ATLIQ
HARDWARE

ATLIQ HARDWARE

SALES INSIGHTS FROM AD-HOC REQUESTS

By- Devesh Tyagi

Agenda

1. **Objectives**
2. **Data Details**
3. **AD-HOC Requests**

Objectives

- Atliq Hardwares (imaginary company) is one of the leading computer hardware producers in India and well expanded in other countries too.
- 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.
- He decided to conduct a SQL challenge which will help him understand both the skills.
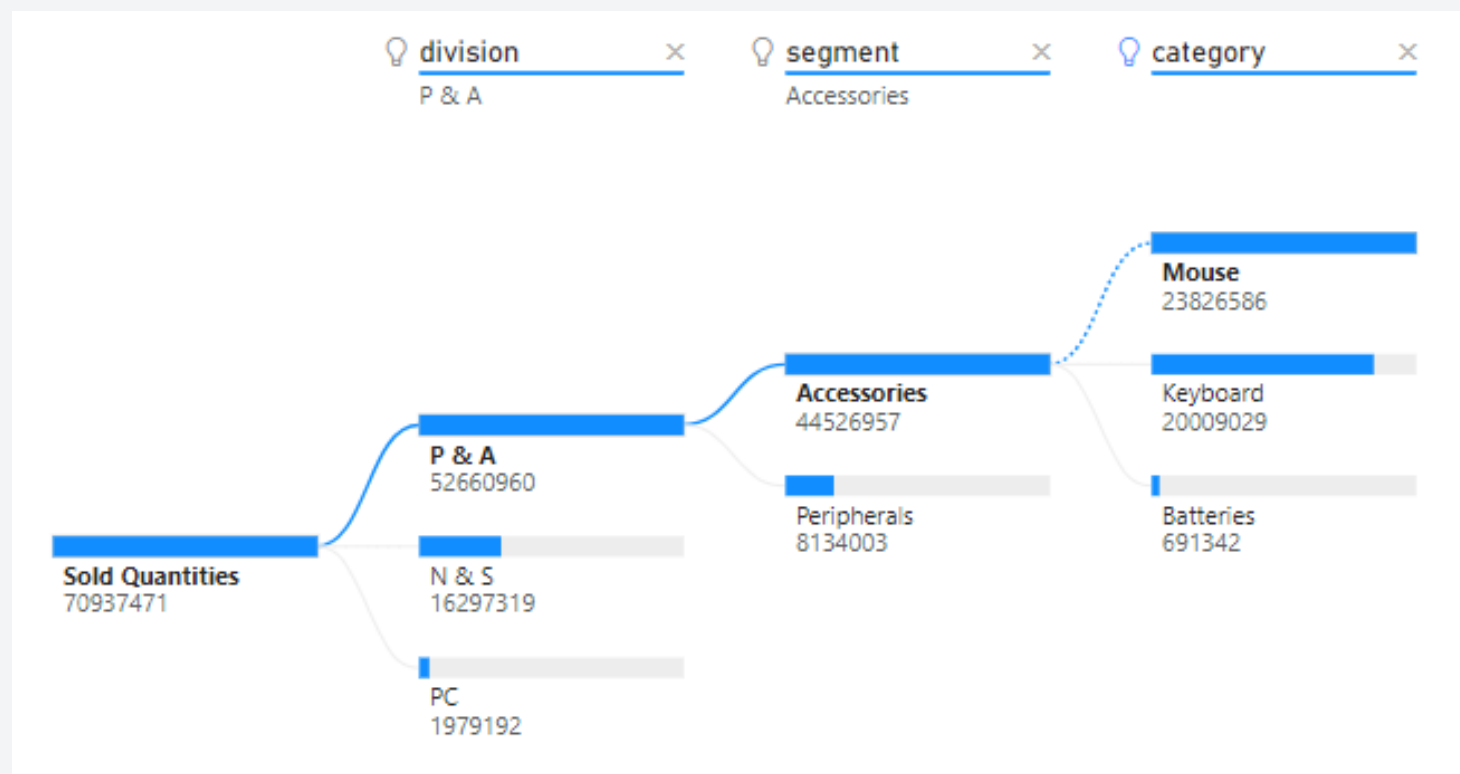
Data Details

Fiscal Year

August 2019-September 2020
FY 2020

September 2020-August 2021
FY 2021

division	segment	category
N & S	Networking	Wi fi extender
N & S	Storage	External Solid State Drives
N & S	Storage	USB Flash Drives
P & A	Accessories	Batteries
P & A	Accessories	Keyboard
P & A	Accessories	Mouse
P & A	Peripherals	Graphic Card
P & A	Peripherals	Internal HDD
P & A	Peripherals	MotherBoard
P & A	Peripherals	Processors
PC	Desktop	Business Laptop
PC	Desktop	Personal Desktop
PC	Notebook	Business Laptop
PC	Notebook	Gaming Laptop
PC	Notebook	Personal Laptop

Queries

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

```sql
select distinct market
from gdb023.dim_customer
where region='APAC'
and customer like '%EXCLUSIVE%'
```

market
India
Indonesia
Japan
Philiphines
South Korea
Australia
Newzealand
Bangladesh

Insights

- Atliq Exclusive has business in 8 different markets in APAC region out of 10.
- China and Pakistan are the only markets where Atliq Exclusive do not operate its business.
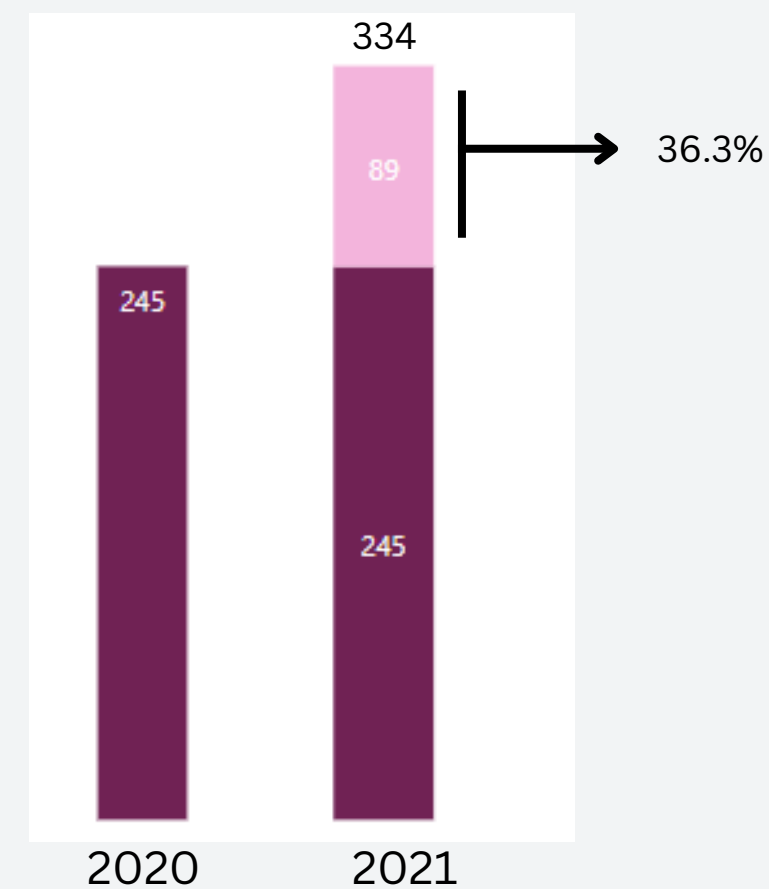
Queries

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

```sql
1 ●   select year_2020.unique_products_2020,
2       year_2021.unique_products_2021,
3       round((year_2021.unique_products_2021-year_2020.unique_products_2020)*100/unique_products_2020,2) as percentage_chg from
4    ⊖  ((select count(distinct (product_code)) as unique_products_2020
5        from gdb023.fact_sales_monthly
6        where fiscal_year=2020) year_2020,
7    ⊖  (select count(distinct (product_code)) as unique_products_2021
8        from gdb023.fact_sales_monthly
9        where fiscal_year=2021) year_2021)
```

unique_products_2020	unique_products_2021	percentage_chg
▶ 245	334	36.33

Insights

From 2020 to 2021,we can observe a rise of 36.3% in unique products. Based on results here, we can observe that Atliq hardware are always looking to introduce new products to market based on trends.
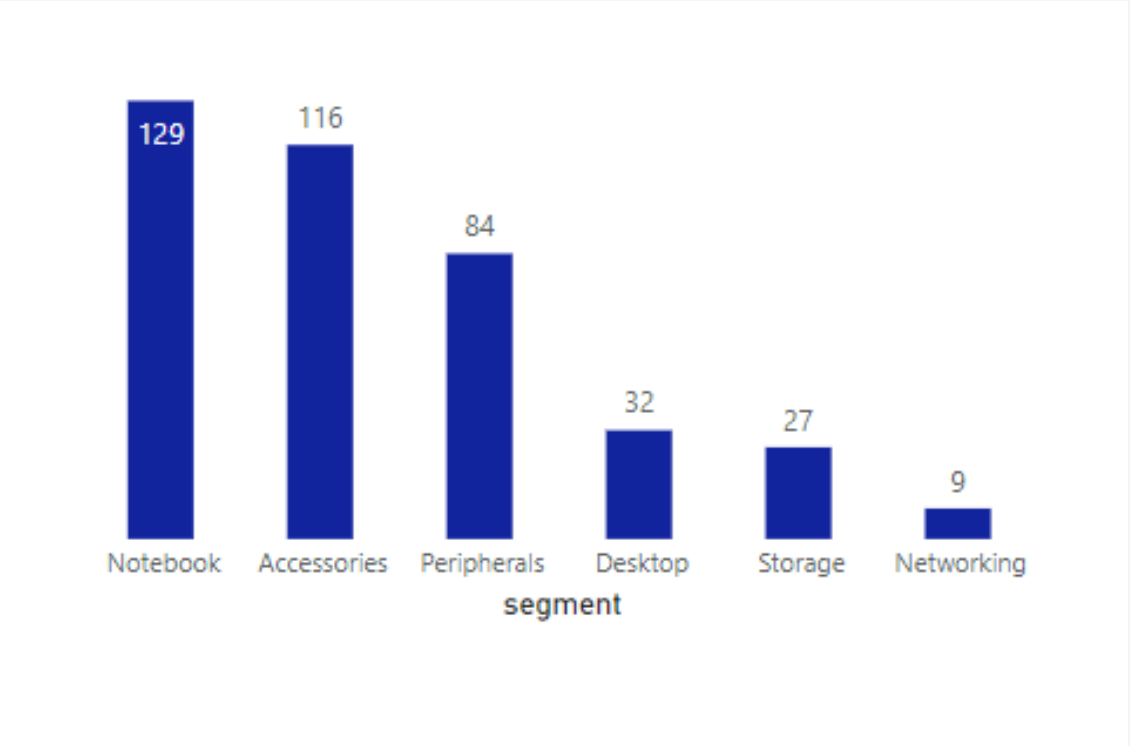
Queries

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

```
1 •   select segment,
2     count(distinct product_code) as product_count
3     from gdb023.dim_product
4     group by segment
5     order by product_count desc;
```

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

division	segment	category
N & S	Networking	Wi fi extender
N & S	Storage	External Solid State Drives
N & S	Storage	USB Flash Drives
P & A	Accessories	Batteries
P & A	Accessories	Keyboard
P & A	Accessories	Mouse
P & A	Peripherals	Graphic Card
P & A	Peripherals	Internal HDD
P & A	Peripherals	MotherBoard
P & A	Peripherals	Processors
PC	Desktop	Business Laptop
PC	Desktop	Personal Desktop
PC	Notebook	Business Laptop
PC	Notebook	Gaming Laptop
PC	Notebook	Personal Laptop

Insights

Notebook, Accessories, Peripherals has highest numbers of unique products. Notebooks has wide variety to provide options for all kinds of buyers. Atliq Hardware are competitive with market with introduction of new Notebooks and options to upgrade its configurations with peripherals.

Queries

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

```sql
1    WITH TBL1 AS
2        (SELECT p.segment AS A , COUNT(DISTINCT(s.product_code)) AS B
3        FROM gdb023.dim_product p, gdb023.fact_sales_monthly s
4        WHERE p.product_code = s.product_code
5        GROUP BY s.fiscal_year, p.segment
6        HAVING s.fiscal_year = "2020"),
7    TBL2 AS
8        (
9        SELECT p.segment AS C , COUNT(DISTINCT(s.product_code)) AS D
10       FROM gdb023.dim_product p, gdb023.fact_sales_monthly s
11       WHERE p.product_code = s.product_code
12       GROUP BY s.fiscal_year, p.segment
13       HAVING s.fiscal_year = "2021"
14       )
15
16   SELECT TBL1.A AS segment, TBL1.B AS product_count_2020, TBL2.D AS product_count_2021, (TBL2.D-TBL1.B) AS difference
17   FROM TBL1, TBL2
18   WHERE TBL1.A = TBL2.C ;
```

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

Insights

Based on percentage change, desktop had highest increase. Accessories had highest difference between count of products in year 2020 and 2021.

Queries

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

```sql
select m.product_code,p.product,round(m.manufacturing_cost,2 ) as manufacturing_cost
from gdb023.dim_product p join gdb023.fact_manufacturing_cost m
on p.product_code=m.product_code
where manufacturing_cost in
 (select max(manufacturing_cost) from gdb023.fact_manufacturing_cost
    union select min(manufacturing_cost) from gdb023.fact_manufacturing_cost)
    order by manufacturing_cost desc;
```

product_code	product	manufacturing_cost
A6120110206	AQ HOME Allin1 Gen 2	240.54
A2118150101	AQ Master wired x1 Ms	0.89

Insights

AQ Home Allin1 Gen2 has highest manufacturing cost.
AQ Master Wired x1Ms has lowest manufacturing cost.

Queries

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.

```sql
1    with TBL1 as
2    (select customer_code as A,AVG(pre_invoice_discount_pct*100) as B
3     from gdb023.fact_pre_invoice_deductions
4      where fiscal_year=2021 group by customer_code),
5    TBL2 as
6    (select customer_code AS c,customer AS d from gdb023.dim_customer where market='India')
7    select TBL1.A as customer_code,
8    round(TBL1.B,2) as average_discount_percentage ,
9    TBL2.d as customer
10   from TBL1 join TBL2
11   on TBL1.A=TBL2.c
12   order by average_discount_percentage desc limit 5;
```

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

Insights

- The largest pre-invoice discount is given to **Flipkart**.
- The 5th largest pre-invoice discount is to **Amazon**.
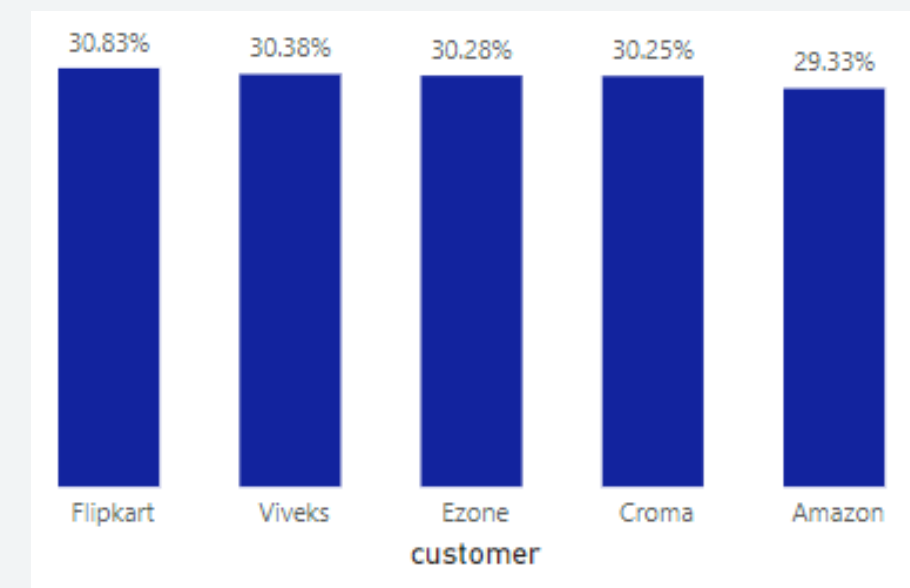
Queries

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

```
1 •    with TBL1 as
2 ⊝    (select * from gdb023.fact_sales_monthly
3      where customer_code in
4      (select customer_code from gdb023.dim_customer where customer= 'Atliq Exclusive'))
5      select month(date) as Month,
6      year(date) as Year,
7      round(sum(g.gross_price*t.sold_quantity),2) as Gross_sales_Amount
8      from TBL1 t join gdb023.fact_gross_price g
9      on t.product_code=g.product_code and t.fiscal_year=g.fiscal_year
10     group by Month,Year;
```

Month	Year	Gross_sales_Amount
9	2019	4496259.67
10	2019	5135902.35
11	2019	7522892.56
12	2019	4830404.73
1	2020	4740600.16
2	2020	3996227.77
3	2020	378770.97
4	2020	395035.35
5	2020	783813.42
6	2020	1695216.60
7	2020	2551159.16
8	2020	2786648.26
9	2020	12353509.79
10	2020	13218636.20
11	2020	20464999.10
12	2020	12944659.65
1	2021	12399392.98
2	2021	10129735.57
3	2021	12144061.25
4	2021	7311999.95
5	2021	12150225.01
6	2021	9824521.01
7	2021	12092346.32
8	2021	7178707.59

Insights

The Sales after pandemic has been consistently high. The sales in summer is lower than sales in winter. Summer sales can be increased with introduction of new products

Queries

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

```sql
1   select CASE
2       WHEN date BETWEEN '2019-09-01' AND '2019-11-01' then 1
3       WHEN date BETWEEN '2019-12-01' AND '2020-02-01' then 2
4       WHEN date BETWEEN '2020-03-01' AND '2020-05-01' then 3
5       WHEN date BETWEEN '2020-06-01' AND '2020-08-01' then 4
6       END AS Quarters,
7       concat(round(sum(sold_quantity)/1000000,2),' M') as total_sold_quantity
8       from gdb023.fact_sales_monthly
9       where fiscal_year=2020
10      group by Quarters
11      order by total_sold_quantity desc;
```

Quarters	total_sold_quantity
1	7.01 M
2	6.65 M
4	5.04 M
3	2.08 M

Insights

Quarter 3 had least amount of products sold due to Pandemic. Quarter 4 also had low product sold amount. With introduction of products like Laptop cooling pad, waterproof speakers, sales can be increased.

Queries

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 TBL1 as
(select c.channel,
    concat(round(sum(s.sold_quantity*g.gross_price)/1000000,2), ' M') as gross_sales_mln
from gdb023.fact_sales_monthly s
join gdb023.dim_customer c
on s.customer_code=c.customer_code
join gdb023.fact_gross_price g
on s.product_code=g.product_code
where s.fiscal_year=2021
group by c.channel)
SELECT B.channel,
(Gross_sales_mln,' M') AS Gross_sales_mln ,
CONCAT(ROUND(Gross_sales_mln*100/A.total , 2), ' %') AS percentage
FROM((SELECT SUM(Gross_sales_mln) AS total FROM TBL1) A,
(SELECT * FROM TBL1) B) ORDER BY percentage DESC
```

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

Insights

Channel: **'Retailer'** had highest sales among all Channels to the company with 73.22% as percentage of contribution.

Channel: **'Distributors'** had least sales among all Channels to the company with 11.31% as percentage of contribution.

Queries

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

```sql
1   WITH TBL1 AS (
2       SELECT p.division, s.product_code, p.product, SUM(s.sold_quantity) AS Total_sold_quantity
3       FROM gdb023.dim_product p JOIN gdb023.fact_sales_monthly s
4       ON p.product_code = s.product_code
5       WHERE s.fiscal_year = 2021
6       GROUP BY  s.product_code, division, p.product
7   ),TBL2 AS
8   (
9       SELECT division, product_code, product, Total_sold_quantity,
10              RANK() OVER(PARTITION BY division ORDER BY Total_sold_quantity DESC) AS 'Rank_Order'
11      FROM TBL1
12  )
13   SELECT TBL1.division, TBL1.product_code, TBL1.product, TBL2.Total_sold_quantity, TBL2.Rank_Order
14    FROM TBL1 JOIN TBL2
15    ON TBL1.product_code = TBL2.product_code
16   WHERE TBL2.Rank_Order IN (1,2,3)
```

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

Insights

Even though, P & A accounts for 75.9% of total products sold. The top 3 most products sold belongs to N&S.

Total Products Sold

P & A 38M (75.92%)

PC 1M (2.94%)

N & S 11M (21.14%)