Atliq Hardware Customer Segmentation

Sql project

OVERVIEW

- Management of “Atliq Hardware” noticed they do not get enough insights to make quick and smart data-informed decisions.
- Purpose of this project is to develop a customer segmentation strategy leveraging company's sales data.
- To help the management identify

--opportunities for targeted marketing campaigns

--product recommendations

--improved customer service strategies.

Q1: List of markets in which customer "Atliq Exclusive" operates in "APAC Region".

```sql
select market
from dim_customer
where customer = 'Atliq Exclusive'
and region = 'APAC'
order by 1;
```

OUTPUT:

market
Australia
Bangladesh
India
India
Indonesia
Japan
Newzealand
Philiphines
South Korea

Q2: Percentage of unique product increase in 2020 vs 2021.

```
with cte1 as(
select(select count(distinct p.product_code)
from dim_product p join fact_sales_monthly s
using(product_code)
where s.fiscal_year = '2020')as unique_products_2020,
(select count(distinct p.product_code)
from dim_product p join fact_sales_monthly s
using(product_code)
where s.fiscal_year = '2021')as unique_products_2021)
select unique_products_2020,unique_products_2021,
concat(round((unique_products_2021- unique_products_2020)*100.0/(unique_products_2020),2),'%')
AS percentage_change
from cte1;
```

OUTPUT:

unique_products_2020	unique_products_2021	percentage_change
245	334	36.33%

Q3: How many unique products does each segment have?

```sql
select segment,count(distinct product_code) as num_products
from dim_product
group by segment
order by num_products desc;
```

OUTPUT:

	segment	num_products
▶	Notebook	129
	Accessories	116
	Peripherals	84
	Desktop	32
	Storage	27
	Networking	9

Q4:Which segment has the highest increase in count of unique products 2021 vs 2020?

```sql
with product_2020 as
(select p.segment,count(distinct p.product_code) AS unique_product_2020
from dim_product p join fact_act_est f
using(product_code)
where f.fiscal_year = '2020'
group by 1),
product_2021 as
(select p.segment,count(distinct p.product_code)as unique_product_2021
from dim_product p join fact_act_est f
using(product_code)
where f.fiscal_year = '2021'
 group by 1)
 select u1.segment,u1.unique_product_2020,u2.unique_product_2021,
 (u2.unique_product_2021 - u1.unique_product_2020) as difference
 from product_2020 u1 join product_2021 u2
 on u1.segment = u2.segment
 group by 1,2,3
 order by difference desc;
```

OUTPUT:

segment	unique_product_2020	unique_product_2021	difference
Accessories	69	103	34
Notebook	92	108	16
Peripherals	59	75	16
Desktop	7	22	15
Storage	12	17	5
Networking	6	9	3

Q5: Find products with highest and lowest manufacturing cost.

```
(
select m.product_code,p.product,m.manufacturing_cost
from dim_product p join fact_manufacturing_cost m
using(product_code)
group by 1,2,3
having m.manufacturing_cost = (select MAX(manufacturing_cost)
                               from fact_manufacturing_cost)
)
UNION
(
select m.product_code,p.product,m.manufacturing_cost
from dim_product p join fact_manufacturing_cost m
using(product_code)
group by 1,2,3
having m.manufacturing_cost = (select MIN(manufacturing_cost)
                               from fact_manufacturing_cost)
);
```

OUTPUT:

	product_code	product	manufacturing_cost
▶	A6121110208	AQ HOME Allin1 Gen 2	263.4207
	A2118150101	AQ Master wired x1 Ms	0.8654

Q6: Return TOP 5 customers who received discounts greater than average high pre invoice discount % in year 2021 in the Indian market.

```
with top_discounts as
(select pi.customer_code,c.customer,
pi.pre_invoice_discount_pct,
avg(pi.pre_invoice_discount_pct)
over(order by customer_code rows between unbounded preceding
     and unbounded following) as avg_discount
from dim_customer c join fact_pre_invoice_deductions pi
using(customer_code)
group by 1,2,3)
select customer_code,customer,pre_invoice_discount_pct
 from top_discounts
 where pre_invoice_discount_pct>avg_discount
 group by 1,2,3
 order by 3 desc
 limit 5;
```

OUTPUT:

customer_code	customer	pre_invoice_discount_pct
90017050	Electricalsara Stores	0.3099
90016176	Amazon	0.3099
70005163	Atliq e Store	0.3098
70009134	Atliq e Store	0.3096
90001021	Taobao	0.3095

Q7: Get the complete report of the Gross sales amount for the customer "Atliq Exclusive" for each month

```sql
SELECT MONTH(s.date) as month, s.fiscal_year as year ,
round(sum(s.sold_quantity*g.gross_price)/1000000,2) as gross_sales_amount_mln,
dense_rank() over(partition by s.fiscal_year order by sum(s.sold_quantity*g.gross_price) desc) as rnk
from dim_customer c join fact_sales_monthly s
using(customer_code)
join fact_gross_price g
using(product_code)
where c.customer = 'Atliq Exclusive'
group by 1,2
order by 2;
```

OUTPUT:

month	year	gross_sales_amount_mln	rnk
11	2018	3.77	1
10	2018	2.46	2
12	2018	2.39	3
9	2018	2.35	4
5	2018	2.31	5
1	2018	2.29	6
7	2018	2.22	7
3	2018	2.22	8
2	2018	1.99	9
6	2018	1.98	10
8	2018	1.50	11
4	2018	1.39	12
11	2019	12.36	1
10	2019	8.50	2
12	2019	8.36	3
9	2019	7.86	4
5	2019	7.80	5
1	2019	7.61	6
3	2019	7.31	7
7	2019	7.30	8
6	2019	6.58	9
2	2019	6.22	10
4	2019	4.68	11
8	2019	4.63	12
11	2020	28.51	1
10	2020	19.48	2
12	2020	18.32	3
1	2020	18.01	4
9	2020	17.04	5
2	2020	15.17	6
8	2020	10.60	7
7	2020	9.69	8
6	2020	6.45	9
5	2020	2.97	10
4	2020	1.49	11
3	2020	1.42	12

Q8: Which quarter of 2020, got the maximum total sold quantity?

```sql
SELECT quarter(date) as Qtr,
round(sum(sold_quantity)/1000000 ,2)as total_sold_qty_in_mln
from fact_sales_monthly
where fiscal_year = '2020'
group by 1
order by 2 desc;
```

OUTPUT:

	Qtr	total_sold_qty_in_mln
▶	4	8.43
	3	5.25
	1	3.70
	2	3.40

Q9: Which channel helped to bring most gross sales in the fiscal year 2021 and the percentage of contribution?

```sql
with channel_sales as
(select c.channel,
round(sum(s.sold_quantity*g.gross_price)/1000000,2) as gross_sales_mln
from dim_customer c join fact_sales_monthly s
using(customer_code)
join fact_gross_price g
using(product_code)
where s.fiscal_year = 2021
group by 1),
total_sales as
(select round(sum(s.sold_quantity*g.gross_price)/1000000,2) as total_sales_mln
from fact_sales_monthly s join fact_gross_price g
using(product_code)
where s.fiscal_year = 2021)
select t1.channel,t1.gross_sales_mln,
concat(round(100.0*(t1.gross_sales_mln)/t2.total_sales_mln,2),'%') as percentage
from channel_sales t1,total_sales t2
group by 1,2,3
order by 2 desc;
```

OUTPUT:

channel	gross_sales_mln	percentage
Retailer	3708.46	73.21%
Direct	784.14	15.48%
Distributor	572.86	11.31%

Q10: Get the Top 3 products in each division in terms of total sold quantity in the fiscal year 2021?

```sql
with top_products as
(SELECT p.division,p.product_code,p.product,
round(sum(s.sold_quantity)/1000000,2) as sales_mln,
dense_rank() over(partition by p.division order by sum(s.sold_quantity)desc)as rank_order
from dim_product p join fact_sales_monthly s
using(product_code)
group by 1,2,3)
select division,product_code,product,sales_mln,rank_order
from top_products
where rank_order<=3
order by 4 desc;
```

OUTPUT:

division	product_code	product	sales_mln	rank_order
N & S	A6720160103	AQ Pen Drive 2 IN 1	1.33	1
N & S	A6818160201	AQ Pen Drive DRC	1.30	2
P & A	A2118150106	AQ Master wired x1 Ms	1.22	1
N & S	A6319160201	AQ Neuer SSD	1.21	3
P & A	A2118150105	AQ Master wired x1 Ms	1.21	2
P & A	A2219150203	AQ Master wireless x1 Ms	1.21	3
PC	A4218110202	AQ Digit	0.06	1
PC	A4118110107	AQ Aspiron	0.06	2
PC	A4218110201	AQ Digit	0.06	3

Insights

- There was a 33.33% increase in the number of products launched in 2021 as compared to 2020.
- ‘AQ Home Allin 1 gen2’ has the highest manufacturing cost and
- ‘AQ Master wired x1 Ms’ has the lowest manufacturing cost.
- Maximum amount of sales happens through retailers (73.21%)
- Products from N&S Division generated highest sales.

Thank You