

Does eWOM Affect Demand for Mobile Device Applications?

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Electronic Word of Mouth (eWOM) is a powerful instrument that marketers can use to more effectively spread the message about their products. Reviewing and rating systems attached to product sites allow consumers to be able to convey their experiences with products and represent a form of eWOM. Understanding how eWOM affects consumer behavior can help marketers better calibrate their promotional activities. The focus of this paper is to assess the relationship between the ratings and reviews associated with Apple apps, as a case in point, and its number of downloads as a test case from which to speculate about the effectiveness of the rating and review system's influence on consumption.

INTRODUCTION

“There’s an app for that” is a very simple, yet profound statement that reflects the trend of technological innovation in the 21st century. Whether it’s learning to cook a culinary masterpiece, checking movie times, or just playing a game to pass the time while waiting in an airport terminal, each activity is increasingly being accomplished with the aid of smartphone applications licensed by Apple or its competitors. These apps can be an immense help in accomplishing tasks that come about in everyday life. According to About.com, there are approximately 1,500,000 apps that are live and available (a June 2015 number) to download from Apple (Costello, S., 2015).

With all these different apps, the question for consumers is: How does one decide which apps are worth purchasing? For marketers, the question becomes: What marketing tools will most influence the consumer buying behavior so that the target audience will purchase a specific app? One answer to these questions lies in a form of electronic word of mouth, specifically the App Store product rating and reviewing system. Both marketers and consumers can benefit from this rapidly growing system. Consumers gain insights and opinions from fellow users regarding the perceived value of an app. When properly harnessed, this community can give marketers an inexpensive form of viral marketing to influence the consumer buying behavior as it relates to app purchasing decisions.

ELECTRONIC WORD OF MOUTH

The notion that buyer behavior is influenced by word of mouth is not a new idea (Brown and Reingen, 1987). What *is* new, however, is word of mouth’s expanding role on the Internet. Dellarocas (2003) put it best when he stated that, “word of mouth is being given new significance by the unique

property of the Internet” (p.1407). With all this interest surrounding electronic word of mouth (eWOM), what exactly is it? According to **Professor Thorsten Hennig-Thurau** at Westfälische Universität Münster et al. (2004), eWOM is “any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet” (p. 39).

Marketers use electronic word of mouth in the form of viral marketing. Viral marketing can be subdivided into two types: organic and amplified (Sharma, 2011). *Organic* viral marketing occurs when customers are satisfied with the product or service they received and voluntarily advocate its purchase to others. *Amplified* viral marketing occurs when marketers proactively launch campaigns to increase WOM activity in communities whether new or existing. Either can be accomplished through a number of channels encompassed in social networking sites. These channels include emails, video sharing platforms, tweets and micro blogs, online stores/review forums, and personal blogs and websites.

In their research, Lee et al. (2008) examined the source of online recommendations or reviews. Their results conveyed that – to a degree – the recommendations made between consumers outweighed the recommendations of an expert in terms of an influence on the consumer buying process. How is this possible? According to Feick and Price (1987), this phenomena is accomplished with the help of “market mavens,” or individuals with general marketplace knowledge or expertise. Their research suggests that consumers are able to discern the difference between these individuals and experts, and use the market maven’s information to make consumer buying decisions. With the help of a market maven, consumers feel confident in the validity of consumer-provided information online. Thus, they believe the information, or recommendation, provided by online consumers to be more credible than that of experts.

Zhu et al. (2010) conducted a study to examine the effects of eWOM valence on eWOM persuasiveness. The results indicated that there was a direct interaction between review valence and consumption goals on perceived review persuasiveness. If a product received a large quantity of good reviews, there was an increased likelihood of the consumer being persuaded to purchase it.

A HIGH APP RATING IS NO GUARANTEE OF RETURN SALES

Even if a user recommendation is highly trusted, user recommendations (by awarding a four or five star rating in electronic WOM) is no guarantee that satisfied (four star) and extremely satisfied (5 star) customers will repurchase the product in the future. Jones and Sasser (1995) found that “except in a few rare instances, complete customer satisfaction is the key to securing customer loyalty and generating superior long-term financial performance.” Their study found that those customers who were less than completely satisfied (less than a 5 star rating) were more likely to defect and purchase other products. This is especially true with the low price points of online applications and the ease with which one can inexpensively try other similar products. Jones et al. (1995) speak of a satisfaction - loyalty link. Their study found that those customers who are totally satisfied (a 5 star rating) are six times more likely to repurchase a company’s product in the next 18 months. The implications of their study at Xerox is profound. Jones et al. (1995) says that, “merely satisfying customers who have the freedom to make choices is not enough to keep them loyal. The only truly loyal customers are totally satisfied customers.”

EWOM AND CUSTOMER BEHAVIOR

In examining why satisfied customers defect, Jones et al. (1995) classified four types of customers.

1. The Loyalist and Apostle: This customer is one with high satisfaction, high loyalty, and will be supportive of your product. The loyalist is the bedrock of the company’s customers. These are the 5 star customers. Their high ranking of your product is better than advertising. Jones et al. (1995) maintains that the apostle customers at companies like Intuit tell up to 5 new people about their experience with the product and company.
2. The Defector and Terrorist: This customer is one with low to median satisfaction for the product, has low to median loyalty, is behaviorally willing to leave or is unhappy and will leave the

product for something else. There are two ways to deal with this customer: correct their problems and move them back to apostles, or drop them as customers because they will overuse the company resources. The cost of maintaining these unconvinced customers outweighs the benefits to the company. They need to move on as they often spread counterproductive stories about the product.

3. The Mercenary: This customer uncharacteristically has high satisfaction, has low to median loyalty, and has a low commitment to the product (coming and going at will). The cost of maintaining these customers is high and they display no loyalty to the company.
4. The Hostage: This customer is one with low to median satisfaction and high product loyalty, but feels unable to leave the product. They are trapped. These customers are found in areas where there is only one supplier of the app or product that does what they need. It makes no difference how unhappy they are, they have nowhere to go. Hostages are very expensive to serve. They are high maintenance users and can devastate company morale.

Horst Schulze, COO of the Ritz-Carlton and winner of the Malcolm Baldrige National Quality Award in 1992, said it best when he stated that, “unless you have 100% customer satisfaction (an apostles’ 5 rating), and I don’t just mean that they are excited about what you are doing, you have to improve. And if you have 100% customer satisfaction, you have to make sure that you listen just in case they change, so you can change with them.” (Jones, 1995). The implication is that you cannot rest on your laurels for ratings of 3, 4, or even 5 in recommendations. Customer satisfaction requires a continual effort on the part of all companies.

EWOM CONNECTION TO SALES

Although a relatively new phenomenon, electronic WOM has been shown to affect consumer buying behavior. This relationship begs the question, just how much does this relationship affect sales?

Bath and Body Works conducted a case study on the emails it sent out to consumers in which consumers received either a generic email or one containing customer ratings and reviews. The company’s findings indicated that the email containing customer review content outperformed the average email in several key metrics: session conversion, average order value, average session length, bounce rate, and page views per visit. This evidence establishes a direct correlation between customer review content in emails and increase in sales (WOMMA, 2004). A similar case study done by Golfsmith, a premier retailer in the golf and tennis industry, via an A/B email test using customer ratings under the product image for one and excluding them from the other email, yielded similar results. Golfsmith saw an increased gross demand generated by the email featuring ratings of 42.44 percent, along with an increase in revenue of 42.36 percent (WOMMA, 2004).

Applying consumer ratings and reviews to emails proved to be successful at generating increased sales, but what would be its effect when added to a regular website? PETCO (2008) decided to test this question by adding such content to its website in October of 2005. After the launch of a consumer ratings and reviews section on its site, PETCO saw increases in its top-rated product category’s conversion rate and spending of customers who progressed past the homepage, and a decrease in its product return rate. All three case studies point to the direct correlation between increases in sales and the use of a consumer rating and review system by a business (WOMMA, 2008).

THE CASE OF APPLE APPS

On June 8, 2015, Apple celebrated its 100 billionth app download from the App Store (Looper, 2015). It is no wonder that Apple is celebrating this milestone when you consider that, on average, Apple iOS users have 48 apps downloaded to their phones (Apple iOS Users Have Most Apps, Use Most Frequently, 2011). Having a plethora of apps is great, but how often do Apple iOS consumers use their apps? According to Akita Gupta (2015), the average person who downloads apps to his or her smartphone

frequently uses only 23 apps out of the average 48 apps downloaded. More specifically, 68 percent of Apple iOS customers, use the apps they download multiple times per day (Apple iOS Users Have Most Apps, Use Most Frequently, 2011). This represents the highest rate of usage among all the competing companies in the downloadable apps market.

Likely the biggest reason for Apple's success and popularity in the downloadable app market is that it was the first mover in this market. Every other competitor followed the Apple lead in the market, with many mimicking Apple's apps and incorporating similar customer rating systems. Apple's customer rating system consists of a five-star scale, which averages out all the total reviews and calculates to the nearest half-star increment. Along with the five-star rating scale, users are encouraged to leave comments to further explain their experience with the application. This rating and review system can be very helpful for consumers as they sift through the 1,500,000 apps currently available on the Apple App Store.

As a result of Apple having a well-established market, a simple and effective rating and review system, and a multitude of apps for consumers to choose from, its rating and review system was chosen for this eWOM study.

THE QUESTION

When the app costs money – even when that cost is less than a dollar – it was thought likely that consumers would rely considerably on the feedback of other consumers when deciding to purchase and download an app. The purpose of this study was to ask whether there is a direct correlation between apps with top ratings and their popularity and frequency of download through the Apple App Store.

The question stems from the conjecture that positive eWOM in the form of user comments would be tied directly to star ranking. Most importantly, this star ranking would have a direct, strong correlation with sales in the form of total downloads.

THE EVIDENCE

Apple has attempted to make it easier for customers to make selections from a digital store offering more than half a million different applications. Apple does this by offering a few major tools; the most popular and widely used is the Top 25 feature. Contrary to its title, this tool presents more than just 25 applications: it actually provides lengthy lists, broken into several categories, of the most-downloaded applications of that particular day. It is important to note that this feature will not provide the number of purchases for each application but simply rank them in sequential order based on total downloads. Within the listing, consumers may peruse not only the Top 25, but continue through several hundred applications all ranked by total downloads and including total star ranking and user review comments.

In this study, data collection included tracking the Top 50 applications over a 14-day period. The rather short period of time was deemed adequate based on the assumption that interval from investigation to purchase would be of short duration. The data was collected at the same time each day and included the application name, price, current ranking, and current number of stars. Over the course of data collection, applications drifted out of the Top 50, but their ranking was followed, one dropping as low as 300th place only days after being in the prestigious Top 10. Additionally, applications would drift into the top rankings for a day or two and suddenly drop out of tracking range. At the end of the 14-day period, 72 total applications had been tracked. Some astonishing numbers were encountered in terms of total user reviews posted, as seen in Table 1:

**TABLE 1
USER REVIEWS**

Total Applications Tracked	72
Total Number of Reviews Posted	3,817,311
Average Cost of Application	\$1.46
Average Rating of Application	4.36
Average Number of Days Spent in Top 50	9.6 days
Average Change in Star Rating (Out of 5)	0.194
Average Number of Reviews Posted Daily	272,665

Initially, the plan was to capture individual user comments in terms of whether they were of a positive or negative nature. In actuality, user reviews were so numerous – totaling hundreds of thousands each day – that this was an unrealistic variable to attempt to capture. Instead, the focus shifted to the star rating provided by customers, under the assumption that, as the star rating increased, so would the interest in the application from consumers, resulting in increased downloads and higher rankings.

Following 14 complete days of data collection, a significant amount of fluctuation in the Top 50 applications was noted. The average application spent 9.6 days in the top 50, and given the amount of movement in ranking and changes in star rating, sufficient fluctuation was collected to identify trends. The top eight applications, ones which experienced the most change in star rating over the data collection period, are presented in Table 2 (expanded version in Appendices 1 and 2):

**TABLE 2
RATING CHANGES**

<i>Application Name</i>	<i>Star Rating/ Date</i>	<i>Star Rating / Date</i>	<i>Change</i>	<i>Down-load Ranking</i>	<i>Down-load Ranking</i>	<i>Change</i>	<i>Correlation</i>
TurboScan	4 (3/16)	5 (3/18)	↑	17 (3/16)	25 (3/18)	↓	Indirect
PicFrame	5 (3/24)	4 (3/26)	↓	45 (3/24)	36 (3/26)	↑	Indirect
Draw Something	4.5 (3/18)	5 (3/20)	↑	2 (3/18)	2 (3/20)	N/A	No Response
Angry Birds Seasons	5 (3/16)	4.5 (3/18)	↓	16 (3/16)	13 (3/18)	↑	Indirect
Words with Friends	4 (3/20)	4.5 (3/22)	↑	7 (3/20)	22 (3/22)	↓	Indirect
Free Music Download	4.5 (3/20)	4 (3/22)	↓	14 (3/20)	18 (3/22)	↓	Direct
Navigation by TeleNav	4.5 (3/16) (3/16)	4 (3/18)	↓	24 (3/16)	27 (3/18)	↓	Direct
Emoji Plus	4 (3/18)	3.5 (3/20)	↓	48 (3/18)	39 (3/20)	↑	Indirect

There was no obvious correlation between star rating and download rate, either positive or negative. Higher priced applications (\$1.99 up to \$6.99) were viewed more closely to determine whether increased investment costs encouraged consumers to follow changes in star ratings and eWOM more carefully, and if they made purchases accordingly. Once again, it appeared that there was no direct correlation between the two variables.

In an attempt to understand the phenomenon more fully, the owner of a well-known and App-Store-featured App was contacted to see if he could shed some light on the results. Taxi Magic is a free app that serves as a mobile taxi ordering service, allowing customers to order a taxi with their smartphone and monitor the taxi's progress en route to the pickup site. Updates are sent to the smartphone, which notifies

the waiting rider to any changes or delays in the taxi's progress. The app also allows for payment to be exchanged electronically through an account the customer activates with the taxi company. The funds are automatically transferred after the ride is completed.

The owner believes real-time app reviews and eWOM have very little influence on downloads (Partee, 2012). Taxi Magic's proprietary research indicates that the majority of smartphone users that buy an app for uses other than gaming tend to download apps for practical purposes and subsequently are not typically influenced by user reviews. Taxi Magic found that putting stickers in the backs of the associated taxi fleets and in the restrooms of nightspots resulted in far more downloads than did positive reviews in the App Store.

Another major contributor to increased downloads was being selected as a featured app in the App Store. A featured app – chosen by Apple staff members based on uniqueness, functionality and quality – gave instant credibility with consumers. If a consumer liked the idea of a given genre of application and wanted to research such applications to see which ones were a good fit, he or she tended to download and be more comfortable with the app that the App Store featured. Partee (2012) believed that the consumer put a lot of credence in what the App Store had featured, and equated featured-status with being of higher quality than other applications in the same genre.

The personnel at Taxi Magic, however, believed in the value of eWOM resulting from the social network Twitter. Partee (2012) said that eWOM tended to become credible when key influencers tweet about a specific app that they may have found or liked. But he also said that this is very rare. In order for Taxi Magic to consider eWOM influential, a Twitter user making a comment about the application must have more than 10,000 followers. This is a rare circumstance, but Taxi Magic had experienced isolated occurrences of sharp spikes in sales due to these types of Twitter activities.

The Taxi Magic team felt that there are other methods that drive downloads. For example, staying on the cutting edge with development and technology will keep the editors and writers of influential magazines and websites interested in the app, and therefore yield positive publicity that will help drive downloads. Taxi Magic found that two things: publicity and the app becoming a featured app, are the two major drivers for downloads.

CONCLUSION AND EVIDENCE-BASED ADVICE

After collection of data and obtaining the opinion of a subject matter expert, the assumption of a strong direct correlation between user reviews, comments, or rating systems (stars) and mobile device application performance (measured by total daily downloads) was not verified. There are several potential reasons for this finding.

First and most importantly, this exercise suggests that the *purchase of applications is primarily affected by buzz or viral marketing* and for reasons that are tied to the potential for network externalities. A user may be more interested in purchasing an application that members of his or her social circle have purchased, as many applications offer an interactive experience with groups. Draw Something, Words with Friends, Hanging with Friends, and Angry Birds are some of the most successful applications in the last several months, and all allow users to engage with one another via the application itself. The interest for the consumer is inextricably linked to the experience he or she will share with others, and therefore they are likely to be affected by the reviews that strangers may have posted about their own experiences with the application. This theory is further strengthened by the fact that many popular apps have integrated with various social media platforms such as Facebook and Twitter. In essence, the value and benefits provided to purchasers increases as the number of owners increases. Consequently, marketers would be better served by working toward getting positive publicity in influential media than worrying about the App Store ratings and rankings. Furthermore, building the app so that it is integrated with existing social media platforms also appears to strengthen the app's brand and increase its volume of downloads.

Secondly, *apps are too inexpensive to be heavily affected by eWOM*. With the average cost of the 70+ applications tracked in this study at less than \$2.00, many consumers may not take the time to, or see

the need for, conducting much research prior to making the relatively insignificant investment. It could be speculated that the more expensive an app is, the greater chance that the consumer will deliberate over the purchase decision and look at ratings and rankings. For inexpensive apps, there is so little risk for the consumer that he or she will buy the application if it looks interesting, even if it's poorly rated or ranked.

Thirdly, ***star ratings and sale rankings are not necessarily reliable indicators of the actual number of downloads for a given application.*** Ideally, access to running totals of downloads for each application to compare to its number of reviews and ranking fluctuations would have offered a better chance to demonstrate correlation. However, Apple does not release this data to the public. Tracking each app's movement in the Top 25 (and beyond) and comparing the movement to its average ranking was the best evidence available.

Finally, due to the relative newness of the category of smartphone apps, ***the majority of app purchasers are Innovators.*** Innovators are more apt to try the latest applications regardless of what initial bugs or flaws are found in early versions and communicated to them through eWOM channels (Winer, 2011, p. 95). Innovators may be more concerned with the basic idea and vision behind the application, and the fact that they were able to be among the first to try it, that with the opinion of others.

Though the research failed to establish correlation between smartphone app ratings and rankings and app purchases, it is still clear that eWOM is a powerful – albeit not fully understood – force in the smartphone application marketplace. As the market matures and becomes more organized, and apps become a more integral part of day-to-day life for a larger portion of the population, eWOM may become increasingly influential in consumers' purchasing decision process.

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