

Zappos Analytics Challenge Report

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Assumptions:

Zero gross sale from zero order.

Which site has the best performance?

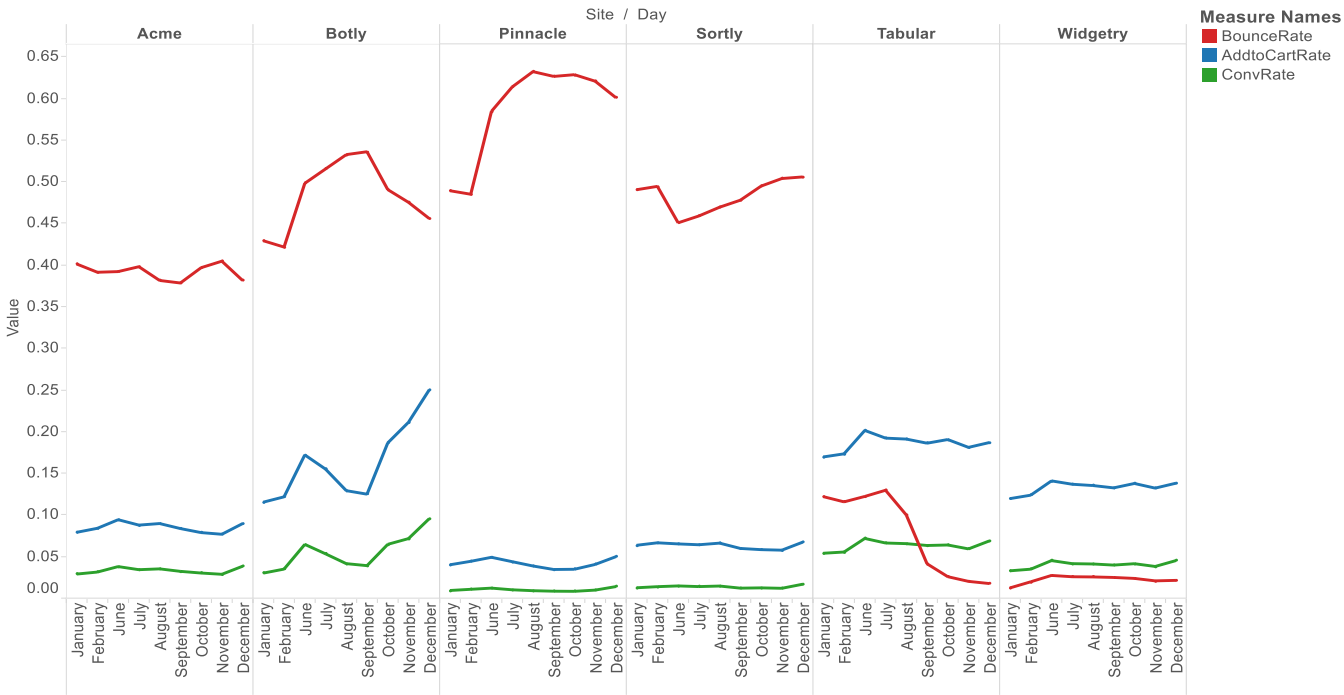
Bounce Rate = Bounces/Visits

Add to Cart Rate = Add to Cart/Visits

Conversion Rate = Order/Visits

Bounce Rate, Add to Cart Rate and Conversion Rate Trends

Overall Performance



The trends of AddtoCartRate, BounceRate and ConvRate for Day Month broken down by Site. Color shows details about AddtoCartRate, BounceRate and ConvRate. The data is filtered on New Customer, which keeps Null, 0 and 1.

Metrics Table

Site	BounceRate	AddtoCartRate	ConvRate
Pinnacle	58.61%	4.18%	1.02%
Sortly	48.63%	6.30%	1.38%
Acme	39.16%	8.44%	3.29%
Widgetry	2.22%	13.31%	4.01%
Botly	46.91%	15.89%	5.27%
Tabular	7.24%	18.53%	6.30%

BounceRate, AddtoCartRate and ConvRate broken down by Site.

Conversion rate is the metric that tells about the performance of a site. It's tells that number of visits finally converted to orders.

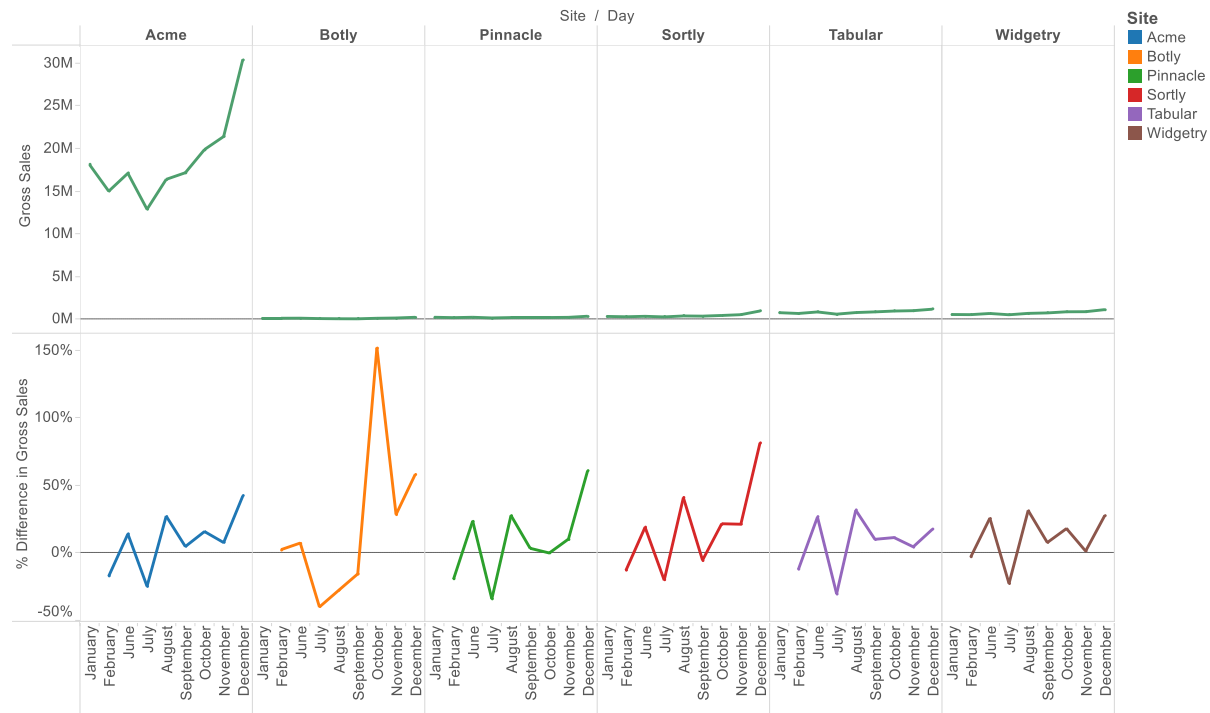
From the trends chart, conversion rate for the Tabular site is high and consistent in every listed month. By considering all 3 metrics from the Metrics table, for the Tabular site, only 7.24% of the visits leave the site with single page view, 18.53% of the visits add product to the cart and 6.3% of the visits order products.

Hence, **Tabular site has highest performance than others.**

Which site got the highest revenue? And its growth rate trend?

Gross Sales and Growth Rate from each site

GrowthRate



The trends of sum of Gross Sales and % Difference in Gross Sales for Day Month broken down by Site. For pane % Difference in Gross Sales: Color shows details about Site. The data is filtered on New Customer, which keeps Null, 0 and 1. The view is filtered on Site, which keeps 6 of 6 members.

GrossSales/Site

Site	Gross Sales	Orders
Acme	168,212,503	1,172,356
Tabular	7,631,153	44,915
Widgetry	6,555,987	48,065
Sortly	3,885,681	33,698
Pinnacle	1,930,383	6,477
Botly	981,244	8,253

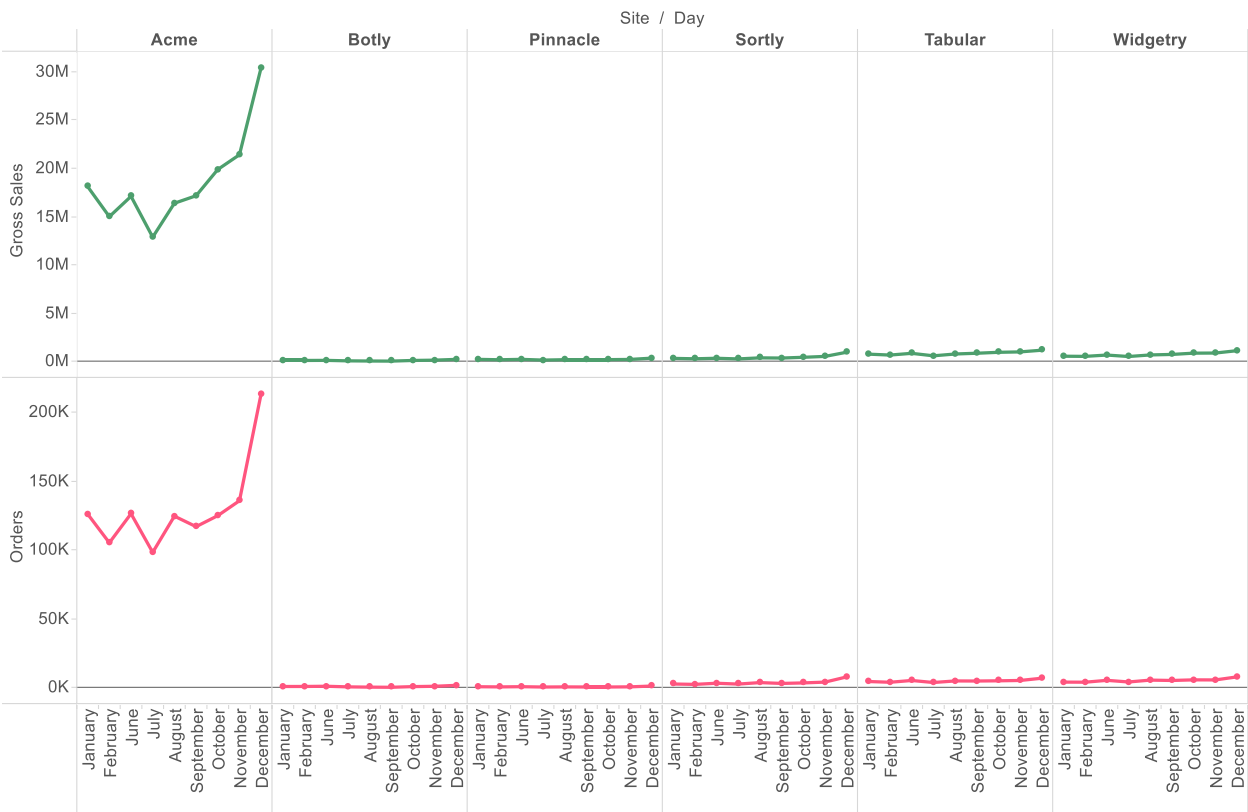
Gross Sales and Orders broken down by Site.

Growth rate tells the percentage increase in revenue from the previous period’s revenue.

By looking at the gross sales in every month, **Acme has the highest gross sales. And, Growth rate trends are same for Acme, Tabular and Widgetry. Botly’s growth rate trend is inconsistent compared to other sites.**

Gross sales and Orders follow same pattern in every month. One of the major observation.

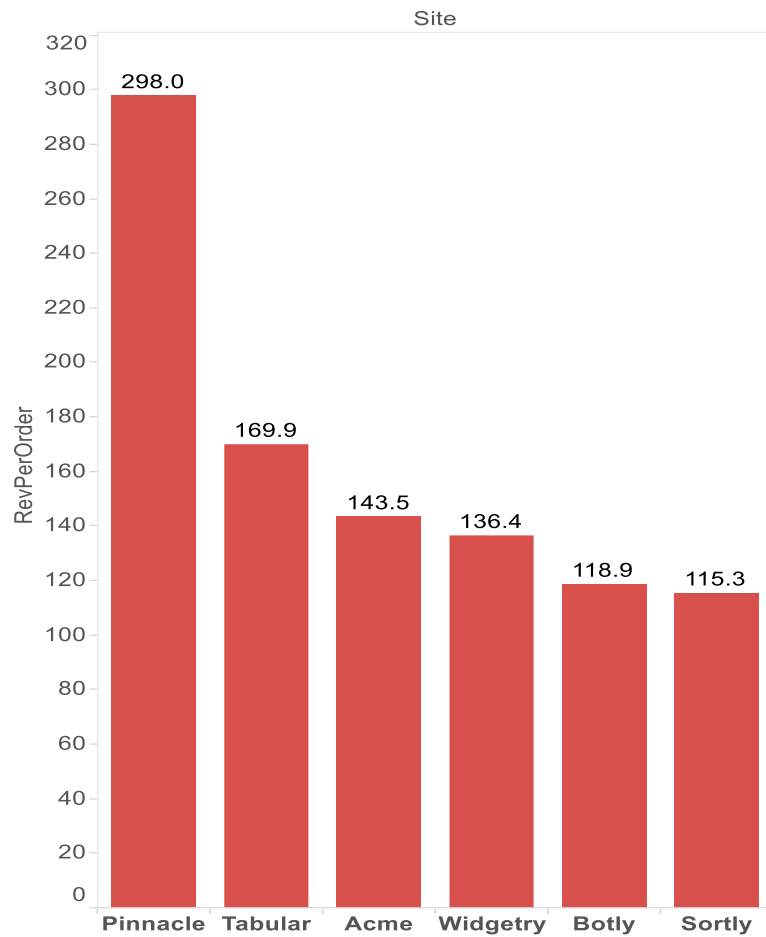
Sales&OrdersTrends



The trends of sum of Gross Sales and sum of Orders for Day Month broken down by Site. The data is filtered on New Customer, which keeps Null, 0 and 1. The view is filtered on Site, which keeps 6 of 6 members.

What is the average order value in every site?

Revenue/Ord



RevPerOrder for each Site. The data is filtered on New Customer, which keeps Null, 0 and 1.

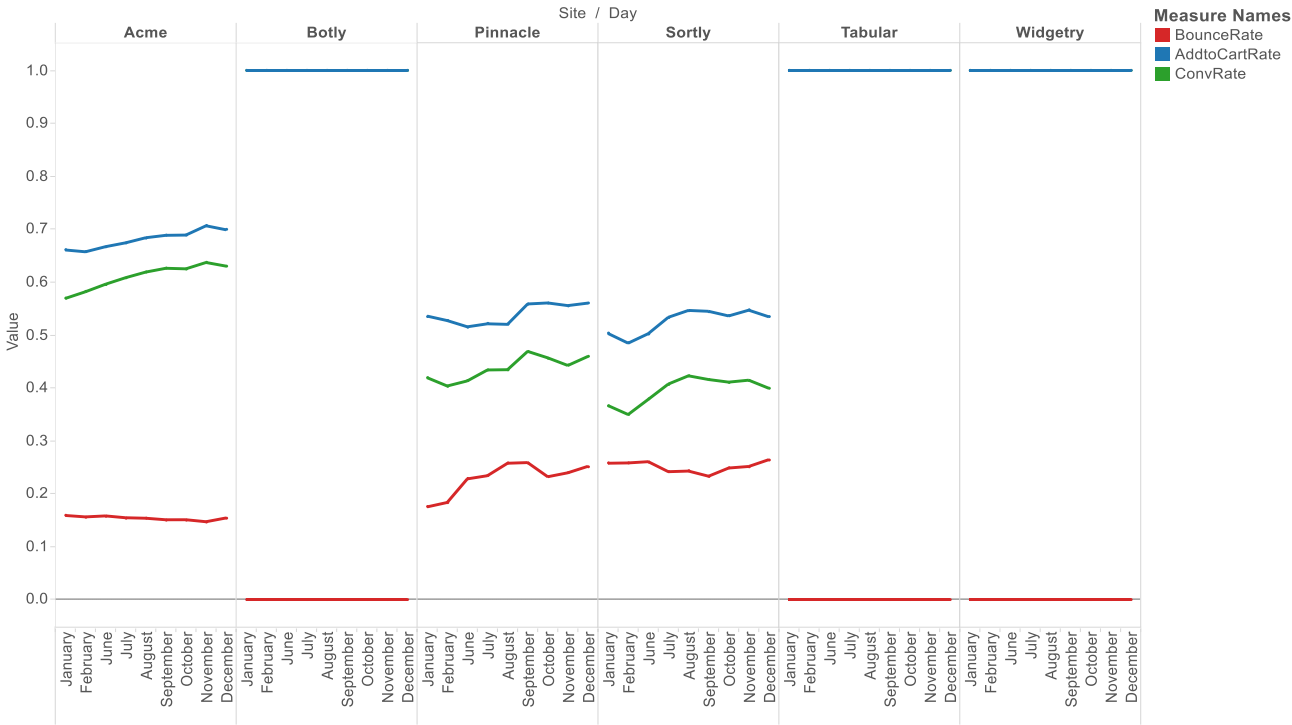
Revenue per order tells the average revenue from each order.

Customer spent per order is high for Pinnacle.

Performance between New and Old Customers

New Customer

NewCust Performance



The trends of AddtoCartRate, BounceRate and ConvRate for Day Month broken down by Site. Color shows details about AddtoCartRate, BounceRate and ConvRate. The data is filtered on New Customer, which keeps 1.

NewCustomer

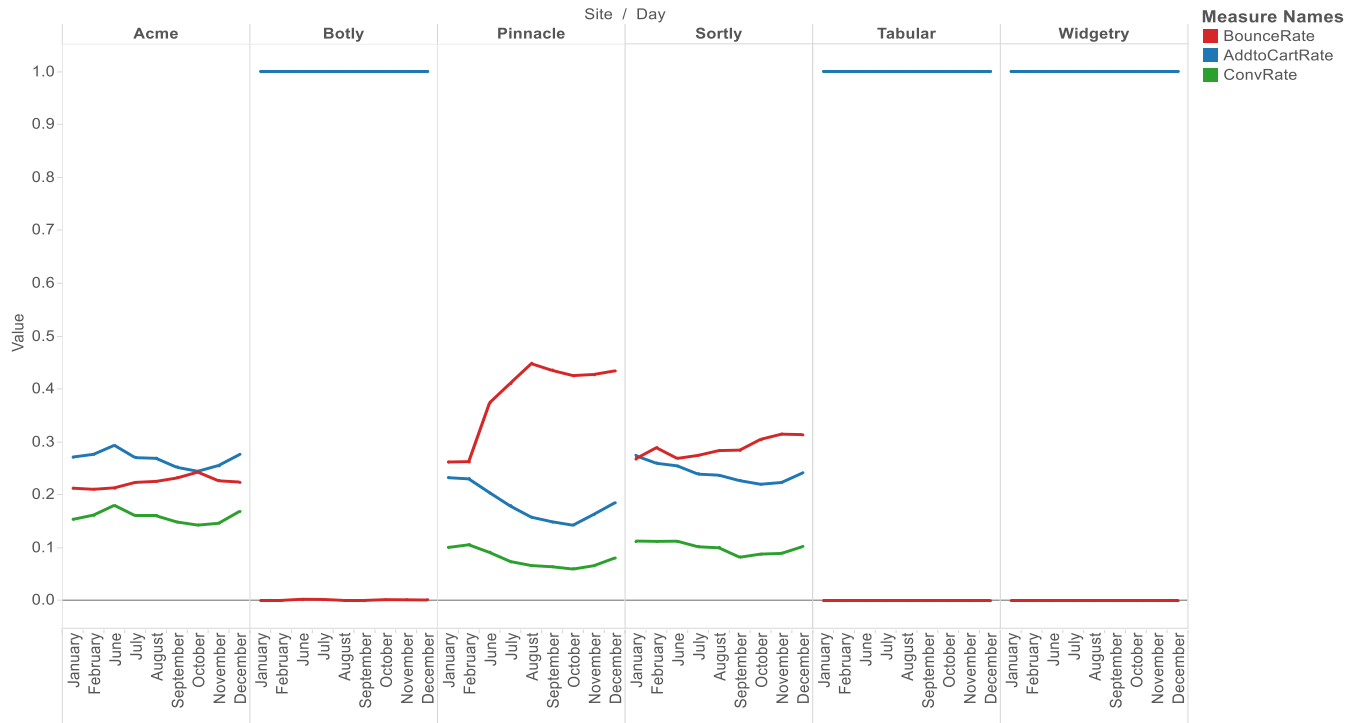
Site	BounceRate	AddtoCartRate	ConvRate
Botly	0.00%	100.00%	100.00%
Tabular	0.00%	100.00%	100.00%
Widgetry	0.00%	100.00%	100.00%
Acme	15.36%	68.29%	61.20%
Pinnacle	22.91%	54.09%	43.74%
Sortly	25.34%	52.78%	39.71%

BounceRate, AddtoCartRate and ConvRate broken down by Site. The data is filtered on New Customer, which keeps 1.

Every new customer orders some product on Botly, Tabular and Widgetry sites. Hence, Bounce rate is 0%, Add to cart rate is 100% and Conversion rate is 100% on those sites.

Old Customer

ReturnCust Performance



The trends of AddtoCartRate, BounceRate and ConvRate for Day Month broken down by Site. Color shows details about AddtoCartRate, BounceRate and ConvRate. The data is filtered on New Customer, which keeps 0.

ReturnCustomer

Site	BounceRate	AddtoCartRate	ConvRate
Botly	0.09%	100.00%	100.00%
Tabular	0.00%	100.00%	100.00%
Widgetry	0.00%	100.00%	100.00%
Acme	22.38%	26.67%	15.75%
Sortly	29.38%	23.82%	9.78%
Pinnacle	39.73%	17.86%	7.64%

BounceRate, AddtoCartRate and ConvRate broken down by Site. The data is filtered on New Customer, which keeps 0.

Every old customer orders some product on Botly, Tabular and Widgetry sites. Hence, Bounce rate is 0%, Add to cart rate is 100% and Conversion rate is 100%.

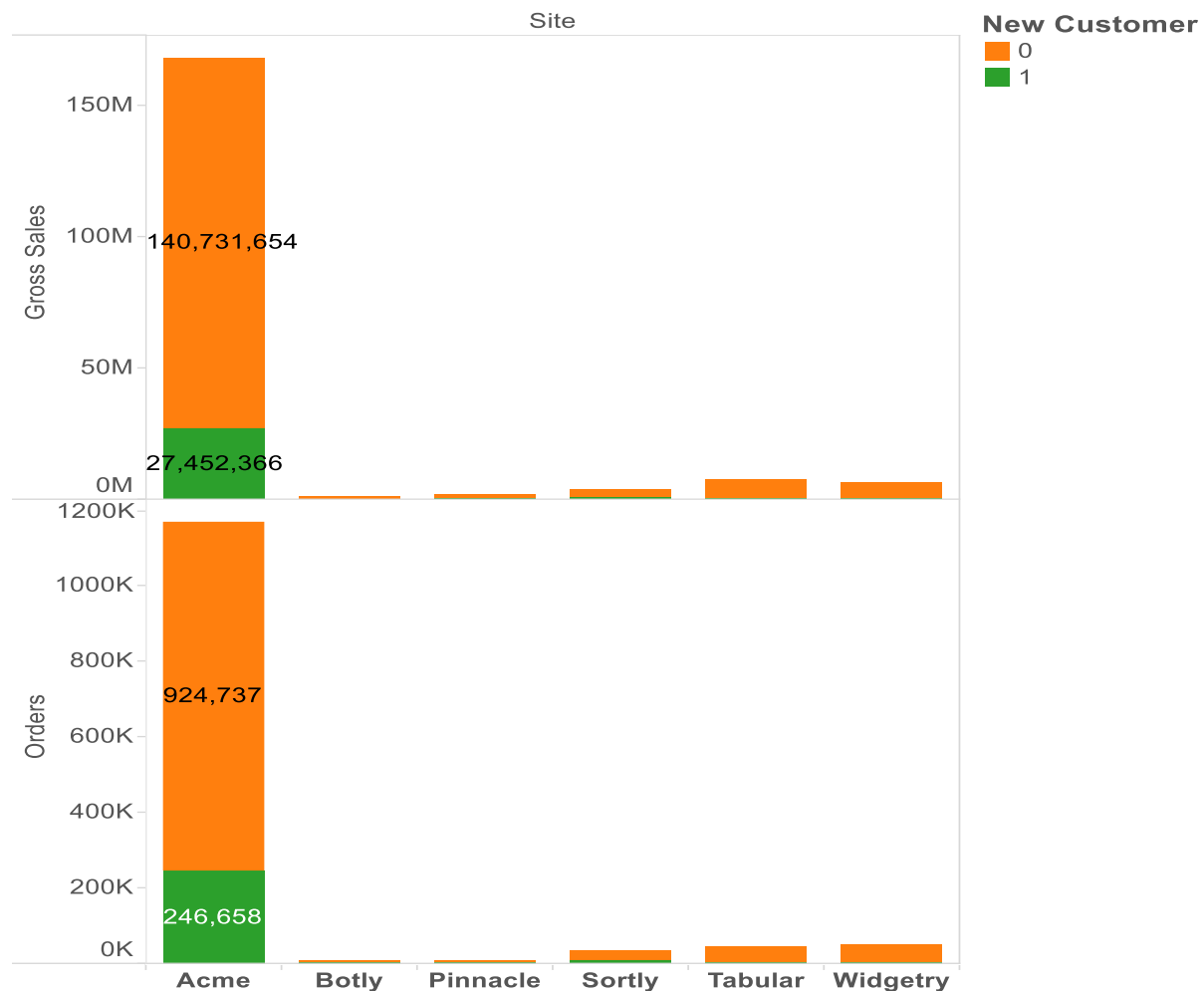
CustomerConv

New Custo..	BounceRate	AddtoCartRate	ConvRate
0	22.49%	27.56%	16.68%
1	15.72%	67.87%	60.54%

BounceRate, AddtoCartRate and ConvRate broken down by New Customer. The view is filtered on New Customer, which keeps 0 and 1.

New customer's conversion rate is higher than old customer's. Hence, new customers tend to order more than old customers.

CustRevn



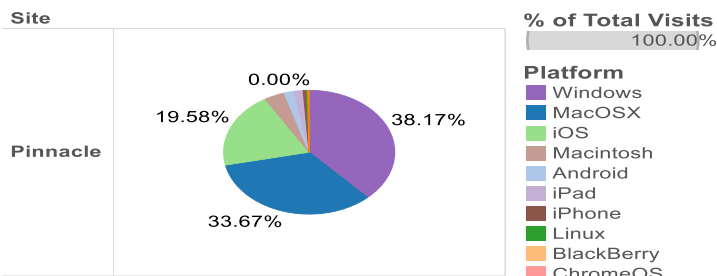
Sum of Gross Sales and sum of Orders for each Site. Color shows details about New Customer. The view is filtered on New Customer, which keeps 0 and 1.

But, revenue from old customers is way higher than new customers.

As return customer has major chunk in gross sales, next step is to look at the bounce rate of the return customer. **From the return customer table, bounce rate is high and conversion rate is low for Pinnacle site.** Let's analyze pinnacle site.

Return Customer’s Bounce Rate in Pinnacle Site

% of Total Visits



Platform (color) and % of Total Visits (size) broken down by Site. The data is filtered on New Customer, which keeps 0. The view is filtered on Platform and Site. The Platform filter keeps 14 members. The Site filter keeps

ReturnCustomerBounceRate

Platform	Site / Day								
	Pinnacle								
	January	February	June	July	August	Septem..	October	Novemb..	Decemb..
Android	31.17%	29.17%	42.55%	38.53%	47.88%	43.38%	48.00%	47.10%	45.66%
BlackBerry	25.00%	0.00%	20.00%	0.00%	80.00%	16.67%	33.33%	80.00%	50.00%
ChromeOS			0.00%		0.00%	25.00%	0.00%	0.00%	9.09%
iOS		29.31%	37.42%	39.04%	42.93%	42.48%	43.04%	42.84%	41.28%
iPad	25.10%	24.53%							
iPhone	26.33%	27.03%							
Linux	0.00%	0.00%	23.08%	0.00%	36.36%	16.67%	27.27%	25.00%	37.93%
Macintosh	30.15%	27.87%							
MacOSX		28.84%	42.33%	46.67%	50.14%	49.18%	46.52%	46.92%	48.23%
Other	0.00%	0.00%							
Unknown				0.00%					50.00%
Windows	22.91%	23.17%	32.42%	37.32%	40.43%	38.49%	38.12%	38.28%	39.99%
WindowsPhone					0.00%	0.00%	0.00%		0.00%

BounceRate broken down by Site and Day Month vs. Platform. The data is filtered on New Customer, which keeps 0. The view is filtered on Platform and Site. The Platform filter excludes Null. The Site filter keeps Pinnacle.

ReturnCustomerConvRate

Platform	Site / Day								
	Pinnacle								
	January	February	June	July	August	Septem..	October	Novemb..	Decemb..
Android	0.00%	1.39%	1.06%	0.92%	0.61%	0.74%	0.67%	1.29%	3.77%
BlackBerry	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ChromeOS			0.00%		0.00%	0.00%	0.00%	0.00%	0.00%
iOS		9.82%	8.90%	7.19%	6.57%	6.20%	6.03%	6.72%	7.52%
iPad	10.53%	11.95%							
iPhone	8.58%	8.11%							
Linux	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Macintosh	9.64%	10.76%							
MacOSX		10.02%	8.41%	6.57%	6.58%	6.18%	5.87%	6.37%	7.57%
Other	0.00%	0.00%							
Unknown				0.00%					0.00%
Windows	10.84%	11.43%	10.16%	8.59%	7.01%	7.02%	6.28%	7.02%	9.20%
WindowsPhone					0.00%	0.00%	0.00%		0.00%

ConvRate broken down by Site and Day Month vs. Platform. The data is filtered on New Customer, which keeps 0. The view is filtered on Platform and Site. The Platform filter excludes Null. The Site filter keeps Pinnacle.

Top 3 return customer visits from Windows, MacOSX, iOS. Bounce rate is increasing and conversion rate is decreasing from Jan to Dec in these major platforms. This is one of the potential problem in Pinnacle site need to concentrate.

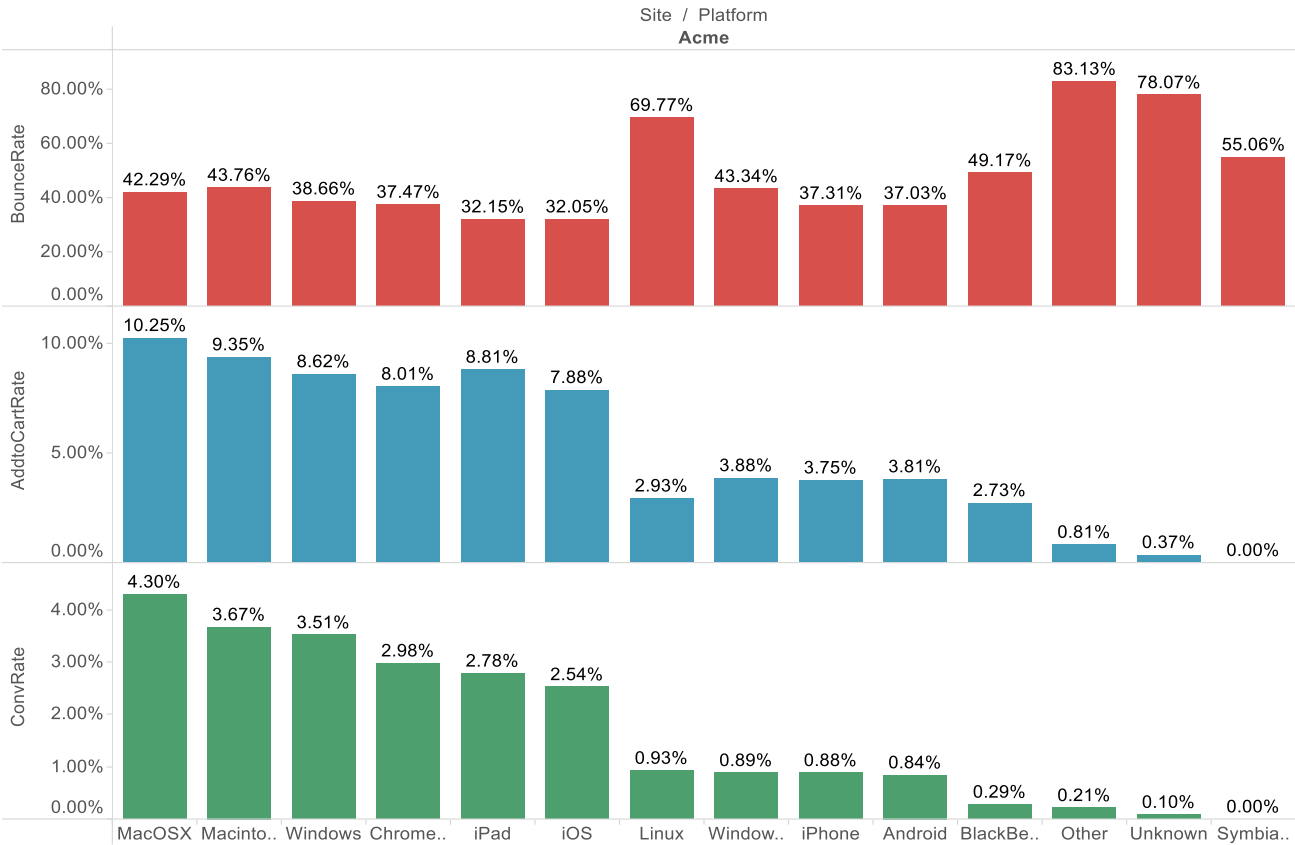
Best Performed Platform in Every Site

Platform with high conversion rate from every site is the best one.

Acme

Best Platform: MacOSX

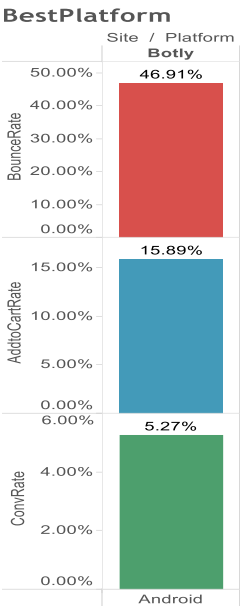
BestPlatform



BounceRate, AddtoCartRate and ConvRate for each Platform broken down by Site. The data is filtered on New Customer, which keeps Null, 0 and 1. The view is filtered on Site and Platform. The Site filter keeps Acme. The Platform filter excludes Null.

Botly

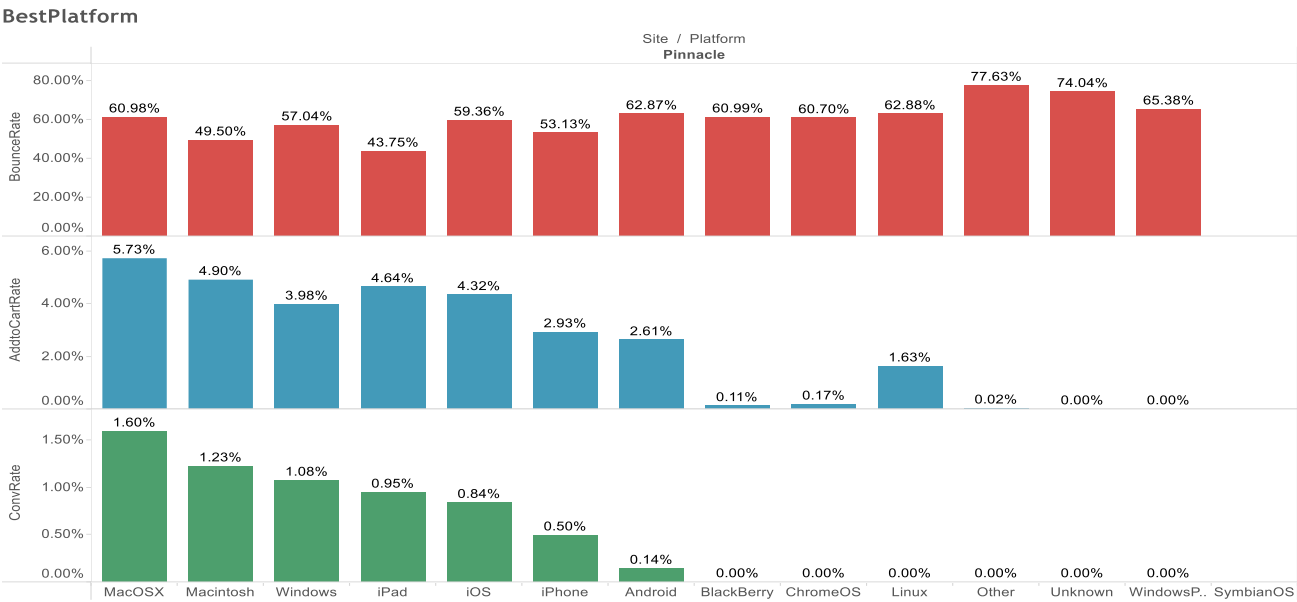
Best Platform: Android (Single Platform)



BounceRate, AddtoCartRate and ConvRate for each Platform broken down by Site. The data is filtered on New Customer, which keeps Null, 0 and 1. The view is filtered on Site and Platform. The Site filter keeps Botly. The Plat-

Pinnacle

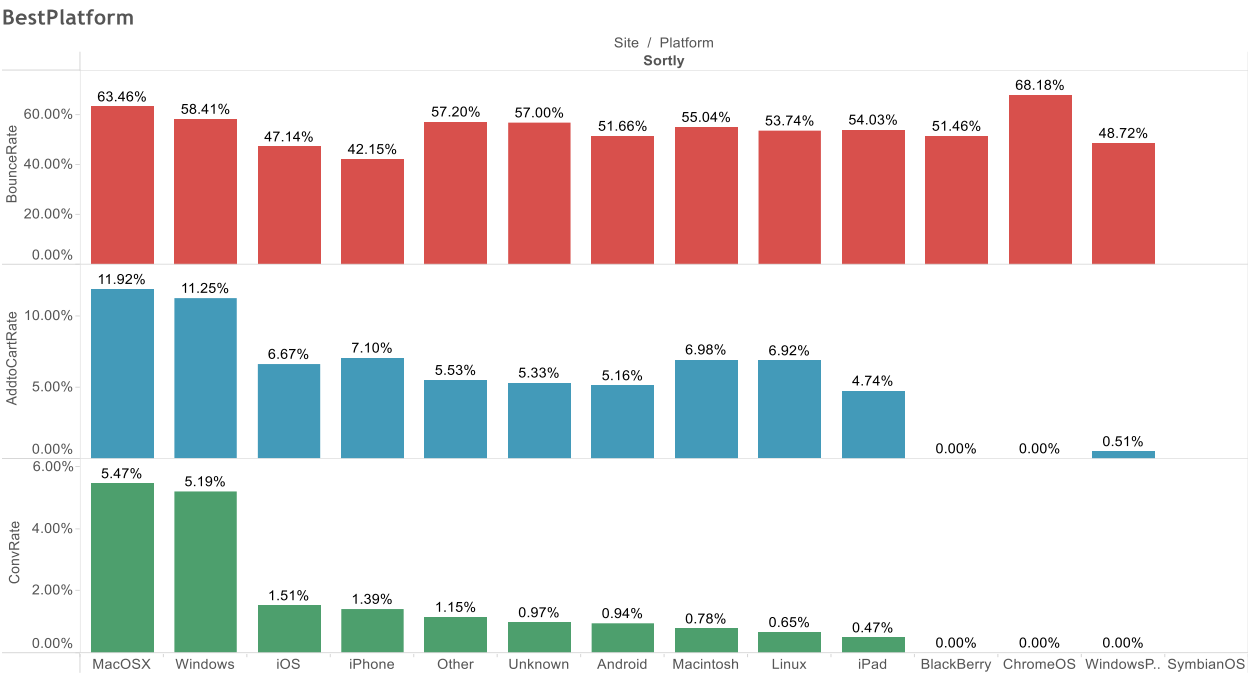
Best Platform: MacOSX



BounceRate, AddtoCartRate and ConvRate for each Platform broken down by Site. The data is filtered on New Customer, which keeps Null, 0 and 1. The view is filtered on Site and Platform. The Site filter keeps Pinnacle. The Platform filter excludes Null.

Sortly

Best platform: MacOSX



BounceRate, AddtoCartRate and ConvRate for each Platform broken down by Site. The data is filtered on New Customer, which keeps Null, 0 and 1. The view is filtered on Site and Platform. The Site filter keeps Sortly. The Platform filter excludes Null.

Tabular

Best Platform: iOS

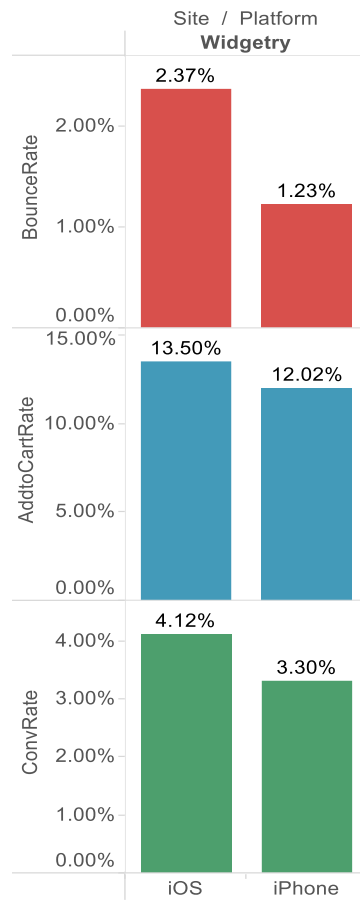


BounceRate, AddtoCartRate and ConvRate for each Platform broken down by Site. The data is filtered on New Customer, which keeps Null, 0 and 1. The view is filtered on Site and Platform. The Site filter keeps Tabular. The

Widgetry

Best Platform: iOS

BestPlatform



BounceRate, AddtoCartRate and ConvRate for each Platform broken down by Site. The data is filtered on New Customer, which keeps Null, 0 and 1. The view is filtered on Site and Platform. The Site filter keeps Widgetry. The

As a whole, MacOSX, iOS and Android are the best platforms, where majority of customer orders are through these platforms.

Easily Navigable/ User-friendly Site

Metrics used: Search pageviews/Order, Product pageviews/Order

UserfriendlySite

Site	ProdPgperOrder	SearchPgperOrder
Botly	8.5	23.3
Acme	58.5	128.4
Tabular	80.8	109.0
Sortly	100.6	160.1
Pinnacle	126.5	179.3
Widgetry	318.6	387.0

ProdPgperOrder and SearchPgperOrder broken down by Site. The view is filtered on Site, which keeps 6 of 6 members.

Botly is the user-friendly site. Because, number of pages navigated for an order is few.

Easily navigable platform for each site

Acme

Platform: **MacOSX**

UserFriPlat/Site

Site	Platform	ProdPgperOrd..	SearchPgperO..
Acme	SymbianOS		
	MacOSX	49	108
	Macintosh	56	123
	Windows	57	131
	iOS	69	135
	iPad	73	136
	ChromeOS	68	153
	iPhone	99	166
	Linux	158	241
	Android	146	344
	WindowsPhone	151	358
	Other	335	699
	BlackBerry	333	727
	Unknown	357	1,228

ProdPgperOrder and SearchPgperOrder broken down by Site and Platform. The view is filtered on Site and Platform. The Site filter keeps Acme. The Platform filter excludes Null.

Botly

Platform: Android (Single platform)

UserFriPlat/Site

Site	Platform	ProdPgperOrd..	SearchPgperO..
Botly	Android	8.49	23.26

ProdPgperOrder and SearchPgperOrder broken down by Site and Platform. The view is filtered on Site and Platform. The Site filter keeps Botly. The Platform filter excludes Null.

Pinnacle

Platform: MacOSX

UserFriPlat/Site

Site	Platform	ProdPgperOrd..	SearchPgperO..
Pinnacle	BlackBerry		
	ChromeOS		
	Linux		
	Other		
	SymbianOS		
	Unknown		
	WindowsPhone		
	MacOSX	85	132
	Windows	130	174
	Macintosh	109	179
	iOS	144	191
	iPad	144	221
	iPhone	210	239
	Android	749	1,156

ProdPgperOrder and SearchPgperOrder broken down by Site and Platform. The view is filtered on Site and Platform. The Site filter keeps Pinnacle. The Platform filter excludes Null.

Sortly

Platform: Windows

UserFriPlat/Site

Site	Platform	ProdPgperOrd..	SearchPgperO..
Sortly	BlackBerry		
	ChromeOS		
	SymbianOS		
	WindowsPhone		
	Windows	33.5	18.5
	MacOSX	27.5	21.1
	iOS	91.8	136.7
	iPhone	101.1	145.6
	Other	124.0	183.2
	Macintosh	153.0	184.0
	Unknown	144.3	229.5
	Android	143.0	284.0
	iPad	332.0	289.0
	Linux	282.1	487.6

ProdPgperOrder and SearchPgperOrder broken down by Site and Platform. The view is filtered on Site and Platform. The Site filter keeps Sortly. The Platform filter excludes Null.

Tabular

Platform: iOS (Single Platform after Feb)

UserFriPlat/Site

Site	Platform	ProdPgperOrd..	SearchPgperO..
Tabular	iPad	0.0	0.0
	iOS	92.4	124.7

ProdPgperOrder and SearchPgperOrder broken down by Site and Platform. The view is filtered on Site and Platform. The Site filter keeps Tabular. The Platform filter excludes Null.

Widgetry

Platform: iOS (Single Platform after Feb)

UserFriPlat/Site

Site	Platform	ProdPgperOrd..	SearchPgperO..
Widgetry	iPhone	194.5	290.4
	iOS	333.7	398.8

ProdPgperOrder and SearchPgperOrder broken down by Site and Platform. The view is filtered on Site and Platform. The Site filter keeps Widgetry. The Platform filter excludes Null.

Factors that affect gross sales

By performing linear regression, we can see what all factors influence gross sales.

After running regression by taking gross sales as dependent variable and Visits, distinct_sessions, orders, bounces, add_to_cart, product_page_views, search_page_views

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.992594
R Square	0.985242
Adjusted R Square	0.985237
Standard Error	4693.81
Observations	21052

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	7	3.1E+13	4.42E+12	200704.3	0
Residual	21044	4.64E+11	22031848		
Total	21051	3.14E+13			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-236.761	34.98942	-6.76665	1.35E-11	-305.343	-168.179	-305.343	-168.179
visits	0.819533	0.224977	3.642746	0.00027	0.378561	1.260505	0.378561	1.260505
distinct_sessions	-2.00975	0.196091	-10.2491	1.36E-24	-2.39411	-1.6254	-2.39411	-1.6254
orders	121.3074	0.918928	132.0097	0	119.5062	123.1086	119.5062	123.1086
bounces	0.4243	0.125734	3.374592	0.000741	0.177852	0.670748	0.177852	0.670748
add_to_cart	18.50195	0.766201	24.14766	4.2E-127	17.00014	20.00376	17.00014	20.00376
product_page_views	-0.05801	0.014704	-3.94529	8E-05	-0.08683	-0.02919	-0.08683	-0.02919
search_page_views	-0.00289	0.011399	-0.25381	0.799643	-0.02524	0.01945	-0.02524	0.01945

Only independent variable that is very significant is Orders.

Next round of regression between gross sales and Orders.

Linear Regression

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.992057
R Square	0.984177
Adjusted R Square	0.984176
Standard Error	4859.572
Observations	21052

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	3.09E+13	3.09E+13	1309302	0
Residual	21050	4.97E+11	23615437		
Total	21051	3.14E+13			

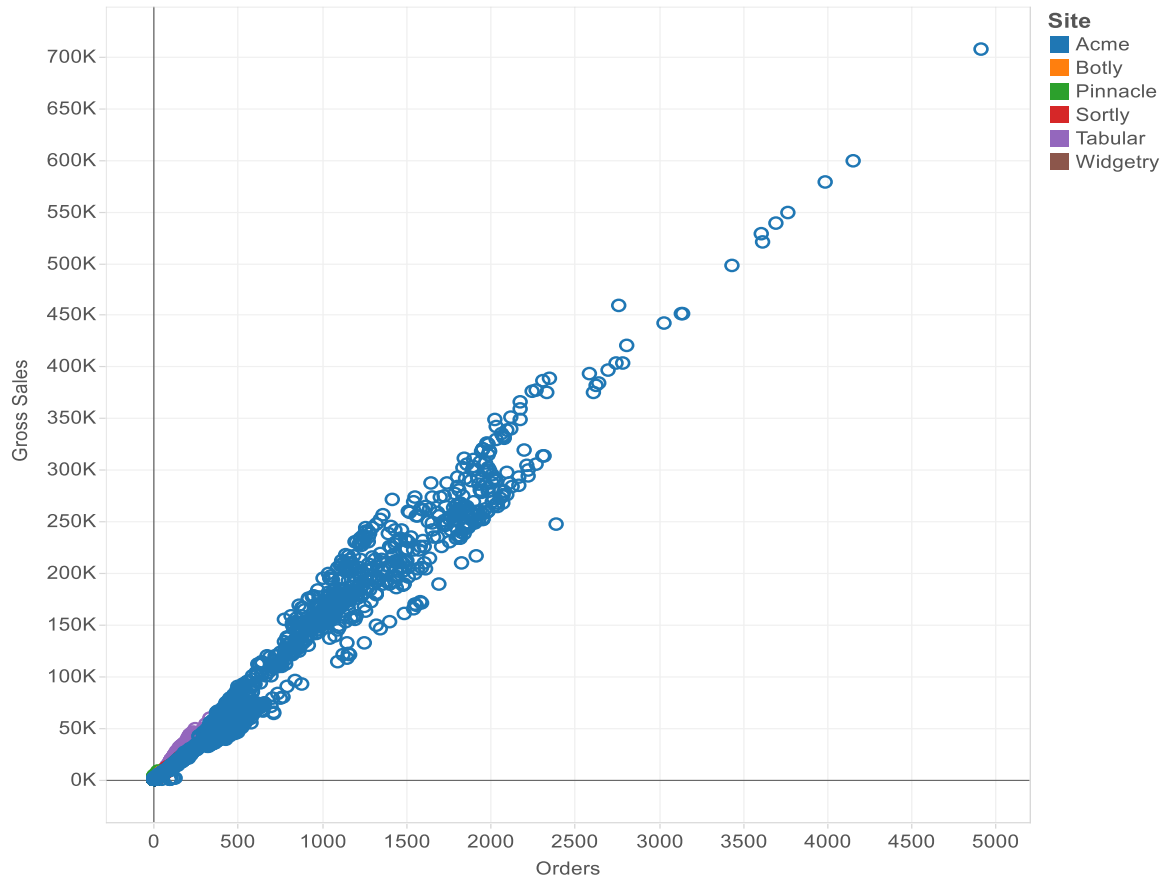
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-199.828	34.44167	-5.80191	6.65E-09	-267.336	-132.319	-267.336	-132.319
orders	147.2157	0.128657	1144.247	0	146.9635	147.4679	146.9635	147.4679

Orders explains the 98.41% of variability in gross sales. So, order is the only factor majorly affects gross sales. We can predict gross sales from orders by the following equation.

Gross Sales = -199.828 + 147.2157 * Orders

**Scatter plot shows strong positive linear correlation between gross sales and orders.
Because of linear correlation, conversion rate (Orders/Visits) and Gross Sales/Visits
pattern will be same.**

OrdersVsGrossSales



Orders vs. Gross Sales. Color shows details about Site. The view is filtered on Site, which keeps 6 of 6 members.

Note: Used Tableau and Excel for the analysis.

Thank You