

## Data Understanding

The data briefs about the digital market involving customers that consume their content. A record of the time period from 1st Jan 2013 to 31st December 2013 is recorded, basically we are studying the data for the year 2013. For each day, the website visited by the customer, type of customer (new or returning), platform used (like android, ipad, windows, linux etc) by the customer, number of visits on the website, number of different sessions, order if placed any, gross sales made, people who just visited, products in the cart, number of product pages and search pages viewed is documented. This data gives an in depth summary for all the activities on websites by consumers for the year 2013. The data consists of 12 attributes and 21061 entries.

The 7 parameters are as follow:

Day: The calendar day

Site: Company site visited by users

New\_customer: 0 = returning customer; 1 = new customer; null = neither

Platform: The type of device used by a website visitor

Visits: The number of distinct website visits; 1 session may have multiple

Distinct\_sessions: The number of distinct website visitors; 1 session may have multiple visits

Orders: The number of website orders

Gross\_sales: The total gross sales for website orders

Bounces: The number of visits that only viewed one page

Add\_to\_cart: The number of visits that added a product to cart

Product\_page\_views: The number of product pages viewed

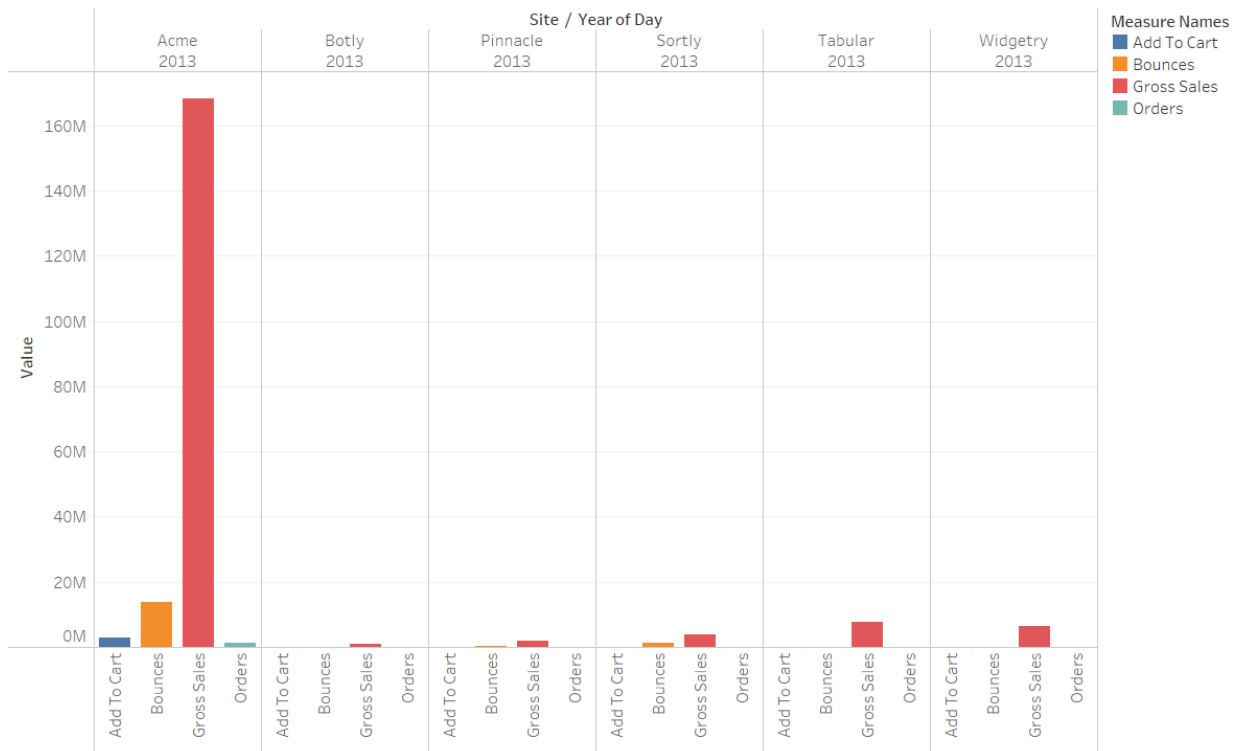
Search\_page\_views: The number of search pages viewed

## Dataset:

1	day	site	new_customer	platform	visits	distinct_session	orders	gross_sales	bounces	add_to_cart	product_page_view	search_page_views
2	01.01.2013	Acme	1	Android	24	16	14	1287	4	16	104	192
3	01.01.2013	Acme	1	BlackBerry	0	0	0	13	0	0	1	0
4	01.01.2013	Sortly	1	iPad	0	0	0	98	0	0	0	0
5	01.01.2013	Acme	1	Windows	922	520	527	60753	149	610	3914	7367
6	01.01.2013	Botly	1	Android	11	10	11	1090	0	11	4	19
7	01.01.2013	Acme	1	Macintosh	384	214	213	28129	65	245	1783	3255
8	01.01.2013	Sortly	1	Android	14	10	4	432	4	7	33	52
9	01.01.2013	Sortly	1	Windows	1	0	0	31	0	0	2	2
10	01.01.2013	Acme	0	Linux	41	27	6	705	6	12	130	272
11	01.01.2013	Acme	0	iPhone	448	368	36	4637	80	79	722	1073
12	01.01.2013	Widgetry	1	iPhone	15	14	15	1813	0	15	230	216
13	01.01.2013	Acme	1	Windows	58192	46312	0	23664	2285	104651	258511	
14	01.01.2013	Sortly	1	Other	0	0	0	0	0	0	4	2
15	01.01.2013	Tabular	1	iPad	22	21	22	3378	0	22	0	0
16	01.01.2013	Sortly	1	Macintosh	0	0	0	13	0	0	3	1
17	01.01.2013	Acme	Android	4942	4290	0	1751	110	5750	14185		
18	01.01.2013	Acme	BlackBerry	111	94	0	55	3	111	198		
19	01.01.2013	Pinnacle	Linux	7	4	0	5	0	8	10		
20	01.01.2013	Pinnacle	0	Macintosh	56	45	5	1563	17	11	120	232
21	01.01.2013	Botly	0	Android	20	19	20	2405	0	20	0	0
22	01.01.2013	Widgetry	0	iPhone	113	109	113	15320	0	113	1729	1466
23	01.01.2013	Pinnacle	BlackBerry	4	2	0	2	0	4	4		
24	01.01.2013	Acme	Linux	984	886	0	777	10	1078	1840		
25	01.01.2013	Pinnacle	iPhone	282	239	0	155	6	292	297		
26	01.01.2013	Acme	SymbianOS	4	3	0	2	0	3	4		
27	01.01.2013	Sortly	Android	1676	1301	0	952	50	2291	4465		
28	01.01.2013	Sortly	0	Linux	0	0	0	0	0	0		
29	01.01.2013	Sortly	0	iPhone	406	317	53	6480	87	119	697	922
30	01.01.2013	Pinnacle	Macintosh	558	433	0	263	17	731	1202		
31	01.01.2013	Acme	Macintosh	26437	18922	0	12039	1206	49492	114557		
32	01.01.2013	Pinnacle	1	Android	0	0	0	0	0	1	2	

## Visualization 1

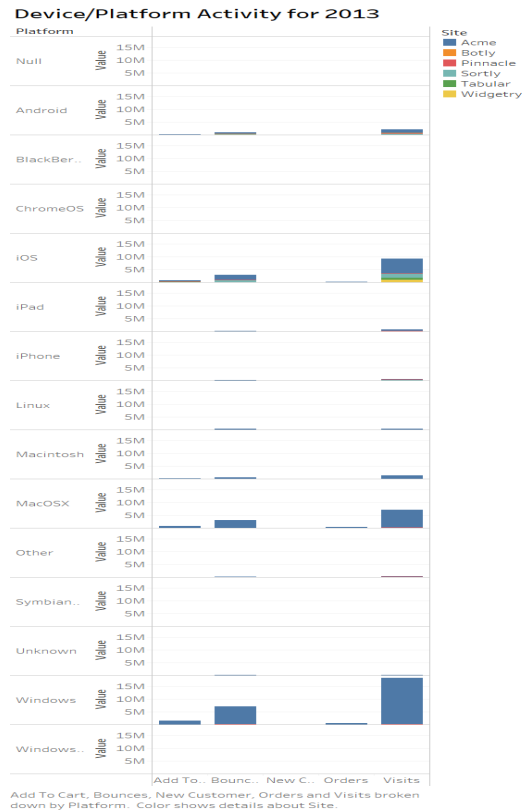
### Website Activity for 2013



Add To Cart, Bounces, Gross Sales and Orders for each Day Year broken down by Site. Color shows details about Add To Cart, Bounces, Gross Sales and Orders. The data is filtered on Day Month, which keeps 9 of 9 members.

- The above graph shows activities for different websites for the year 2013.
- It is observed that Acme has the maximum activity throughout the year.
- The gross sales for acme is maximum in comparison with all the websites. The sales covered by acme is much more than all.
- Investment made on Acme would result in positive return on Investment as observed from the past trends.
- In order to increase traffic on other websites, some work should be done to attract the users.

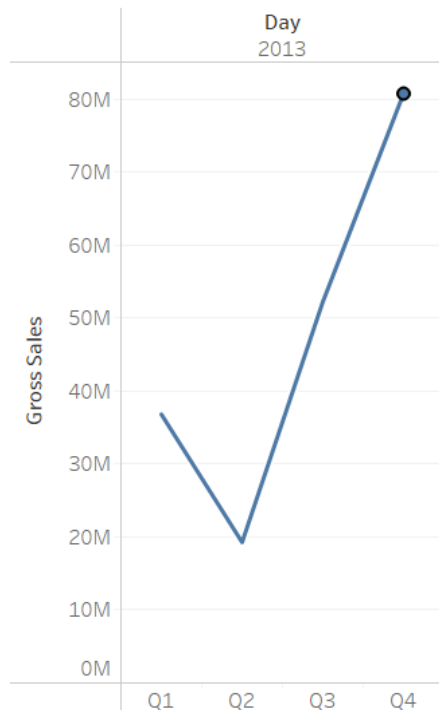
## Visualization 2



- The above visualization shows activity for each platform for the year 2013.
- It is observed that most users use Windows to access the website followed by IOS and MacOS.
- The consumers have evolved with time and now prefer windows, macOS and IOS over Linux, Blackberry and other previously used devices.
- Here we are trying to understand our users and which platform they are using and how they have changed their mode of accessing.

## Visualization 3

### Time Series Analysis

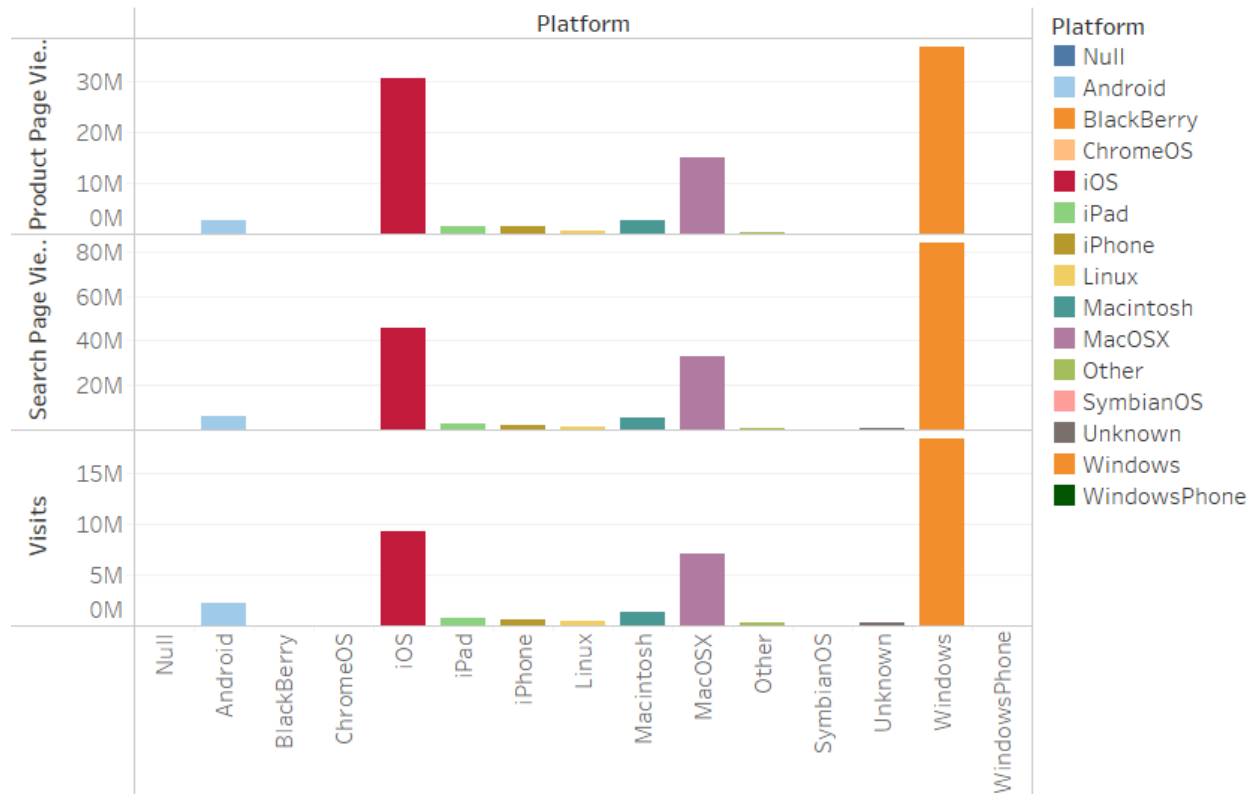


The trend of sum of Gross Sales for Day  
Quarter broken down by Day Year.

- The above graph is a line graph to observe time series analysis.
- Here we are monitoring sales over a period of time.
- We have divided the year 2013 into 4 quarters.
- It is observed that from the first quarter to second quarter the gross sales falls and then from second quarter to fourth quarter the sales rises in a linear pattern from 20M to 80M.
- We can say that the sales in the first few months of the year is not much appealing but by the end of the year the sales increase tremendously.
- It can be inferred that the consumers spend more money during the year end that Is the festive season.
- It can also be inferred that more products are available or released during the second half of the year attracting more customers.

#### Visualization 4:

### Platform Comparison for Views and Visits

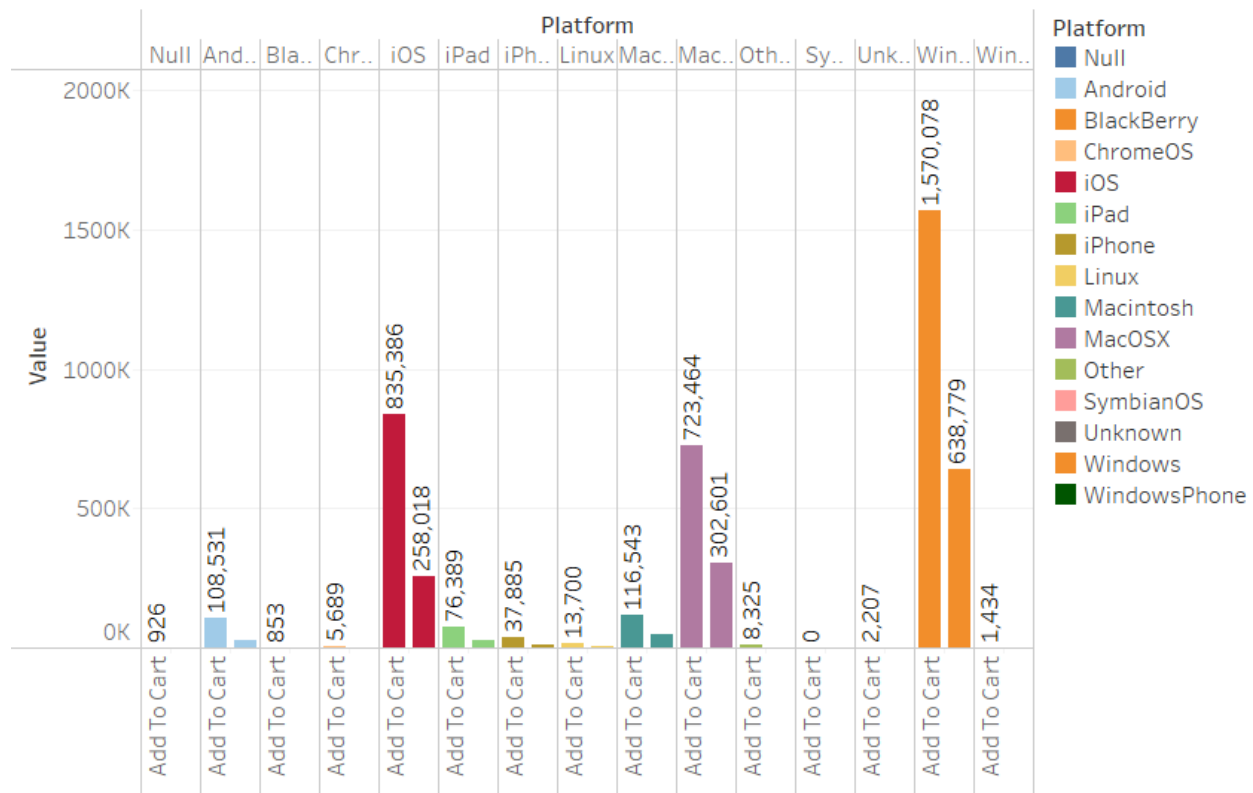


Sum of Product Page Views, sum of Search Page Views and sum of Visits for each Platform. Color shows details about Platform.

- In the above visualization we Platform Comparison for views and visits .
- We draw comparisons from our three most used platforms.
- The trend for all three views is similar for all three platforms.
- Product page is viewed the most by the users followed by the search page.
- Users are sure about the products and directly visit the product page more often, maybe they have shared a link of the product as well.
- The trend says that product pages are well advertised.
- Customers are more likely to visit a page after viewing the search page and the product page.
- The product page view and search page view by the customer help the customers and increase the number of visits.

## Visualization 5:

### Orders VS Add To Cart

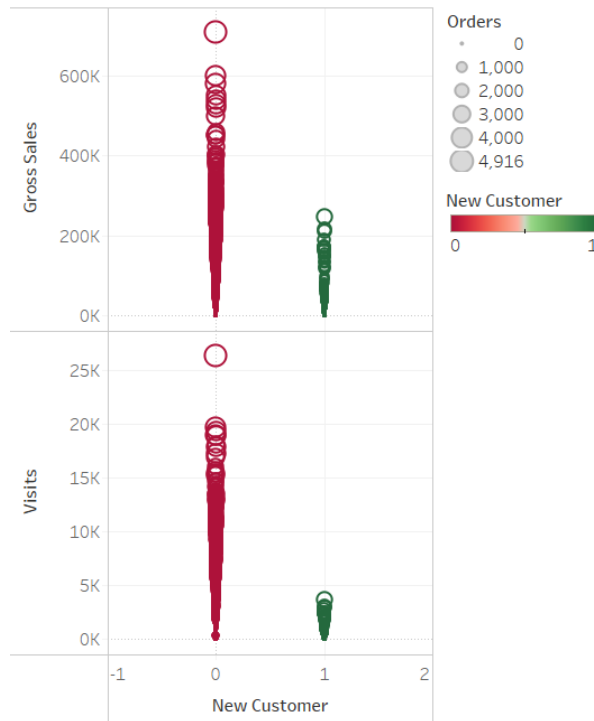


Add To Cart and Orders for each Platform. Color shows details about Platform. The marks are labeled by Add To Cart and Orders.

- The above visualization shows a comparison of orders and add to cart.
- It helps us to draw the conclusion that the consumers of the website actually get the products or just add it to the cart.
- For the IOS platform it is observed that less than half of the products in the add to cart are actually bought.
- Similar pattern is seen for Mac OSX and Windows.
- It can be inferred that the products tend to just remain in the cart and not orders.
- This might be a reason for low gross sales.
- Some marketing or business scheme must be created in order to make sure that the products reach the order stage.
- Frequent reminders must be sent to the user reminding them that they have some products in their cart and if they would like to buy them before they go out of stock.
- There are chances that people forget about their cart.

## Visualization 6

### Gross Sales and Visits Comparison between New and Returning Customers

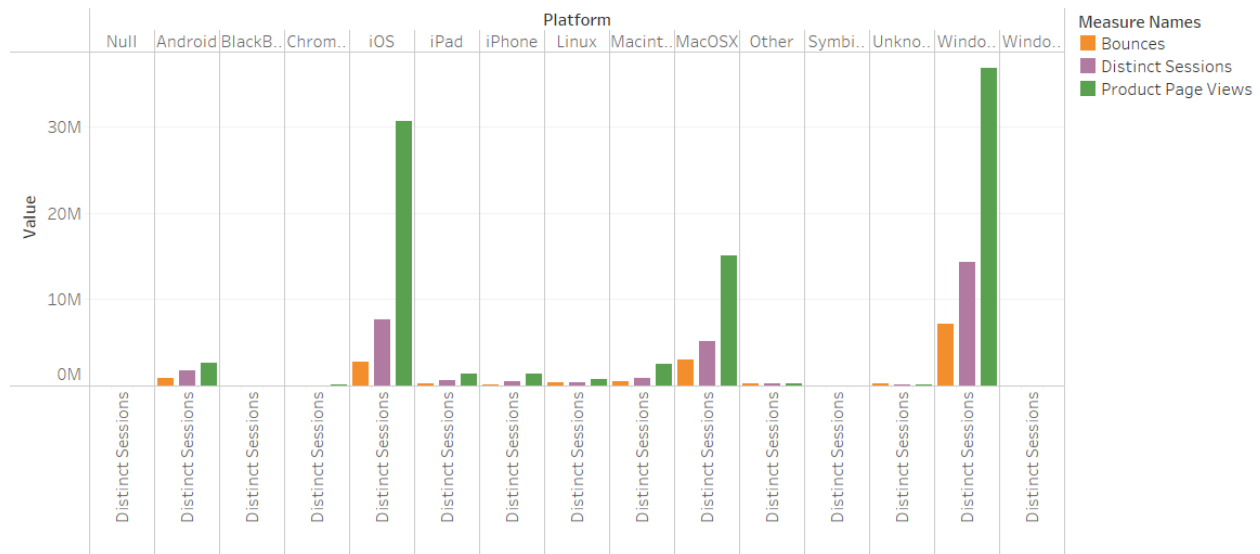


New Customer vs. Gross Sales and Visits. Color shows New Customer. Size shows Orders.

- From the above graph we are trying to compare the activity of new and returning customers.
- It is observed that returning customers are more than the new customers.
- We also see that returning customers contribute to more gross sales than the new ones.
- The websites attract the returning customers but fail to lure the new ones.
- Since there's a huge difference in the visits of old and new customers more work should be done on the websites and the marketing and publicity factor.
- This would help to make more awareness among the new customers regarding the website.

## Visualization 7

### Views VS Sessions VS Bounces



Bounces, Distinct Sessions and Product Page Views for each Platform. Color shows details about Bounces, Distinct Sessions and Product Page Views.

- The above visualization is used to compare views, sessions and bounces for various platforms.
- It is observed that Bounces for each platform are not much in any platform suggesting that the users tend to explore multiple pages before leaving which is a good sign.
- The distinct sessions are not much recorded, this again suggests that we don't have new users.
- Schemes must be planned in order to increase these distinct sessions and gain more distinct website visitors.
- It is observed that the product page view is maximum suggesting that all the users, be it distinct or the one that explores multiple pages view the product page more often. It is good that the product page is designed in such a way that there is easy navigation to it and it attracts the visitors to the products.



## **Business Insights**

Collective insights received from the visualization on the data will be that Acme website has the most activity. All the trends found out further are mostly influenced by the behavior of Acme hence it can be said that this particular website will see more or else the same trends. We observe that other websites are not contributing much and hence strategies should be developed in order to make other sites equally active. We also saw that during the end of the year the sales are maximum and an increase in sales is also observed. The websites should make sure to work more in the first half to increase the sales. Customer behavior is also observed here and seen that people indulge in more shopping during the year end. New customers are rare, most of them that add to sales are the old or returning customers. The websites should be marketed enough so that new users are aware about them. There is a possibility that the customers forget the products in the cart and don't end up buying. Orders are much less than the items that are actually present in the cart. This can be solved by sending frequent reminders. In depth analysis and insights for each visualization are provided above with some recommendations from my end.