

Adventure Works Cycles

Exploratory Data Analysis (EDA) Using SQL

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A solid blue horizontal bar spanning the width of the slide at the bottom.

Online vs Offline Orders YoY

Table 1: Online and Offline Orders

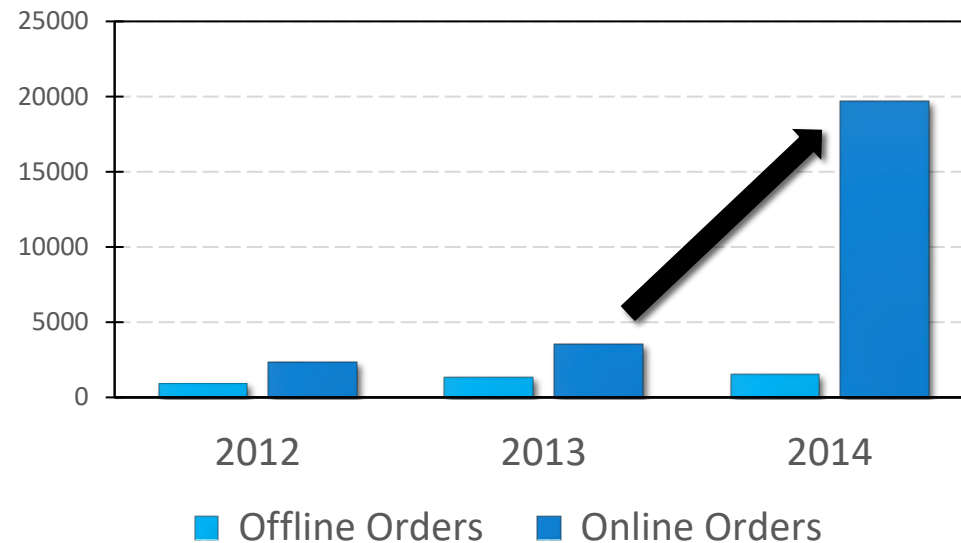
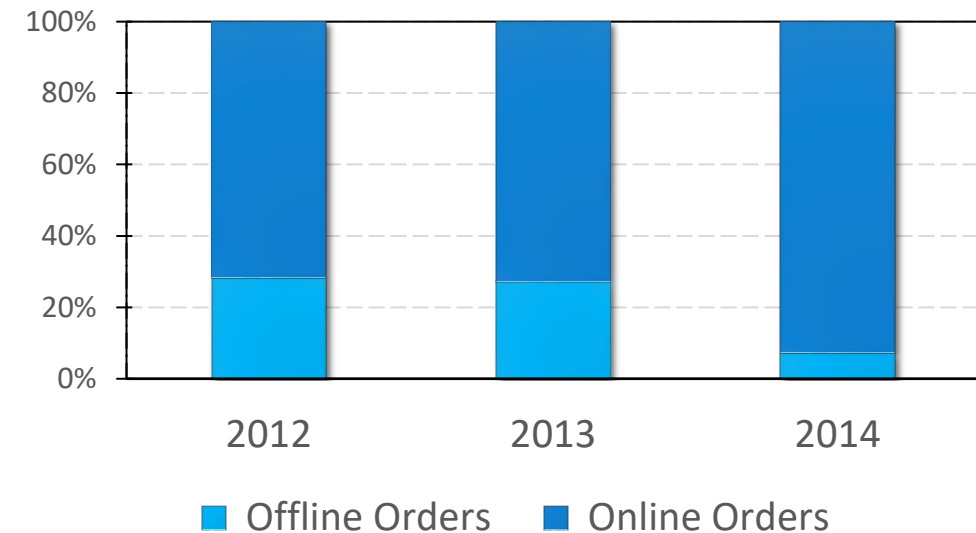


Table 2: Online and Offline Orders



Summary:

- Drastic Increase in Online Sales by product mix in 2014 (please see Table 1)
- Steady decrease in Offline Sales YoY on cumulative basis (please see Table 2)

Total Orders YoY Online vs Offline

Table 1: Total Orders

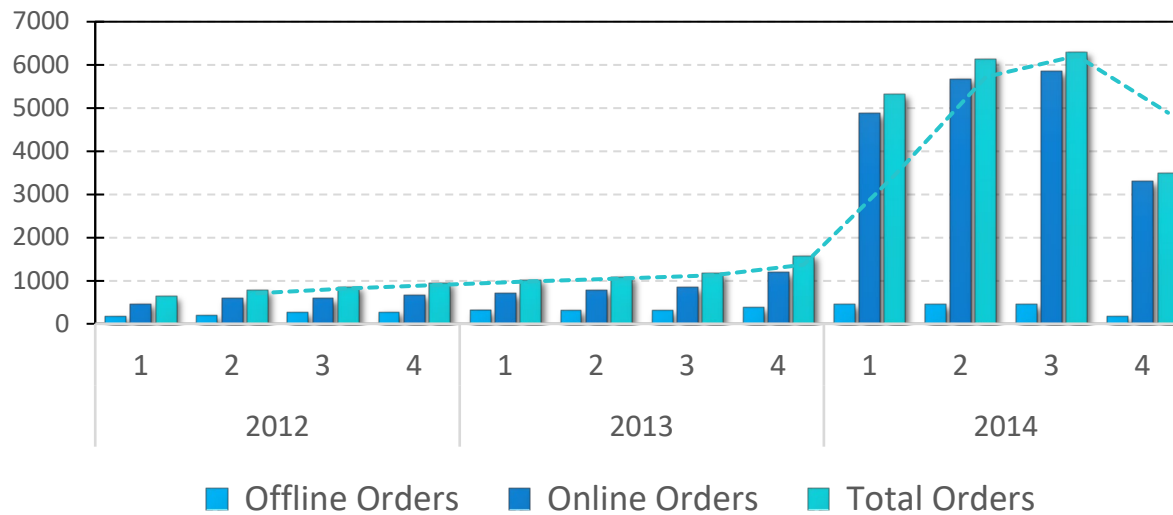
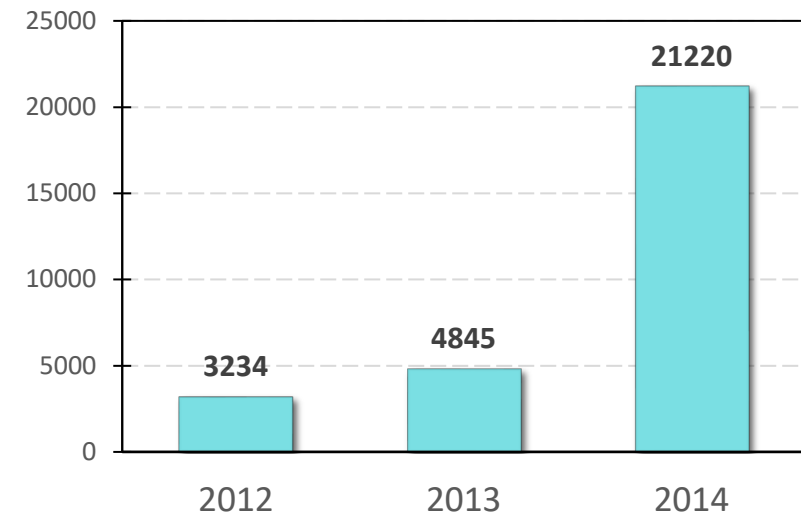


Table 2: Total Orders



Summary:

- Total Orders are driven by increase in Online orders. There is a large jump in Total Orders in 2014. See Table 1
- Steady YoY increase in Total Orders - from almost 5,000 (in 2013) to over 21,000 (in 2014). See Table 2
- 87% of all sales were made online (total 2012,2013,2014)
- 13% of all sales were made offline (total 2012,2013,2014)

Online vs Offline Orders by FY over FQ

Table 1: Online orders by FY over FQ

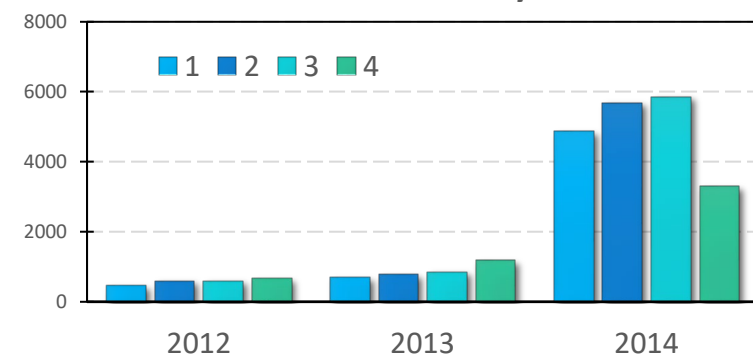


Table 1A: Online orders by FQ over FY

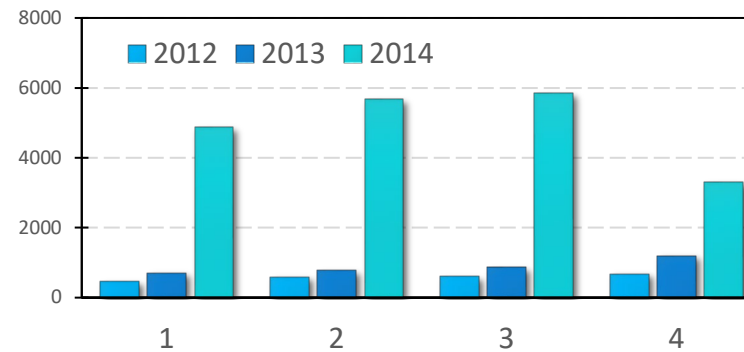


Table 2: Offline Orders by FY over FQ

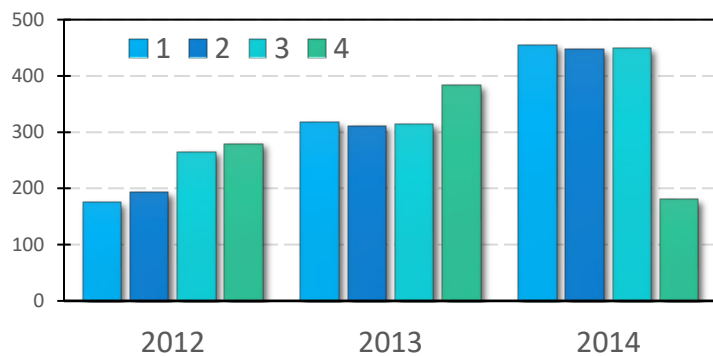
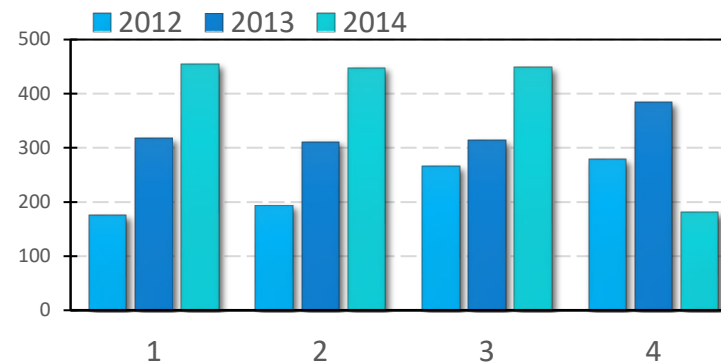


Table 2A: Offline Orders by FQ over FY



Summary:

- Online Orders drastically increased in 2014. See Table 1
- Offline Orders Increase in each FQ YoY (Q1, Q2 and Q3). See Table 2
- Offline and Online Orders were the highest in Q4 for 2012 and 2013
- Online and Offline Sales dropped in Q4 2014.

Recommendation:

- The online business should be further expanded due to its large contribution to the total orders
- Conduct a market research (competitor analysis, online traffic, marketing expenditure, inventory) to understand sales drop in Q4, 2014
- Review Pricing and Marketing Strategies to identify shortcomings in Q4, 2014

Top Product Mix OFFLINE vs ONLINE YoY by FQ

	2012		2013		2014	
FQ	Offline	Online	Offline	Online	Offline	Online
1	Bikes-Accessories-Clothing-Components	Bikes	Bikes-Accessories-Clothing-Components	Bikes	Bikes-Accessories-Clothing-Components	Accessories
2	Bikes-Accessories-Clothing-Components	Bikes	Bikes-Accessories-Clothing-Components	Bikes	Bikes-Accessories-Clothing-Components	Accessories
3	Bikes-Accessories-Clothing-Components	Bikes	Bikes-Accessories-Clothing-Components	Bikes	Bikes-Accessories-Clothing-Components	Accessories
4	Bikes-Accessories-Clothing-Components	Bikes	Bikes-Accessories-Clothing-Components	Bikes	Bikes-Accessories-Clothing-Components	Bikes-Accessories

Summary:

- Product Mix which consists of all products (Bikes, Accessories, Clothing, Components) remained Top Offline Seller for 2012,2013 and 2014.
- There was '0' Sale for full Product Mix (Bikes, Accessories, Clothing, Components) Online
- 'Bikes' were Top Online Sellers for 2012 and 2013. There is a change in Top Seller in 2014 from Bikes to Accessories. 'Bikes' became the Bottom Online Selling Product mix in 2014.

Recommendation:

- Create a recommendation system on the website to offer customers to accompany their purchase with another item. Introduce bundling strategy where we offer a discount on a bundle purchase.
- Conduct 'Bikes' price comparison analysis online to find out why 'Bikes' went from being Top Seller to Bottom Seller

Bottom Product Mix OFFLINE vs ONLINE YoY by FQ

	2012		2013		2014	
FQ	Offline	Online	Offline	Online	Offline	Online
1	Accessories	n/a	Bikes-Accessories	n/a	Accessories	Bikes
2	Clothing	n/a	Accessories	n/a	Accessories	Bikes
3	Clothing	n/a	Accessories	n/a	Bikes-Accessories	Bikes
4	Accessories	n/a	Accessories	Clothing	Accessories-Components	Bikes

Summary:

- 'Accessories' remained the Offline Bottom Selling product mix over 3 years, except Q2 and Q3 in 2012
- 'Bikes' became the Bottom Online Selling product mix in 2014 after being Top Selling Online product for two consecutive years.

Recommendation:

- Introduce Upselling incentives for Store employees to boost Sales of 'Accessories' and 'Bikes'
- Offer a discount on the second or third product to increase an average volume order