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CoolTShirts

Learn SQL from Scratch
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Table of Contents

1. Get familiar with Cool T-Shirts

1.1 Number Campaigns and Sources

utm_campaign is a record of which ad campaign drove a user to CoolTShirts. In order to find out the number of individual campaigns that have run we must run a distinct count of utm_campaign as shown on the below. Number of campaigns is 8.

```sql
SELECT COUNT(DISTINCT utm_campaign) AS 'campaign_count'
FROM page_visits;
```

campaign_count
8

utm_source is a record of which site/medium sent the traffic to CoolTShirts. In order to find out the number of sources we must run a distinct count of utm_source as shown below. Number of Sources is 6.

```sql
SELECT COUNT(DISTINCT utm_source) AS 'source_count'
FROM page_visits;
```

source_count
6

1.2 How are Campaigns and Sources related?

- To see all the different campaigns and sources we must run a query to show the separate campaign names and sources attached to them.

```sql
SELECT DISTINCT utm_campaign AS 'campaign', utm_source AS 'source'
FROM page_visits;
```

- The result can be seen to the right.

campaigns	sources
getting-to-know-cool-tshirts	nytimes
weekly-newsletter	email
ten-crazy-cool-tshirts-facts	buzzfeed
retargetting-campaign	email
retargetting-ad	facebook
interview-with-cool-tshirts-founder	medium
paid-search	google
cool-tshirts-search	google

1.3 Pages on Website

- Establish the distinct pages on the site by running the query below

```
SELECT DISTINCT page_name as 'web_page'
FROM page_visits;
```

- This tells us there are 4 pages as displayed below

web_page
1 - landing_page
2 - shopping_cart
3 - checkout
4 - purchase

2. What is the user journey?

2.1 Number of first touches per campaign

Establish all first touches in 'first_touch' across all users

First touch attribution across all campaigns can be queried by matching 'first_touch to 'page_views' on user_id and timestamp in 'first_touch_att'

Then in selecting utm_source, utm_campaign and counting the number of first touch attributes, we can group by utm_campaign, displaying number of first touches per campaign in descending order

source	campaign	number_of_first_touch
medium	interview-with-cool-tshirts-founder	622
nytimes	getting-to-know-cool-tshirts	612
buzzfeed	ten-crazy-cool-tshirts-facts	576
google	cool-tshirts-search	169

```
WITH first_touch AS (
    SELECT user_id,
        MIN(timestamp) as first_touch_at
    FROM page_visits
    GROUP BY user_id),
first_touch_att AS (SELECT ft.user_id,
    ft.first_touch_at,
    pv.utm_source,
    pv.utm_campaign
FROM first_touch ft
JOIN page_visits pv
    ON ft.user_id = pv.user_id
    AND ft.first_touch_at = pv.timestamp)
SELECT first_touch_att.utm_source AS 'source',
first_touch_att.utm_campaign AS 'campaign',
COUNT(first_touch_att.first_touch_at) AS
'number_of_first_touch'
FROM first_touch_att
GROUP BY 2
ORDER BY 3 DESC;
```

2.2 Number of last touches per campaign

Establish all first touches in 'last_touch' across all users

Last touch attribution across all campaigns can be queried by matching 'last_touch to 'page_views' on user_id and timestamp in 'last_touch_att'

Then in selecting utm_source, utm_campaign and counting the number of first touch attributes, we can group by utm_campaign, displaying number of last touches per campaign in descending order

source	campaign	number_of_last_touch
email	weekly-newsletter	447
facebook	retargetting-ad	443
email	retargetting-campaign	245
nytimes	getting-to-know-cool-tshirts	232
buzzfeed	ten-crazy-cool-tshirts-facts	190
medium	interview-with-cool-tshirts-founder	184
google	paid-search	178
google	cool-tshirts-search	60

```
WITH last_touch AS (SELECT user_id,
       MAX(timestamp) AS 'last_touch_at'
    FROM page_visits
    GROUP BY user_id),
last_touch_att AS (SELECT lt.user_id,
        lt.last_touch_at,
        pv.utm_source,
        pv.utm_campaign,
        pv.page_name
  FROM last_touch lt
  JOIN page_visits pv
    ON lt.user_id = pv.user_id
    AND lt.last_touch_at = pv.timestamp)
SELECT last_touch_att.utm_source AS 'source',
last_touch_att.utm_campaign AS 'campaign',
count(last_touch_att.last_touch_at) AS
'number_of_last_touch'
FROM last_touch_att
GROUP BY 2
ORDER BY 3 DESC;
```

2.3 How many visitors made a purchase?

- Establish the distinct number of users that landed on the 'purchase' page

```sql
SELECT COUNT(DISTINCT user_id) AS 'landed_on_purchase _page'
FROM page_visits
WHERE page_name = '4 - purchase';
```

- This tells us there are 361 individual users that have landed on the 'purchase' page

landed_on_purchase _page
361

2.4 Campaigns responsible for last touch on purchase page

Running previous last touch query with added condition of the 'last touch' being specifically for the 'purchase page'

"WHERE page_name = '4 - purchase'"

We can narrow last touch down to the campaigns we can attribute for bringing users specifically to the purchase page
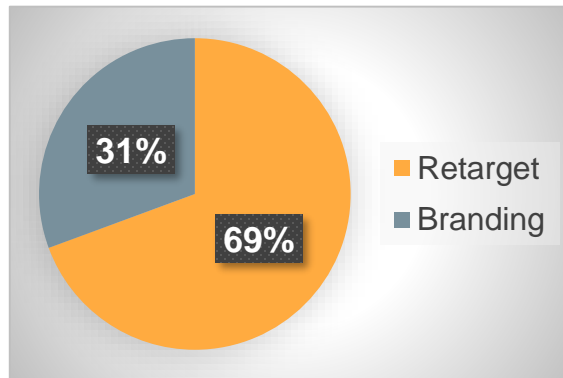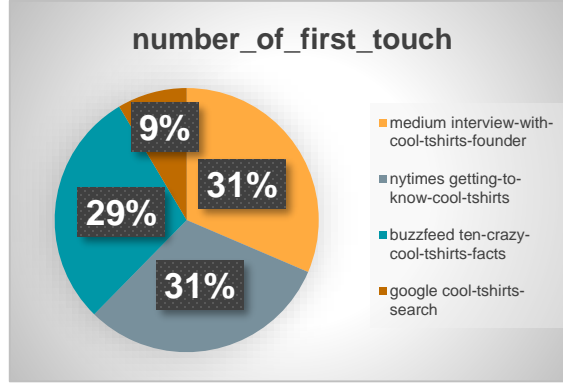
Break down as below

source	campaign	number_of_last_touch
email	weekly-newsletter	115
facebook	retargetting-ad	113
email	retargetting-campaign	54
google	paid-search	52
nytimes	getting-to-know-cool-tshirts	9
buzzfeed	ten-crazy-cool-tshirts-facts	9
medium	interview-with-cool-tshirts-founder	7
google	cool-tshirts-search	2

```
WITH last_touch AS (SELECT user_id,
        MAX(timestamp) AS 'last_touch_at'
    FROM page_visits
    WHERE page_name = '4 - purchase'
    GROUP BY user_id),
last_touch_att AS (SELECT lt.user_id,
        lt.last_touch_at,
        pv.utm_source,
        pv.utm_campaign,
        pv.page_name
    FROM last_touch lt
    JOIN page_visits pv
      ON lt.user_id = pv.user_id
      AND lt.last_touch_at = pv.timestamp)
SELECT last_touch_att.utm_source AS 'source',
last_touch_att.utm_campaign AS 'campaign',
count(last_touch_att.last_touch_at) AS
'number_of_last_touch'
FROM last_touch_att
GROUP BY 2
ORDER BY 3 DESC;
```

2.5 What is the typical user journey?

- Generally what would be considered to be "branding" and content creation led campaigns are the best initial drivers of users to site. Making up 91%.

- What brings users back though is the more direct response led mediums, retargeting or reminding those that have already visited site or shown interest.

- 69% of last touches are made up of these specific type of mediums, highlighted in yellow in the table
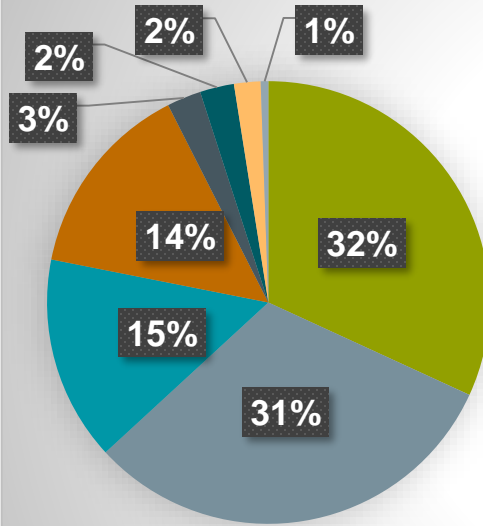
number_of_first_touch

- 9%
- 31%
- 31%
- 29%

- medium interview-with-cool-tshirts-founder
- nytimes getting-to-know-cool-tshirts
- buzzfeed ten-crazy-cool-tshirts-facts
- google cool-tshirts-search

source	campaign	number_of_first_touch
medium	interview-with-cool-tshirts-founder	622
nytimes	getting-to-know-cool-tshirts	612
buzzfeed	ten-crazy-cool-tshirts-facts	576
google	cool-tshirts-search	169

- 31%
- 69%

- Retarget
- Branding

source	campaign	number_of_last_touch
email	weekly-newsletter	447
facebook	retargetting-ad	443
email	retargetting-campaign	245
nytimes	getting-to-know-cool-tshirts	232
buzzfeed	ten-crazy-cool-tshirts-facts	190
medium	interview-with-cool-tshirts-founder	184
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google	cool-tshirts-search	60

2.5 What is the typical user journey?

- Campaigns most effective at driving conversions generally fall in to the direct response category, with reminders/ retargeting driving users back to purchase.

- Email and retargeting (across Google & Facebook) make up 92% of conversion, so they put themselves in prime position for reinvestment

- …but we cannot ignore the campaigns that drive users to site in the first place doing the much needed branding job.

Last Touch Purchaser's

Pie chart values: 32%, 31%, 15%, 14%, 3%, 2%, 2%, 1%

source	campaign	number_of_last_touch
email	weekly-newsletter	115
facebook	retargetting-ad	113
email	retargetting-campaign	54
google	paid-search	52
nytimes	getting-to-know-cool-tshirts	9
buzzfeed	ten-crazy-cool-tshirts-facts	9
medium	interview-with-cool-tshirts-founder	7
google	cool-tshirts-search	2

Legend:
- email weekly-newsletter
- facebook retargetting-ad
- email retargetting-campaign
- google paid-search
- nytimes getting-to-know-cool-tshirts
- buzzfeed ten-crazy-cool-tshirts-facts
- medium interview-with-cool-tshirts-founder
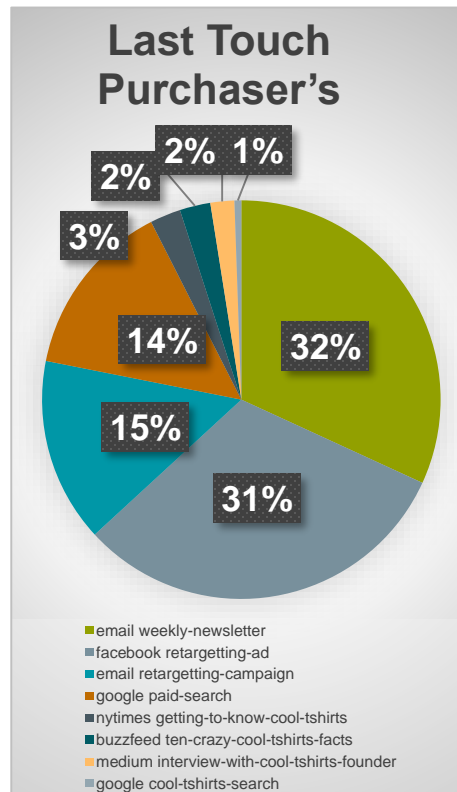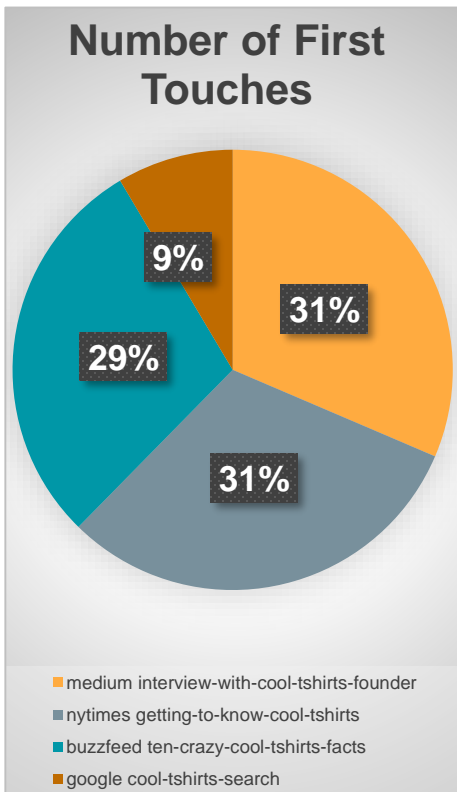- google cool-tshirts-search

3. Optimize the campaign budget

3 Optimize Campaign Budget - Recommendations

- At face value and not knowing actual spends. With only 5 campaigns to reinvest in those 4 campaigns driving majority of conversions would take centre stage. Facebook, Paid Search, and the two email campaigns.

- For the 5th it would make sense to run some more PR pieces with either NY Times or "Interviews". Buzzfeed all though good, feels like a "one off" that you should not repeat in order to maintain brand credibility.

- However with email campaigns relatively inexpensive, especially if news letters budgets could stretch to do something similar to Buzzfeed on an equivalent site

Number of First Touches

31%
31%
29%
9%

- medium interview-with-cool-tshirts-founder
- nytimes getting-to-know-cool-tshirts
- buzzfeed ten-crazy-cool-tshirts-facts
- google cool-tshirts-search

Last Touch Purchaser's

2% 1%
2%
3%
14%
15%
31%
32%

- email weekly-newsletter
- facebook retargetting-ad
- email retargetting-campaign
- google paid-search
- nytimes getting-to-know-cool-tshirts
- buzzfeed ten-crazy-cool-tshirts-facts
- medium interview-with-cool-tshirts-founder
- google cool-tshirts-search

Campaign's to reinvest in	Comment
weekly-newsletter	Should be part of working practice to keep known customers informed (so yes but should it really have marketing budget assigned… or should this come out of "business as usual budget")
Facebook retargeting	Yes
Email retargeting	Yes
Google Paid-search	Yes
Another Interview or PR piece	Yes for first touch driving
Buzzfeed style piece	Only if budget allows if weekly news letter can be maintained from another budget source otherwise weekly newsletter over and above this