



AD-HOC INSIGHTS

Consumer Goods Domain

Presented by : Murali Dharan



Objective:

- AtliQ Hardware, an Indian-based global computer hardware manufacturer, is bolstering its data analytics team to bolster informed decision-making capabilities.
- Tony Sharma, the Director of Data Analytics, intends to organize an SQL challenge aimed at evaluating both the technical skills and soft skills of prospective junior data analysts.
- The company has outlined ten specific ad hoc requests, representing real-world challenges, for candidates to offer valuable insights.
- Recognizing the pivotal role of data insights, AtliQ Hardware strategically prioritizes the enhancement of its data analytics capabilities.
- As part of this strategic initiative, the organization aims to recruit junior data analysts who can adeptly tackle practical challenges within the field.



I. 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

Australia

Bangladesh

India

Indonesia

Japan

Newzealand

Philippines

South Korea

INSIGHTS:

AtliQ Exclusive has extended its presence into eight key markets across the Asia-Pacific (APAC) region.



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

```
WITH unique_product 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  
        dim_product  
        JOIN fact_sales_monthly USING (product_code)  
)  
SELECT  
    *,  
    (  
        unique_product_2021 / unique_product_2020 - 1  
    ) * 100 AS pct_change  
FROM  
    unique_product;
```

unique_product_2020	unique_product_2021	pct_change
245	334	36.33

INSIGHTS:

In the fiscal year 2020, our product range encompassed 245 items, and by FY 2021, it has surged to 334, reflecting a substantial growth of 36%.



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

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

Segment	No_of_unique_product
Notebook	129
Accessories	116
Peripherals	84
Desktop	32
Storage	27
Networking	9

INSIGHTS:

- AtliQ Hardware provides an extensive array of products in the Notebook, Peripherals, and Accessories segments.
- Acknowledging the strategic need to diversify our product offerings, we aspire to venture into the desktop, networking, and storage markets.
- In response, AtliQ Hardware is set to introduce cutting-edge Trending Products in these targeted markets.



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

```
WITH unique_product AS (  
  SELECT  
    segment,  
    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  
    dim_product  
    JOIN fact_sales_monthly USING (product_code)  
  GROUP BY  
    segment  
)  
SELECT  
  *,  
  unique_product_2021 - unique_product_2020 AS Diff  
FROM  
  unique_product;
```

Segment	Unique Product 2020	Unique Product 2021	Diff
Notebook	92	108	16
Accessories	69	103	34
Peripherals	59	75	16
Storage	12	17	5
Desktop	7	22	15
Networking	6	9	3

INSIGHTS:

In 2021, AtliQ Hardware focused on expanding its presence in the accessories market, introducing a total of 34 new accessory products.



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

```
SELECT
  product_code,
  product,
  manufacturing_cost
FROM
  fact_manufacturing_cost
  JOIN dim_product USING (product_code)
WHERE
  manufacturing_cost IN (
    (
      SELECT
        MAX(manufacturing_cost)
      FROM
        fact_manufacturing_cost
    ),
    (
      SELECT
        MIN(manufacturing_cost)
      FROM
        fact_manufacturing_cost
    )
  );
```

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

INSIGHTS:

The Product AQ Home Allin 1 Gen 2 Personal computer has highest manufacturing cost and AQ Master wired Mouse has lowest manufacturing cost in AtliQ Hardware



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

```
SELECT
  customer_code,
  customer,
  ROUND(pre_invoice_discount_pct * 100, 2) as Average_discount_perc
FROM
  fact_pre_invoice_deductions
  JOIN dim_customer USING (customer_code)
WHERE
  fiscal_year = 2021
  AND market = "India"
ORDER BY
  pre_invoice_discount_pct DESC
LIMIT
  5;
```

Customer Code	Customer	Average Discount Perc
90002009	Flipkart	30.83
90002006	Viveks	30.38
90002003	Ezone	30.28
90002002	Croma	30.25
90002016	Amazon	29.33

INSIGHTS:

Considering Flipkart's position as the most heavily discounted customer in the Indian market, featuring a pre-invoice discount percentage of 30.83%, AtliQ applied approximately equivalent pre-invoice discount percentages to each of its top 5 clients in 2021.



7. Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month .

```
WITH CTE AS (  
    select  
        DATE_FORMAT(DATE, '%M') AS months,  
        YEAR(DATE) AS years,  
        (sold_quantity * gross_price) AS gross_sales_amount  
    FROM  
        fact_gross_price  
        JOIN fact_sales_monthly USING(product_code)  
        JOIN dim_customer USING (customer_code)  
    WHERE  
        customer = "Atliq Exclusive"  
)  
SELECT  
    months,  
    years,  
    ROUND(  
        SUM(gross_sales_amount) / 1000000,  
        2  
    ) AS gross_sales_amount  
FROM  
    CTE  
GROUP BY  
    months,  
    years;
```

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

INSIGHTS:

AtliQ Exclusive achieved its peak sales in November 2020, with March 2020 marking the lowest point in sales. The decrease in sales from March to August can be linked to the repercussions of COVID-19. Nevertheless, there is a positive outlook as sales have steadily recovered post-pandemic, demonstrating resilience and surpassing the levels observed in 2020.



8. In which quarter of 2020, got the maximum total_sold_quantity?

```
WITH Quarter_sales AS (  
  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"  
          WHEN MONTH(date) IN (6, 7, 8) THEN "Q4"  
    END AS Quarters  
  FROM  
    fact_sales_monthly  
)  
SELECT  
  Quarters,  
  ROUND(  
    SUM(sold_quantity) / 100000,  
    2  
  ) AS total_sold_quantity  
FROM  
  Quarter_sales  
WHERE  
  fiscal_year = 2020  
GROUP BY  
  Quarters  
ORDER BY  
  total_sold_quantity DESC;
```

Quarters total_sold_quantity

Q1	70.06
Q2	66.50
Q3	20.75
Q4	50.43

INSIGHTS:

During the third quarter of fiscal year 2020 (March, April, and May), characterized by the peak of COVID-19 and extensive lockdowns affecting businesses, the quantity sold sharply declined to 2.1 million. Interestingly, there was a notable surge in demand for computer accessories during this period, likely driven by a large number of students either beginning or continuing their coursework online.



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

```
WITH channel_total_sales AS (  
  SELECT  
    CHANNEL,  
    ROUND(  
      SUM(  
        (sold_quantity * gross_price)  
      ) / 1000000,  
      2  
    ) AS total_sales_amount  
  FROM  
    fact_sales_monthly s  
    JOIN fact_gross_price g USING (product_code, fiscal_year)  
    JOIN dim_customer c USING (customer_code)  
  WHERE  
    s.fiscal_year = 2021  
  GROUP BY  
    channel  
)  
SELECT  
  *,  
  ROUND(  
    total_sales_amount * 100 / sum(total_sales_amount) OVER(),  
    2  
  ) AS pct_share  
FROM  
  channel_total_sales  
ORDER BY  
  pct_share DESC;
```

CHANNEL	total_sales_amount	pct_share
Retailer	1,219.08	73.23
Direct	257.53	15.47
Distributor	188.03	11.30

INSIGHTS:

The majority of Atliq's overall sales, a significant 73%, were conducted through retailers, forming a substantial portion of its total sales. In contrast, sales through direct and distributor channels accounted for a comparatively smaller share of the total revenue.



I 0. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021

```
WITH top3 AS (  
  SELECT  
    division,  
    product_code,  
    product,  
    SUM(sold_quantity) AS Total_quantity,  
    DENSE_RANK() OVER(  
      PARTITION BY division  
      ORDER BY  
        SUM(sold_quantity) DESC  
    ) AS top_3_product  
  FROM  
    dim_product  
  JOIN fact_sales_monthly USING (product_code)  
  WHERE  
    fiscal_year = '2021'  
  GROUP BY  
    division,  
    product_code,  
    product  
)  
SELECT  
  *  
FROM  
  top3  
WHERE  
  top_3_product ≤ 3
```

division	product_code	product	Total_quantity	top_3_product
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:

The three best-selling product in the N & S division were pen drivers. The three best-selling product in the P & A division were pen mouse. The three best-selling product in the PC division were laptops.



Recommendation For Enhancing AtliQ's Sales Performance

- Prioritize delivering exceptional customer service to build and sustain long-term relationships with clients.
- Execute a strong marketing strategy across various channels to maximize brand visibility and reach a diverse audience.
- Cultivate a distinctive brand identity that effectively communicates your unique value proposition, setting your products or services apart in the market.
- Dedicate resources to train the sales team, ensuring they are well-equipped with the skills and knowledge needed to enhance their effectiveness in driving sales.
- Provide competitive pricing for products and create attractive promotional offers to incentivize customer engagement and loyalty.
- Continuously expand and refine your product offerings to meet evolving market demands, staying ahead of industry trends and customer preferences.
- Establish a systematic approach to collecting customer feedback regularly, using insights to drive continuous improvement in products, services, and overall customer satisfaction



THANK YOU

For Watching