

Amazon Case Study: Use of Data to Create Loyal Customers

Megan Bell

University of Wisconsin

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Amazon Case Study: Use of Data in Support of Loyal Customers

Introduction

Amazon's mission is "to be Earth's most customer-centric company" (Amazon.com, 2014). Amazon describes their commitment as "customer obsession" where leaders begin and end work with the customer. Kaufman and Horton (2015) identify this approach as engaging customers through a journey known as the Digital Involvement Cycle (DIC). Unlike traditional marketing where a funnel approach filters customers from awareness to point-of-sale, DIC recognizes that a customer purchase decision is really a journey to a lasting relationship.

This paper presents a case study of how analytics reveal Amazon's success in delivering a tailored shopping experience that creates lasting customer relationships and business success. The first report section addresses Amazon's key measure of success, which is financial performance based on delivering customer value. The next two sections review Amazon's ability to leverage data for optimal website uptime and to create Amazon's highest customer value through its recommendation system. The final four sections examine Amazon's use of data in well-defined converged media strategies which attracts customers and Amazon Prime which converts and retains customers. Finally, a conclusion summarizes Amazon's success through its customer focus and culture of metrics.

Amazon's Website Central to Customer Interactions

Sales Revenue an Important Indicator of Success

The Amazon.com website and related mobile applications are the epicenter of Amazon's customer experience. Amazon measures its success first by positive business outcomes that are good for the customer. For example, Amazon (2016) achieved the status of fastest U.S. company

to reach \$100 billion in sales in 2015 due to its customer-obsessed focus. This success included more than 70,000 vendors who each sold more than \$100,000. Amazon's economic success is also apparent in that Amazon was responsible for contributing 65.9% growth in US online retail with a total value of transactions reaching \$147.0 billion in 2016 (Zaroban, 2017). This is a 31% increase in Amazon sales transactions versus 2015. Amazon's sales figures are why Internet Retailer named Amazon as the top company in its 2016 Top 500 list.

Website Performance Impacts Sales

Delivering consistent website availability is paramount to providing customers with website continual. As illustrated in Appendix A Figure A1, Amazon receives more than 600 million visits annually, and about half of traffic comes from mobile devices (Rosenstein, 2016). Website visitors spend an average of four-and-a-half minutes per visit and browser through more than 7 web pages within a visit. The criticality of Amazon visitor time was benchmarked as a "100-ms increase in the page load time decreased sales by 1 percent" (Kohavi & Longbotham, 2010). Amazon has invested in organizational realignment to assure consistent website performance meets customer needs. (Selinger 2014).

Algorithms: Personalization Drives Purchases

Amazon's most significant use of data involves proprietary algorithms that analyze millions of Amazon's customer page views associated with product discovery and purchasing. The algorithms make use Amazon's own customer data to deliver personalized recommendations based on shopping behaviors. Amazon refers to these algorithms as "item-to-item collaborative filtering" to customize overall browsing experience (Linden, Smith, and York, 2003; Linden, Jacobi, & Benson, 2001). Collaborative filtering begins by examining shopping and purchase patterns of

similar shoppers and similar items. Depending on the purpose of an algorithm, differing mathematical approaches such as cluster analysis may be used for defining a particular algorithm for use. Algorithms may be associated with customer personality types as part of understanding and performance tuning. Adamopoulos and Todri (2015) studied algorithm performance across 906,277 Amazon purchases from 81,475 users who posted purchase details on Twitter. Similar to modeling work performed by Amazon, Adamopoulos and Todri were able to segment shopper personalities and understand the relative relationships of recommendations versus customer personality hierarchies. This study corroborated the compatibility of Amazon's personalized recommendation systems to customers' needs and values. Former employee Greg Linden (2006) developed one of the early recommendation algorithms that placed potential product items in a customer's shopping cart. Linden proved the return on investment through pilot testing to demonstrate success (Kohavi & Longbotham, 2010; Linden, 2006). From inception to production, Amazon invested in assuring the success of its recommendations systems.

The importance of Amazon's personalization algorithms may be observed in claims that 35% of Amazon sales originated from personalization algorithms (Marshall, 2006). Recommendations systems research confirms this claim and that different types of personalization recommendations lead to differing impacts on revenue as observed in Figure 1 (Burstein & LaMontagne, 2015). As an example, recommendation types such as "visitors who viewed this product ultimately bought" can contribute revenue levels of 25.1%. In some cases, recommendation types such as "Visitors who viewed this product also viewed" may contribute more than 60% of revenue for a business. This presence of this recommendation type on a product page correlates to an important part of the customer shopping process and contributes to converting customer leads to sales.

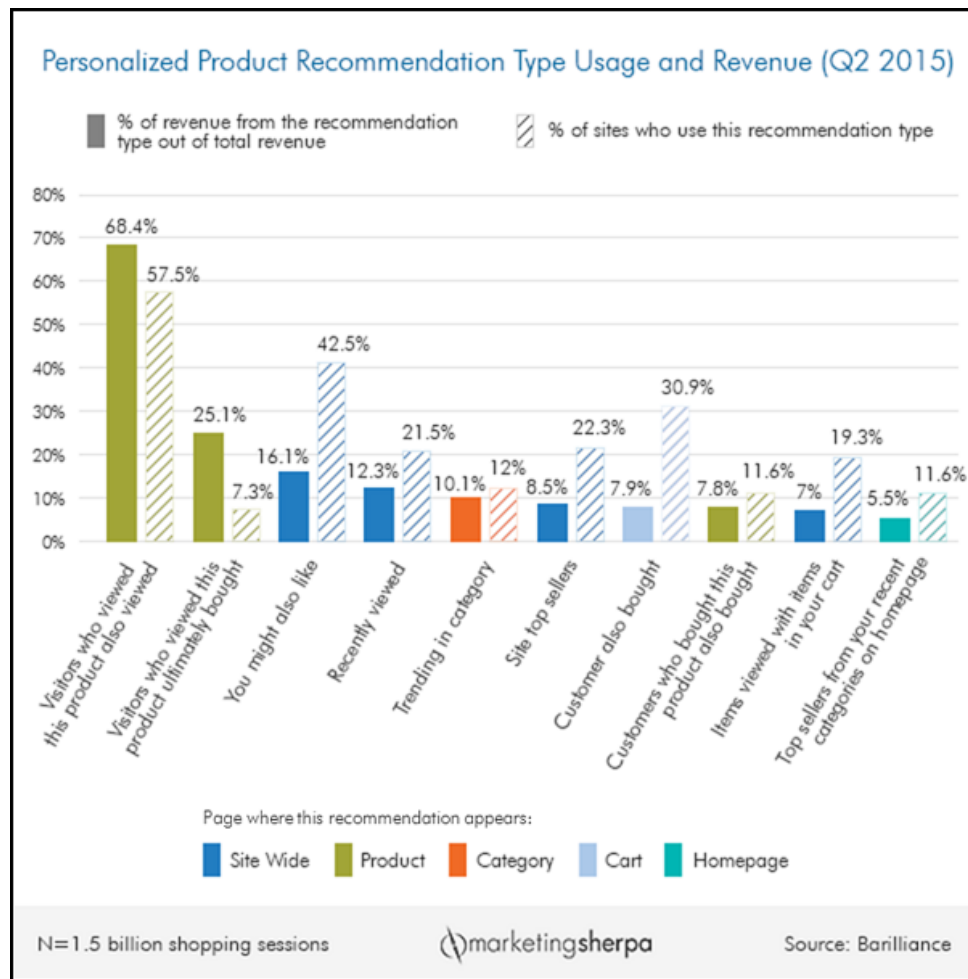


Figure 1. Bar chart of most effective types of personalized product recommendations from Bonilliance. Reprinted from MarketingSherpa Personalized Product Recommendation Type Usage and Revenue (Q2 2015) Copyright 2017 by CRIP.

Converged Media Drives New and Return Traffic

To sell products, Amazon must continually attract customers and retain customers. Engaging customers begins at the beginning of product discovery. Amazon employs a combination of Amazon.com customer reviews, social media and paid search to reach and retain potential customers. Reviews are a sustaining factor for long-term customer retention.

Amazon's Earned Media: Reviews

Amazon's customer reviews are its goldmine for engaging customers. These reviews are a form of earned media from shoppers who endorse and criticize products. Between 1995 and 2013, shoppers posted more than 35 million reviews, which amounts to approximately 1.9 million reviews per annum (Leskovec, 2013). Analysis of reviews data displayed in Appendix B Figure B1 indicates that reviews are more likely to exist for products costing less than \$250 and have a slight positive skew (Woolf, 2014). To further highlight this skew, ratings for electronics reviews are presented in Appendix B Figure B2. To add balance during the shopping process, Amazon prominently displays positive and negative reviews and enables customer ratings of reviews to facilitate filtering. The influence of reviews is that customers purchase more product and have higher social media engagement (Bao & Chang, 2013).

Social Media

Social media measures describe customer involvement and represent relationships that exist outside Amazon.com. For Amazon, social media represents an important supplementary channel for customer reach. Amazon's social media engagement complements its reviews in that both amplify Amazon's overall cross-channel media reach (Bao & Chang, 2013). In 2013, Amazon's investment in social media was estimated to drive at least 3.7% of its website traffic (Strambor, 2013). Amazon's has strong social media metrics for Facebook and Twitter with both having similar engagement based on a normalized engagement scores as summarized in Appendix D Figures D1 and D2.

Facebook is Amazon's largest social media community. Currently, Amazon had more than 26 million followers on its Facebook page with more than 27 million Facebook Likes and more

than 18,000 fan posts (Talkwalker, 2017; Umetric, 2016). Fan posts are strongly associated to deals and contests, and comment volume is higher with positive comment activity as observed in Appendix D Figure D1. Amazon's average posting response time is less than an hour for customer response.

Amazon has 2.54 million Twitter followers. Twitter represents the largest share of Amazon's social media engagement mix with an estimated 60% of Amazon's engagement activity (Talkwalker, 2017). In terms of engagement strength, Amazon averaged 48 retweets per post and had the ninth highest Twitter ranking in 2013 (Strambor, 2013). Tweets associated with hash tags have the highest engagement as observed in Appendix D Figure D3. Due to the strength of Amazon's Twitter community, Amazon introduced the hashtag #AmazonCart in 2014 for Twitter shoppers to add products to their shopping carts (Lomas, 2014).

Paid Media

A PowerReviews study (2016) of online shoppers found that nearly 40 percent of surveyed shoppers began their purchase journey on Amazon with reviews. A chart with a similar trend is located in Appendix C Figure C1. To gain more product research share, Amazon invests in paid search engine ads since 35% of shoppers initiate shopping with a search engine (PowerReviews, 2016).

Amazon pays Google for prominent display in Google search engine text ad results. In 2013, Amazon paid Google \$157.7 million for search, making it one of Google's biggest ad spenders (Peterson, 2014). Between January and November 2016, Amazon was measured with a 26% share of voice on the top 50,000 retail keywords in text ads (Sullivan, 2017). While Amazon invests in text ads, it does not pay for products listing ads (PLAs) (Miller & Clifford, 2012).

Amazon wants customers conducting product-specific searches on its site. However, Amazon is known to test for strategic investment and ran a 10-day study conducted by company AdGooroo (Sullivan, 2017). In this study, Amazon tested PLA search and sponsored 377 out of the 2,500 top retail keywords; it ranked at number 22 for total click-through rates. In a subset search for home goods, Amazon performed in the top 10 of website properties. Given these results, Amazon would dominate Google's search landscape if they invested in Google search engine and PLA search.

Converting Customers to Lasting Relationships

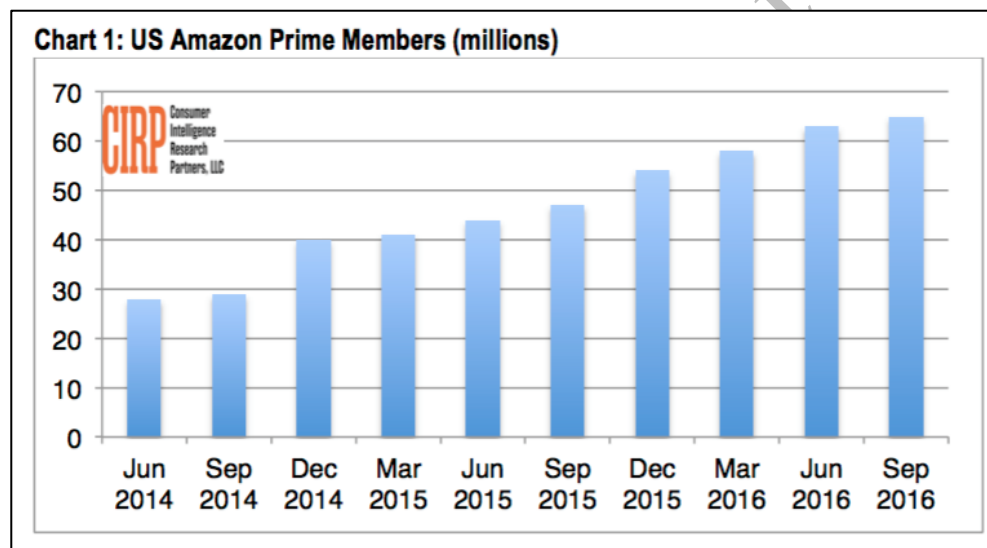


Figure 2. Two-year snapshot of Amazon Prime growth. Reprinted from “Amazon Prime Gains on Improved Retention (Research summary release)”, Consumer Research Intelligence Partners, LLC (CRIP), 2016, Chicago, IL. Copyright 2017 by CRIP.

Amazon's long-term focus is lasting customer relationships where customers use Amazon.com as their shopping destination (Tierney, 2017). The key to lasting customers is Amazon's Prime membership program. As of February 2017, it is estimated that Amazon has 65

million subscribers, as displayed in Figure 2, who delivered \$6.4 billion U.S. revenue in subscription fees to Amazon's 2016 revenue (Gustafson, 2017). A recent Prime study by research firm CRIP (2016) indicated that Amazon's approach of a free 30-day Prime membership results in a conversion rate of 70%. In addition, more than 90% of Prime members renew each year (Kline, 2015). Prime customers spend about \$1,200 a year on average while non-members spend about \$700 a year. Prime is meeting its objective according to Bezos, "We want Prime to be such a good value, you'd be irresponsible not to be a member" (Amazon.com, 2016).

Conclusion

Amazon is a customer-centric business where a culture of metrics enables leaders to combine instinct with data to achieve results (Selinger, 2014). This approach engenders a business culture where data adds customer value through features such as personalized recommendations and specialized review systems. Amazon's prowess with analytics are also evident in how it approaches paid search and maintains active social media channels that increase website traffic and build customer loyalty. Finally, Amazon retains customer through Prime.

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Appendix A

Website Traffic Snapshot

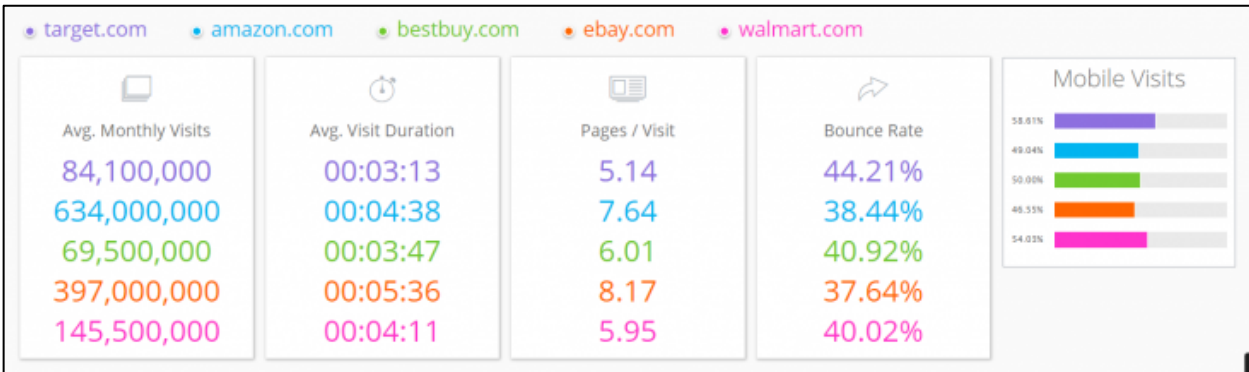


Figure A1. SimilarWeb snapshot of monthly website statistics for Amazon and key competitors.

Reprinted from “How America’s E-commerce Giants Compare across the Desktop, Mobile Web and Mobile app Arenas”, The Next Web (TNW), 2015, Netherlands, retrieved from

https://thenextweb.com/market-intelligence/2015/01/14/americas-e-commerce-giants-compare-across-desktop-mobile-web-mobile-app-arenas/#.tnw_EmkRp7aI. Copyright 2017 by The Next

Web.

Appendix B

Amazon Reviews

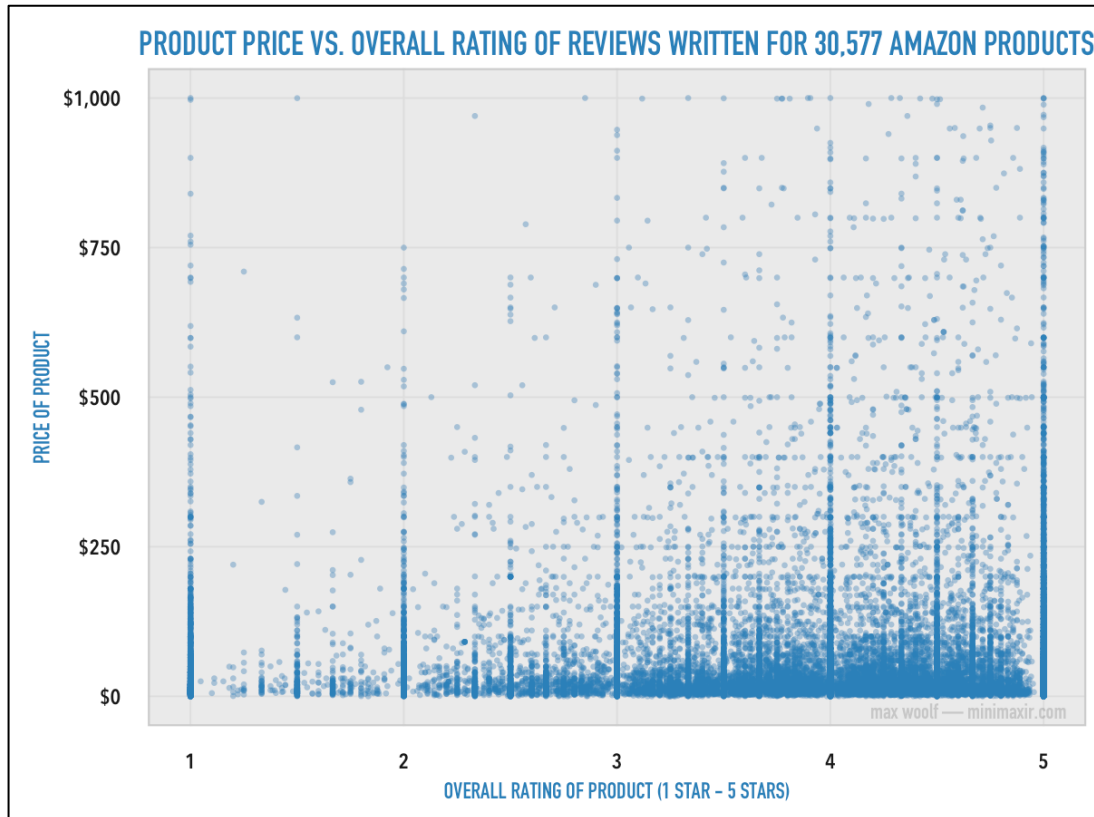


Figure B1. Scatterplot of Amazon overall product rating by product price (1995 to 2013).

Reprinted from “A Statistical Analysis of 1.2 Million Amazon Reviews”, M, Woolf, 2014,

retrieved from <http://minimaxir.com/2014/06/reviewing-reviews/>. Copyright 2017 by Max

Woolf.

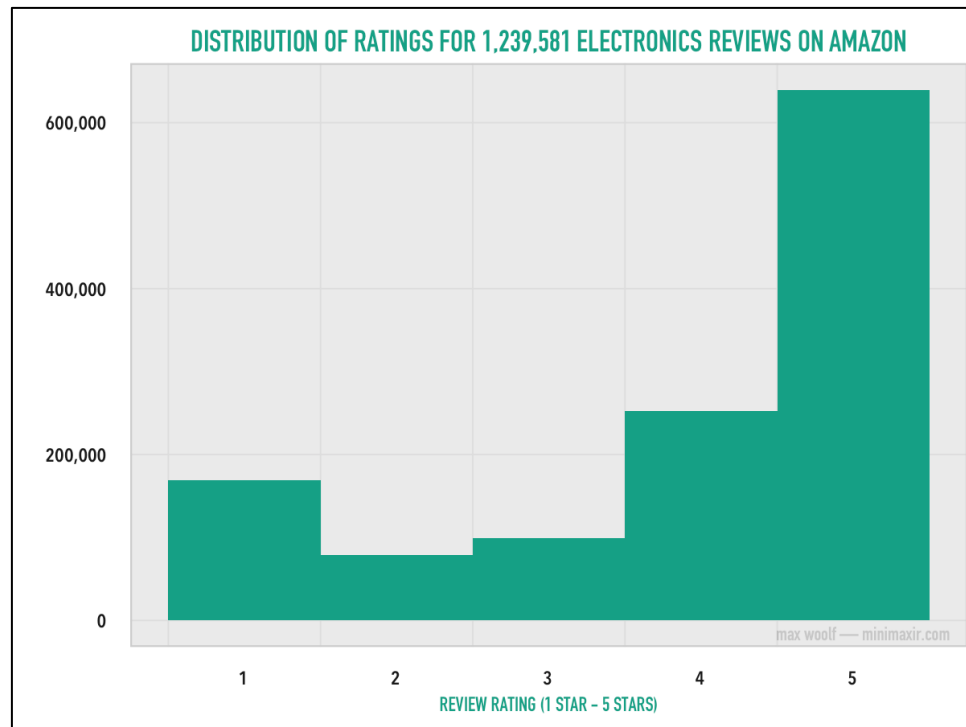


Figure B2. Scatterplot of Amazon electronics products ratings by number of reviews (1995 to 2013). Reprinted from “A Statistical Analysis of 1.2 Million Amazon Reviews”, M, Woolf, 2014, retrieved from <http://minimaxir.com/2014/06/reviewing-reviews/>. Copyright 2017 by Max Woolf.

Appendix C

Paid Search

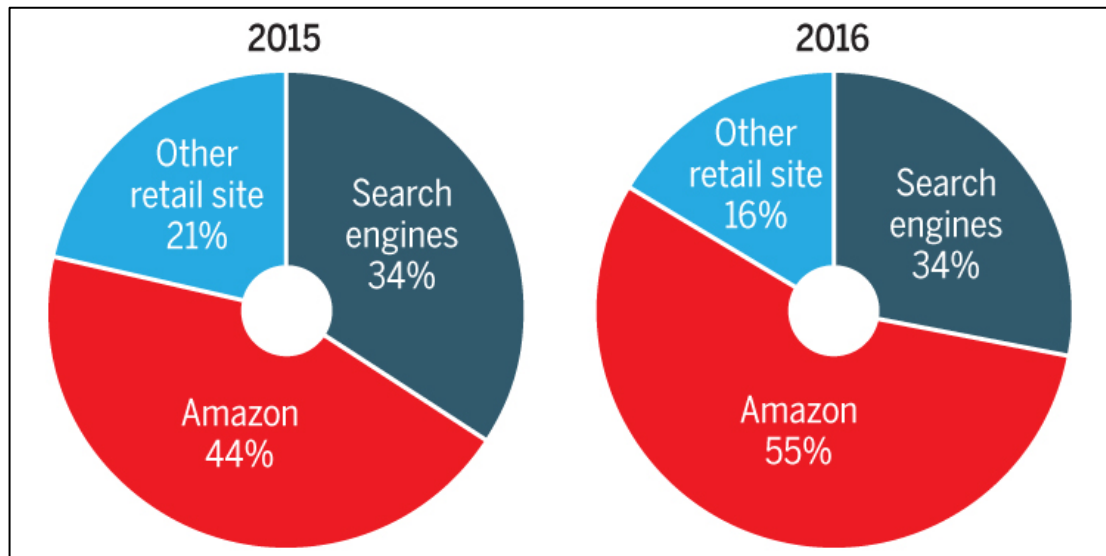


Figure C1. Pie charts displaying 2015 and 2016 consumer-stated start point of product search.

Reprinted from Internet Retailer, 2016, retrieved from

<https://www.internetretailer.com/trends/consumers/>. Copyright 2017 by Internet Retailer.

Appendix D

Social Media

BRAND POSTS	FAN POSTS	CONTENT & CAMPAIGNS
Engagement Score 43	Total Fan Posts 17,900	Most Engaging Content Type Occasion specific deals
Total Posts 575	Brand Response Rate 33.63%	Least Engaging Content Type Photos
Total Likes 381,065	Avg. Reply Time 56 mins	Most Prolific Content Type Brand News
Total Comments 163,132	General Sentiment Neutral	
Total Shares 99,089		

Figure D1. Summary metrics for Amazon's Facebook page (2015). Reprinted from "Amazon Social Media Report for October 1, 2015 to December 31, 2015 (Presentation)", Umetrics, Inc., 2016, retrieved from <https://www.slideshare.net/unmetric/amazon-social-media-analysis-q4-2015>. Copyright 2017 by Umetrics, Inc.

BRAND TWEETS	USER TWEETS
Engagement Score 42	Total Mention 1,110,486
Total Proactive Tweets 1,744	Total Retweets 72,959
Retweets Total 165	Response Rate (%) 0.03%
Replies Total 391	Average Reply Time (mins) 158
Favorites Total 85,155	

Figure D2. Summary metrics for Amazon's Twitter account (2015). Reprinted from "Amazon Social Media Report for October 1, 2015 to December 31, 2015 (Presentation)", Umetrics, Inc., 2016, retrieved from

<https://www.slideshare.net/unmetric/amazon-social-media-analysis-q4-2015>. Copyright 2017 by Umetrics, Inc.

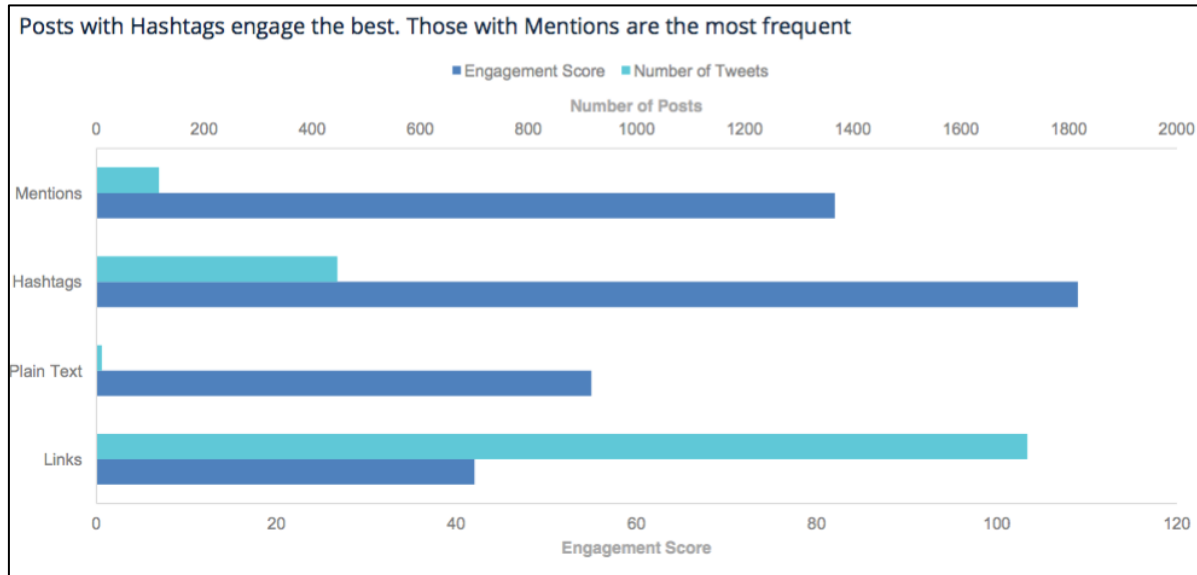


Figure D3. Summary metrics for Amazon's Twitter hash tag posts (2015). Reprinted from "Amazon Social Media Report for October 1, 2015 to December 31, 2015 (Presentation)", Umetrics, Inc., 2016, retrieved from <https://www.slideshare.net/unmetric/amazon-social-media-analysis-q4-2015>. Copyright 2017 by Umetrics, Inc.