

Consumer Goods Insights



Provide Insights to Management in Consumer Goods Domain

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DeTech Solutions

❖ Company Overview:

- ❑ DeTech Solutions, a leading **computer hardware producer** in India.
- ❑ Global presence with expansions in **multiple countries**.

❖ Company Problem:

- ❑ The management noticed that they **do not get enough insights**
- ❑ To make quick and **smart data-informed decisions**.

❖ **Company Decision/Challenge:**

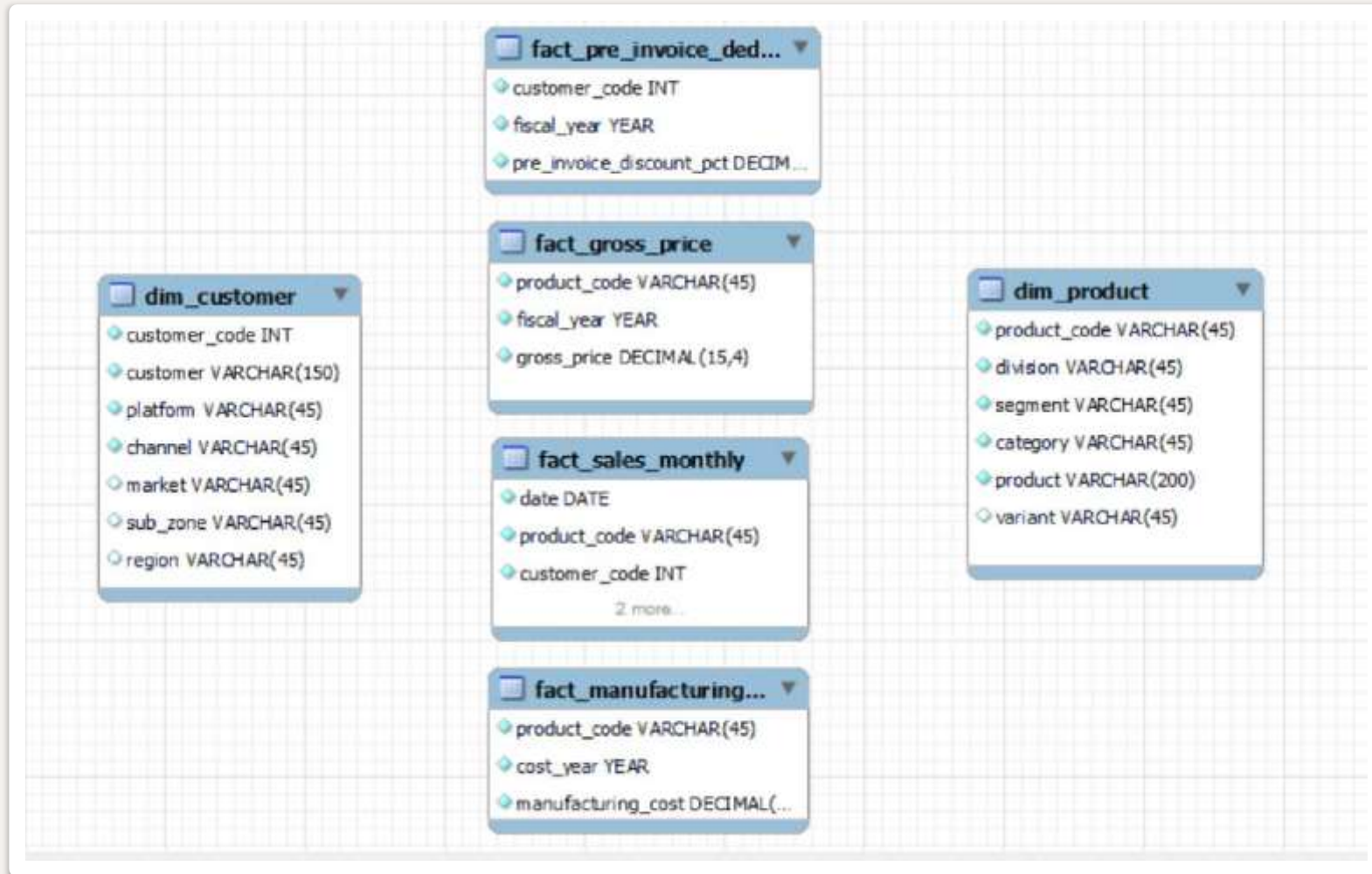
- ❑ Rakesh Verma, their data analytics **director** wanted to **hire** someone
 - ❑ The person should be **good at both tech and soft skills**.
 - ❑ Decision to conduct an **SQL challenge** for holistic skill assessment.
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DeTech Market

Market :- ● APAC ● EU ● LATAM ● NA



Input Data



Tools Used



- 1 Provide the list of markets in which customer "*DeTech Exclusive*" *operaGes* its business in the APAC region

```
SELECT Distinct(market) AS DeTech_Exclusive_mkt
FROM dim_customer
WHERE customer = 'DeTech Exclusive' AND region = 'APAC'
```

	Atliq_Exclusive_mkt
▶	India
	Indonesia
	Japan
	Philippines
	South Korea
	Australia
	Newzealand
	Bangladesh

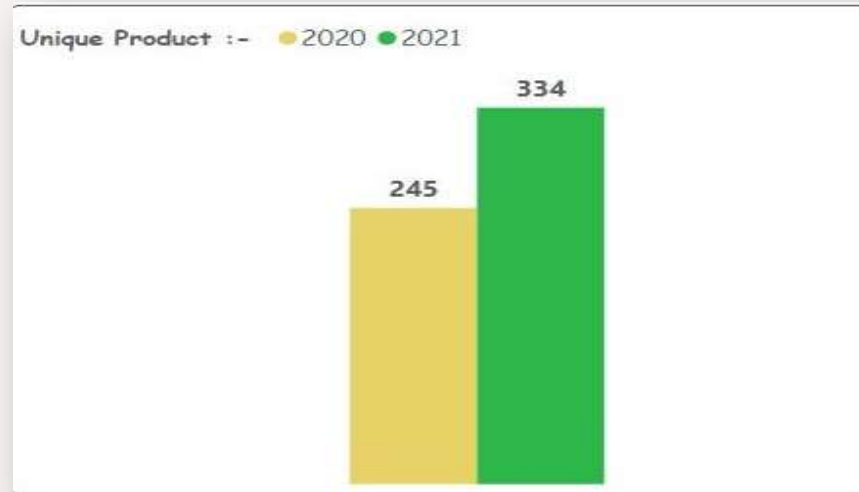
DeTech Market in APAC Region



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

```
WITH table1 AS (  
    SELECT COUNT(DISTINCT product_code) AS Unique_product_2020  
    FROM fact_sales_monthly  
    WHERE fiscal_year = 2020  
)  
table2 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) / Unique_product_2020) * 100,2) AS percentage_change  
FROM table1 CROSS JOIN table2;
```

	Unique_product_2020	Unique_product_2021	percentage_change
▶	245	334	36.33

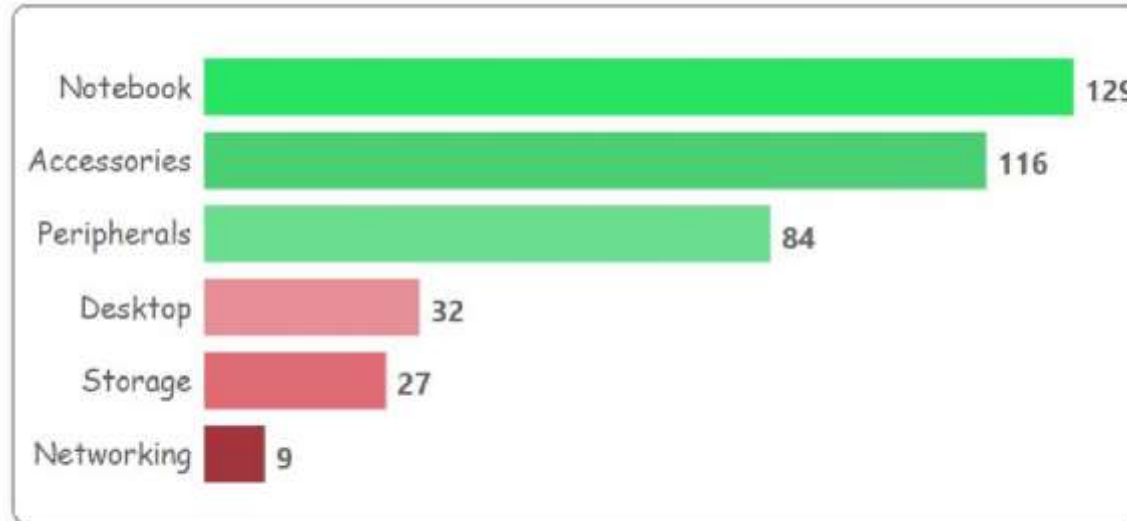


- ❑ The Product increase in 2021 is **36.33%**
- ❑ Continuously Innovating with **introducing new Product**

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 product_count DESC;
```

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



- ❑ Notebook, Accessories & Peripherals contribute around **83%**
- ❑ Some **new product** should be introduced in **Networking**.

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

```
WITH unique_product AS
(
  SELECT b.segment AS segment,
    COUNT(DISTINCT
      (CASE
        WHEN fiscal_year = 2020 THEN a.product_code END)) AS product_count_2020,
    COUNT(DISTINCT
      (CASE
        WHEN fiscal_year = 2021 THEN a.product_code END)) AS product_count_2021
  FROM fact_sales_monthly AS a
  INNER JOIN dim_product AS b
  ON a.product_code = b.product_code
  GROUP BY b.segment
)
SELECT segment, product_count_2020, product_count_2021,
(product_count_2021-product_count_2020) AS difference
FROM unique_product
ORDER BY difference DESC;
```

	segment	product_count_2020	product_count_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

Segment	Product 2020	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 ↑
Total	245	334	89

- ❑ **Accessories** has **34** the **largest increase** in production
- ❑ Storage and **Networking** producing lowest

Request | Query | Output

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

```
SELECT p.product_code, p.product,  
       mc.manufacturing_cost as MIN_and_MAX_manufacturing_cost  
FROM dim_product AS p  
JOIN fact_manufacturing_cost AS mc ON p.product_code = mc.product_code  
WHERE mc.manufacturing_cost = (  
    SELECT MAX(manufacturing_cost)  
    FROM fact_manufacturing_cost  
)  
OR mc.manufacturing_cost = (  
    SELECT MIN(manufacturing_cost)  
    FROM fact_manufacturing_cost  
);
```

product_code	product	MIN_and_MAX_manufacturing_cost
A2118150101	AQ Master wired x1 Ms	0.8920
A6120110206	AQ HOME Allin1 Gen 2	240.5364

\$241.43

AQ HOME Allin1 Gen 2

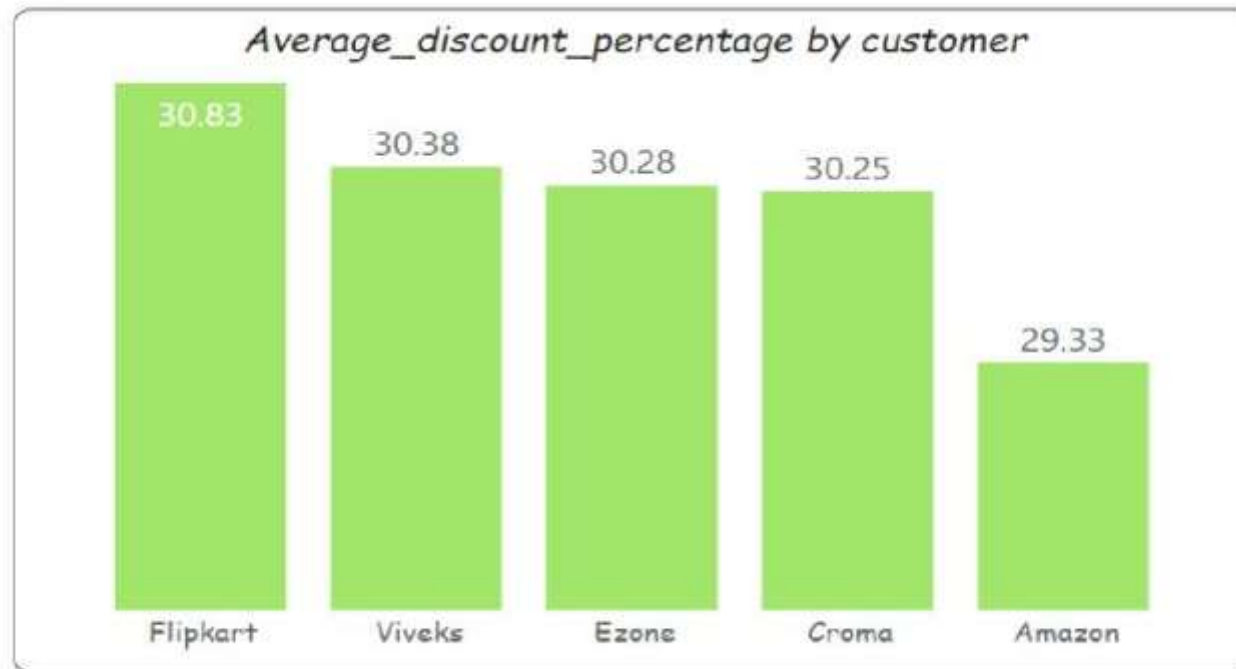
\$0.89

AQ Master wired x1 Ms

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_code, c.customer,  
ROUND(AVG(pre_invoice_discount_pct)*100,2) as average_discount_percentage  
FROM fact_pre_invoice_deductions as inv  
JOIN dim_customer as c ON inv.customer_code = c.customer_code  
WHERE market = 'India' AND fiscal_year = 2021  
GROUP BY c.customer, c.customer_code  
ORDER by average_discount_percentage DESC  
LIMIT 5;
```

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



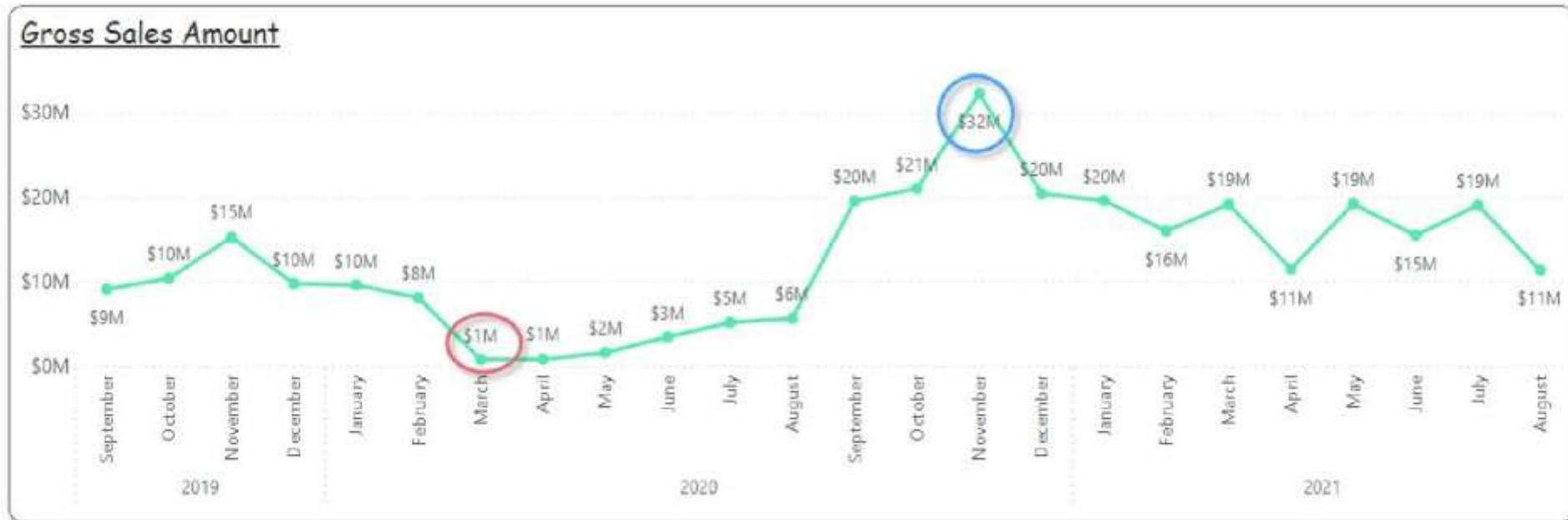
In 2021 the **average pre invoice discount** given by top 5 customer is similar however **Flipkart** gave the highest avg discount i.e. **30.83 %**

7. Get the complete report of the *Gross sales amount* for the customer "DeTech Exclusive" for each month.

```
SELECT monthname(s.date) as months, year(s.date) as years,  
ROUND(SUM(s.sold_quantity*g.gross_price),2) as Gross_sales_amount  
FROM fact_gross_price as g  
JOIN fact_sales_monthly as s ON g.product_code = s.product_code  
JOIN dim_customer as c ON s.customer_code = c.customer_code  
WHERE c.customer = "Atliq Exclusive"  
GROUP BY months,years
```

	months	years	Gross_sales_amount
▶	September	2019	9092670.34
	November	2019	15231894.97
	December	2019	9755795.06
	January	2020	9584951.94
	March	2020	766976.45
	April	2020	800071.95
	May	2020	1586964.48
	July	2020	5151815.40
	August	2020	5638281.83
	September	2020	19530271.30
	November	2020	32247289.79
	December	2020	20409063.18
	January	2021	19570701.71
	March	2021	19149624.92
	April	2021	11483530.30
	May	2021	19204309.41
	July	2021	19044968.82
	August	2021	11324548.34
	October	2019	10378637.60

Visualization | Insights

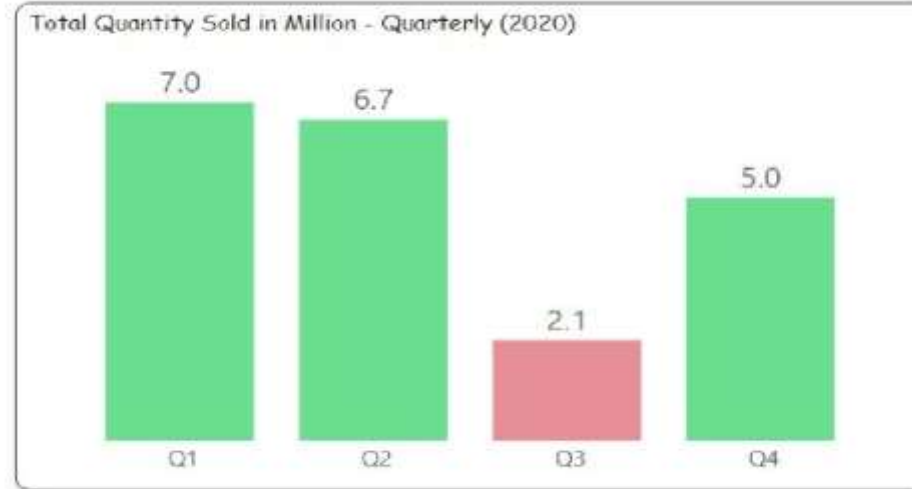


- ❑ Lowest Sales – March 2020 [**Covid & Global Chip Shortage**]
- ❑ Highest Sales – November 2020 [**Festive Season**]

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

```
SELECT
CASE
    WHEN date BETWEEN '2019-09-01' AND '2019-11-01' then 1
    WHEN date BETWEEN '2019-12-01' AND '2020-02-01' then 2
    WHEN date BETWEEN '2020-03-01' AND '2020-05-01' then 3
    WHEN date BETWEEN '2020-06-01' AND '2020-08-01' then 4
END AS Quarters,
SUM(sold_quantity) AS total_sold_quantity
FROM fact_sales_monthly
WHERE fiscal_year = 2020
GROUP BY Quarters
ORDER BY total_sold_quantity DESC;
```

	Quarters	total_sold_quantity
▶	1	7005619
	2	6649642
	4	5042541
	3	2075087

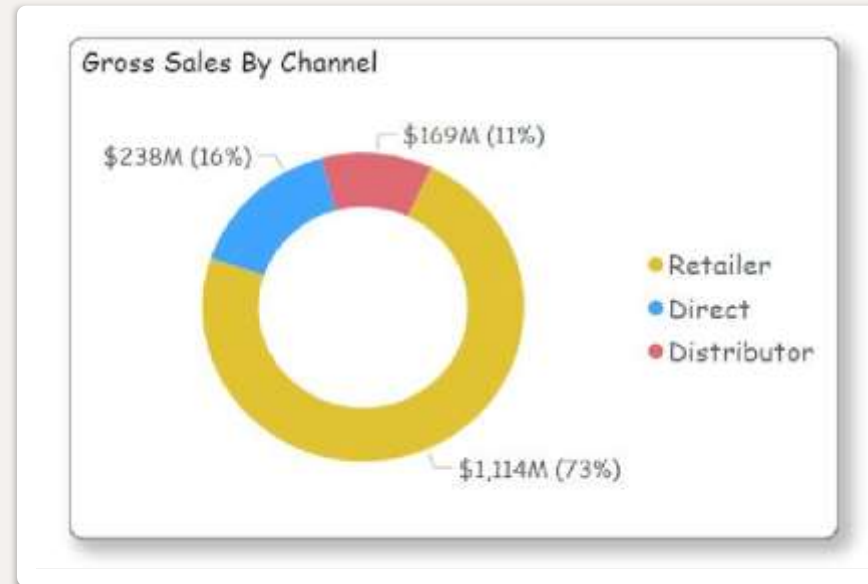


In **Quarter 1** sold maximum quantity i.e. **7 M** where as **Quarter 3** significantly decreased to **2.1M**, the reason behind is the **Covid-Lockdown** in the month of March, April & May

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

```
WITH GrossSalesByChannel AS (  
  , TotalGrossSales AS (  
    SELECT SUM(gross_sales_mln) AS total_gross_sales_mln  
    FROM GrossSalesByChannel  
  )  
  )  
SELECT  
  G.channel,  
  ROUND(G.gross_sales_mln, 2) AS gross_sales_mln,  
  ROUND((G.gross_sales_mln / T.total_gross_sales_mln) * 100, 2) AS percentage  
FROM GrossSalesByChannel AS G  
CROSS JOIN TotalGrossSales AS T  
ORDER BY G.gross_sales_mln DESC;
```

	channel	gross_sales_mln	percentage
▶	Retailer	1113959553.91	73.24
	Direct	237724525.48	15.63
	Distributor	169225139.83	11.13



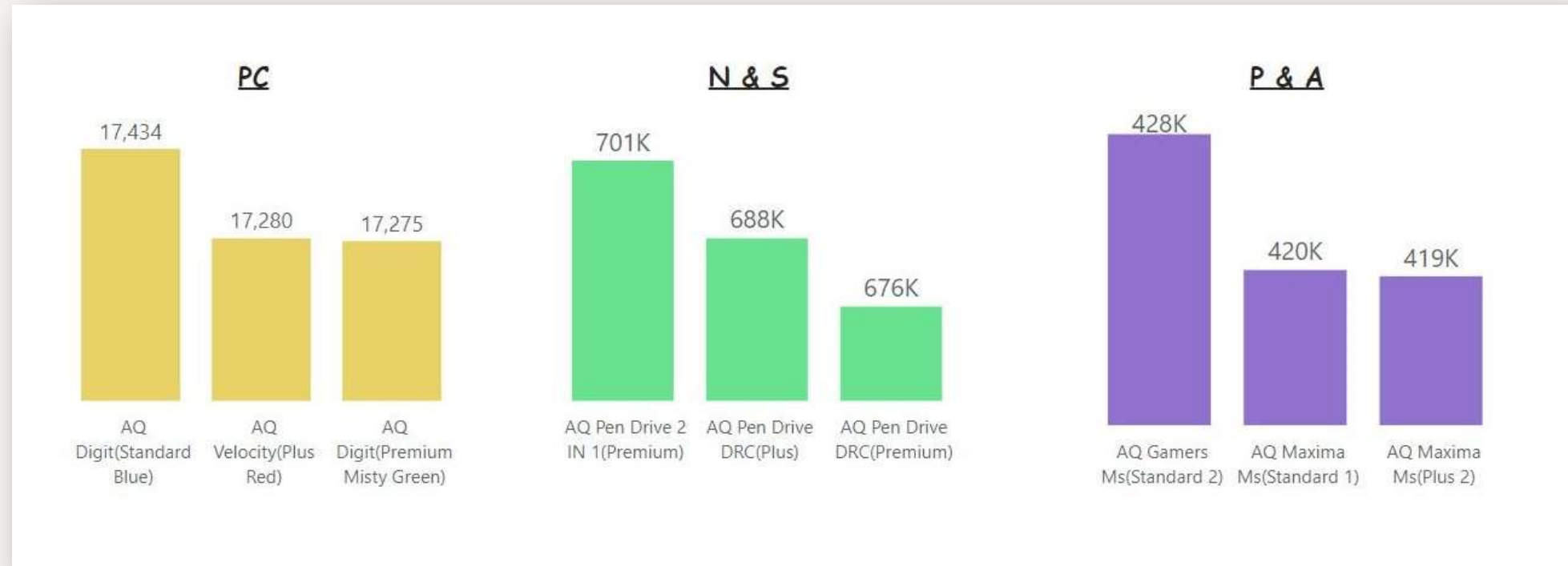
The **Retailers** contribute to the major portion of the **sales** that is **73%** where as Direct and Distributer combined sales is 27%

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

```
WITH temp_table AS (  
    select division, s.product_code, concat(p.product,"(",p.variant,")") AS product ,  
           sum(sold_quantity) AS total_sold_quantity,  
           rank() OVER (partition by division order by sum(sold_quantity) desc) AS rank_order  
FROM  
fact_sales_monthly s  
JOIN dim_product p  
ON s.product_code = p.product_code  
WHERE fiscal_year = 2021  
GROUP BY product_code  
)  
SELECT * FROM temp_table  
WHERE rank_order IN (1,2,3);
```

	division	product_code	product	total_sold_quantity	rank_order
	P & A	A2319150302	AQ Gamers Ms(Standard 2)	428498	1
	P & A	A2520150501	AQ Maxima Ms(Standard 1)	419865	2
	P & A	A2520150504	AQ Maxima Ms(Plus 2)	419471	3
	PC	A4218110202	AQ Digit(Standard Blue)	17434	1
	PC	A4218110208	AQ Digit(Premium Misty Green)	17275	3
	PC	A4319110306	AQ Velocity(Plus Red)	17280	2
	N & S	A6720160103	AQ Pen Drive 2 IN 1(Premium)	701373	1
	N & S	A6818160202	AQ Pen Drive DRC(Plus)	688003	2
▶	N & S	A6819160203	AQ Pen Drive DRC(Premium)	676245	3

Visualization | Insights



Top 3 products in each division that have a **highest total sold quantity** in the fiscal year 2021

