
ORDER BY division, Rank_Order;
```

division	product_code	product	Total_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



- ❑ 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

division	product_code	product	Total_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

## ❑ Insight

- These are the top three selling products from each division:
- In the N & S division, AtliQ Hardware sold AQ Pen Drive 2 In 1 with approximately 701,373 units, followed by AQ Pen Drive DRC.



Dhaval Patel  
Sir

Hemanand Vadivel  
Sir

# THANK YOU!

Presented by: Swapnil Alaspure