



AtliQ Hardware: Sales & Supply Chain Analytics



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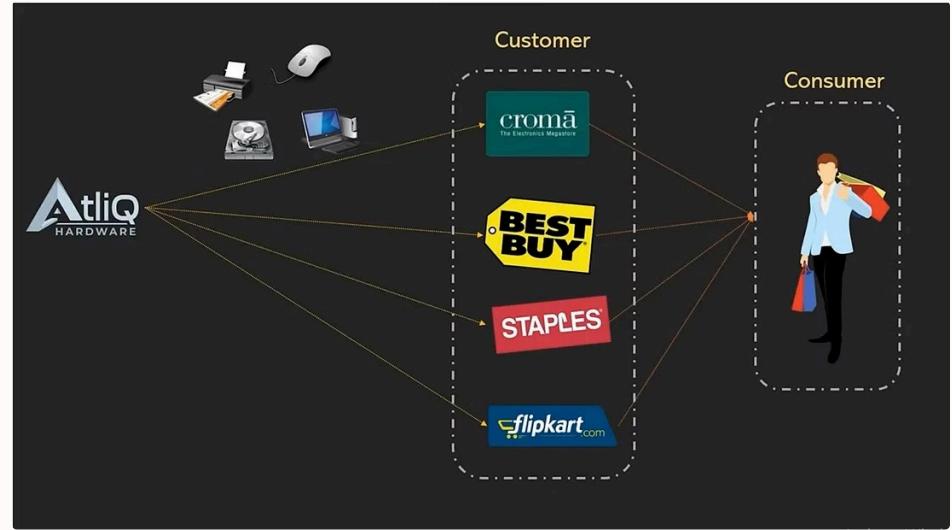
Objectives

- 1 Generate actionable insights from sales data.
- 2 Automate reporting processes for individual product sales, market badges, and KPI metrics
- 3 Supply Chain Report

Business Model

AtliQ Technology, established in 2018, operates in the hardware manufacturing sector, specializing in electronic gadgets like mice, keyboards, laptops, printers, etc.

The company distributes its products to a diverse range of customers, including both both Brick&Motar and Online stores.



1. Generate a report of individual product sales aggregated on a monthly basis for FY 2021

Key Metrics:

- Month
- Product Name & Variant
- Sold Quantity
- Gross Price per Item
- Gross Price Total

Creating User-Defined Functions

```
CREATE FUNCTION get_fiscal_year(calendar_date DATE) RETURNS  
INTEGER DETERMINISTIC BEGIN DECLARE fiscal_year int; SET  
fiscal_year = year(date_add(calendar_date, interval 4 month));  
RETURN fiscal_year; END;
```

Result Grid	
	<code>gdb0041.get_fiscal_year('2017-09-01')</code>
▶	2018

Gross Sale Report

```
SELECT s.date, s.product_code, p.product, p.variant, s.sold_quantity,  
g.gross_price, ROUND(g.gross_price * s.sold_quantity, 2) AS  
gross_sale FROM fact_sales_monthly s 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 =  
get_fiscal_year(s.date) WHERE customer_code = 90002002 AND  
get_fiscal_year(s.date) = 2021 ORDER BY s.date ASC LIMIT 1000000;
```

	date	product_code	product	variant	sold_quantity	gross_price	gross_sale
▶	2020-09-01	A0118150101	AQ Dracula HDD - 3.5 In...	Standard	202	19.0573	3849.57
	2020-09-01	A0118150102	AQ Dracula HDD - 3.5 In...	Plus	162	21.4565	3475.95
	2020-09-01	A0118150103	AQ Dracula HDD - 3.5 In...	Premium	193	21.7795	4203.44
	2020-09-01	A0118150104	AQ Dracula HDD - 3.5 In...	Premium Plus	146	22.9729	3354.04
	2020-09-01	A0219150201	AQ WereWolf NAS Intern...	Standard	149	23.6987	3531.11
	2020-09-01	A0219150202	AQ WereWolf NAS Intern...	Plus	107	24.7312	2646.24
	2020-09-01	A0220150203	AQ WereWolf NAS Intern...	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

2. Aggregate Monthly Gross Sales Report

Query to Aggregate Monthly Gross Sales for Chroma India

```
SELECT s.date, round(SUM(g.gross_price * s.sold_quantity),2) AS  
gross_sale 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 s.date ORDER BY s.date;
```

	date	gross_sale
▶	2017-09-01	122407.56
	2017-10-01	162687.57
	2017-12-01	245673.80
	2018-01-01	127574.74
	2018-02-01	144799.52
	2018-04-01	130643.90
	2018-05-01	139165.10
	2018-06-01	125735.38
	2018-08-01	125409.88
	2018-09-01	343337.17
	2018-10-01	440562.08

Creating Stored Procedure for Gross Sales Report for Any Customer

```
CREATE PROCEDURE get_monthly_gross_sales_for_customer (IN  
c_code INT) BEGIN SELECT s.date, SUM(g.gross_price *  
s.sold_quantity) AS gross_price_total 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 =  
c_code GROUP BY s.date; END;
```



3. Determine Market Badge Based on Sold Quantity for Different Markets.

```
CREATE PROCEDURE get_market_badge (IN in_market VARCHAR(45),
IN in_fiscal_year YEAR, OUT out_badge VARCHAR(45)) BEGIN
DECLARE qty INT DEFAULT 0;
```

#Retrieve total qty for a given market + fiscal year

```
SELECT SUM(sold_quantity) INTO qty FROM fact_sales_monthly s
JOIN dim_customer c ON s.customer_code = c.customer_code
WHERE get_fiscal_year(s.date) = in_fiscal_year AND c.market =
in_market GROUP BY c.market;
```

#Determine market badge

```
IF qty > 5000000 THEN SET out_badge = 'Gold'; ELSESET out_badge
= 'Silver'; END IF; END;
```

Result Grid	
	@badge
▶	Gold

4. Generate Various KPI Reports: Top and Bottom Markets, Products, and Customers by Net Sales.

Steps To Generate Report on Net sales

- Calculating Pre-invoice Deduction
- Calculating Post-invoice Deduction
- Calculating Net Sale



Calculating Pre-invoice Deduction:

```
CREATE VIEW sales_preinv_discount AS SELECT s.date,  
s.product_code, p.product, p.variant, s.sold_quantity, c.market,  
g.gross_price, ROUND(g.gross_price * s.sold_quantity, 2) AS  
gross_price_total, pre.pre_invoice_discount_pct FROM  
fact_sales_monthly s JOIN dim_customer c ON s.customer_code =  
c.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 = get_fiscal_year(s.date) JOIN  
fact_pre_invoice_deductions pre ON pre.customer_code =  
s.customer_code AND pre.fiscal_year = get_fiscal_year(s.date);
```

date	fiscal_year	product_code	product	customer_code	market	variant	sold_quantity	gross_price	gross_sale	pre_invoice_discount_pct
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	70020217	India	Standard	51	15.3952	785.16	0.0824
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	70020218	India	Standard	77	15.3952	1185.43	0.2956
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	7003181	Indonesia	Standard	17	15.3952	261.72	0.0536
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	7003182	Indonesia	Standard	6	15.3952	92.37	0.2378
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	7006157	Philippines	Standard	5	15.3952	76.98	0.1057
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	7006158	Philippines	Standard	7	15.3952	107.77	0.1875
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	7007198	South Korea	Standard	29	15.3952	446.46	0.0700
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	7007199	South Korea	Standard	34	15.3952	523.44	0.2551
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	7008169	Australia	Standard	22	15.3952	338.69	0.0953
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	7008170	Australia	Standard	5	15.3952	76.98	0.1896
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	70011193	France	Standard	10	15.3952	153.95	0.0521
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	70011194	France	Standard	4	15.3952	61.58	0.2046
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	70012042	Germany	Standard	0	15.3952	0.00	0.0984
2017-09-01	2018	A0118150101	AQ Dracula HDD - 3.5 Inch...	70012043	Germany	Standard	0	15.3952	0.00	0.2620

Calculating Post-invoice Deduction:

```
CREATE VIEW sales_postinv_discount AS SELECT *, (gross_price_total  
- gross_price_total * pre_invoice_discount_pct) AS net_invoice_sales,  
(po.discounts_pct + po.other_deductions_pct) AS  
post_invoice_discount_pct FROM sales_preinv_discount s JOIN  
fact_post_invoice_deductions po ON s.date = po.date AND  
s.product_code = po.product_code;
```

date	fiscal_year	customer_code	market	product_code	product	variant	sold_quantity	gross_sale	pre_invoice_discount_pct	net_invoice_sales	post_invoice_discount
2017-09-01	2018	90027207	Brazil	A0118150101	AQ Dracula HDD - ...	Standard	4	61.58	0.2803	44.32	0.3905
2017-11-01	2018	90027207	Brazil	A0118150101	AQ Dracula HDD - ...	Standard	16	246.32	0.2803	177.28	0.4139
2017-12-01	2018	90027207	Brazil	A0118150101	AQ Dracula HDD - ...	Standard	4	61.58	0.2803	44.32	0.3295
2018-01-01	2018	90027207	Brazil	A0118150101	AQ Dracula HDD - ...	Standard	6	92.37	0.2803	66.48	0.3244
2018-03-01	2018	90027207	Brazil	A0118150101	AQ Dracula HDD - ...	Standard	9	138.56	0.2803	99.72	0.3766
2018-04-01	2018	90027207	Brazil	A0118150101	AQ Dracula HDD - ...	Standard	6	92.37	0.2803	66.48	0.3615
2018-05-01	2018	90027207	Brazil	A0118150101	AQ Dracula HDD - ...	Standard	7	107.77	0.2803	77.56	0.3173
2018-07-01	2018	90027207	Brazil	A0118150101	AQ Dracula HDD - ...	Standard	10	153.95	0.2803	110.80	0.3501
2018-08-01	2018	90027207	Brazil	A0118150101	AQ Dracula HDD - ...	Standard	6	92.37	0.2803	66.48	0.3740
2017-09-01	2018	90023030	Canada	A0118150101	AQ Dracula HDD - ...	Standard	4	61.58	0.2117	48.54	0.2863
2017-10-01	2018	90023030	Canada	A0118150101	AQ Dracula HDD - ...	Standard	2	30.79	0.2117	24.27	0.2851

Calculating Net Sale:

```
CREATE VIEW sales_preinv_discount AS SELECT CREATE VIEW  
net_sales AS SELECT *, net_invoices_sales*(1-  
post_invoice_discount_pct) AS net_sales FROM  
sales_postinv_discount;
```

date	fiscal_year	customer_code	customer	market	product_code	product	variant	sold_quantity	gross_sale	pre_invoice_disc	net_invoice_sale	post_invoice_disc	net_sales
2017-09-01	2018	90027207	Amazon	Brasil	A0118150101	AQ Dracula ...	Standard	4	61.58	0.2803	44.32	0.3905	27.01
2017-11-01	2018	90027207	Amazon	Brasil	A0118150101	AQ Dracula ...	Standard	16	246.32	0.2803	177.28	0.4139	103.90
2017-12-01	2018	90027207	Amazon	Brasil	A0118150101	AQ Dracula ...	Standard	4	61.58	0.2803	44.32	0.3295	29.72
2018-01-01	2018	90027207	Amazon	Brasil	A0118150101	AQ Dracula ...	Standard	6	92.37	0.2803	66.48	0.3244	44.91
2018-03-01	2018	90027207	Amazon	Brasil	A0118150101	AQ Dracula ...	Standard	9	138.56	0.2803	99.72	0.3766	62.17
2018-04-01	2018	90027207	Amazon	Brasil	A0118150101	AQ Dracula ...	Standard	6	92.37	0.2803	66.48	0.3615	42.45
2018-05-01	2018	90027207	Amazon	Brasil	A0118150101	AQ Dracula ...	Standard	7	107.77	0.2803	77.56	0.3173	52.95
2018-06-01	2018	90027207	Amazon	Brasil	A0118150101	AQ Dracula ...	Standard	10	153.95	0.2803	100.80	0.3430	72.00
2018-08-01	2018	90027207	Amazon	Brasil	A0118150101	AQ Dracula ...	Standard	6	92.37	0.2803	66.48	0.3740	46.62
2017-09-01	2018	90023030	Amazon	Canada	A0118150101	AQ Dracula ...	Standard	4	61.58	0.2117	48.54	0.2863	34.64
2017-10-01	2018	90023030	Amazon	Canada	A0118150101	AQ Dracula ...	Standard	2	30.79	0.2117	24.27	0.2851	17.35
2017-12-01	2018	90023030	Amazon	Canada	A0118150101	AQ Dracula ...	Standard	3	46.19	0.2117	36.41	0.2882	25.92
2018-01-01	2018	90023030	Amazon	Canada	A0118150101	AQ Dracula ...	Standard	5	76.98	0.2117	60.68	0.3334	40.45
2018-02-01	2018	90073939	Amazon	Canada	A0118150101	AQ Dracula ...	Standard	1	15.40	0.2117	12.14	0.1296	8.14

Top 5 Markets by Net Sales:

```
CREATE VIEW sales_preinv_discount AS SELECT CREATE VIEW  
net_sales AS SELECT *, net_invoices_sales*(1-  
post_invoice_discount_pct) AS net_sales FROM  
sales_postinv_discount;
```

net sales values are in millions

market	net_sales_mln
India	771.14
USA	489.39
South Korea	228.33
Canada	171.36
Philippines	131.90

Top 5 Products by Net Sales:

```
SELECT product, ROUND(SUM(net_sales) / 1000000, 2) AS  
net_sales_mln FROM net_sales GROUP BY product ORDER BY  
net_sales_mln DESC LIMIT 5;
```

net sales values are in millions

	product	net_sales_mln
▶	AQ BZ Allin1	92.95
	AQ BZ Compact	92.57
	AQ Smash 1	91.21
	AQ Smash 2	88.39
	AQ Gamer 2	87.52

Top 5 Customers by Net Sales:

```
SELECT customer, ROUND(SUM(net_sales) / 1000000, 2) AS  
net_sales_mln FROM net_sales GROUP BY customer ORDER BY  
net_sales_mln DESC LIMIT 5;
```

net sales values are in millions

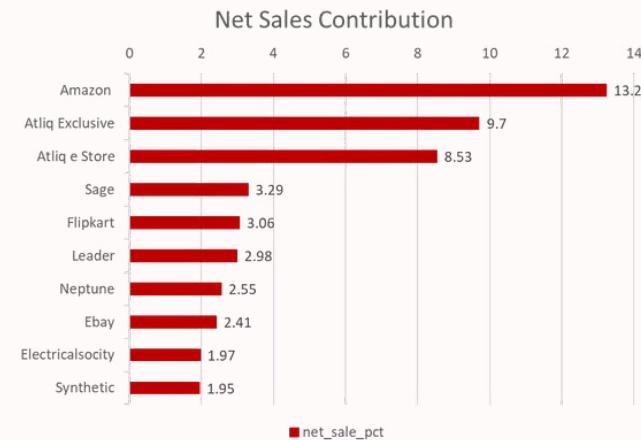
	customer	net_sales_mln
▶	Amazon	396.42
	Atliq Exclusive	277.12
	Atliq e Store	246.53
	Flipkart	98.40
	Sage	95.30

5. Prepare Bar and Pie Charts for Market Share Analysis.

Bar Chart (Top 10 Markets by % Net Sales)

```
with cte1 as ( select customer,  
round(sum(net_sales)/1000000,2) as net_sales_mln  
from net_sales  
where fiscal_year ="2021"  
group by customer  
order by net_sales_mln desc  
)  
select , net_sales_mln100/sum(net_sales_mln) over() as pct from cte 1
```

	customer	net_sale_pct
▶	Amazon	13.23
	Atliq Exclusive	9.70
	Atliq e Store	8.53
	Sage	3.29
	Flipkart	3.06
	Leader	2.98
	Neptune	2.55
	Ebay	2.41
	Electricalsocity	1.97
	Synthetic	1.95



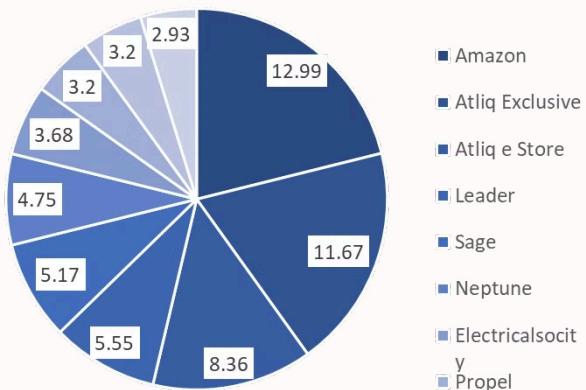
Net sales breakdown of customers region-wise (APAC, EU, LATAM, NA).

```
WITH cte1 AS ( SELECT c.customer, c.region,
round(sum(net_sales)/1000000,2) AS net_sales_mln,
round(sum(sum(net_sales)) OVER(PARTITION BY region)/1000000,2)
AS net_sales_mln_by_region FROM net_sales ns JOIN dim_customer
c ON c.customer_code=ns.customer_code WHERE fiscal_year = 2021
GROUP BY c.customer,c.region ) SELECT customer,region,
net_sales_mln,round(net_sales_mln * 100/
net_sales_mln_by_region,2) AS net_sale_pct_by_region FROM cte1
ORDER BY region, net_sales_mln DESC;
```

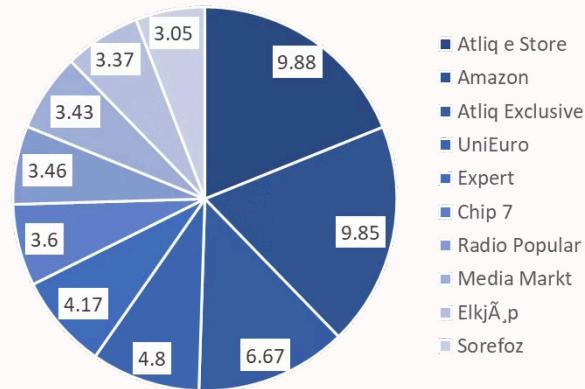
	customer	region	net_sales_mln	net_sale_pct_by_region
▶	Amazon	APAC	57.41	12.99
	Atiq Exclusive	APAC	51.58	11.67
	Atiq e Store	APAC	36.97	8.36
	Leader	APAC	24.52	5.55
	Sage	APAC	22.85	5.17
	Neptune	APAC	21.01	4.75
	Electricalsociety	APAC	16.25	3.68
	Propel	APAC	14.14	3.20
	Synthetic	APAC	14.14	3.20
	Flipkart	APAC	12.96	2.93
	Novus	APAC	12.91	2.92
	Expression	APAC	12.90	2.92
	Girias	APAC	11.30	2.56
	Wynn Sales	APAC	11.27	2.55

Pie Charts

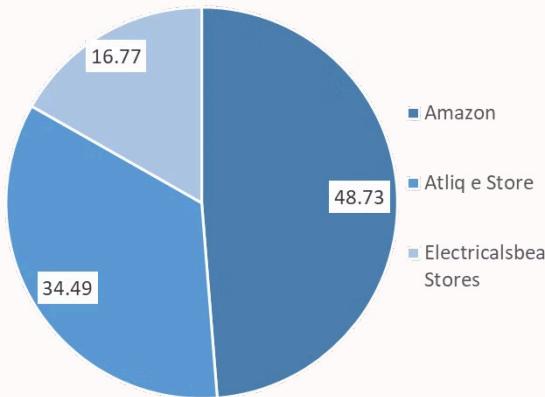
APAC Market: Net Sale



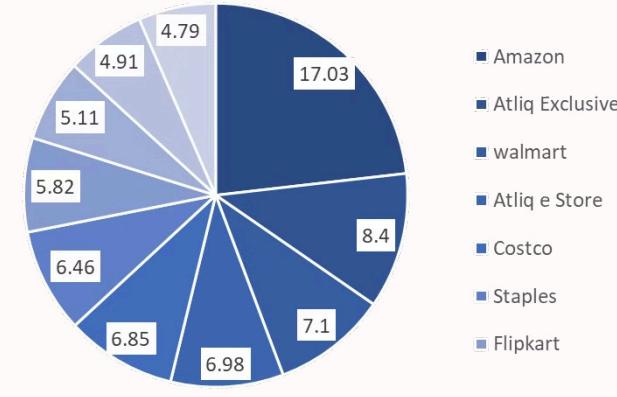
EU Market: Net Sale



LATAM Market: Net Sale



NA Market: Net Sale



6. Identify Top N Products in Each Division by Quantity Sold.

```
with cte1 as (Select p.division,p.product,sum(sold_quantity) as total
qty
from fact_sales_monthly s
join dim_product p
on p.product_code=s.product_code
where fiscal_year=2021
group by s.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 Clx3	408502	1
N & S	AQ Pen Drive 2 IN 1	701373	2
N & S	AQ Wi Power Dx2	840169	3
P & A	AQ Marquee P4	79434	1
P & A	AQ LION x1	136481	2
P & A	AQ Electron 3 3600 Desktop Processor	162525	3
PC	AQ HOME Allin1 Gen 2	13855	1
PC	AQ Home Allin1	18661	2
PC	AQ Gamer 1	42859	3

7. Generate Forecast Accuracy Report for All Customers for a Given Fiscal Year Report

```
CREATE DEFINER=root@localhost PROCEDURE get_forecast_accuracy(  
in_fiscal_year INT )
```

```
BEGIN
```

```
with forecast_err_table as
```

```
( select s.customer_code as customer_code, c.customer as customer_name,  
c.market as market, sum(s.sold_quantity) as total_sold_qty,  
sum(s.forecast_quantity) as total_forecast_qty, sum(s.forecast_quantity-  
s.sold_quantity) as net_error, round(sum(s.forecast_quantity-  
s.sold_quantity)*100/sum(s.forecast_quantity),1) as net_error_pct,  
sum(abs(s.forecast_quantity-s.sold_quantity)) as abs_error,  
round(sum(abs(s.forecast_quantity-  
sold_quantity))*100/sum(s.forecast_quantity),2) as abs_error_pct from  
fact_act_est s join dim_customer c on s.customer_code = c.customer_code  
where s.fiscal_year=in_fiscal_year group by customer_code ) select *, if  
(abs_error_pct > 100, 0, 100.0 - abs_error_pct) as forecast_accuracy from  
forecast_err_table order by forecast_accuracy desc;
```

```
END
```

customer_code	customer_name	market	total_sold_qty	total_forecast_qty	net_error	net_error_pct	abs_error	abs_error_pct	forecast_accuracy
90013120	Coolblue	Italy	109547	113467	23920	17.9	70402	52.75	47.25
70010048	Atic e Store	Bangladesh	119439	141965	22526	15.9	75666	53.30	46.70
90023027	Costco	Canada	236189	279941	43752	15.6	149282	53.33	46.67
90023026	Relief	Canada	228988	273747	44486	16.3	146930	53.73	46.27
90017051	Forward Stores	Portugal	86823	117951	31138	26.4	63462	53.80	46.20
90017058	Mbit	Portugal	86866	110061	23226	21.1	59364	53.93	46.07
90023028	walmart	Canada	239081	283309	44228	15.6	153044	54.02	45.98
70027208	Atic e Store	Brazil	33713	46995	13282	28.3	25458	54.17	45.83
90023024	Saod	Canada	246397	287220	40823	14.2	155997	54.17	45.83

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THANK YOU