


CONSUMER GOODS AD-HOC ANALYSIS

BY: VISHESH KUMAR



AtliQ Hardware, a leading global producer of computer hardware, offers a wide range of products, including peripherals, PCs, and network storage solutions. These products are sold through both brick-and-mortar retailers (e.g., Chroma, Best Buy) and e-commerce platforms (e.g., Amazon, Flipkart).

To address the management's need for actionable insights to support data-driven decision-making, I conducted ad-hoc analyses, providing key recommendations to bridge this gap. In close collaboration with Tony Sharma, Director of Data Analytics, I contributed to strategic initiatives aimed at fostering growth and maintaining AtliQ Hardware's competitive edge in the industry.

1. Understanding Business Needs

- Analyzed the **Ad-Hoc Requests** document, which outlined **10 key business questions** requiring immediate insights for informed decision-making.

2. Data Analysis Using SQL

- **Designed and executed** efficient SQL queries to address each of the business questions.
- Ensured **data accuracy**, optimized query performance, and maintained **clean, structured code** throughout the analysis process.

3. Providing Insights

- Raw data into **actionable insights** tailored to the specific needs of management.
- Delivered insights that facilitated **quick decision-making** and supported **improved strategic planning**.

1. Provide the list of markets in which customer "AtliQ Exclusive" operates its business in the "APAC" region.

```
select distinct market from dim_customer  
where region = "APAC";
```

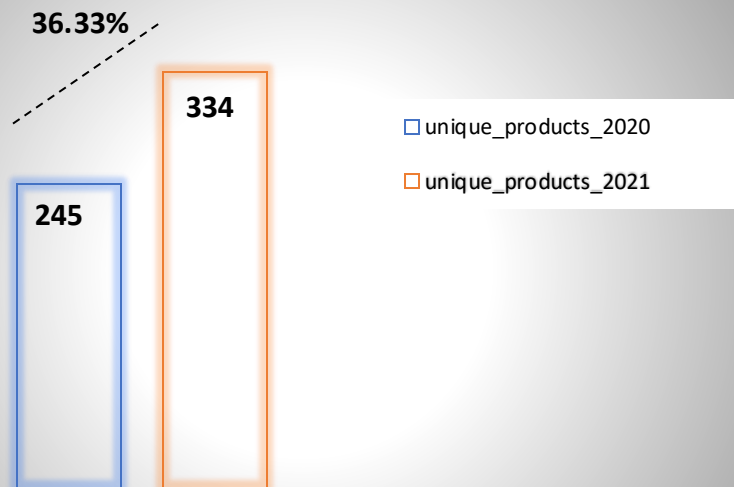


	market
▶	India
	Indonesia
	Japan
	Pakistan
	Philiphines
	South Korea
	Australia
	Newzealand
	Bangladesh
	China

2. What is the percentage of unique product increase in 2021 vs. 2020?

```
with cte1 as(select count(distinct product_code) as unique_product_2020 from fact_sales_monthly
where fiscal_year= 2020),
cte2 as(select count(distinct product_code) as unique_product_2021 from fact_sales_monthly
where fiscal_year= 2021)
select unique_product_2020, unique_product_2021,
round((unique_product_2021-unique_product_2020)*100/unique_product_2020,2) as Percentage_chg
from cte1 cross join cte2;
```

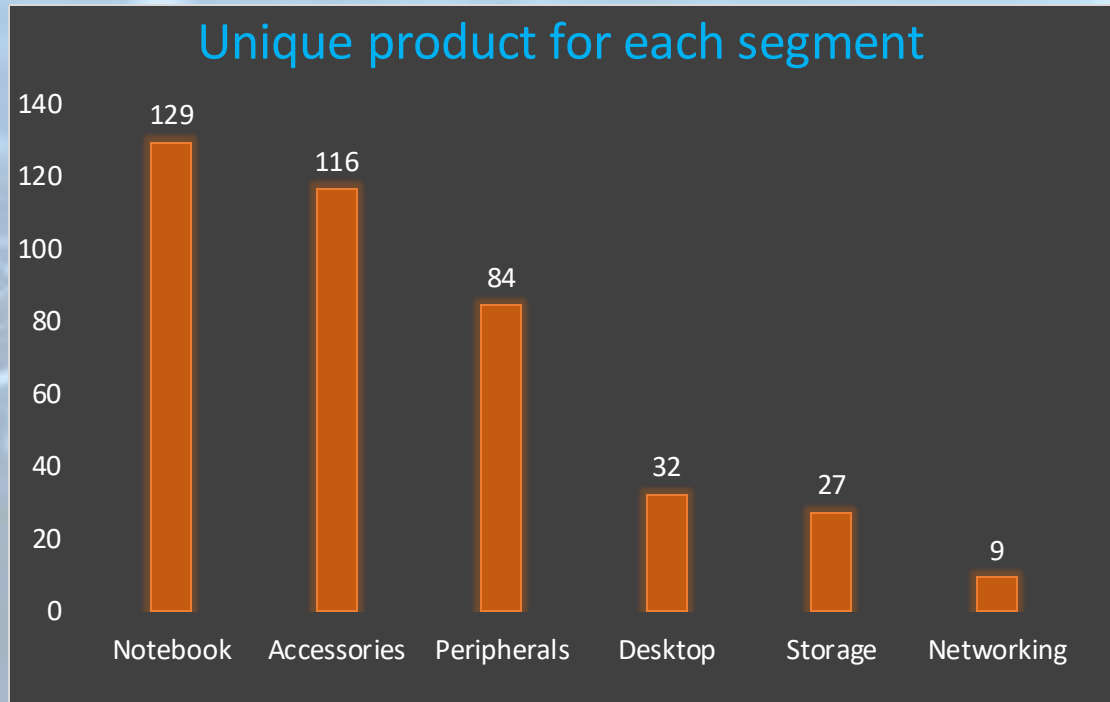
	unique_product_2020	unique_product_2021	Percentage_chg
▶	245	334	36.33



In 2021, the company achieved a **36.33% increase** in the number of unique products sold, growing from **245 products in 2020** to **334 products**. This represents a net gain of **89 products**. This growth highlights the company's success in **diversifying its product portfolio** and effectively responding to **evolving customer demands**.

3. Provide a report with all the unique product counts for each segment and sort them in descending order of product counts.

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



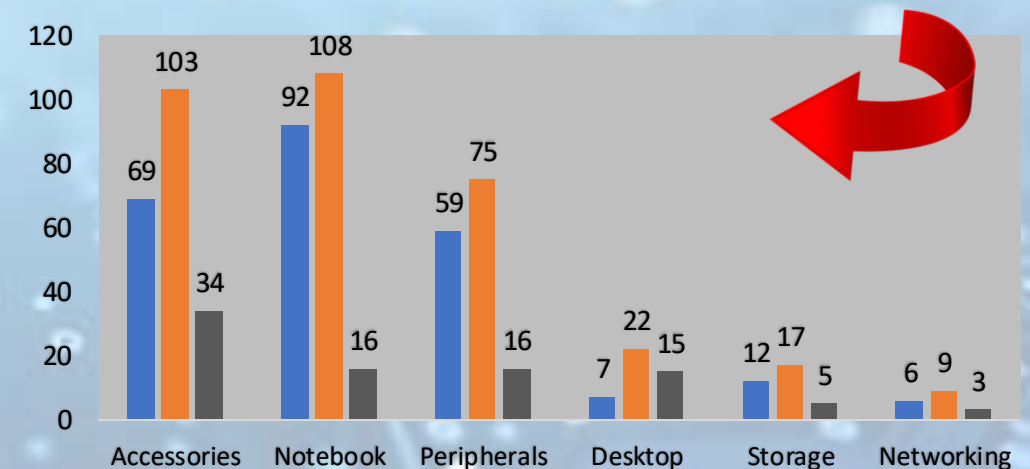
Product Segmentation Insights:

- **Notebook Segment:** Leading with 129 unique products, indicating strong demand and broad market appeal.
- **Networking & Storage:** Fewer products, suggesting a niche focus or limited offerings in these categories.

4. Follow-up: Which segment had the most increase in unique products in 2021 vs 2020? .

```
with cte1 as(select count(distinct p.product_code)as unique_product_2020,
p.segment from dim_product p
join fact_sales_monthly s
on s.product_code= p.product_code
where s.fiscal_year =2020
group by p.segment),
cte2 as(select count(distinct p.product_code) as unique_product_2021,
p.segment from dim_product p
join fact_sales_monthly s
on s.product_code=p.product_code
where s.fiscal_year=2021
group by p.segment)
select P0.segment, P0.unique_product_2020, P1.unique_product_2021,
P1.unique_product_2021-P0.unique_product_2020 as difference
from cte1 P0
join cte2 P1
on P0.segment=P1.segment
order by difference desc;
```

	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



The accessories segment saw the largest growth in unique products, rising by 34 in 2021. In contrast, the networking segment had the smallest increase, with only 3 additional products.


5. Get the products that have the highest and lowest manufacturing costs.

```
with CTE1 as(  
  select min(manufacturing_cost) as Min_manufacturing_cost,  
         max(manufacturing_cost) as Max_manufacturing_cost from fact_manufacturing_cost)  
select m.product_code, p.Product, manufacturing_cost from fact_manufacturing_cost m  
join dim_product p  
on p.product_code= m.product_code  
join CTE1 c  
on c.Min_manufacturing_cost=m.manufacturing_cost  
or c.max_manufacturing_cost=m.manufacturing_cost;
```

	product_code	Product	manufacturing_cost
▶	A2118150101	AQ Master wired x1 Ms	0.8920
	A6120110206	AQ HOME Allin1 Gen 2	240.5364

The product with the highest manufacturing cost is the AQ HOME All-in-1 Gen 2 Personal Desktop, priced at \$240.53.

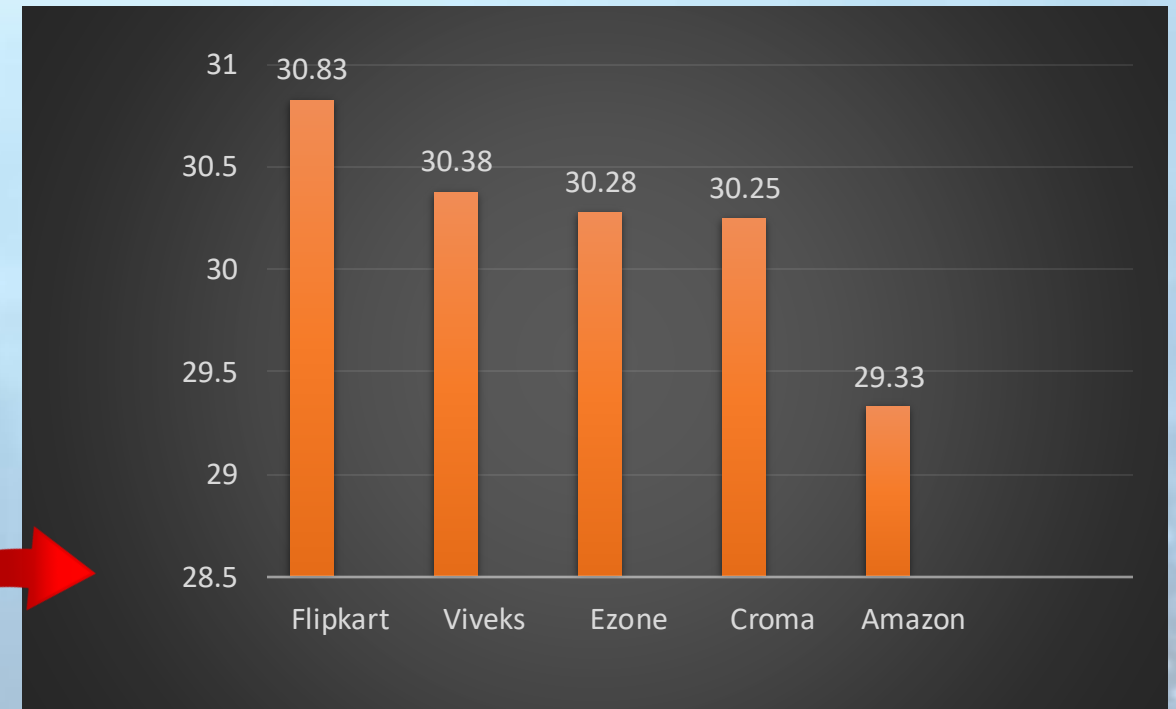
In contrast, the product with the lowest manufacturing cost is the AQ Master Wired x1 Mouse, costing just \$0.89.



6. Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market.

```
select c.customer,pre.customer_code,  
round(avg(pre.pre_invoice_discount_pct)*100,2) as avg_Pct  
from fact_pre_invoice_deductions pre  
join dim_customer c  
on Pre.customer_code = c.customer_code  
where c.market="India" and pre.fiscal_year=" 2021"  
group by pre.customer_code, c.customer  
order by avg_Pct desc  
limit 5
```

	customer	customer_code	avg_Pct
►	Flipkart	90002009	30.83
	Viveks	90002006	30.38
	Ezone	90002003	30.28
	Croma	90002002	30.25
	Amazon	90002016	29.33



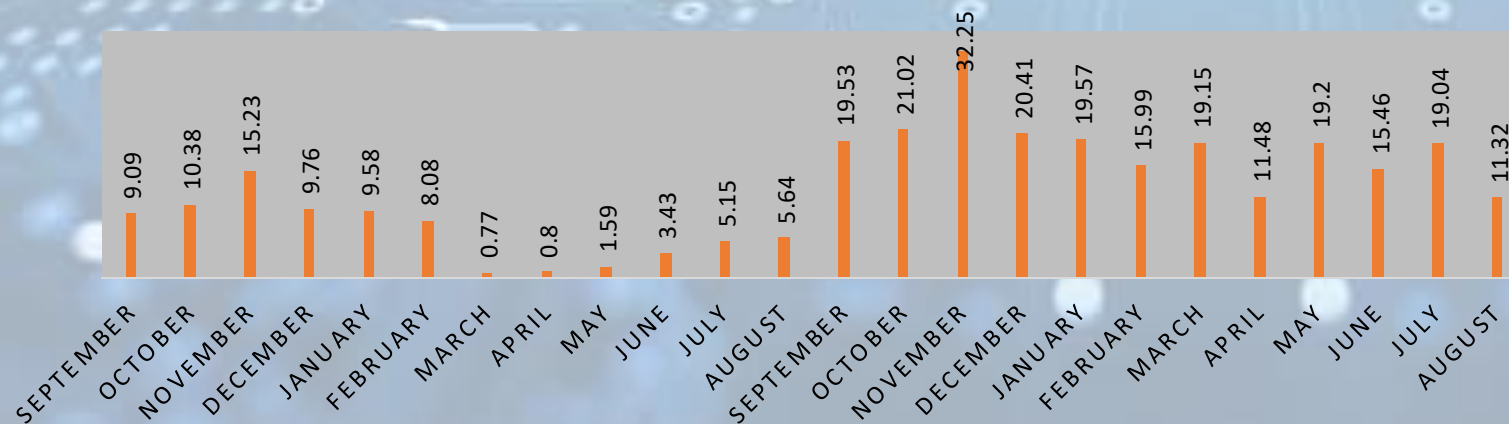
For FY 2021, Flipkart offered the highest average pre-invoice discount at 30.38%, followed by Vivek's, Ezone, Croma, and Amazon.

7. Get the complete report of the Gross sales amount for the customer “Atliq Exclusive” for each month . This analysis helps to get an idea of low and high-performing months and take strategic decisions.

```
select date_format(date,'%M') as month, s.fiscal_year,
concat(round(sum(s.sold_quantity*g.gross_price)/1000000,2), ' M')
as Toatl_gross_sales
from fact_sales_monthly s
join fact_gross_price g
on g.product_code=s.product_code
join dim_customer c
on c.customer_code=s.customer_code
where c.customer="Atliq Exclusive"
group by month, s.fiscal_year
order by s.fiscal_year,field(month, "September", "October", "November",
"December", "January", "February", "March", "April",
"May", "June", "July", "August");
```

month	fiscal_year	Toatl_gross_sales
September	2020	9.09 M
October	2020	10.38 M
November	2020	15.23 M
December	2020	9.76 M
January	2020	9.58 M
February	2020	8.08 M
March	2020	0.77 M
April	2020	0.80 M
May	2020	1.59 M
June	2020	3.43 M
July	2020	5.15 M
August	2020	5.64 M

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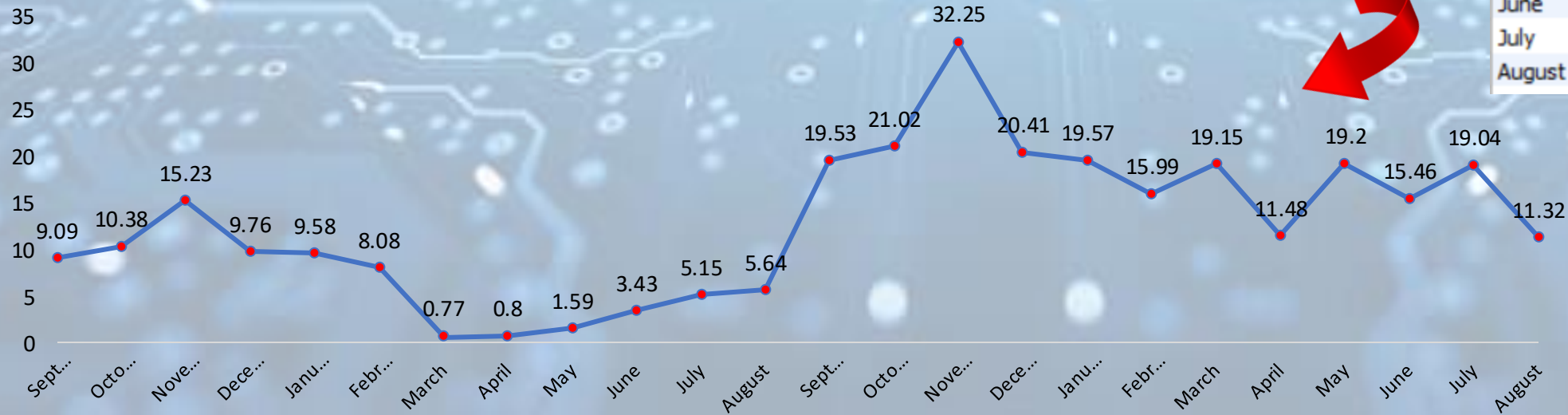


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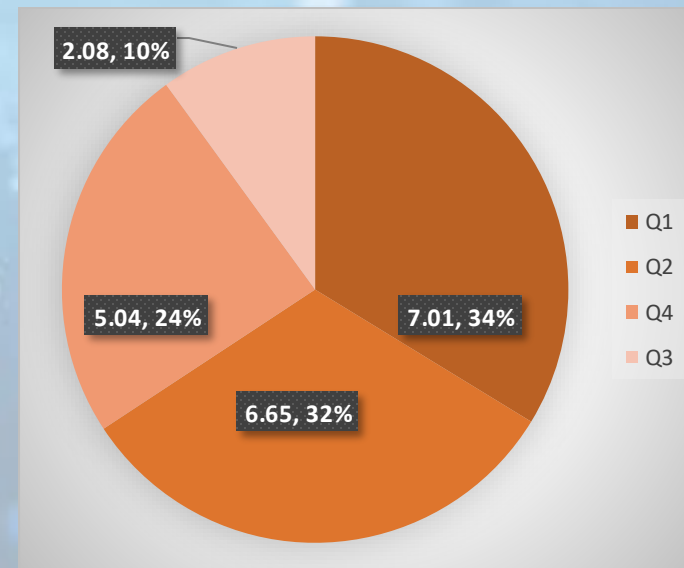
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8. In which quarter of 2020, got the maximum total_sold_quantity?

```
with Cte1 as (  
  select *,  
  case  
    when month(date) in(9,10,11) then "Q1"  
    when month(date) in (12,1,2) then "Q2"  
    when month(date) in (3,4,5) then "Q3"  
    when month(date) in (6,7,8) then "Q4"  
  end As quarter  
from fact_sales_monthly  
where fiscal_year ="2020")  
select quarter,concat(round(sum(sold_Quantity)/1000000,2), " M")  
as Total_Sold_Quantity from Cte1  
Group by quarter  
order by Total_Sold_Quantity Desc;
```

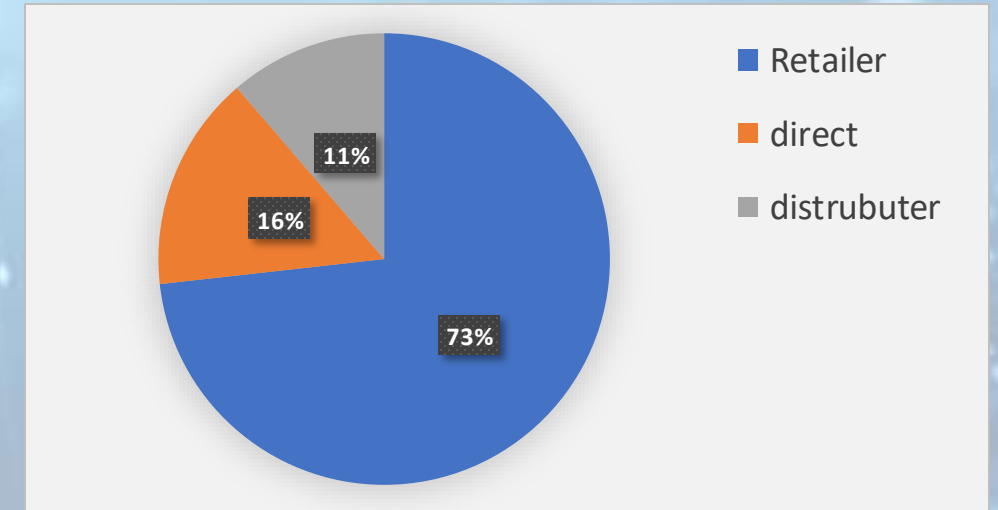
	quarter	Total_Sold_Quantity
►	Q1	7.01 M
	Q2	6.65 M
	Q4	5.04 M
	Q3	2.08 M



9. Which channel helped to bring more gross sales in the fiscal year 2021 and the percentage of contribution?

```
With gross_sales as(
select c.channel, round(sum(g.gross_price*s.sold_quantity)/1000000,2)
as Gross_sales_in_Mln from
fact_sales_monthly s
join fact_gross_price g
on s.product_code=g.product_code
or s.fiscal_year= g.fiscal_year
join dim_customer c
on s.customer_code=c.customer_code
where s.fiscal_year="2021"
group by c.channel)
select channel, gross_sales_in_mln,
(Gross_sales_in_Mln)*100/sum(Gross_sales_in_Mln) as PCT
from gross_sales
group by channel
order by PCT desc;
```

	channel	Gross_sales_in_Mln	Pct_contribution
▶	Retailer	1219.08	73.23%
	Direct	257.53	15.47%
	Distributor	188.03	11.30%



In FY 2021, AtliQ Exclusive saw the retail channel contribute the largest share of gross sales, accounting for 73%, followed by direct sales at 16% and distributor sales at 11%.

10. Get the Top 3 products in each division that have a high total_sold_quantity in the fiscal_year 2021?

```
with CTE1 as(  
select p.Division, s.product_code, p.Product,  
       Sum(s.sold_quantity) as Total_sold_qty,  
       ROW_NUMBER() OVER (PARTITION BY p.division  
                           ORDER BY SUM(s.sold_quantity) DESC) AS rank_order  
from fact_sales_monthly s  
join dim_product p  
on p.product_code= s.product_code  
group by p.division, p.product, s.product_code)  
select division,product, Product_code,  
       total_sold_qty,rank_order from cte1  
where rank_order <=3;
```

division	product	Product_code	total_sold_qty	rank_order
N & S	AQ Pen Drive 2 IN 1	A6720160103	1159222	1
N & S	AQ Pen Drive DRC	A6818160201	1128104	2
N & S	AQ Clx1	A6419160301	729696	3
P & A	AQ Gamers Ms	A2319150302	683634	1
P & A	AQ Master wireless x1 Ms	A2219150204	682321	2
P & A	AQ Gamers Ms	A2319150306	681531	3
PC	AQ Digit	A4218110202	26012	1
PC	AQ Velocity	A4319110306	25978	2
PC	AQ Aspiro	A4118110107	25963	3

In FY 2021, the N and S segments showcased the highest product sales among the three segments, highlighting their strong performance and significant contribution to overall sales.



AtliQ Hardware

THANK YOU