Finance and Supply Chain Analytics

AtliQ Hardware

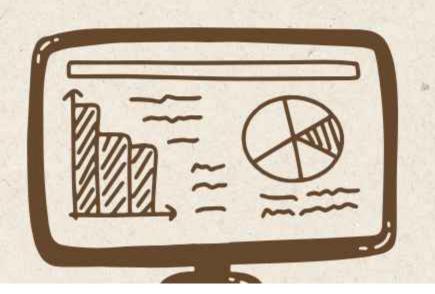# Table of Contents

Problem Statement & Project Overview

Reports, Outcome & Visualization

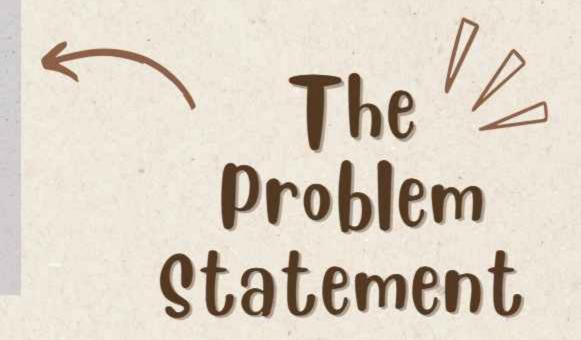Findings and Conclusion

Introduction

AtliQ Hardeware is a leading company that supplies product such as computer hardware and peripherals to clients across the world.

The Problem Statement

AtliQ Hardware is currently facing performance challenges due to the increasing size and complexity of its Excel files. To address this, the company has formed a dedicated team of data analysts to leverage MySQL for extracting valuable insights and enhancing operational efficiency.

Project Overview

The scope of this project is conducting an in-depth analysis of the dataset provided by AtliQ Hardware. The Primary goal is to derive actionable insights regarding sales performance, Market dynamics, Customer behaviour.

Business Questions

1. How many customers are there?
2. how many products are there?
3. how many markets are there?
4. how many unique region are there?

5. how many divisions are there?
6. product categories, segment and variant
7. unique platforms and channels

```sql
# GETTING FAMILIAR WITH DATA
--   how many customers are there?
select count(distinct customer) as No_of_customers from dim_customer;


# how many products are there?
select count(distinct product) as No_of_products from dim_product;


# how many markets are there?
select count(distinct market) as No_of_market from dim_customer;


#how many unique region are there?
select distinct region from dim_customer;
```

```sql
# how many divisions are there ?
select distinct division from dim_product;


# product categories, segment and variant
select distinct segment from dim_product;
select distinct category from dim_product;
select distinct variant from dim_product;


# unique platforms and channels of atliq hardware
select distinct platform from dim_customer;
select distinct channel from dim_customer;
```

yearly sales & How does the monthly gross sales trend over the last two fiscal years?

```
# 1. yearly sales & How does the monthly gross sales trend over the last two fiscal years?
select
        fiscal_month,
        round(sum(total_gross_price)/1000000,2) as gross_price
from net_sales
where fiscal_year in (2021,2022)
group by fiscal_month;
```

fiscal_month	gross_price
September	683.06
October	861.52
November	1173.86
December	1241.36
January	120.95
February	117.17
March	122.18
April	122.38
May	120.34
June	116.56
July	122.49
August	121.47

Gross Margin Monthly Chart for Last two years

What is the region-wise contribution to total sales revenue?

region	fiscal_year	total_net_sales
▸ APAC	2022	882.68
APAC	2021	441.98
APAC	2020	147.98
APAC	2019	71.33
APAC	2018	20.67
EU	2022	362.08
EU	2021	200.77
EU	2020	55.79
EU	2019	17.22
EU	2018	1.75
LATAM	2022	6.04
LATAM	2021	3.16
LATAM	2020	2.00
LATAM	2019	0.83
LATAM	2018	0.20
NA	2022	392.10
NA	2021	177.94

```
# What is the region-wise contribution to total sales revenue?
select c.region,n.fiscal_year,
        round(sum(net_sales)/1000000,2) as total_net_sales
from net_sales n
join dim_customer c
on c.customer_code = n.customer_code
group by c.region, n.fiscal_year
order by c.region, n.fiscal_year desc;
```

yearly total sales

fiscal_year	yearly_sales
2018	1324097.44
2019	3555079.02
2020	6502181.91
2021	23216512.22
2022	44638198.92

```
# yearly total sales
SELECT
    get_fiscal_year(date) as fiscal_year,
    round(sum(g.gross_price * s.sold_quantity),2) as yearly_sales
FROM fact_sales_monthly s
join fact_gross_price g
on
    g.product_code = s.product_code and
    g.fiscal_year = get_fiscal_year(s.date)
where customer_code = '90002002'
group by get_fiscal_year(date)
order by fiscal_year;
```

Yearly Sales

Generate a report detailling the individual product sales for croma india customer throughout the fiscal year 2021

```sql
select
    s.date, s.fiscal_year,
    s.customer_code,c.market,p.product_code,
    p.product, p.variant, s.sold_quantity,
    g.gross_price as gross_price_per_item,
    round(g.gross_price * s.sold_quantity,2) as total_gross_price,
    pre.pre_invoice_discount_pct
from fact_sales_monthly s
join dim_customer c
   on c.customer_code = s.customer_code
join dim_product p
   on p.product_code=s.product_code
join fact_gross_price g
   on g.product_code = s.product_code and
   g.fiscal_year = s.fiscal_year
join fact_pre_invoice_deductions pre
   on pre.customer_code = s.customer_code and
   pre.fiscal_year = s.fiscal_year
where
    get_fiscal_year(s.date) = 2021 and
    s.customer_code = 90002002;
```

date	product_code	product	variant	sold_quantity	gross_price_per_item	total_gross
2020-09-01	A0118150101	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Standard	202	19.0573	3849.57
2020-09-01	A0118150102	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Plus	162	21.4565	3475.95
2020-09-01	A0118150103	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Premium	193	21.7795	4203.44
2020-09-01	A0118150104	AQ Dracula HDD – 3.5 Inch SATA 6 Gb/s 5400 R...	Premium Plus	146	22.9729	3354.04
2020-09-01	A0219150201	AQ WereWolf NAS Internal Hard Drive HDD – 8...	Standard	149	23.6987	3531.11
2020-09-01	A0219150202	AQ WereWolf NAS Internal Hard Drive HDD – 8...	Plus	107	24.7312	2646.24
2020-09-01	A0220150203	AQ WereWolf NAS Internal Hard Drive HDD – 8...	Premium	123	23.6154	2904.69
2020-09-01	A0320150301	AQ Zion Saga	Standard	146	23.7223	3463.46
2020-09-01	A0321150302	AQ Zion Saga	Plus	236	27.1027	6396.24
2020-09-01	A0321150303	AQ Zion Saga	Premium	137	28.0059	3836.81
2020-09-01	A0418150103	AQ Mforce Gen X	Standard 3	23	19.5235	449.04
2020-09-01	A0418150104	AQ Mforce Gen X	Plus 1	82	19.9239	1633.76
2020-09-01	A0418150105	AQ Mforce Gen X	Plus 2	86	20.0766	1726.59
2020-09-01	A0418150106	AQ Mforce Gen X	Plus 3	48	19.9365	956.95
2020-09-01	A0519150201	AQ Mforce Gen Y	Standard 1	138	22.3984	3090.98
2020-09-01	A0519150202	AQ Mforce Gen Y	Standard 2	72	24.9298	1794.95

gross sales report monthly

```sql
#gross sales report monthly
select s.date,
    sum(round(g.gross_price * s.sold_quantity,2)) as total_gross_price
from fact_sales_monthly s
join fact_gross_price g
on g.product_code = s.product_code and
   g.fiscal_year = get_fiscal_year(s.date)
where s.customer_code = 90002002
group by s.date;
```

date	total_gross_price
2017-09-01	122407.57
2017-10-01	162687.56
2017-12-01	245673.84
2018-01-01	127574.73
2018-02-01	144799.54
2018-04-01	130643.92
2018-05-01	139165.06
2018-06-01	125735.36
2018-08-01	125409.90
2018-09-01	343337.14
2018-10-01	440562.10
2018-12-01	653944.72
2019-01-01	359025.06
2019-02-01	356607.19
2019-04-01	379549.74
2019-05-01	340152.29
2019-06-01	343792.08

TOP 5 MARKETS IN THE YEAR 2021

```sql
# TOP 5 MARKETS IN THE YEAR 2021
SELECT market,
       round(sum(net_sales)/1000000,2) as net_sales
FROM gdb0041.net_sales
where fiscal_year = 2021
group by market
order by net_sales desc limit 5;
```

market	net_sales
India	210.67
USA	132.05
South Korea	64.01
Canada	45.89
United Kingdom	44.73

TOP 5 CUSTOMERS BY NETSALES

customer	net_sales_mln
Amazon	30.00
Atliq Exclusive	23.98
Flipkart	12.96
Electricalsocity	12.31
Propel	11.86

```sql
#TOP 5 CUSTOMERS BY NETSALES
select c.customer,
       round(sum(net_sales)/1000000,2) as net_sales_mln
from dim_customer c
join net_sales n
on n.customer_code = c.customer_code
where n.fiscal_year = 2021 and c.market = "india"
group by c.customer
order by net_sales_mln desc limit 5 ;
```

get top n products n each division
by their quantity sold

```sql
# get top n products n each division by their quantity sold
with cte1 as (
        select division, product,
            sum(sold_quantity) as total_qty
        from net_sales
        where fiscal_year = 2021
        group by division, product
    ),
    cte2 as(
        select *,
            dense_rank() over(partition by division order by total_qty desc) as drnk
        from cte1
    )
select * from cte2 where drnk <=3;
```

division	product	total_qty	drnk
N & S	AQ Pen Drive DRC	2034569	1
N & S	AQ Digit SSD	1240149	2
N & S	AQ Clx1	1238683	3
P & A	AQ Gamers Ms	2477098	1
P & A	AQ Maxima Ms	2461991	2
P & A	AQ Master wireless x1 Ms	2448784	3
PC	AQ Digit	135092	1
PC	AQ Gen Y	135031	2
PC	AQ Elite	134431	3

Forecast Accuracy Report for customer with highest forecast for fiscal year 2021

```sql
1 •⊖ with forecast_err_table as (
2        select
3            s.customer_code as customer_code,
4            c.customer as customer,
5            c.market as market,
6            sum(s.sold_quantity) as total_sold_quantity,
7            sum(s.forecast_quantity) as total_forecast_quantity,
8            sum((forecast_quantity-sold_quantity)) as net_err,
9            round(sum((forecast_quantity-sold_quantity))*100/sum(forecast_quantity),1) as net_err_pct,
10           sum(abs(forecast_quantity-sold_quantity)) as abs_err,
11           round(sum(abs(forecast_quantity-sold_quantity))*100/sum(forecast_quantity),1) as abs_err_pct
12       from fact_act_est s
13       join dim_customer c
14       using (customer_code)
15       where s.fiscal_year=2021
16       group by s.customer_code)
17   select
18       *,
19       if(abs_err_pct>100,0, 100-abs_err_pct) as forecast_accuracy
20   from forecast_err_table
21   order by forecast_accuracy desc;
```

customer_code	customer	market	total_sold_quantity	total_forecast_quantity	net_err	net_err_pc	abs_err	abs_err_	forecast_accuracy
90013120	Coolblue	Italy	109547	133532	23985	18.0	70467	52.8	47.2
90023027	Costco	Canada	236189	279962	43773	15.6	149303	53.3	46.7
70010048	Atliq e Store	Bangladesh	119439	142010	22571	15.9	75711	53.3	46.7
90023026	Relief	Canada	228988	273492	44504	16.3	146948	53.7	46.3
90017051	Forward Stores	Portugal	86823	118067	31244	26.5	63568	53.8	46.2
90017058	Mbit	Portugal	86860	110195	23335	21.2	59473	54.0	46.0
90023028	walmart	Canada	239081	283323	44242	15.6	153058	54.0	46.0
90015146	Mbit	Norway	147152	210507	63355	30.1	114189	54.2	45.8
90013124	Amazon	Italy	110898	136116	25218	18.5	73826	54.2	45.8
90023024	Sage	Canada	246397	287233	40836	14.2	155610	54.2	45.8
90015147	Chiptec	Norway	154897	223867	68970	30.8	122100	54.5	45.5
90017054	Flawless Stores	Portugal	84371	114698	30327	26.4	62483	54.5	45.5
70027208	Atliq e Store	Brazil	33713	47321	13608	28.8	25784	54.5	45.5
80001019	Neptune	China	1113979	1275248	161269	12.6	695779	54.6	45.4
90015144	Sound	Norway	160074	225637	65563	29.1	123257	54.6	45.4
70013125	Atliq Exclusive	Italy	101658	123428	21770	17.6	67546	54.7	45.3
90009130	Logic Stores	Newzealand	103290	110175	6885	6.2	60225	54.7	45.3
90015149	UniEuro	Norway	142086	212500	70414	33.1	116172	54.7	45.3

Findings of Queries

→ AtliQ Hardware achieved record sales in 2022.

→ India was the largest market in 2021 with the sales of $210.65M.

→ Amazon generated the highest Net Sales in 2021 with $109.03M.

→ The AQ BZ All-in-one was the top selling product in 2021 with the sales of $33.75M

→ In 2021, Colombia, Chile and Brazil had the lowest Net Sales.

→ Cool Blue, Costco, AtliQ e store are the top 3 customers with highest forecast accuracy.

Thank You