



Ad_Hoc Insights

Consumer goods domain



BY
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SENARIO

Atliq Hardware's: Data-Driven Challenge

Company Overview:

Atliq Hardware is a leading computer hardware manufacturer in **India** with a strong global presence, and offers a diverse range of products across various segments and channels

The Problem:

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

The **aims** is to optimize product offerings, identify top-performing markets, improve pricing strategies, and enhance overall **profitability**.

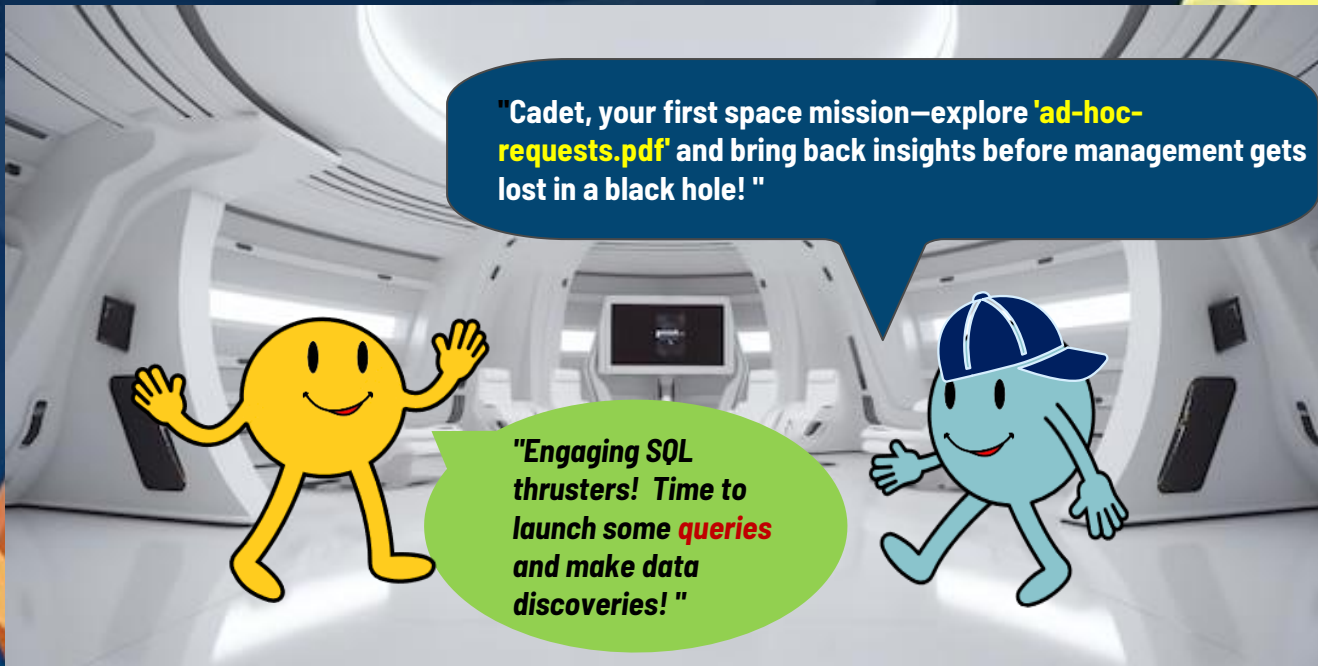
The Solution:

To **achieve** this, we need a detailed analysis of sales trends, pricing variations, product performance, and customer-specific discounts.

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Ad Hoc Analysis

What Is Ad Hoc Analysis?

- Ad hoc analysis is a business intelligence process that aims to answer specific business questions on an **as-needed basis**.
- ad hoc analysis goes further, expanding on the **objective** data of a report to extract **deeper insights**.
- Ad hoc analysis is a **dynamic** process, meaning report elements can be changed and manipulated at will, in real time, providing some level of measurement not used in traditional static reporting. For an organization to get the most out of its data, any user should be able to run an ad hoc analysis.

Use case

- Sales
- Health care
- HR
- Finance
- Retail ..etc

Ad_Hoc Analysis

Benefits

- Flexibility
- Speed
- Agile Decision Making
- Encourages Collaboration



Key Objectives

1. Market Presence & Customer Insights:

- Identify the **APAC** region markets where **Atliq Exclusive** operates.
- Determine **top customers** in **India** who received the highest pre-invoice **discounts** in **2021**.

2. Product Portfolio Performance:

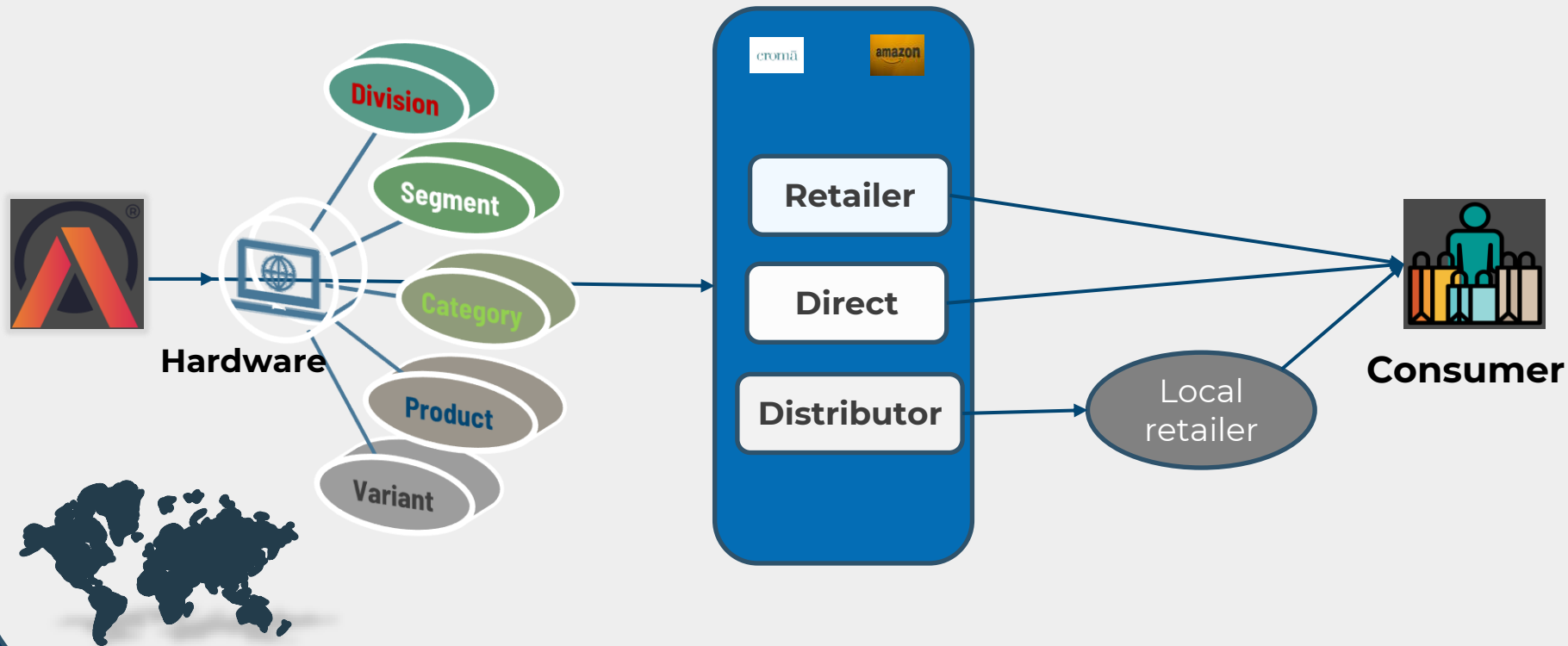
- Measure the **percentage** increase in **unique products** from 2020 to 2021.
- Analyze **product distribution** across different **segments** and identify the segment with the highest increase in unique products.
- Identify the **most** and **least expensive** products based on manufacturing costs.

3. Sales & Revenue Analysis:

- Generate a detailed monthly **Gross Sales Amount report** for **Atliq Exclusive** to identify high- and low-performing months.
- Determine which **quarter** of **2020** had the highest total **sold quantity**.
- Identify the **sales channel** that contributed the most to gross sales in 2021 and calculate its percentage contribution.
- Find the **top 3 best-selling products** in each division based on total sold quantity in 2021.



About ATLIQ



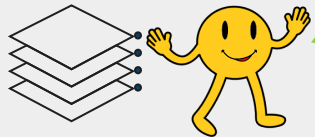
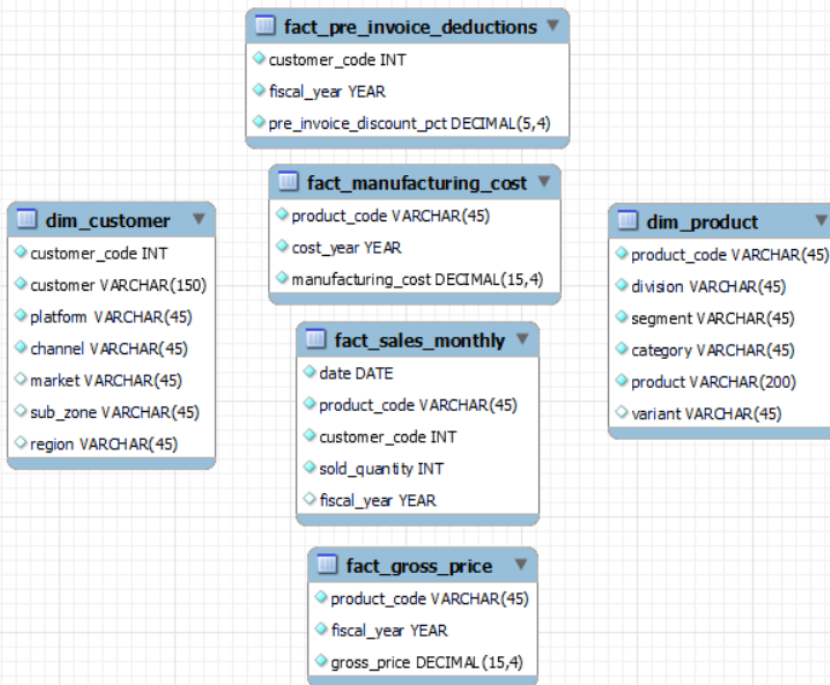


Table Schema



STRUCTURE :

- Together these tables form a star schema
- There are 4 fact and 2 dimension tables

Fact tables:

- fact_gross_price:** contains gross price information for each product
- fact_manufacturing_cost:** contains the cost incurred in the production of each product
- fact_pre_invoice_deductions:** contains pre-invoice deductions information for each product
- fact_sales_monthly:** contains monthly sales data for each product.

Dimension tables:

- dim_customer:** contains customer-related data
- dim_product:** contains product-related data



Q1 : list of markets

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

The following are the distinct markets for customer "**Atliq Exclusive**" in the **APAC** region

	market
▶	India
	Indonesia
	Japan
	Philippines
	South Korea
	Australia
	Newzealand
	Bangladesh





Q2 : Unique products by year

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

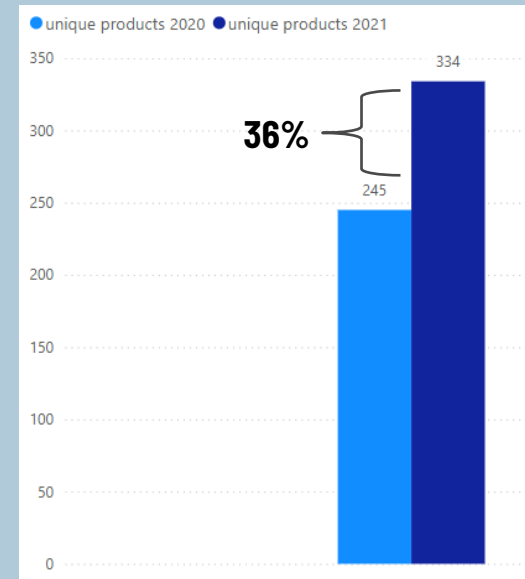
Percentage_chg

Result Grid	Filter Rows:	Export:	Wrap Cell Content
	unique_products_2020	unique_products_2021	percentage_chg
▶	245	334	36.3265

INSIGHTS :

Unique products has increased from 245 to 334
Following reasons might helped in boosting the number

- **Product Expansion**
- **Market Diversification**
- **Strategic Pivot**
- **Increased R&D or innovation**





Q3 : Unique Products by segment

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

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

INSIGHTS :

High product variety in Notebook & Accessories

Notebooks typically have multiple models catering to different users (gaming, business, students).

Accessories (like chargers, bags, keyboards, etc.) often have high variations.

Lower product count in Networking & Storage

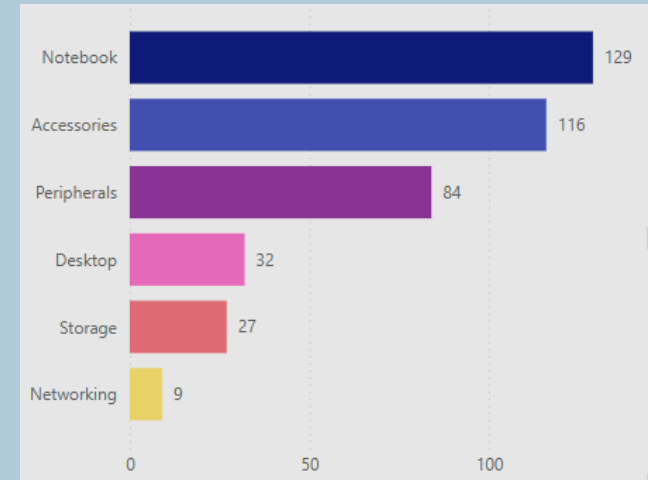
Networking devices (routers, switches) & storage solutions (HDDs, SSDs) usually have fewer models with **longer product lifecycles**.

These products don't need frequent updates compared to consumer electronics.

Desktops having lower count than Notebooks

Trend shift: More customers are opting for portable devices over traditional desktops.

Custom-built PCs might reduce the need for pre-configured desktops.





Q4 : Difference in Unique Products by segment

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
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INSIGHTS :

- **Accessories had the highest increase (+34 products):**
This indicates high **demand** or **new product** introductions in accessories.
Could be due to **new trends, customer needs**, or **competitive** expansion.
- **Notebooks & Peripherals grew moderately (+16 each)**
Indicates a steady expansion of product offerings.
Likely **new laptop models** or **hardware** improvements.
- **Desktops saw significant growth (+15, from 7 to 22 products)**
Could indicate a resurgence in **demand for pre-built desktops**.
Might be due to gaming, business workstations, or home-office setups.
- **Storage & Networking had minimal changes**
Incremental updates rather than a full product lineup expansion.
Might indicate **stability** or **lower innovation rate in these categories**.

	segment	count_2020	count_2021	difference
▶	Notebook	92	108	16
	Accessories	69	103	34
	Peripherals	59	75	16
	Desktop	7	22	15
	Storage	12	17	5
	Networking	6	9	3



Q5 : High & Low-Cost Products

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

product_code

product

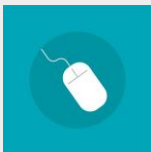
manufacturing_cost

INSIGHTS:

AQ HOME Allin1 Gen 2 is a **desktop**, which typically includes high-end components (CPU, memory, storage, casing, etc.) – hence the higher manufacturing cost.



AQ Master wired x1 Ms is a **mouse**, a simpler peripheral with significantly lower production complexity and cost.



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



Q6: TOP 5 Customers

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`

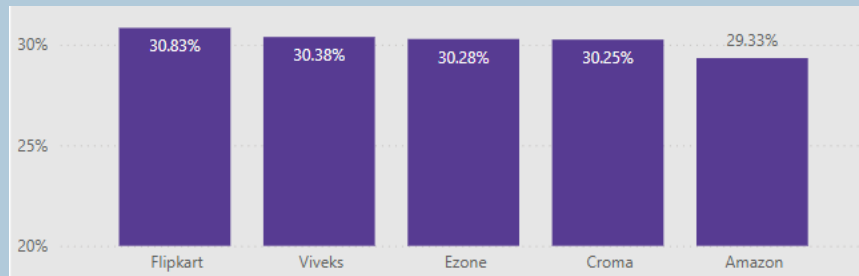
INSIGHTS:

We observe for **top 5 customers** who received an average high **`pre_invoice_discount_pct`** for the fiscal year **2021** and in the **Indian** market

Flipkart is in top receiving more discount comparatively
Followed by **Viveks**, **Ezone**, **Croma**, **Amazon**

- These are major retail/e-commerce players in India, often negotiating **bulk deals** or **promotional pricing**.
- Discounts could be tied to **volume-based incentives**, **seasonal campaigns**, or **strategic partnerships** with the company.

	customer_code	customer	avg_discount
▶	90002009	Flipkart	0.3083
	90002006	Viveks	0.3038
	90002003	Ezone	0.3028
	90002002	Croma	0.3025
	90002016	Amazon	0.2933





Q7 : Gross sales amount

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
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INSIGHTS:

Lowest Sales Month : March 2020 – \$0.77M (Likely due to COVID lockdowns starting)

Highest Sales Month : November 2020 – \$32.25M (Seasonal spike, possibly festival/holiday season)

2020 Trend: Steep decline from Feb to Apr 2020, followed by a sharp recovery post-August

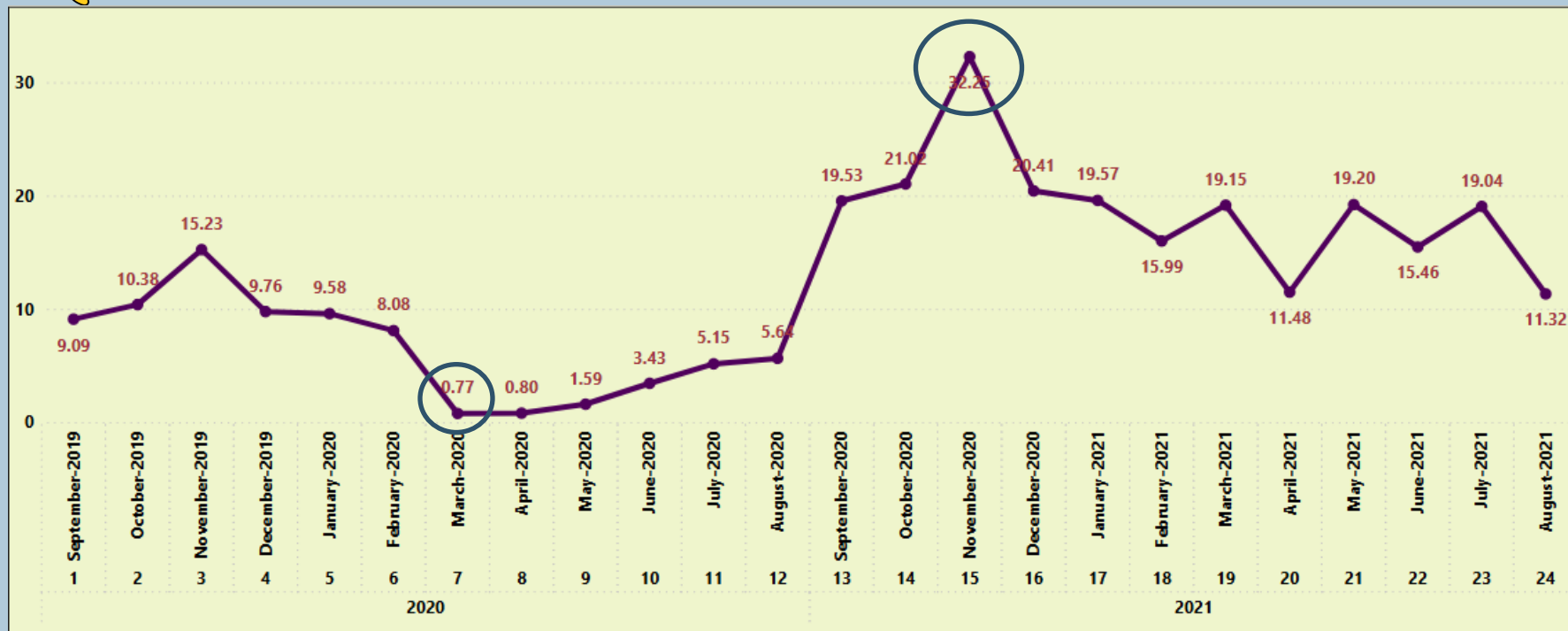
2021 Trend: Stabilized sales, though fluctuating between \$11M and \$20M
Indicates business adaptation and consumer demand normalization.

Overall Direction : Sales recovered strongly after Q2 2020, maintained moderate consistency in 2021

	months	fiscal_year	total_sales_mln
▶	September-2019	2020	9.09
	October-2019	2020	10.38
	November-2019	2020	15.23
	December-2019	2020	9.76
	January-2020	2020	9.58
	February-2020	2020	8.08
	March-2020	2020	0.77
	April-2020	2020	0.80
	May-2020	2020	1.59
	June-2020	2020	3.43
	July-2020	2020	5.15
	August-2020	2020	5.64
	September-2020	2021	19.53
	October-2020	2021	21.02
	November-2020	2021	32.25
	December-2020	2021	20.41
	January-2021	2021	19.57
	February-2021	2021	15.99
	March-2021	2021	19.15
	April-2021	2021	11.48
	May-2021	2021	19.20
	June-2021	2021	15.46
	July-2021	2021	19.04
	August-2021	2021	11.32



Q7 : Gross sales amount



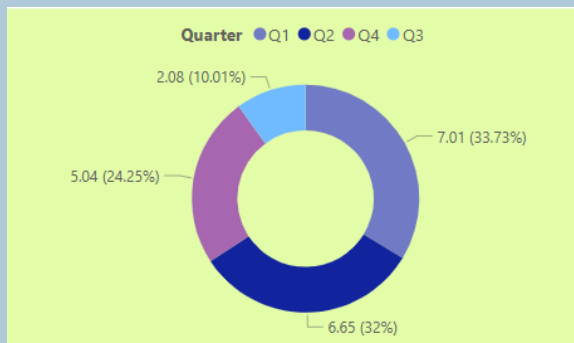
Further month-wise breakdown



Q8 : MAX sold quantity by quarter

8. In which quarter of 2020, got the maximum total_sold_quantity? The final output contains these fields sorted by total sold quantity,

Quarter	total_sold_quantity
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INSIGHTS

- **Q1** leads with over **33% (7.01M)** of the total sales, driven by a November sales
- **Q2** follows closely at **32% (6.65M)**, which has strong performance in December.
- **Q3** significantly underperforms, contributing just **10.01%(2.08M)** of total sales.
- **Q4** is moderate, contributing around **24.25%(5.04M)**

	Quarter	total_quantity_mln
▶	Q1	7.01
	Q2	6.65
	Q4	5.04
	Q3	2.08

	month_name	quarter_name	total_quantity_mln
▶	September	Q1	1.76
	October	Q1	2.19
	November	Q1	3.05
	December	Q2	3.18
	January	Q2	1.76
	February	Q2	1.70
	March	Q3	0.24
	April	Q3	0.82
	May	Q3	1.02
	June	Q4	1.56
	July	Q4	1.69
	August	Q4	1.79

Further month-wise breakdown



Q8 : MAX sold quantity by quarter

	Quarter	total_quantity_mln
▶	Q1	7.01
	Q2	6.65
	Q4	5.04
	Q3	2.08



Further month-wise breakdown



Q9 : Gross sales by Channel

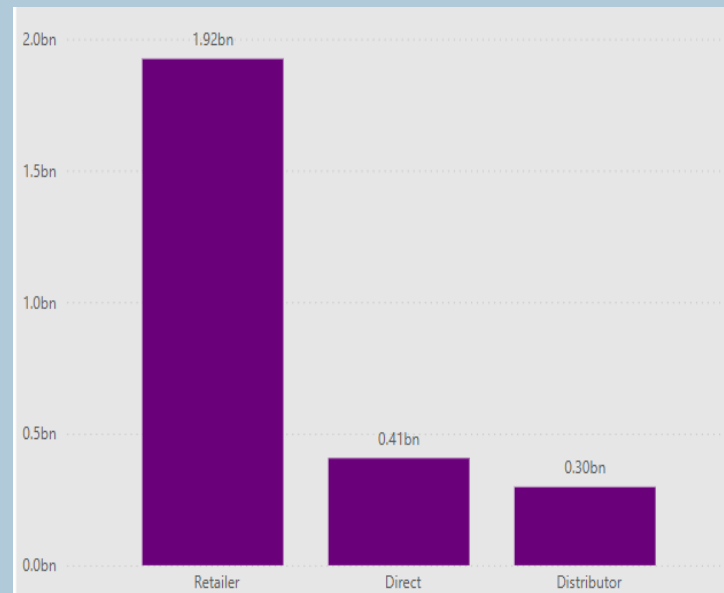
9. Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution? The final output contains these fields,

Channel	gross_sales_mln	Percentage
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channel	gross_sales_mln	percentage
Retailer	1924.17	73.22
Direct	406.69	15.47
Distributor	297.18	11.31

INSIGHTS:

- We observe Retailer channel is the TOP performer here with **Gross Sales:** \$1924.17 million and **Contribution: 73.22%** of total FY21 sales which is nearly 3/4th of total sales
- **Direct** and **Distributor** channels contribute less than a third combined.
- This trend shows a **strong retail network** and potential areas to boost **Direct-to-Customer (D2C)** or distribution strategy.



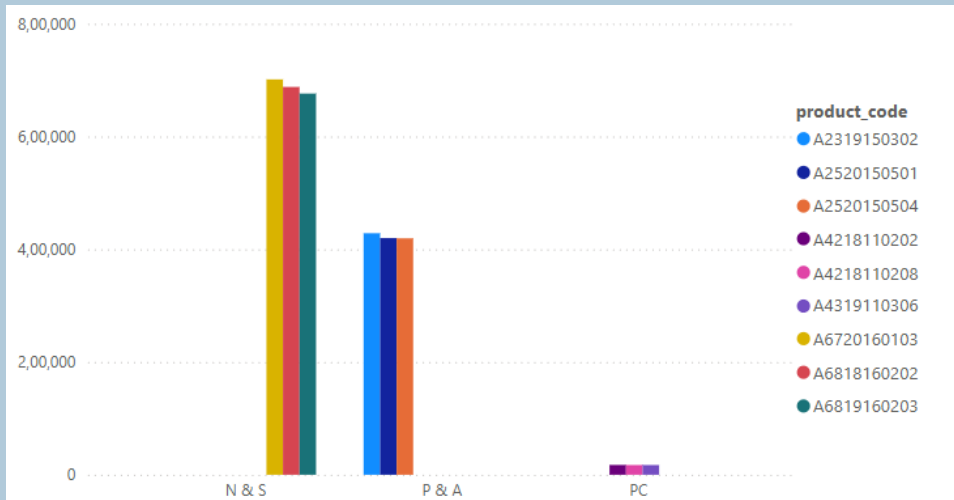
Gross sales by channel



Q10 : TOP 3 Products by Division

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
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	division	product_code	product	total_sales	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

Top-3 Products in each division



Q10 : TOP 3 Products by Division

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
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N & S Division (Highest Sales Overall)

Top Performer: AQ Pen Drive 2 IN 1 [Premium]
– **701,373 units**

Closely followed by:

AQ Pen Drive DRC [Plus] – **688,003 units**
AQ Pen Drive DRC [Premium] – **676,245 units**

Observation:

Pen Drive variants dominate this division.
Premium and Plus versions both have strong market pull.

P & A Division

Top Performer: AQ Gamers Ms [Standard 2] –
428,498 units

Followed by:

AQ Maxima Ms [Standard 1] – **419,865 units**
AQ Maxima Ms [Plus 2] – **419,471 units**

Observation:

Very tight competition between Maxima variants
Gamers series leads but by a small margin.

PC Division (Lowest Volume Overall)

•Top Performer: AQ Digit [Standard Blue]
– **17,434 units**

•Other contenders:

- AQ Velocity [Plus Red] –
17,280 units
- AQ Digit [Premium Misty Green] – **17,275 units**

•Observation:

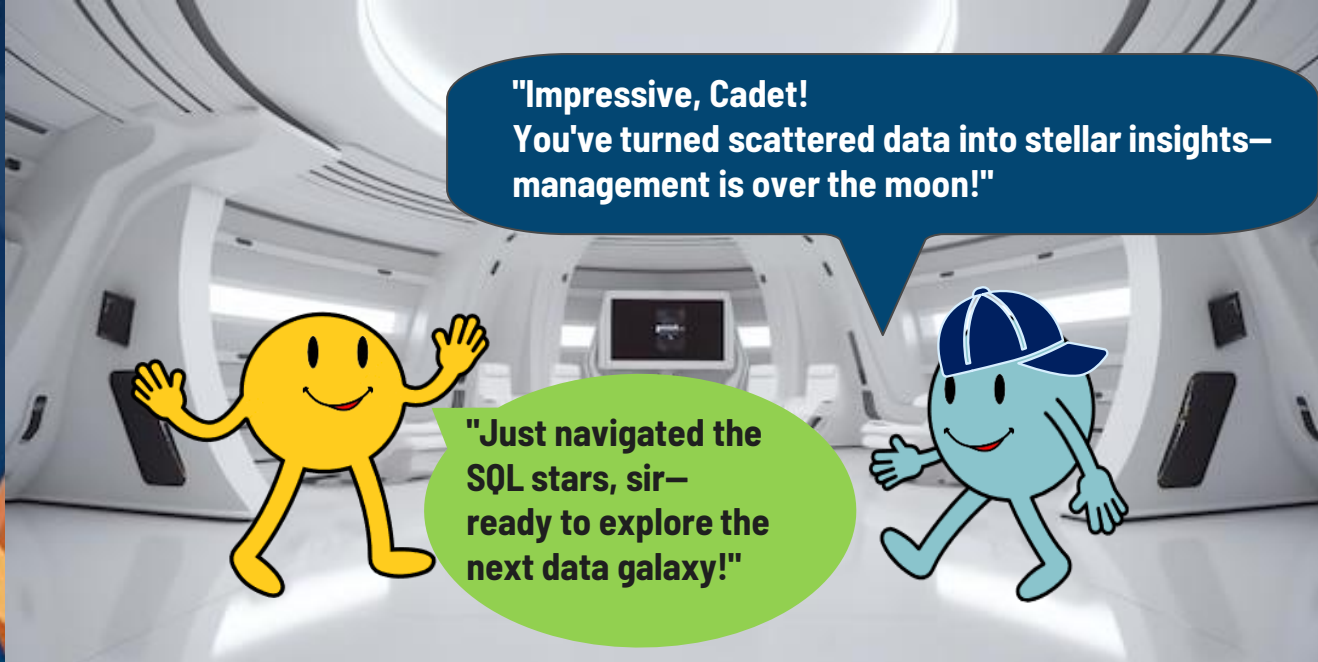
- Sales volume is significantly lower than other divisions.
- Still, evenly distributed performance among variants.



Conclusion

Conclusion Summary – Ad-Hoc Sales Analysis (FY 2020–2021)

- *Atliq Exclusive* operates across multiple markets within the **APAC region**, showing regional presence.
- There was a **36% increase in unique products** in 2021 compared to 2020, indicating product diversification.
- The **Notebook** and **Accessories segment** led with the highest number of unique products across segments.
- These **increase in unique products** is positive from 2020 to 2021.
- The **highest manufacturing cost** product is *AQ HOME Allin1 Gen 2*, while the *lowest* is *AQ Master wired x1 Ms*.
- **Flipkart** is in top receiving more discount comparatively
- Monthly sales trend shows **November as peak month** for *Atliq Exclusive*; strategic focus can enhance low months.
- **Q1 of 2020** had the **maximum total quantity sold**, contributing **33.73%** of annual volume.
- The **Retail channel** was the dominant contributor to gross sales in 2021, accounting for **73.22%** of the revenue.
- Top-selling products by division are led by **Premium and Plus variants**, especially in **N & S and P & A divisions**, reflecting strong product acceptance.



"Impressive, Cadet!

**You've turned scattered data into stellar insights—
management is over the moon!"**

**"Just navigated the
SQL stars, sir—
ready to explore the
next data galaxy!"**



This project is part of code basics **resume challenge 4**

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Amaream Sai Bharath Chand

