



**SQL Project
On
CONSUMER AD-HOC INSIGHTS**

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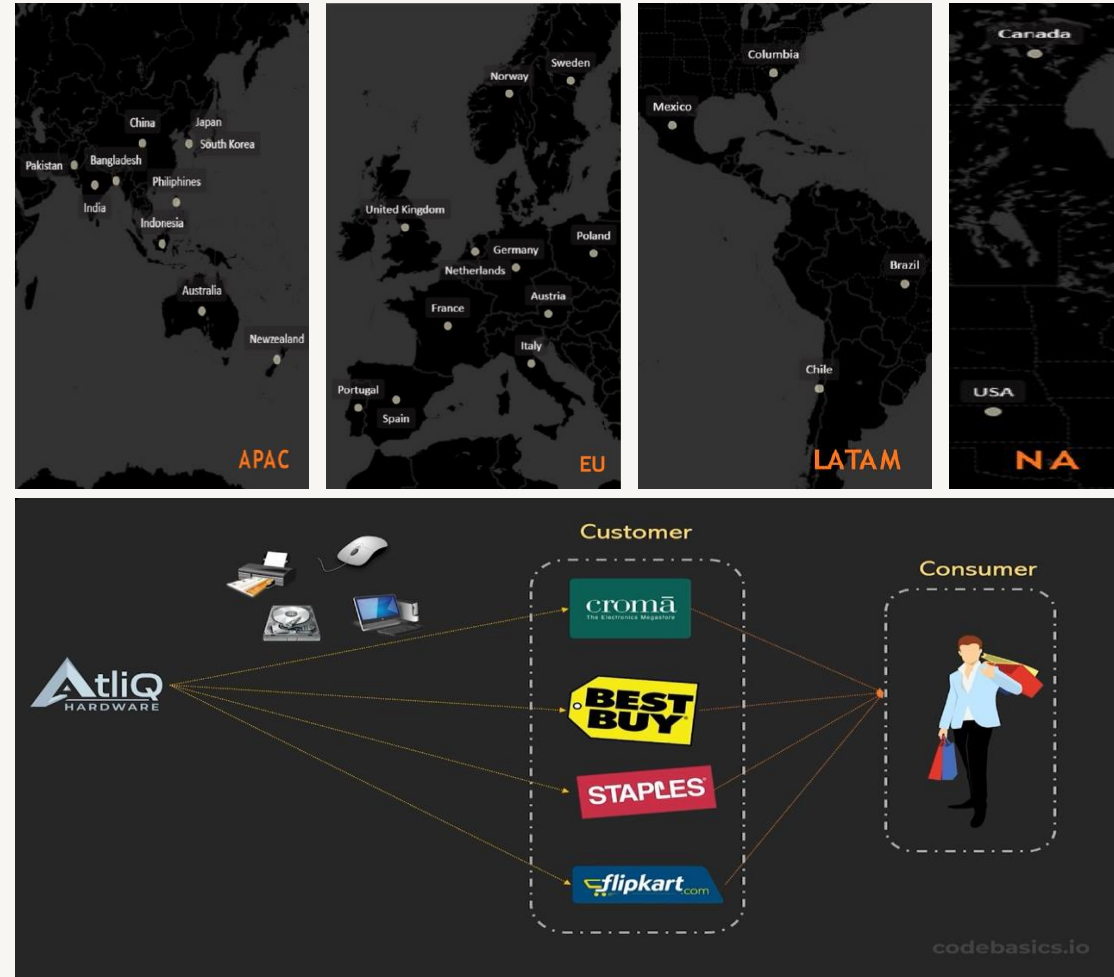


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Company Overview & Market

- AtliQ Hardware is a Computer Hardware and Accessory manufacturer.
- The company manufactures products under 3 major divisions i.e., **Networking & Storage, PC, Peripherals & Accessories.**
- AtliQ Hardware is operational in **NA, LATAM, EU** and **APAC** 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 & Problem Overview

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

Problem 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



Croma Sales Report

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

```
SELECT
    s.date,
    s.product_code,
    p.product,
    p.variant,
    s.sold_quantity,
    g.gross_price,
    ROUND((s.sold_quantity * g.gross_price), 2) AS gross_price_total
FROM
    fact_sales_monthly s
    JOIN
    dim_product p ON s.product_code = p.product_code
    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
    AND GET_FISCAL_YEAR(date) = 2021
ORDER BY 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
	2020-09-01	A0519150208	AQ Mforce Gen Y	Premium 2	118	30.5816	3608.63
	2020-09-01	A0619150301	AQ Mforce Gen Z	Standard 1	51	30.4696	1553.95
	2020-09-01	A0619150302	AQ Mforce Gen Z	Standard 2	191	34.0973	6512.58
	2020-09-01	A0620150303	AQ Mforce Gen Z	Standard 3	167	34.2412	5718.28
	2020-09-01	A0620150304	AQ Mforce Gen Z	Plus 1	122	37.5826	4585.08
	2020-09-01	A0620150305	AQ Mforce Gen Z	Plus 2	173	36.5679	6326.25
	2020-09-01	A0620150306	AO Mforce Gen Z	Plus 3	182	37.5278	6830.06



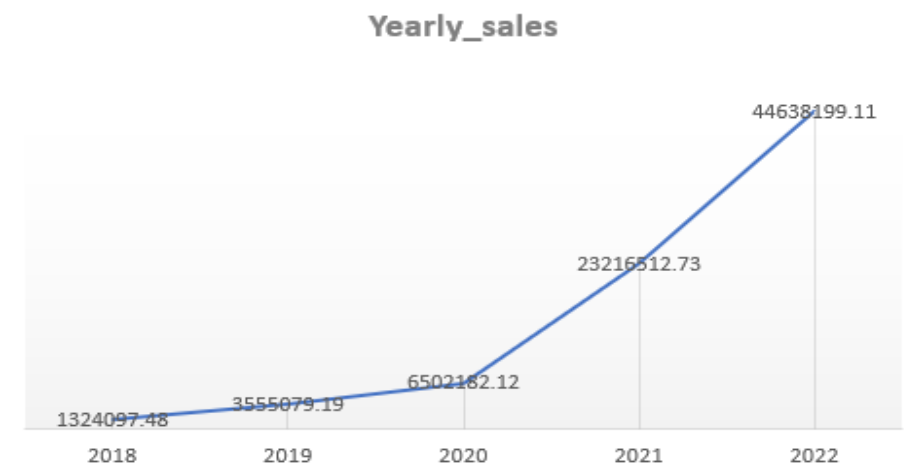
Croma Yearly Gross Sales Report

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

1. Fiscal Year
2. Total Gross Sales amount in that year from Croma

	fiscal_year	gross_price_total
▶	2018	1324097.48
	2019	3555079.19
	2020	6502182.12
	2021	23216512.73
	2022	44638199.11

```
SELECT
    g.fiscal_year,
    SUM(ROUND(s.sold_quantity * g.gross_price, 2)) AS gross_price_total
FROM
    fact_sales_monthly s
    JOIN
    fact_gross_price g ON s.product_code = g.product_code
    AND g.fiscal_year = GET_FISCAL_YEAR(s.date)
WHERE
    customer_code = 90002002
GROUP BY g.fiscal_year
ORDER BY g.fiscal_year ASC;
```

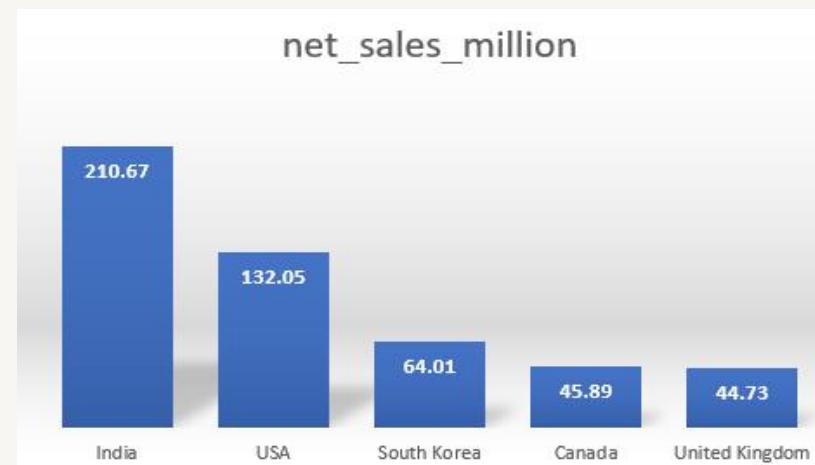


Top 5 Market

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

```
SELECT
    market,
    ROUND(SUM(net_sales) / 1000000, 2) AS net_sales_million
FROM
    net_sales
WHERE
    fiscal_year = 2021
GROUP BY market
ORDER BY net_sales_million DESC
LIMIT 5;
```

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



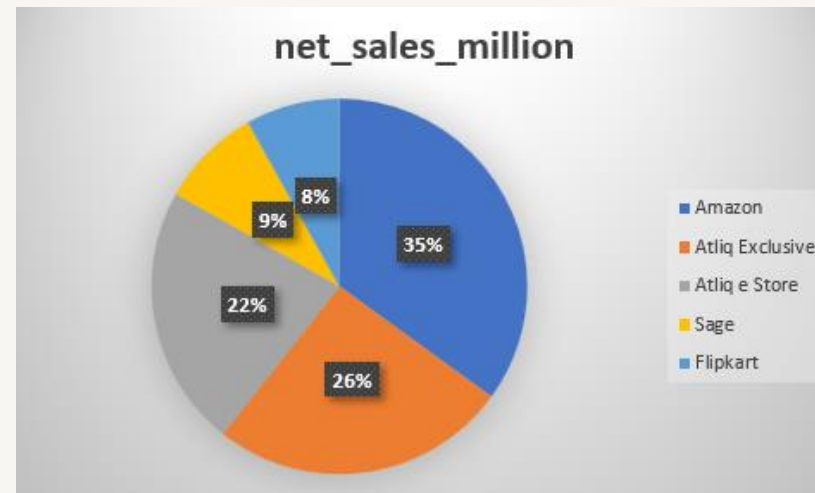


Top 5 Customers

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

```
select
  c.customer,
  round(sum(n.net_sales)/1000000,2) as net_sales_million
from net_sales n
  join dim_customer c
    on n.customer_code=c.customer_code
where
  n.fiscal_year = 2021
group by c.customer
order by net_sales_million desc
limit 5;
```

	customer	net_sales_million
▶	Amazon	109.03
	Atliq Exclusive	79.92
	Atliq e Store	70.31
	Sage	27.07
	Flipkart	25.25

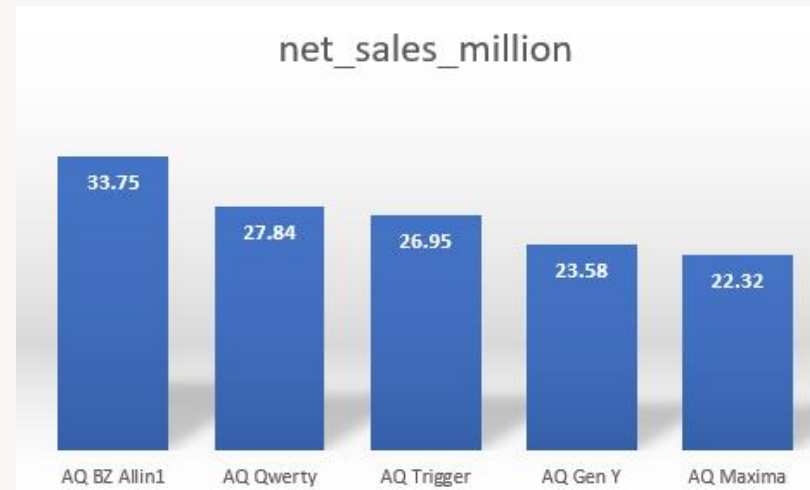


Top 5 Products

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

```
SELECT
    n.product,
    ROUND(SUM(n.net_sales) / 1000000, 2) AS net_sales_million
FROM
    net_sales n
WHERE
    n.fiscal_year = 2021
GROUP BY n.product
ORDER BY net_sales_million DESC
LIMIT 5;
```

	product	net_sales_million
▶	AQ BZ Allin1	33.75
	AQ Qwerty	27.84
	AQ Trigger	26.95
	AQ Gen Y	23.58
	AQ Maxima	22.32





Net Sales % Report

Generate a report on net sales percentage

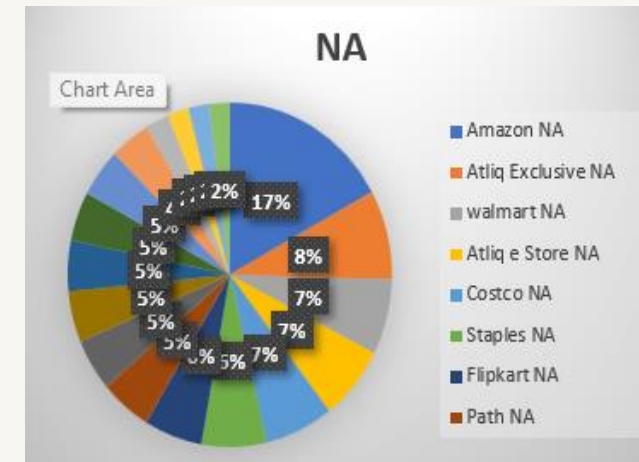
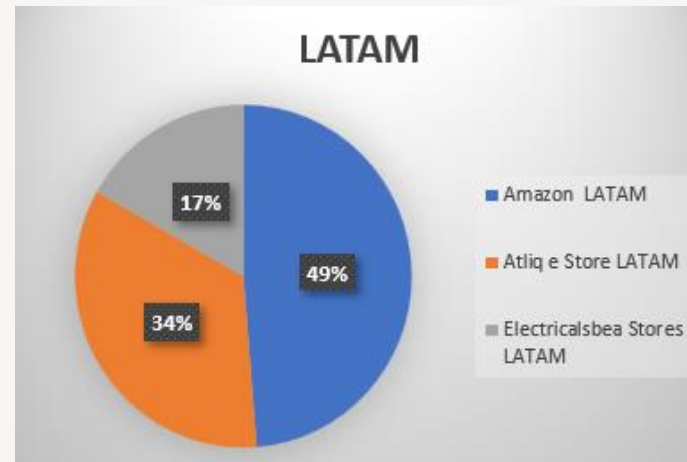
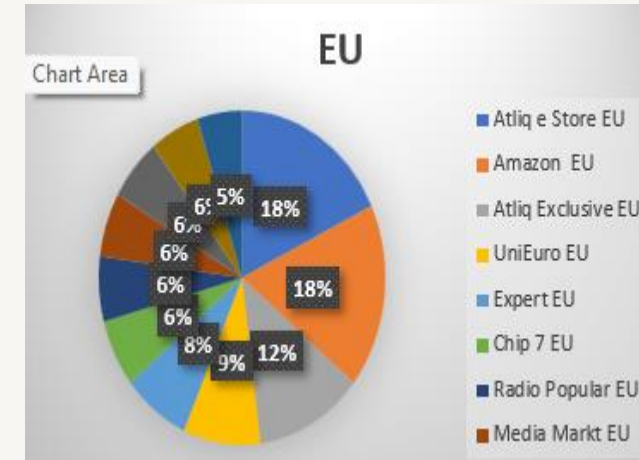
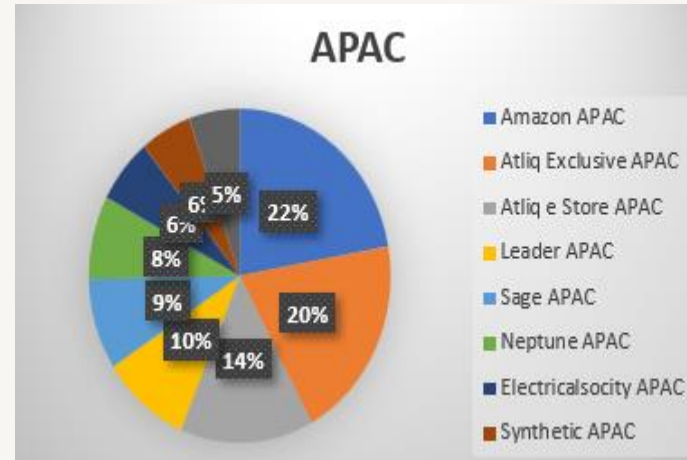
```
with cte2 as(select
    c.customer,
    c.region,
    round(sum(n.net_sales)/1000000,2) as net_sales_million
from net_sales n
join dim_customer c
on n.customer_code=c.customer_code
where
    n.fiscal_year = 2021
group by c.customer , c.region
order by net_sales_million desc)
select
    *,
    round(net_sales_million*100/sum(net_sales_million) over(partition by region),2) as pct_share_region
from cte2;
```

	customer	region	net_sales_million	pct_share_region
▶	Amazon	APAC	57.41	12.99
	Atliq Exclusive	APAC	51.58	11.67
	Atliq e Store	APAC	36.97	8.36
	Leader	APAC	24.52	5.55
	Sage	APAC	22.85	5.17
	Neptune	APAC	21.01	4.75
	Electricalsociety	APAC	16.25	3.68
	Synthetic	APAC	14.14	3.20
	Propel	APAC	14.14	3.20
	Flipkart	APAC	12.96	2.93
	Novus	APAC	12.91	2.92
	Expression	APAC	12.90	2.92
	Girias	APAC	11.30	2.56
	Vijay Sales	APAC	11.27	2.55
	Ebay	APAC	11.14	2.52
	Reliance Digital	APAC	11.10	2.51
	Electricalslytical	APAC	11.08	2.51
	Lotus	APAC	10.53	2.38
	Ezone	APAC	10.30	2.33
	Viveks	APAC	10.09	2.28
	Croma	APAC	9.88	2.24
	Zone	APAC	6.91	1.56
	Acclaimed Sto...	APAC	5.79	1.31
	Taobao	APAC	4.31	0.98
	Digimarket	APAC	3.97	0.90
	Forward Stores	APAC	3.83	0.87
	Insight	APAC	3.61	0.82



Market Share %

Top Customers in different Regions





Forecast Accuracy 2020 vs 2021

Generate a Report Comparing Forecast Accuracy of 2020 and 2021 By Customer

```
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
```

	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



Forecast Accuracy 2020 vs 2021

Forecast Accuracy 2020 vs 2021 by Customer (Top 5 Customer 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 APAX, LATAM & NA regions.
- AtliQ estore topped the chart in EU region.
- Forecast Accuracy of 2021 is much more accurate than 2020.



THANK YOU