



SQL Project
on
AtliQ CONSUMER AD-HOC INSIGHTS

- Suraj Kant

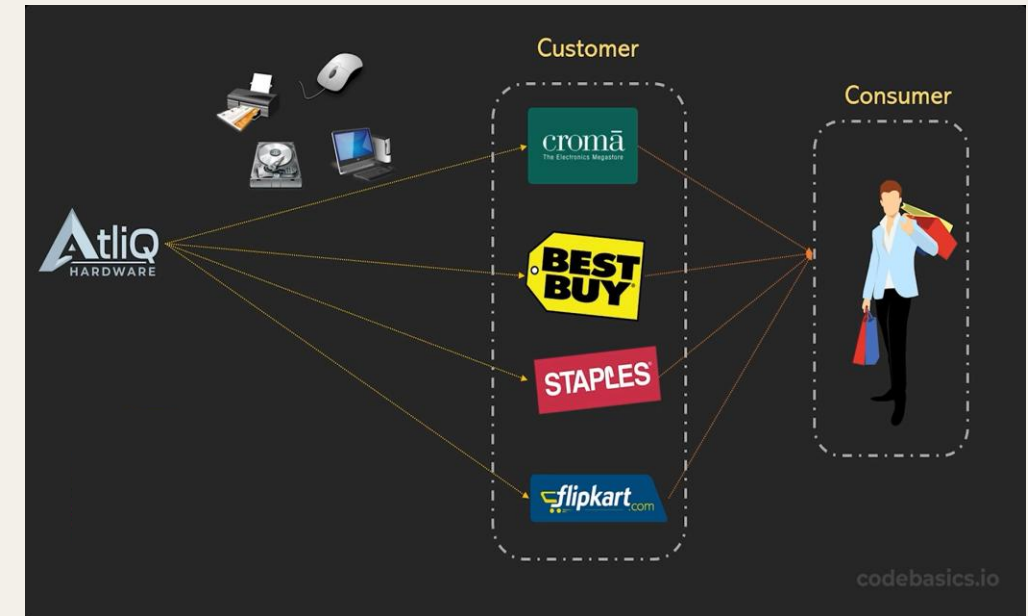


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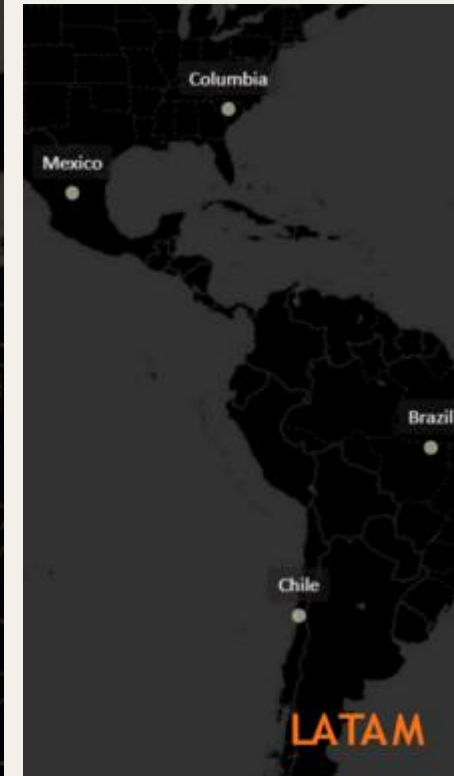
Company's Overview and Market

- **AtliQ Hardware** is a distinguished global leader in electronics manufacturing, specializing in the production and distribution of an extensive range of high-quality hardware products.
- The company manufactures products under 3 major divisions i.e., **Networking & Storage, PC, Peripherals & Accessories**, serving the diverse needs of customers worldwide.
- AtliQ Hardware is operational in **NA, LATAM, EU and APAC** regions.





Company Overview and Market



AtliQ Hardware is operational in **APAC**, **EU**, **LATAM** and **NA** regions.



Objectives

- **AtliQ Hardware** (fictitious corporation) is one of the major computer hardware manufacturers in India, with a strong presence in other nations.
- Nevertheless, the management did note that they do not have sufficient insights to make prompt, wise, and data-informed judgments.
- Plan to expand the data analytics team by adding junior data analysts.
- To assess candidates, Data analytics director, Tony Sharma plans to conduct a SQL Challenge to evaluate both tech and soft skills.
- The company seeks insights for 9 ad hoc requests.



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 entails 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 behavior, and to forecast supply chain trends.



Chroma Sales Report

Generate a report detailing the individual product sales for **Croma** India customer throughout the fiscal year **2021**.

```
1 • SELECT
2     sm.date,
3     p.product_code,
4     p.product,
5     p.variant,
6     sm.sold_quantity,
7     gp.gross_price,
8     ROUND((sm.sold_quantity * gp.gross_price), 2) AS gross_price_total
9 FROM
10    fact_sales_monthly sm
11    JOIN
12    dim_product p ON sm.product_code = p.product_code
13    JOIN
14    fact_gross_price gp ON gp.product_code = p.product_code
15    AND gp.fiscal_year = GET_FISCAL_YEAR(sm.date)
16 WHERE
17     customer_code = 90002002
18     AND GET_FISCAL_YEAR(date) = 2021
19 ORDER BY sm.date ASC
```

| | date | product_code | product | variant | sold_quantity | gross_price | gross_price_total |
|---|------------|--------------|---|--------------|---------------|-------------|-------------------|
| ▶ | 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 |
| | 2020-09-01 | A0519150203 | AQ Mforce Gen Y | Standard 3 | 38 | 26.5871 | 1010.31 |
| | 2020-09-01 | A0519150204 | AQ Mforce Gen Y | Plus 1 | 149 | 26.1081 | 3890.11 |
| | 2020-09-01 | A0519150205 | AQ Mforce Gen Y | Plus 2 | 29 | 29.7008 | 861.32 |
| | 2020-09-01 | A0519150206 | AQ Mforce Gen Y | Plus 3 | 28 | 31.2439 | 874.83 |
| | 2020-09-01 | A0519150207 | AQ Mforce Gen Y | Premium 1 | 171 | 32.4427 | 5547.70 |



CROMA YEARLY GROSS SALES REPORT

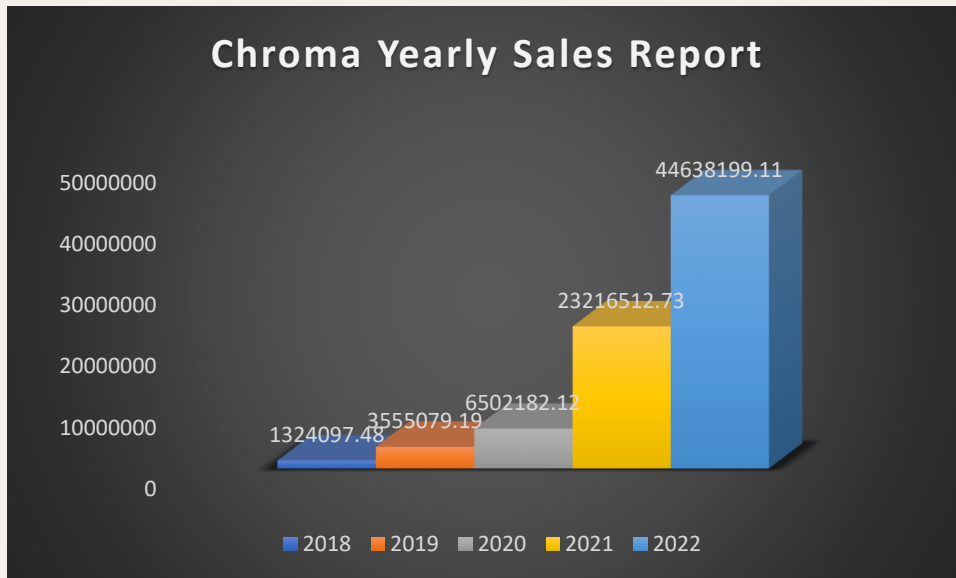
Generate a yearly report for Croma India where there are two columns.

Fiscal Year

Total Gross Sales amount

in that year from **Croma**.

```
1 • SELECT
2     gp.fiscal_year,
3     SUM(ROUND(gp.gross_price * sm.sold_quantity, 2)) AS total_gross_price
4 FROM
5     fact_gross_price gp
6     JOIN
7     fact_sales_monthly sm ON gp.product_code = sm.product_code
8     AND gp.fiscal_year = GET_FISCAL_YEAR(date)
9 WHERE
10    customer_code = 90002002
11 GROUP BY gp.fiscal_year
12 ORDER BY gp.fiscal_year ASC
```



| | fiscal_year | total_gross_price |
|---|-------------|-------------------|
| ▶ | 2018 | 1324097.48 |
| | 2019 | 3555079.19 |
| | 2020 | 6502182.12 |
| | 2021 | 23216512.73 |
| | 2022 | 44638199.11 |



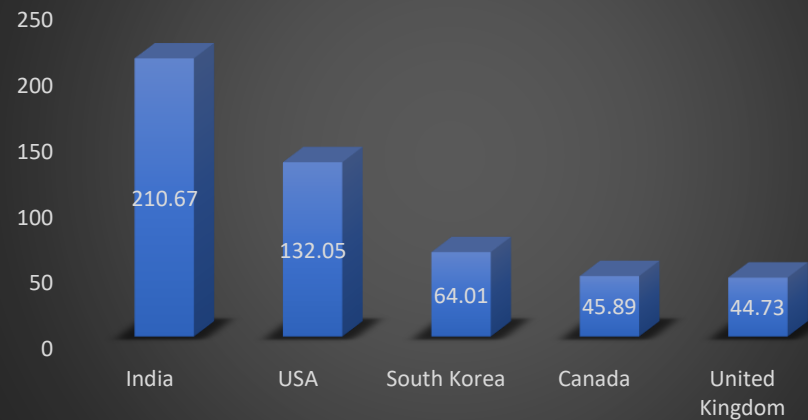
TOP 5 MARKETS

Generate a report getting **Top 5 markets**

by Net Sales in Fiscal Year **2021**

```
1 • SELECT
2     market, ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_mln
3 FROM
4     net_sales
5 WHERE
6     fiscal_year = 2021
7 GROUP BY market
8 ORDER BY net_sales_mln DESC
9 LIMIT 5;
```

Top 5 Markets By Net Sales In 2021



| | market | net_sales_mln |
|---|----------------|---------------|
| ▶ | India | 210.67 |
| | USA | 132.05 |
| | South Korea | 64.01 |
| | Canada | 45.89 |
| | United Kingdom | 44.73 |

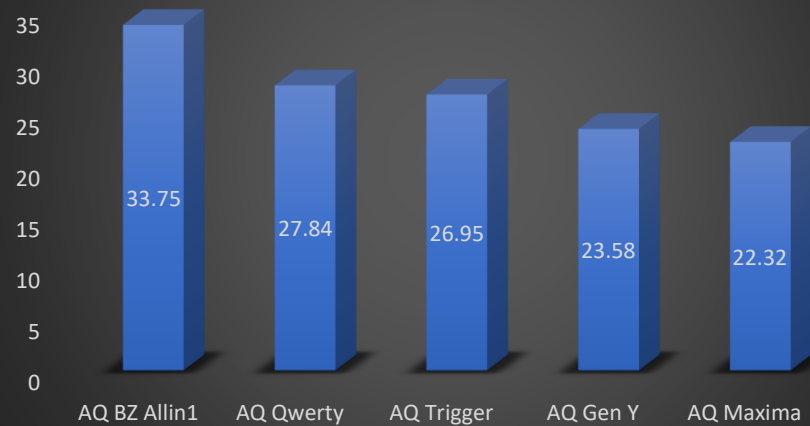


TOP 5 Products

Generate a report getting **Top 5 Products** by Net Sales in Fiscal Year **2021**

```
1 • SELECT
2     product,
3     ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_mln
4 FROM
5     net_sales
6 WHERE
7     fiscal_year = 2021
8 GROUP BY product
9 ORDER BY net_sales_mln DESC
10 LIMIT 5;
```

Top 5 Products By Net Sales in 2021



| | product | net_sales_mln |
|---|--------------|---------------|
| ▶ | AQ BZ Allin1 | 33.75 |
| | AQ Qwerty | 27.84 |
| | AQ Trigger | 26.95 |
| | AQ Gen Y | 23.58 |
| | AQ Maxima | 22.32 |

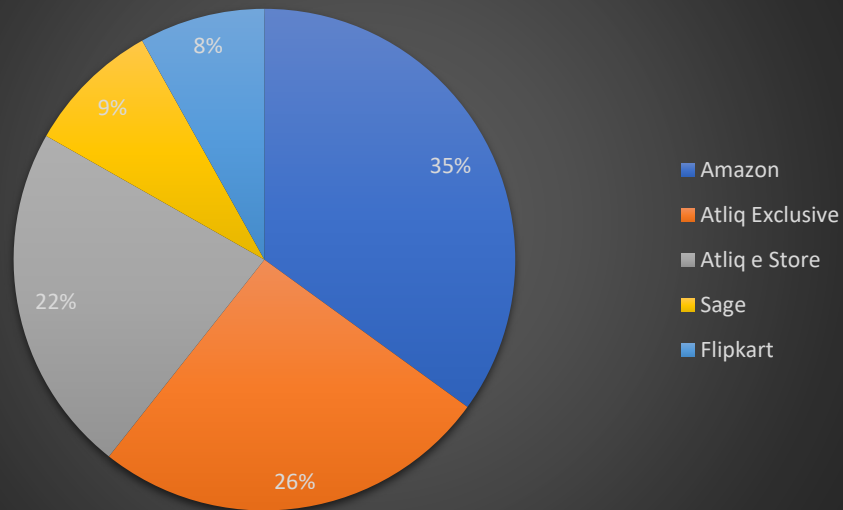


TOP 5 Customers

Generate a report getting **Top 5 Customers** by Net Sales in Fiscal Year **2021**

```
1 • SELECT
2     c.customer,
3     ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_mln
4 FROM
5     net_sales ns
6     JOIN
7     dim_customer c ON ns.customer_code = c.customer_code
8 WHERE
9     ns.fiscal_year = 2021
10 GROUP BY c.customer
11 ORDER BY net_sales_mln DESC
12 LIMIT 5;
```

Top 5 Customers By Net Sales (2021)



| | customer | net_sales_mln |
|---|-----------------|---------------|
| ▶ | Amazon | 109.03 |
| | Atliq Exclusive | 79.92 |
| | Atliq e Store | 70.31 |
| | Sage | 27.07 |
| | Flipkart | 25.25 |



NET SALES % REPORT

Generate a Net Sales% report of
Top 4 Customers in different
regions

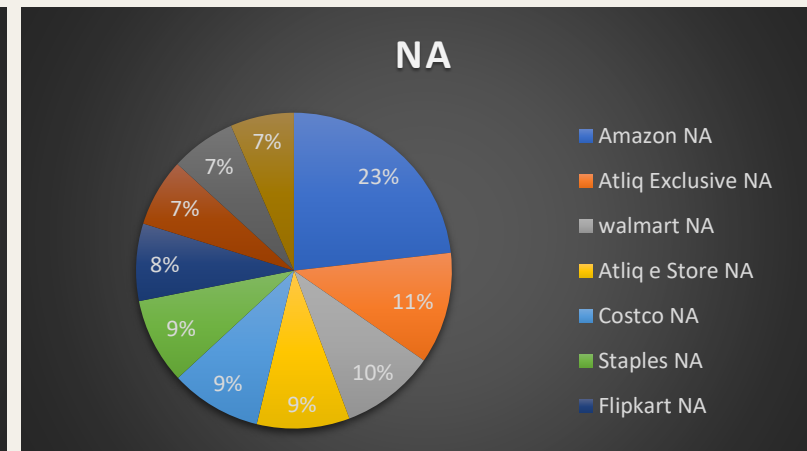
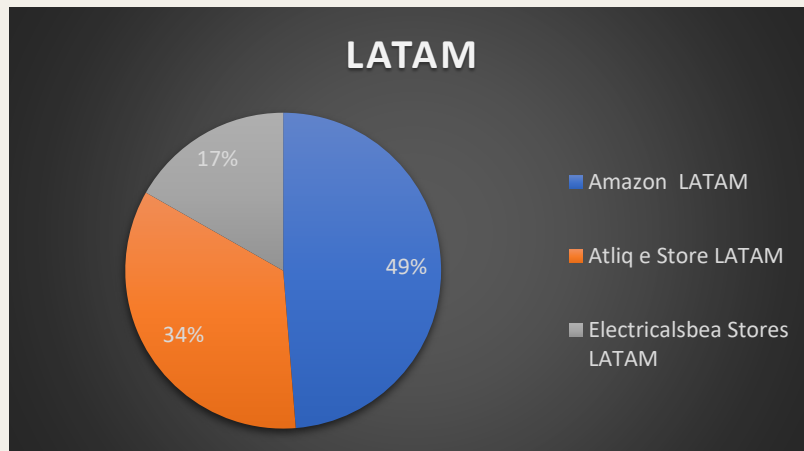
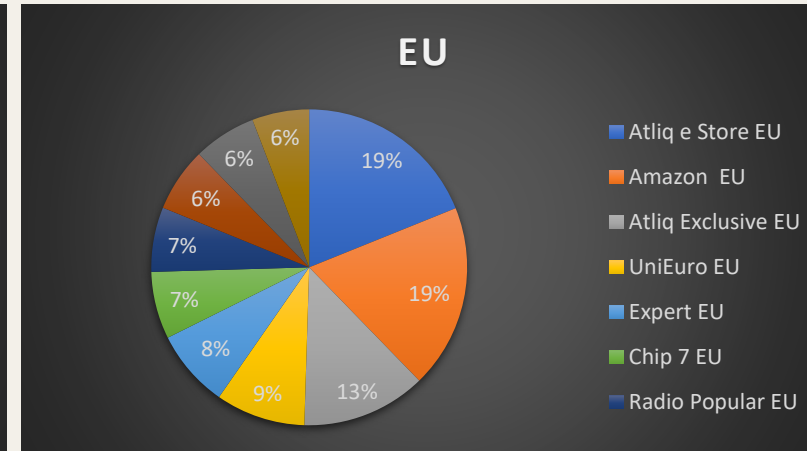
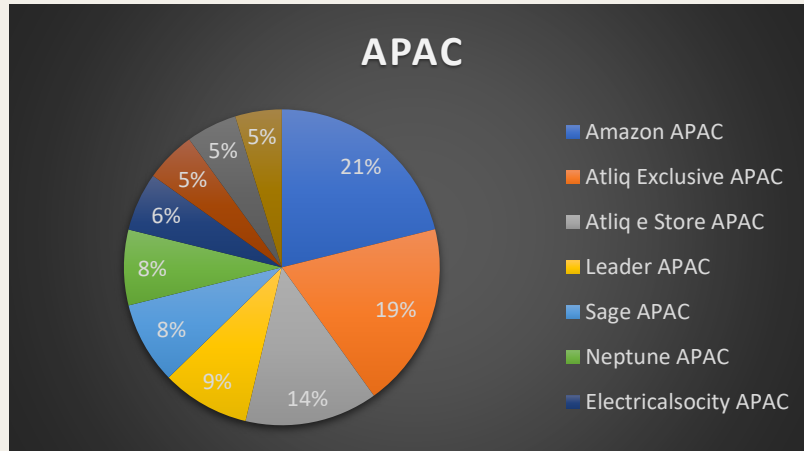
| | customer | region | net_sales_mln | pct_share_region | drnk |
|---|-------------------|--------|---------------|------------------|------|
| ▶ | Amazon | APAC | 57.41 | 12.99 | 1 |
| | Atiq Exclusive | APAC | 51.58 | 11.67 | 2 |
| | Atiq e Store | APAC | 36.97 | 8.36 | 3 |
| | Leader | APAC | 24.52 | 5.55 | 4 |
| | Atiq e Store | EU | 19.83 | 9.87 | 1 |
| | Amazon | EU | 19.77 | 9.84 | 2 |
| | Atiq Exclusive | EU | 13.39 | 6.67 | 3 |
| | UniEuro | EU | 9.63 | 4.80 | 4 |
| | Amazon | LATAM | 1.54 | 48.73 | 1 |
| | Atiq e Store | LATAM | 1.09 | 34.49 | 2 |
| | Electricalsbea... | LATAM | 0.53 | 16.77 | 3 |
| | Amazon | NA | 30.31 | 17.03 | 1 |
| | Atiq Exclusive | NA | 14.95 | 8.40 | 2 |
| | walmart | NA | 12.63 | 7.10 | 3 |
| | Atiq e Store | NA | 12.42 | 6.98 | 4 |

```
1 • with cte1 as (SELECT
2     c.customer,
3     c.region,
4     ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_mln
5 FROM
6     net_sales ns
7     JOIN
8     dim_customer c ON ns.customer_code = c.customer_code
9 WHERE
10    ns.fiscal_year = 2021
11 GROUP BY c.customer, c.region),
12 cte2 as (select *, round(net_sales_mln * 100 / sum(net_sales_mln) over(partition by region), 2) as pct_share_region
13 from cte1),
14 cte3 as (select *,
15     dense_rank() over(partition by region order by pct_share_region desc) as drnk
16 from cte2)
17 select *
18 from cte3
19 where drnk < 5
```



Market Share %

Top 10 Customers by market share
% in different Regions





Forecast Accuracy 2020 vs 2021

Generate a report comparing forecast accuracy of **2020** and **2021** by Customer

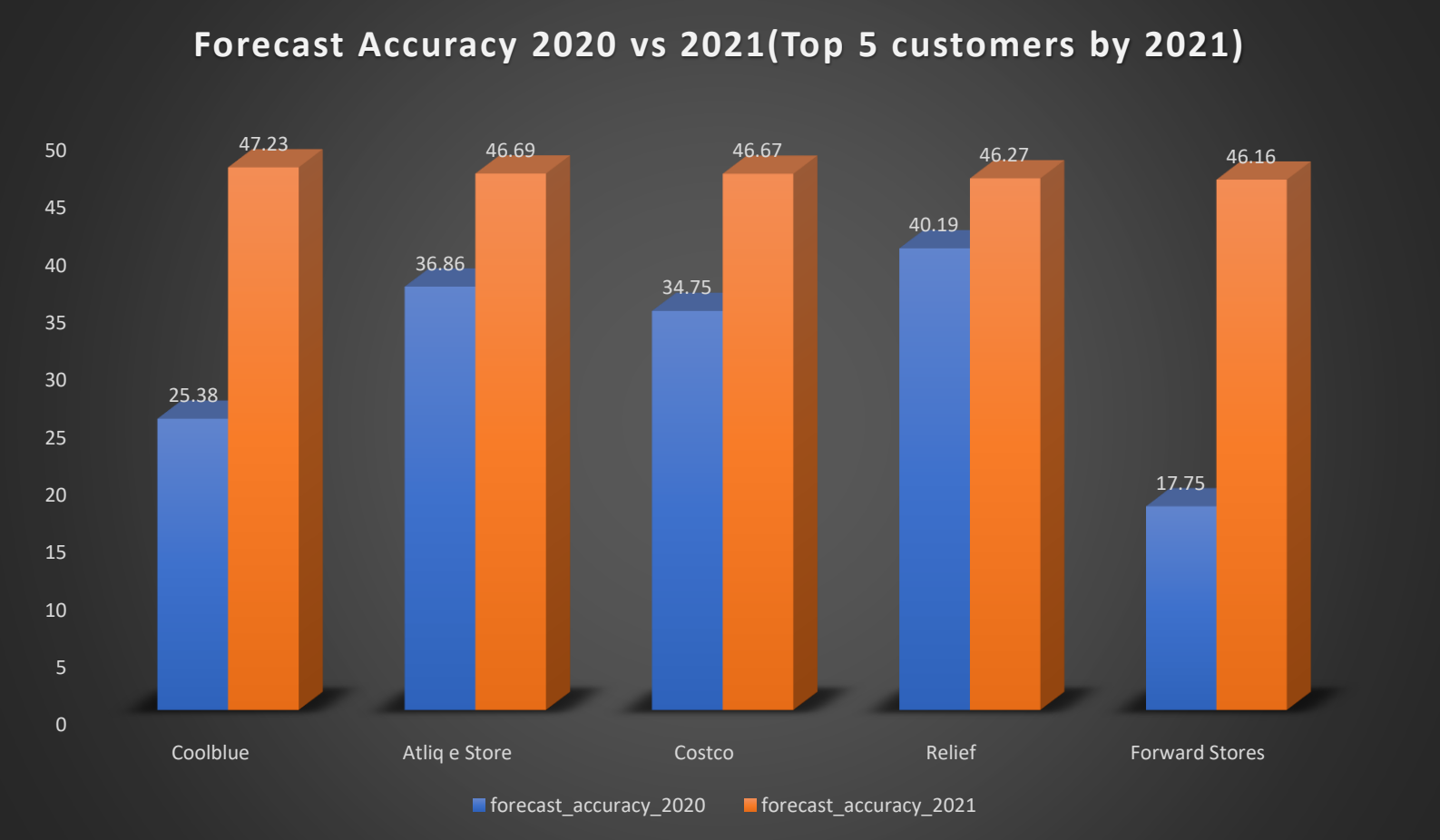
| | customer_code | customer | market | forecast_accuracy_2020 | forecast_accuracy_2021 |
|---|---------------|--------------------|---------------|------------------------|------------------------|
| ▶ | 90013120 | Coolblue | Italy | 25.38 | 47.23 |
| | 70010048 | Atliq e Store | Bangladesh | 36.86 | 46.69 |
| | 90023027 | Costco | Canada | 34.75 | 46.67 |
| | 90023026 | Relief | Canada | 40.19 | 46.27 |
| | 90017051 | Forward Stores | Portugal | 17.75 | 46.16 |
| | 90017058 | Mbit | Portugal | 15.45 | 46.03 |
| | 90023028 | walmart | Canada | 36.83 | 45.98 |
| | 90023024 | Sage | Canada | 38.59 | 45.82 |
| | 90015146 | Mbit | Norway | 0.86 | 45.76 |
| | 90013124 | Amazon | Italy | 3.77 | 45.76 |
| | 90017054 | Flawless Stores | Portugal | 13.76 | 45.52 |
| | 70027208 | Atliq e Store | Brazil | 35.34 | 45.51 |
| | 90015147 | Chiptec | Norway | 6.38 | 45.46 |
| | 80001019 | Neptune | China | 23.40 | 45.44 |
| | 90015144 | Sound | Norway | 8.37 | 45.37 |
| | 90009130 | Logic Stores | Newzealand | 0.06 | 45.34 |
| | 90015149 | UniEuro | Norway | 7.91 | 45.33 |
| | 90021088 | Electricalslytical | United Kin... | 36.01 | 45.33 |
| | 90017050 | Electricalsara ... | Portugal | 17.89 | 45.28 |
| | 70013125 | Atliq Exclusive | Italy | 27.59 | 45.27 |
| | 90021094 | Coolblue | United Kin... | 37.94 | 45.24 |
| | 70009134 | Atliq e Store | Newzealand | 0 | 45.19 |
| | 90013118 | Fnac-Darty | Italy | 27.95 | 45.17 |

```
1 with cte20 as (SELECT
2     e.*, dt.fiscal_year,
3     sum(sold_quantity) as total_sold_quantity,
4     sum(forecast_quantity) as total_forecast_quantity,
5     sum(forecast_quantity - sold_quantity) as net_err,
6     sum(abs(forecast_quantity - sold_quantity)) as abs_err,
7     (sum(forecast_quantity - sold_quantity) * 100 / sum(forecast_quantity)) as net_err_pct,
8     (sum(abs(forecast_quantity - sold_quantity)) * 100 / sum(forecast_quantity)) as abs_err_pct_2020
9 FROM fact_act_est e
10 join
11     dim_date dt on dt.calendar_date = e.date
12 where dt.fiscal_year = 2020
13 group by customer_code),
14 cte21 as (SELECT
15     e.*, dt.fiscal_year,
16     sum(sold_quantity) as total_sold_quantity,
17     sum(forecast_quantity) as total_forecast_quantity,
18     sum(forecast_quantity - sold_quantity) as net_err,
19     sum(abs(forecast_quantity - sold_quantity)) as abs_err,
20     (sum(forecast_quantity - sold_quantity) * 100 / sum(forecast_quantity)) as net_err_pct,
21     (sum(abs(forecast_quantity - sold_quantity)) * 100 / sum(forecast_quantity)) as abs_err_pct_2021
22 FROM fact_act_est e
23 join
24     dim_date dt on dt.calendar_date = e.date
25 where dt.fiscal_year = 2021
26 group by customer_code)
27 select c.customer_code, c.customer, c.market,
28     if(abs_err_pct_2020 > 100, 0, round(100 - abs_err_pct_2020, 2)) as forecast_accuracy_2020,
29     if(abs_err_pct_2021 > 100, 0, round(100 - abs_err_pct_2021, 2)) as forecast_accuracy_2021
30 from cte20 c20
31 join
32     dim_customer c on c.customer_code = c20.customer_code
33 join
34     cte21 c21 on c21.customer_code = c20.customer_code
35     and c21.product_code = c20.product_code
36 order by forecast_accuracy_2021 desc
```



Forecast Accuracy 2020 vs 2021

Forecast Accuracy 2020 vs 2021 by Customer(Top 5 customers by 2021 forecast accuracy)





Conclusion

- AtliQ Hardware achieved record sales in 2022.
- **India** was the largest market in **2021** with sales of **\$210.67M**.
- **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**.
- **Amazon** captures the top market share% in **APAC, LATAM & NA** regions.
- **AtliQ e-store** topped the chart in **EU** region.
- For year **2021** the **forecast accuracy** is much **more** accurate than 2020 for each customer.



Thank You!