Traffic Source Analysis

Traffic Source Analysis is all about understanding where our customers come from and which of particular channels are driving the highest quality traffic.

In real word, our customers are coming from e-mails, social media, search, and direct traffic.

Then we're going to be looking at conversion rates which is the percentage of those sessions which convert to our sales or revenue activity we do the conversion rate analysis so that we can understand how highly qualified that traffic is and how valuable each of those traffic sources is to us.

Some of our common use cases

- Are analyzing search data and shifting budgets towards one engine or another looking at different campaigns or keywords to see which have the best conversion rates.
- We could compare user behavior patterns across different traffic sources and we can look for opportunities to eliminate wasted spend within our paid marketing channels.
- We can also look at channels which are performing very well so that we can try to scale those up so before we get into

Traffic Source Analysis | SQL

```sql
SELECT
      utm_source,
      utm_campaign,
      http_referer,
      COUNT(website_session_id) AS sessions
FROM website_sessions
WHERE created_at < '2012-04-12'
GROUP BY 1, 2, 3
ORDER BY 4 DESC;
```

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Result Grid Filter Rows: Search Export:

utm_source	utm_campaign	http_referer	sessions
gsearch	nonbrand	https://www.gsearch.com	3613
NULL	NULL	NULL	28
NULL	NULL	https://www.gsearch.com	27
gsearch	brand	https://www.gsearch.com	26
bsearch	brand	https://www.bsearch.com	7
NULL	NULL	https://www.bsearch.com	7

UTM: Urchin Tracking Metrics.
website_sessions: Table containing all the website sessions.
website_session_id: Primary Key in website_sessions

Findings:

- This is a pretty obvious story we can say that G search non brand is the most important marketing channel brining in the traffic.

Traffic Conversion Rate Analysis | SQL

```sql
SELECT
      W.utm_source,
      W.utm_campaign,
      W.http_referer,
      COUNT(W.website_session_id) AS sessions,
      COUNT(O.order_id) AS orders,
      (COUNT(O.order_id)/COUNT(W.website_session_id))*100 AS conversion_rate -- gives what percentage of sessions reslut in orders
FROM website_sessions as W LEFT JOIN
     orders AS O ON W.website_session_id = O.website_session_id
WHERE W.created_at < '2012-04-14'
GROUP BY 1, 2, 3
ORDER BY 4 DESC;
```

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Result Grid Filter Rows: Search Export:

utm_source	utm_campaign	http_referer	sessions	orders	conversion_rate
gsearch	nonbrand	https://www.gsearch.com	3895	112	2.8755
NULL	NULL	NULL	34	1	2.9412
NULL	NULL	https://www.gsearch.com	34	0	0.0000
gsearch	brand	https://www.gsearch.com	31	3	9.6774
bsearch	brand	https://www.bsearch.com	7	0	0.0000
NULL	NULL	https://www.bsearch.com	7	0	0.0000

orders: Table containing all the orders.

order_id: Primary Key in orders

Why Left Join? : Left Join will result in all the data from website_sessions and the matching data from orders, which helps with conversion rate analysis.

Findings:

- Except the gsearch brand, the conversion rate is way below. Company needs to optimize marketing bids.

Bid Optimization and Trend Analysis

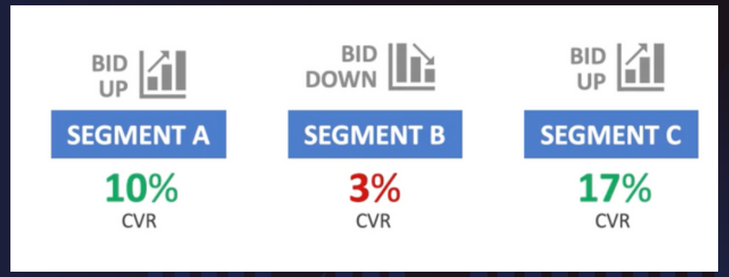
Bid Optimization is all about understanding the value of various segments of your paid traffic so that you can optimize your marketing budget you're going to be trying to help your marketers figure out what is the right amount to bid for various segments of that traffic based on how much revenue it makes you.

Some of our common use cases

- Understanding conversion rates and revenue per Click to figure out how much you could spend.
- Also look at various sub segments of your traffic
- Impact that bid changes have on how you're ranking in these paid auctions and how much volume of customers you're getting from those paid marketing channels when you dial up or dial down bids

Trend Analysis

MySQL date functions these are really powerful when you wanna do trending analysis.



GSearch Non Brand Trend Analysis | SQL

```sql
-- Gsearch non brand trend analysis [WEEK]
-- Bid down on 2012-04-15 because of the low conversion rate

SELECT
    YEAR(created_at) AS year,
    WEEK(created_at) AS week,
    MIN(DATE(created_at)) AS start_of_week,
    COUNT(website_session_id) AS sessions
FROM website_sessions
WHERE utm_source = 'gsearch' AND
utm_campaign = 'nonbrand' AND
created_at < '2012-05-10'
GROUP BY 1,2;

-- Traffic decreased from a high of 1152 sessions to 621 on 2012-04-15 [Week 16]
-- Traffic remained stabled for 2 weeks since bid down, went to all time low by week 17
```

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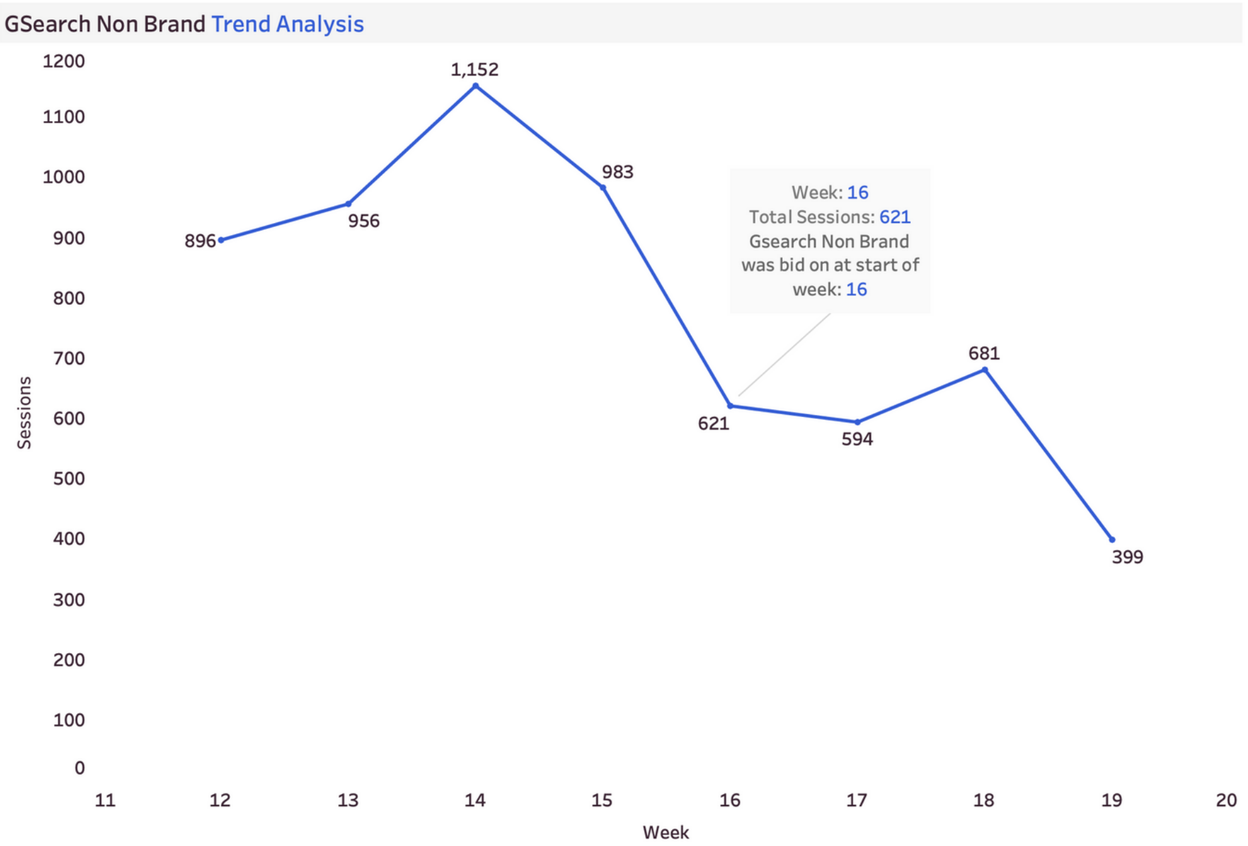
Result Grid | Filter Rows: Search | Export:

year	week	start_of_week	sessions
2012	12	2012-03-19	896
2012	13	2012-03-25	956
2012	14	2012-04-01	1152
2012	15	2012-04-08	983
2012	16	2012-04-15	621
2012	17	2012-04-22	594
2012	18	2012-04-29	681
2012	19	2012-05-06	399



Findings:

- Traffic decreased from a high of 1152 sessions to 621 by end of Week 16.
- Traffic remained stabled for 2 weeks since bid down, went to all time low by week 17.
- Need to find the ways to improve the efficiency of the marketing channel.

GSearch Non Brand Device Level Analysis | SQL

```sql
-- conversion rates across device types

SELECT
    W.device_type,
    COUNT(W.website_session_id) AS website_sessions,
    COUNT(O.order_id) AS orders,
    COUNT(O.order_id)/COUNT(W.website_session_id) AS conversion_rate
FROM website_sessions AS W LEFT JOIN
    ORDERS AS O ON w.website_session_id = O.website_session_id
WHERE W.created_at < '2012-05-11'
AND W.utm_source = 'gsearch' AND
W.utm_campaign = 'nonbrand'
GROUP BY 1
ORDER BY 4 DESC;
```

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ult Grid Filter Rows: Search Export:

devic...	website_sessions	orders	conversion_rate
desktop	3911	146	0.0373
mobile	2492	24	0.0096

UTM: Urchin Tracking Metrics.
website_sessions: Table containing all the website sessions.
website_session_id: Primary Key in website_sessions

Findings:

- We've got device type sessions orders and we have conversion rate and so what's interesting here is the conversion rate for your desktop traffic is about 3.7 %.
- 3.7% of sessions matriculate to a revenue generating order for the business for mobile traffic it's less than 1%.

GSearch Non Brand Device Level Trend | SQL

```sql
-- Bid up Gseach Non Brand computer marketing campaign
-- Lets look at weekly trends of traffic at with device type

SELECT
    YEAR(created_at) AS year,
    MONTH(created_at) AS month,
    WEEK(created_at) AS week,
    MIN(DATE(created_at)) AS week_start_date,
    COUNT(CASE WHEN device_type = 'desktop' THEN website_session_id ELSE NULL END) AS desktop_sessions,
    COUNT(CASE WHEN device_type = 'mobile' THEN website_session_id ELSE NULL END) AS mobile_sessions
FROM website_sessions
WHERE created_at BETWEEN '2012-04-15' AND '2012-06-09'
AND utm_source = 'gsearch'
AND utm_campaign = 'nonbrand'
GROUP BY 1,2,3;
```

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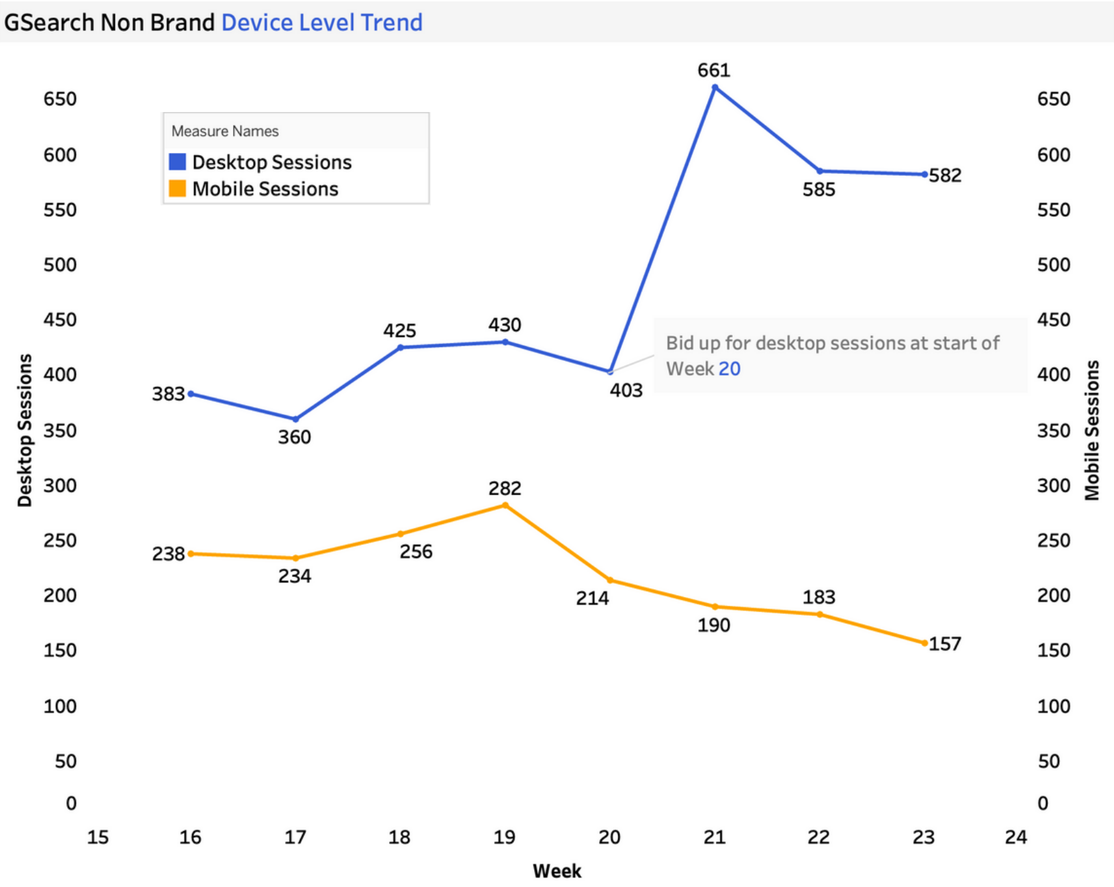
Result Grid Filter Rows: Search Export:

year	month	week	week_start_date	desktop_sessions	mobile_sessions
2012	4	16	2012-04-15	383	238
2012	4	17	2012-04-22	360	234
2012	4	18	2012-04-29	98	61
2012	5	18	2012-05-01	327	195
2012	5	19	2012-05-06	430	282
2012	5	20	2012-05-13	403	214
2012	5	21	2012-05-20	661	190
2012	5	22	2012-05-27	455	138
2012	6	22	2012-06-01	130	45
2012	6	23	2012-06-03	582	157



Findings:

- Bid changes that were made for desktop, resulted a pop in desktop traffic after the bid up and we didn't see any kind of a pop for mobile. We can pretty confidently say that those bid changes did help us create this additional surge in desktop volume.