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WHY THEY TWITTER: UNDERSTANDING THE RATIONALES BEHIND THE
ADOPTION OF TWITTER FOR ENTERPRISE CUSTOMER SERVICE

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ABSTRACT

Computer Mediated Communication (CMC) is a form of communication between people with the aid of computers. Recently, CMC technologies, including website, website Q&A tool, electronic mail, weblogs/bulletin boards/forums, online chat windows, etc., have emerged as new technologies for customer service. Among these technologies, Twitter, a popular microblogging tool, has been adopted by various industries to connect to their customers. However, such adoption has received little scholarly attention. This paper takes a step in this direction, seeking to provide understanding of the rationales behind the adoption of Twitter for customer service and the user preferences of using the technology for such service. Case studies were conducted with companies that are currently using the technology to connect to their customers and user surveys were carried out among Twitter users to gather their preferences towards using it for customer service. The results show that a variety of reasons exist for the adoption of Twitter by companies and users rank Twitter fairly low as a customer service technology as compared to other CMC technologies. Therefore, there seems to be a misconnection between the widespread adoption of Twitter by companies and the overall low rankings of the technology by Twitter users.

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1. Introduction

As information technology, such as the Internet, has been evolving rapidly in recent years, companies are constantly experimenting with new ways to connect to their existing customers and provide service to them (Ali; El Sawy and Bowles; Piccoli et al.; Watson, Meister and Fenner; Bray). Although the traditional call center has been around for decades, we gradually witnessed the emergence of new communication media that are of potential use for businesses to service their customers. The emerging technologies for communication are often referred as computer-mediated communication (CMC) technologies (e.g. electronic mail. instant message, online chat window, weblog, etc.). More and more companies have started to adopt these technologies to provide additional customer touch-points. One of the most recent adoptions is Twitter (Smarty), a web-based microblogging service that allows users to "post short messages (up to 140 characters) that can be read by any other Twitter user" (Huberman, Romero and Wu 3). Extensive research studies and thorough analyses have been conducted by various scholars on the use of CMC technologies to provide customer service (Wong and Kruse; Froehle and Roth; Zeithaml, Parasuraman and Malhotra; Murphy and Tan; Froehle); however, Twitter's application in customer service has received little scholarly attention. In particular, there is no solid understanding of why companies use Twitter for customer service. To fill this gap, my study takes a step in this direction, seeking to examine the rationales behind the adoption of Twitter, describe users' preferences towards Twitter for customer service and identify some best practices for such adoption.

1.1. Customer Service

According to Scott, customer service is the process designed to enhance the satisfaction of customers (87). Typically, customer service targets customers of the service provider before, during and after purchases ("Customer Service"). The principle benefits of customer service are increased profitability and customer satisfaction, while there are other benefits such as creating a competitive advantage over competitors (Domegan and Donaldson 102). Many enterprises have realized that as their markets grow worldwide and become more service-oriented, better customer service is the key to their success.

For the purpose of this study, customer service consists of two subsets, customer support and customer information. Customer support, which is also referred to as "product support or after-sales service" (Goffin 374), usually contains services such as handling complaints, providing updates and accessories on products, repairing broken products, etc., to existing customers. Because Twitter requires users to willingly subscribe to company Twitter feeds in order to obtain information from the company, one would logically assume that any such type of information is customer service. These Twitter feeds are different from advertising or banner ads, which are not requested by customers and often become annoying to them. Thus, the study also examines customer information as part of customer service. Such information typically consists of marketing information, such as deals and promotions of products, and general information about the company, such as news and announcements to subscribed customers.

1.2. Computer-mediated Communication

Fano defined CMC as "the process of transferring knowledge between people with the aid of computers" (3). According to Chen and Liu (1346), the concept was first introduced in 1968 by Licklider and Taylor, who said "in a few years, men will be able to communicate more effectively through a machine than face to face (21). The coinage of the term CMC, however, came several years later. As examined by Chun in his study of the use of CMC in instructional environments, the term was either coined in 1978 by Hiltz and Turoff, as suggested by Murray or in 1986 by Harasim, as implied by Chao (qtd. 17). Despite different origins of the term, CMC has been used extensively by various industries to provide services to their customers since as early as 1980s (Huete and Roth 46).

According to Jacobson, CMC may be classified as asynchronous or synchronous (128). Asynchronous CMC is "delayed-time interaction" (Abrams 158) and it includes electronic mail, mailing lists, bulletin board services and newsgroup, and web resources (Jacobson 128). In asynchronous CMC technologies, messages are usually stored in the computers (unless deleted) for later retrieval by the recipient, and users of these technologies have no expectations for real-time communication. On the other hand, synchronous CMC is real-time communication. As described by Jacobson, synchronous types of CMC, such as chat rooms or different types of virtual realities, users usually expect real-time communication (128). Although generally CMC can be categorized into these two types, Jacobson mentioned in the Notes section of his paper that some technologies could blend these definitions (141). For instance, although the original design/general use of electronic mail is asynchronous, it can also be used as a

synchronous technology if both the sender and the receiver are at the computer and engage in a real-time conversation with each other. Therefore, another possible category, semi-synchronous, which means that the technology could become synchronous or asynchronous under certain conditions, may be appropriate for these special circumstances. Twitter, as typically used, is a semi-synchronous technology.

For the purpose of this study, I will examine the use of Twitter for customer service both from its synchronous and asynchronous aspects. For its synchronous aspect, customers who direct their messages (Twitter has a method for which people can direct messages to other users) to the company representative usually expect an instant answer from that person. Under such circumstances, customers treat Twitter as a synchronous method to communicate with company representatives in real-time. On the other hand, customers can also post a complaint about the company and not expect an answer from them while the company representative might be monitoring those complaints in the entire Twitter community and reply back to that customer. Because of this situation, the asynchronous aspect of Twitter should also be included.

Besides its semi-synchronous feature, Twitter is often referred by many people as a social medium. Defined by Kaplan and Haenlein, social media are "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (61). As web services, social media enable people with few technical skills to establish social networks or share information with their friends or other people. Examples of social media include Facebook, MySpace, YouTube, Twitter and Flickr (Kim and Jeong 12). For the purpose of this study, the focus is only on Twitter.

1.3. Traditional and CMC Technologies for Customer Service

Traditionally, customer service is handled through telephone call centers, and it is still in place and extensively used by companies to provide services to their customers. A call center is a customer service center that provides services to customers through voice conversations (Mamou, Carmel, and Hoory 1). As one of the most traditional and common customer service technologies, call centers have been adopted by various industries and achieved great success. However, there exist criticisms on both the system and the operators handling the calls, especially after more and more companies have outsourced their call centers overseas to reduce costs. Common criticisms include the automated queuing system, unnecessary marketing information, excessive waiting time, poor English proficiency of the representatives, and their lack of knowledge about the services or products.

Due to the rapid evolvement of new communication technologies and the complaints about existing customer service methods (i.e., telephone call service), more and more companies are seeking to provide additional communication channels for customers to reach them. Because of the popularity of the World Wide Web, CMC technologies have emerged as multiple methods for companies to reach out to customers and vice versa. These emerging technologies include website Q&A tool, electronic mail, online chat window, weblog/bulletin board/forum, online video, etc., which have been adopted by various companies in various industries. Most recently, Twitter has become another method for customer service (Jurmann; Smarty).

1.4. Twitter and its Application in Customer Service

Twitter is a relatively new communication technology from which users can share information, opinions and status with other people. According to the most recent definition by Twitter.com:

> Twitter is a real-time information network powered by people all around the world that lets you share and discover what's happening now. (Twitter 1)

Originally founded by Jack Dorsey, Evan Williams and Biz Stone on July 13, 2006 (Sarno), the initial purpose of Twitter is to create a platform where people can have real-time status communication (Lennon). Through its website, users can sign up and post their status, known as tweets, about what they are doing or thinking in real-time. Users of the Twitter community can also send and receive updates through mobile phone, email, RSS, instant messaging, and a host of other third-party applications (Galagan 28). One unique characteristic of Twitter is that people can build their own networks by choosing who to follow (i.e., to communication with) or who can follow them or share messages with them. The network is directed and does not need to be reciprocated (Huberman, Romero and Wu). Twitter also allows users to engage in conversations with people following them by sending direct messages (DM), which is only accessible by the recipient.

A relatively new phenomenon that started with the launch of Twitter or similar tools is microblogging. Microblogging is a form of weblog. A weblog, as defined by Rettberg, is a frequently updated website consisting of data entries in reverse chronological order and all contents are created mostly by one author (Rettberg).

Microblogging, on the other hand, is a weblog where people share thoughts and ideas by text-based posts with a restriction of 140 characters per post (McFedries 84). Among various microbloging platforms, Twitter is currently the most popular one and other ones include Jaiku and Pownce (Java et al. 1).

Since its launch in 2006, Twitter has gained widespread popularity. The tipping point, defined as "the moment of critical mass, the threshold, the boiling point" (Gladwell 12) of its popularity was at the South by Southwest festival when the event usage grew from 20,000 to 60,000 tweets per day (Douglas). Since then, Twitter has exploded, with growth rate of 752% from December 2007 to December 2008 (Ostrow, "Twitter's Massive 2008") and 1382% from February 2008 to February 2009 (McCarthy). According to Compete, Twitter had 23.6 million unique visitors by the end of year 2009 ("Site Profile for: Twitter.com"). Among all Twitter users, roughly about 51% of them are from U.S. (Jasra) and 45% of all Twitter users around the globe are adults aging from 18-34 as of writing ("Twitter.com"). eMarketer also forecasts Twitter usage to reach 26 million in the U.S by the end of 2010 ("Twitter Tally"). With such an enormous user base and fascinating growth rate, Twitter is certainly a technology that draws attention from both the individuals and corporations.

Although Twitter is originally designed as a way to communicate status over the internet in real-time, users of Twitter have other intentions rather than simply providing updates to their status. As an emerging communication technology, novel uses are developed by the users, not necessarily predicated or dominated by the design of the technology. Since its launch, Twitter has been used in various settings other than its original design (Stevens; Lenhart and Fox 4). The settings may be categorized as personal,

business (Mann 3; Mateosian 87), media (Hermida), political (Grossman; Morozov), governmental (Williams; Klapper; Poulsen), educational (Dunlap and Lowenthal; Grosseck and Holotescu; Ebner et al.), and citizen journalism (Frommer) uses. For the purpose of this study, I will only focus on the use of Twitter in business settings.

As the user base of Twitter continues to grow and new applications of the technology emerge, some companies have started to adopt Twitter to connect to their customers. Mann has categorized companies' uses of Twitter into four categories: direct, indirect, internal and inbound signaling (2-3). According to his study, direct use of Twitter indicates that the companies are utilizing Twitter as "a marketing or public relations channel" (Mann 2). Indirect use points out the use of Twitter by company employees to enhance their own reputations online (Mann 3). Internal use represents the use of Twitter among the employees within the company for cooperative purposes and finally, inbound signaling means that the companies are monitoring tweets in the entire Twitter community to search for references to their brands or products (Mann 3). As mentioned earlier, companies have adopted Twitter either to broadcast news, announcements, and promotions of products or engage in private conversations with customers to solve their problems or handle companies or other negative commentaries. The former is defined as "customer information" and the latter is defined as "customer support". As suggested by Mann, customer information is generally associated with the direct use of Twitter to serve marketing and public relations purposes, while customer support is associated with both direct use and inbound signaling. Therefore, the study would only focus on these two categories while other ones (i.e., indirect and internal) would not be included.

1.5. Research Questions

There are four research questions that guide the study. The questions follow:

1. *What advantages and/or disadvantages does Twitter have compared with other customer service technologies (call center and CMC technologies)?*
   In order to understand the rationales behind the adoption of Twitter for enterprise customer service, it is important to first understand how people use Twitter and its advantages and/or disadvantages over traditional methods for customer service. My personal experience with the tool, review of relevant literature, results of the company interviews and Twitter user surveys may be resources for answering this research question.

2. *What are the rationales or motivations behind companies' adoption of Twitter for customer service?*
   The core objective of the study is to examine the rationales behind the adoption of Twitter for customer service. In order to answer this question, it is important to collect opinions from the companies that are currently using the technology for customer service. Therefore, I will conduct interviews with eight companies regarding their adoptions of Twitter and Twitter strategies. There may be multiple reasons in play and they will be revealed through the analyses of the company interviews.

3. *How do Twitter users rank Twitter for customer service, as compared to other methods (Call Center, CMC)?*

Because some customers may use a number of technologies to obtain customer service, it is important to gather information on their preferences towards Twitter for this purpose. Therefore, a survey will be conducted among the users of Twitter to answer this question.

4. *What methods of using Twitter for customer service are proved to be successful from the perspective of the companies?*

Given results to the previous research questions, deployed methodologies of Twitter use for customer service will be identified, and if possible, their performances will be evaluated.

The organization of the study is as follows. The next chapter (Literature Review) reviews relevant literature on Twitter, its user intentions, and some concerns with the technology. Then the chapter focuses on the historical uses of CMC technologies (including Twitter) for customer services. The third chapter (Methodology) contains two interrelated sections. The first section includes an investigation on the state-of-the-art technologies that companies use to provide customer service, followed by a couple of case studies conducted with selected companies on their experiences and opinions towards using Twitter for customer service. The second section of the chapter provides a detailed analysis of the survey responses. The fourth chapter (Interpretation of Results) concludes results from both the company interviews and survey results and answers each

of the research questions above. Finally, the last chapter (Summary and Further Research

Possibilities) draws indications from the results, discusses some best practices for

companies based on the findings and offers future research opportunities.

2. Literature Review

2.1. About Twitter

I began my study by reviewing relevant literature on Twitter to have a better understanding of the technology and how people are using it. As mentioned earlier, Twitter is the most popular microblogging service that allows users to share their status by posting text-based responses to the question, "what are you doing" within 140 characters. Despite its original design, Twitter users are using the technology for various other purposes. One study has concluded that 58.5 percent of a total number of 5,767 postings do not answer the question, "what are you doing" (Mischaud 21). Thus, novel uses of Twitter have been developed among the Twitter community and the platform has been utilized beyond its original intent. In order to understand the user intentions of Twitter, various scholarly studies have been conducted on Twitter as well as its user community. One of the early research studies on Twitter has revealed main intentions as "daily chatter", "conversations", "sharing information/URLs", and "reporting news" (Java et al. 62-63). Findings of another research study also indicate surprisingly similar results of how people use Twitter (Zhao and Rosson 245-247).

The first user intention, daily chatter, seems to be most relevant to the original design of the technology. It mainly includes daily activities of the user. According to Java et al., daily chatter is "the largest and most common use of Twitter" (62). By posting their status, people are sharing with the public about what they are doing in real-time. One incentive seems to be connecting with friends and another one, as suggested by McFedries, is to enhance their cyber presence (84). Although daily chatter is the majority use of Twitter, some people have been complaining about receiving pointless updates

from people they follow. In his paper, *to Twitter or not to Twitter*, Lucky uses "pointless, incessant barking" as a metaphor for social networking based on his reflection on a speaker who Twitters every morning that he has just woken up (22). Daily chatters are extremely important to companies because customers are constantly sharing ideas or thoughts on their brands and products through these daily chatters.

The second user intention is conversations. Some scholars have examined the use of Twitter as a tool for conversations and the study indicates a high degree of conversationality existing in the Twitter community (Honeycutt and Herring). Conversations on Twitter usually occur when people put the "@" symbol before the name of the person who they wish to direct the message to. Though very similar to Direct Messages (DM), its most fundamental difference from DM is that the messages sent with the "@" symbol will be public. In order words, all other people will be able to see your message including the person you send it to. DM, on the other hand, will only be viewable by the recipient. However, there are certain constraints on how people send DMs such as that one can only DM a person who is following him. The "@" symbol and DM are frequently used by companies to engage in conversations with the customers with the former being used in their replies to the customers and the latter being used as safe channels for customers to provide their private information.

The third user intention is sharing information/URLs. Twitter, as originally designed, would allow people to be able to see tweets from all the people they are following. However, the 140-character feature will limit the amount of information people can share or receive. Thanks to the power of URL shortener services which replace long URLs with short ones, people could share much more information in a post.

Some of the URL shorteners include "URL shortener. TinyURL, Bit.ly, is.gd, Twi.bz"
(Mateosian 87) and all are free to use. In order to share adequate information with the
customers, some companies are already using these shorteners to point customers to their
knowledge base or company web pages.

Finally, the last user intention is reporting news, which is generally associated
with citizen journalism. As defined by Glaser, citizen journalism represents the idea that
amateur journalists can utilize modern technologies to report news on their own or in
collaboration with others (Glaser). Probably the first prominent use of Twitter for
reporting news is a rescue photo of the U.S. Airways flight 1549 posted by Janis Krums
(Frommer). Because of its unique real-time information sharing feature, Twitter has
gradually become an ideal platform for reporting news. As a result, more and more
companies are utilizing the platform to broadcast news and events that the customers
might be interested in.

Despite the fact that Twitter has been used extensively both by individuals and
companies, some usability and security issues have raised concerns among scholars. As a
public platform, Twitter has received much attention around its security. In a study
examining the use of Twitter for informal conversations and collaborative purposes
within the enterprise, Zhao and Rosson point out that the risk of releasing proprietary
information is one of the concerns for such use (Zhao and Rosson 251). In terms of
providing customer service, giving away personal information to unauthorized parties is
considered to be a primary concern (Sangani 35). Currently, most companies do not
encourage the use of "@" symbol for exchanging customer private information but they
do encourage using DM, Electronic mail or other traditional methods for customers to

provide their private information to the representatives. And certain information, such as financial information, is warned by companies not to be disclosed on Twitter whatsoever ("BofA_Help"). Another concern with using Twitter is its usability. As examined by Douglis, valuable content is usually buried in an everlasting list of tweets and finding important information will be similar to finding a needle in a haystack (Douglis). Several other scholars have also raised similar and noticed that the problem escalates with a larger number of followers (Johnson 3; Zhao and Rosson 251). Thus, having the ability to filter the tweets and group them into topics will be most crucial to businesses that are providing customer service on Twitter. Failing to respond to customers as quickly as possible will eventually result in losing the customers to competitors.

2.2. CMC (including Twitter) for Customer Service

Many articles in this area have been already mentioned in the Introduction Chapter and other related ones will be introduced in this section. As mentioned earlier, CMC is a form of communication between people with the aid of computers. General CMC technologies include, but are not limited to, company website, Q&A tool or self-support centers, Electronic mail, online chat, Short Message Service (SMS), forums/blogs/bulletin boards, Twitter, and etc. Many research studies have been conducted on the use of these CMC technologies for customer service. Piccoli et al., have examined the roles, functionalities and designs of the company websites as customer service systems (Piccoli et al.). Burton and Kadambi have tried to identify the key factors that contribute to the success of HP's electronics self support center. The findings indicate that cost effectiveness is the main reason associated with the adoption of self-

support centers and customers are overall satisfied with the help they obtained (Burton and Kadambi). Electronic mails have been studied by various researchers in different industry settings (Nguyen and Murphy; Leuenberger, Schegg and Murphy). Another scholar, Johnson has examined the use of online chat systems for library reference services. Although the study shows that few people know about the service, they have also indicated strong interest in it (Johnson). Idris, Basari and Zubir have implemented a SMS for filing complaints to Lembaga Air Perak. According to their results, the technology has enabled the customers to file complaints more easily and the companies to handle complaints faster and more efficiently (Idris, Basari and Zubir). Finally, as suggested by Bernoff and Li, utilizing CMC technologies such as blogs or forums would save the company enormous cost of customer support calls and "handle future problems before they fester" (39-40).

To the best of my knowledge, the use of Twitter for customer service has received little scholarly attention, despite the fact that such adoption is growing rapidly among enterprises. In a recent study, it is shown that 56 out of the Fortune 100 companies are currently using Twitter for some form of customer service (Ostrow, "Twitter is Top Social"). Among these 56 companies, 94 percent of them use it for news/announcements, 67 percent of them use it for customer service & 57 percent of them use it for deals and promotions (Ostrow "Twitter is Top Social"). Some potential reasons for adopting Twitter have been revealed by a few studies. Grensing-Pophal has suggested that defending the reputation of the companies, taking advantage of Twitter's cost-effective nature, and engaging customers are potential drivers behind the adoption of Twitter for customer service (Grensing-Pophal). Similarly, Cunningham has suggested that smaller

businesses should adopt Twitter because it allows them to compete with companies who have a bigger budget for customer service since Twitter is free to use and has a large impact (13). However, these rationales are the tip of the iceberg and many more have yet to be explored. Furthermore, I have not found any studies that focus on users' opinions towards such an adoption. Therefore, my study will examine why companies are using twitter for customer service and whether or not users prefer twitter for obtaining services.

3. Methodology

3.1. Company Information

The first part of my study involves investigating the customer service technologies that companies currently use from their web presence. Twenty of the Fortune 100 companies were examined. My goal is to identify and provide a percentage breakdown of the various media that these companies have established as available communication channels for customer service. As part of the investigation, I would also examine how many of these Fortune 20 companies are using Twitter and how they present Twitter as a communication channel. The companies that I have investigated are Exxon Mobil, Wal-Mart Stores, Chevron, ConocoPhillips, General Electric, General Motors, Ford Motor, AT&T, Hewlett-Packard, Valero Energy, Bank of America Corp., Citigroup, Berkshire Hathaway (Geico), International Business Machines, McKesson, J.P. Morgan Chase & Co., Verizon Communications, Cardinal Health, CVS Pharmacy, and Procter & Gamble. I have also expanded my list to include other companies that have adopted Twitter and received considerable public notice. These companies are JetBlue, Comcast, Zappos, Best Buy, Southwest, and Dell.

In order to further examine the rationales behind their adoptions of Twitter for customer service and their experiences of using the technology, interviews requests were sent to a subset of the above companies. The interview consists of six questions. The first question taps into the background of the company's adoption of Twitter for customer service and their reasons for doing so. The second question asks for their general experiences with the technology both from a strategic and an operational level. The third question was designed to evaluate Twitter's performance as a customer service

technology and its advantages and disadvantages in such use. The fourth question was intended for examining the scale of Twitter customer service. The fifth question was designed to obtain information about the kinds of services that companies provide to their customers via Twitter as well as the types of information that customers seek from companies. The last question asks for companies' perspectives on Twitter's potential as a communication technology for customer service and their future plan of further exploring and utilizing it (the interview questions are attached in Appendix B).

Due to company employees' limited availability, I was only able to interview three companies out of the many to which I sent invitations. However, other people have conducted and published similar interviews with these companies on their adoptions of Twitter. Thus, I have combined results from the three interviews that I have conducted and the interviews that are already published online to complement my study and hope to generate a better understanding of their rationales or motivations behind the adoption of Twitter, their opinions towards the technology, and their experiences of using it. The interviews that I conducted were transcribed. Some of the published interviews already have transcriptions available while others do not. In the case where there is no transcript attached (e.g., videos and audio recordings), I have taken notes for my study in those interviews. An interpretive methodology known as coding was employed to analyze the interview transcripts and notes. The coding technique involves developing codes, which are usually words or phrases that label research findings. The process was iterative and generally includes the following steps. First, six categories were generated according to the interview questions and they are "Rationales of Twitter Use", "Twitter Advantages", "Twitter Disadvantages", "Scale of Customer Service on Twitter", "Services Provided on

Twitter", "Future Twitter Strategy", and "Best Practices and Suggestions". Second, codes within each category were developed to analyze and interpret all interview responses. Finally, I utilized the model proposed by Raymond to locate all the fragments with relevant information from the interview scripts and notes and match them with the codes that I have developed in a single table (2). When developing the table, the codes were further tested against the responses to ensure that they are "all-inclusive" and "mutually exclusive" as recommended by Raymond (1). When the response did not fit with any code, I either modified the existing code or introduced a new code (see Appendix E for the coding table).

3.2. Survey of Twitter Users

Another important aspect of the study is to examine the user perspectives on using Twitter for customer service. Therefore, a survey was given to Penn State University (PSU) undergraduate students and a few other individuals of the PSU community. The survey consists of 10 questions and was published on SurveyMonkey.com. The participation link was sent to students in five Information Sciences and Technology courses, mainly targeting students who are typically aged from 18-24 years old for two reasons: first, as a younger generation, they are more likely to embrace new technologies and thus, it increases the odds of getting responses from people who use Twitter; second, 45% of all Twitter users around the globe are adults aging from 18-34 ("Twitter.com") so the data that I collect would represent a fairly good sample of the Twitter users. In designing the survey questions, my goal was to obtain information about general usage data of the participants, their intentions of using technology, and their preferences towards it as opposed to other

types of CMC technologies when seeking different types of customer services. In creating the survey, the first question was intended to obtain the students' contact information and verify their Penn State student identity. The second, third, and fourth questions were designed specifically for collecting usage information of the students. The fifth question was designed to collect information about their purposes of using Twitter and questions six to ten were intended for determining to what degree the users would prefer Twitter as opposed to company website, website Q&A tool, telephone call service, texting/SMS, electronic mail, web blogs/forums/bulletin boards, and online chat services when seeking different kinds of customer services (see Appendix C for the complete list of survey questions).

4. Interpretation of Results

4.1. Company Investigation Results

Among these companies, 100 percent have a company website, Electronic mail and telephone call service, 76.9 percent have some form of website Q&A support tool or self-support centers, 46.2 percent use bulletin boards, forums or blogs, 38.5 percent have an online chat service in place, 84.6 percent use Twitter for some form of customer service and none have an SMS/texting message service. The companies who have adopted Twitter all have widespread public attention. The number of their followers ranges from a minimum of 409 to a maximum of 1,685,047 (Appendix A). According to the investigation, their presentation of Twitter as a customer service methodology varies from one company to another. Some companies present Twitter as an important communication channel for customers to reach them and have several accounts catering to different needs of the customers (e.g., Verizon has more than five Twitter accounts) while other companies only have one account mainly used as a way to post news and event announcements or as a place-holder to avoid brand-jacking (see Appendix A for the full set of results).

4.2. Interpretation of Company Responses

In the following, I report the results based on the coding table that I have developed. Because of the confidentiality of the information, no identifiable information will be released.

A variety of rationales are in place for Twitter's adoption as a customer service technology by the companies interviewed. Four common rationales were revealed and

will be discussed as follows. First, seven out of eight companies report that one reason they established Twitter as a communication channel is because they are interested in listening to what customers are saying about their company. They use Twitter to gather feedback from customers on their products or services. Among the feedback that they have gathered, they found two types of information to be extremely important to their businesses; one is early warnings of problems and the second is customers' opinions on future products or product improvements. Companies have found out that through listening to what customers are saying about them on Twitter, they are able to identify issues that would later on become more serious. As one company pointed out, "social media is the canary in the coal mine" (Bean). Other companies have found it as a useful tool in obtaining feedback on product improvements and therefore generating "customer-inspired innovation" (Binhammer). Second, six out of the eight companies mentioned establishing better relationships with customers as one of their major drives to move to Twitter for providing customer service. The relationship that they develop with customers on Twitter is more personal than traditional media. As one company employee pointed out, social media channels such as Twitter are more personal. He continued to say, "It doesn't make others less important, but it does make the experience more personal" (Tabitha). Through these personal conversations, some companies have seen a decline in negative commentary about them (Binhammer) and some even have big critiques resolved through Twitter (Bean). The feedback that they received from customers on their engagements in conversations is overwhelmingly positive. As one company mentioned, "Yes…there's definitely a cycle being established where people see that they can get a company's attention, and companies see how much people love when you

respond to them. It feeds on itself" (Bean). Other companies have also realized improvements in their brand images and reputations. The third category of rationale is simply helping customers. Seven companies report that they just want to help customers and reaffirm their commitments to great customer service. Among these companies, some report that they want to make themselves available and assist when they can while others report that they also want to assist customers as quickly as possible. The fourth category is about meeting customers where they already are and five companies mentioned it during their interviews (Eliason; Johnston, Liu; Binhammer; Day). It represents their effort to use the technologies that customers are already using. In addition to these four categories, one company reports that they utilize Twitter as a platform to express their corporate culture. They mentioned that Twitter has been extremely helpful for their recruiting purposes since people on Twitter would be able to learn the company culture from inside by observing how employees interact with each other (Liu). Although some of the companies interviewed have been using Twitter for marketing purposes and generated considerable revenue, none of them have reported the generation of revenue as their reason for adopting Twitter. Also, none of them have considered "cost-effective" as a primary reason for them to get involved in Twitter. The companies seem to have seen larger values in Twitter as a listening tool. As one manager pointed out, "right now it's just kind of a match with us to get a heads up to what consumers want to learn from us, what consumers want us to change. There is almost more value in that as being part of this early-on conversation than there is in a certain percentage of reduce in cost of the organization when it comes to call center, or email or etc." (Liu).

Regarding advantages and/or disadvantages, I was not able to collect enough responses from each company. From the responses that I have gathered, Twitter's real-time searchability, immediacy in terms of replying back to customers, its cost-effective nature and the ability to provide valuable market research information are some of its advantages as a customer service technology. With real-time searchability, companies are able to search for references to their companies or products in real-time and engage in conversations with the customers to deal with the issues or complaints. As one company states, "We cannot continually look at the same website to see if anything is being said, so we use a variety of search techniques. This brings me to the second key factor. Searching but not getting the results for days or weeks after something is posted is not going to be effective. So we use methods that are immediate" (Eliason). Addressing individual concerns in a timely fashion would prevent the issue from spreading to customers or potential customers and finally becoming a larger issue. Immediacy ensures the quality of the customer service. More and more customers are demanding faster responses from the companies and getting the right information to the right person in a timely fashion has become increasing important for the companies. Twitter's immediacy in terms of information sharing has enabled companies to achieve that. As one company mentioned, "we average our responses to consumers in just twelve minutes" (Liu). This level of immediacy would be difficult to achieve even with the most traditional customer contact platforms such as telephone service or electronic mail. In addition to its searchability and immediacy, a few companies consider the cost of using Twitter as one of its advantages. One company states that handling customer service issues through telephone call service in the middle of the night would be much more expensive than

doing it on Twitter while the quality stays the same (Liu). Finally, one of the companies considers Twitter as "the greatest market research tool ever" (Johnston, "140: The Twitter Conference") because people would talk about their company through daily chatters, which provides extremely valuable information to the companies' products and services.

Despite the many advantages, there are also some disadvantages with using Twitter for customer service. The two main categories of disadvantages are filtering/finding information and character limitation. The Literature Review chapter has revealed similar information from the user perspective. As the number of Twitter followers continues to grow, companies typically receive an enormous number of responses within seconds. Filtering and finding valuable content among these responses can be extremely difficult. Most companies have been struggling with this problem because eventually it would be detrimental to the quality and immediacy of the customer service that they provide to customers on Twitter. Character limitation is another disadvantage pointed out by two companies, who mentioned that solving complicated problems within 140 characters is impossible. One company mentioned that they are currently working on a blog or knowledge base that could provide the content and include links in their responses to the customers (Liu). Although relevant literature has revealed security as a potential problem with Twitter, none of the companies has raised security as a significant issue. Future studies could explore this area.

As for the scale of customer service that has been handled through Twitter, most companies report that the technology is only in its experimental mode and the amount of customer service only accounts for a very small percentage as compared to traditional

communication channels such as telephone call service or electronic mail. As one manager points out, "On a given day we may help 300-500 people through Twitter, compared to one million calls a day" (Liu). Despite the relatively small scale, some companies have reported that it has been constantly and rapidly growing. One manager of another company states that with the growth of their Twitter followers, the company is trying to bring more people on the team in order to keep the quality of the service they provide on Twitter (Bean).

The types of customer service that companies provide on Twitter vary significantly among the interviewed companies. Although all of them provide customer information, their intentions are different. Half of the companies try to stay away from pushing marketing information such as deals or promotions to customers. What they provide to the customers in terms of customer information is only broadcasted updates on news and events. They focus exclusively on customer care and support as well as establishing better relationships with the customers. As one company mentioned, "we believe that people sign up for our service (and we will) volunteer ourselves to be available when they need it, and if they need it" (Liu), and thus, they continue to demonstrate their great commitment to customer service. Another company stated, "We're not really looking at short-term ROI (Return on Investment) in terms of sales. We're looking to form life-long relationships with our customers, and we think Twitter helps us do this" (Liu). The other half of the companies, utilize Twitter as a marketing channel to push out deals or promotions to the customers in addition to their customer support endeavors. They view pushing marketing information differently as the other set of companies do. They justify their marketing efforts by stating that customers actually demand the deals.

According to one of them, "We heard a lot from our customers that they want to see deals, specific deals and we understood that there is a segment of our audience that wants to see nothing but the deals and they don't want the conversations and there is a group that wants the conversations and they really didn't want the advertising" (Johnston, "Inside JetBlue's Two-Prong"). Thus, two of these four companies have set up a secondary account that is specifically for deals and promotions while they keep the original one as a place solely for conversations and customer support. The other two use only a single account for marketing, broadcasting news, and customer support.

When talking about the future of Twitter as a customer contact platform, the companies have surprisingly similar responses. Most of the eight companies state that they would continue to expand Twitter until something comes along and takes the place. As one manager pointed out, "There is no guarantee Twitter will be around. Social media is a constantly changing space and what is hot today, may not be tomorrow" (Liu). With such a rapidly changing field, companies would continue to explore more places where customers already are and establish them as new customer contact platforms.

Lastly, the companies have shared some common best practices and suggestions. Four of the companies have stressed the point that companies should first listen to listen to what customers are saying and refrain from engaging in conversation until they have learned enough. One company has reported using search.Twitter.com to search for relevant information and another company has reported using TweetDeck to serve the same purpose. One company has introduced a tool named "Co-Tweet" (Johnston, "Morgan Johnston") which would enable the Twitter account manager to assign responses to different subject matter experts (SMEs) across different departments within

the organization. In terms of suggestions, two companies have suggested answering questions publicly whenever possible so that it is all "searchable, storable and trustful" (Liu). However, if customer private information is involved as part of the support, the companies report that they would switch to safer channels such as telephone call service or electronic mail support. Some companies also suggest that when seeking to adopt Twitter, companies should start small and expand gradually and they should constantly seek feedback from the users on how they could improve their Twitter service.

4.3. Interpretation of User Survey Responses

Survey invitations were presented to approximately 500 students from five Information Sciences and Technology courses. The number of responses was 149, with 137 completed surveys (91.9%). In answering question two of the survey (see Appendix C), 68 (46.6%) of the respondents indicate that they have a Twitter account. The responses of the participants who do not have a Twitter account were immediately filtered out because they might not be able to fairly evaluate the use of the tool that they have never used. As a result, the number of valid responses was narrowed down to 68.

A breakdown of the answers to the Twitter usage questions of the 68 respondents provides key information for interpreting the results. Among the respondents, 9 (13.2%) indicate that they have had a Twitter account for more than two years, 16 (23.5%) have had one between one year to two years, 22 (32.4%) have had one for between six months to one year, and 21 (30.8%) have had one for less than six months (see table 4-1).

Question 1: How long have you been using Twitter?		
Answer Options	**Response Percent**	**Response Count**
More than 24 months	13.2%	9
18-24 months	10.3%	7
12-18 months	13.2%	9
6-12 months	32.4%	22
1-6 months	23.5%	16
1-3 weeks	4.4%	3
Less than a week	2.9%	2
N/A (I do not have a Twitter account)	0.0%	0
answered question		**68**
skipped question		**0**

Table 4-1: Duration of Twitter Use

With regard to frequency of use, 14 (20.6%) of the students report that they use Twitter every day, 10 (14.7%) use it several times a week, 9 (13.2%) use it once a week, 30 (44.1%) use it less frequently than once a week and the rest have never used the service even though they own a Twitter account (see table 4-2).

Question 2: How often do you use Twitter?		
Answer Options	**Response Percent**	**Response Count**
Everyday	20.6%	14
Several times a week	14.7%	10
Once a week	13.2%	9
Several times a month	11.8%	8
Once a month	4.4%	3
Several times a year	17.6%	12
Once a year	10.3%	7
Never	7.4%	5
answered question		**68**
skipped question		**0**

Table 4-2: Frequency of Twitter Use

Concerning user intentions, the majority (39 or 57.4%) utilize the service as a way to getting updates on news and events, 33 (48.5%) use it for staying connected with friends, 17 (25%) of the respondents use it to follow celebrities or famous people while only 10 (14.7%) use the tool for customer service. The rest of the respondents (19.1%) all

stated other purposes such as "want to try some new stuff", "keep up with technology use", "make one for class", etc. (see table 4-3 and Appendix D).

Question 3: What do you use your Twitter account for?		
Answer Options	**Response Percent**	**Response Count**
N/A (I do not have a Twitter account)	0.0%	0
Stay connected with friends	48.5%	33
Build online reputation	14.7%	10
Getting updates on news and events	57.4%	39
Customer service (communication with the company about their products/services and get updates on their deals)	**14.7%**	**10**
Follow celebrities or famous people	25.0%	17
N/A (I do not have a Twitter account)	0.0%	0
Other (please specify)	19.1%	13
answered question		**68**
skipped question		**0**

Table 4-3: Purpose of Twitter Use

After asking the respondents about their general Twitter usage information, the survey then asked for their preferences towards using Twitter for customer service as opposed to other technologies when they have different communication purposes. The different purposes were broken down into four categories: problems with the products or services, complaints about the products or services, inquires about product updates, and general inquiries.

First, I will determine the most preferred and the least preferred technology under different situations through descriptive statistics on the full set of responses. The mean ranks of different technologies were calculated and compared in each situation. In the first situation, the sample data has revealed that people would prefer accessing the company website the most (mean rank=323.53) and twitter the least (mean rank=112.85) when they are having problems with the products or services (see table 4-4).
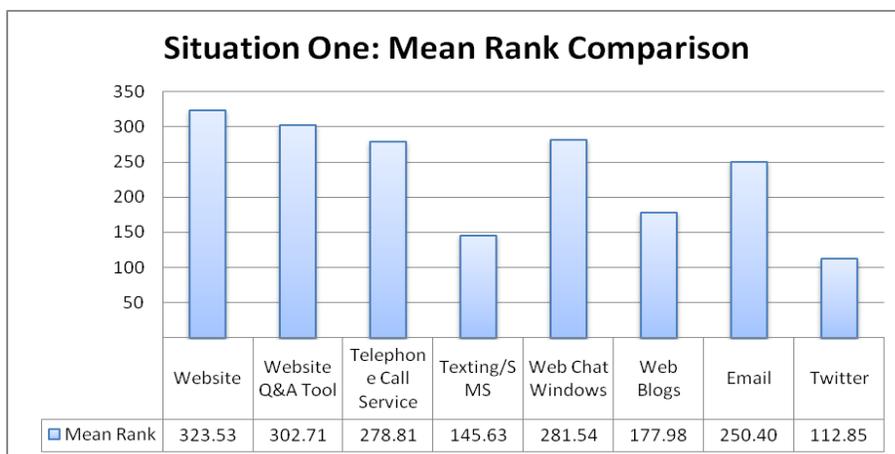
Table 4-4: Mean Rank Comparison of Situation One: Problems with Products

In the second situation, when people have complaints about the products or services, the sample data has indicated that web chat window is the most preferred technology (mean rank=377.03) and texting/SMS is still the least preferred (mean rank=117.68). Similarly, twitter was again ranked as the least preferred technology with a mean rank of 183.29 (see table 4-5).
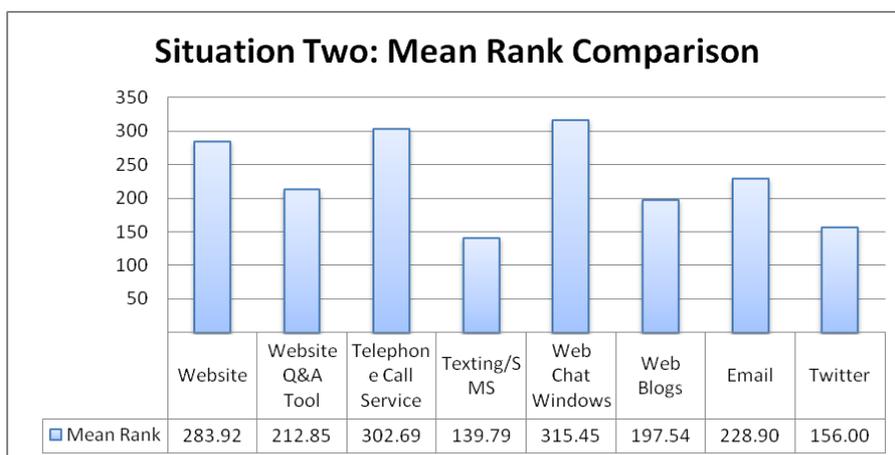
Table 4-5: Mean Rank Comparison of Situation Two: Complaints About Products

In situation three, if you have inquires about updates or accessories on the products or services you bought, the sample has revealed that respondents would most prefer the website (mean rank=360.45) and still least prefer texting/SMS (mean rank=144.71). Interestingly, in this situation, twitter's ranking has moved up by one to become the third least preferred technology (mean rank=200.66) while electronic mail has taken its

original place as the second least preferred technology with a mean rank of 172.55 (see table 4-6).

Situation Three: Mean Rank Comparison

	Website	Website Q&A Tool	Telephone Call Service	Texting/SMS	Web Chat Windows	Web Blogs	Email	Twitter
Mean Rank	360.45	271.34	203.38	144.71	277.36	250.46	172.55	200.66
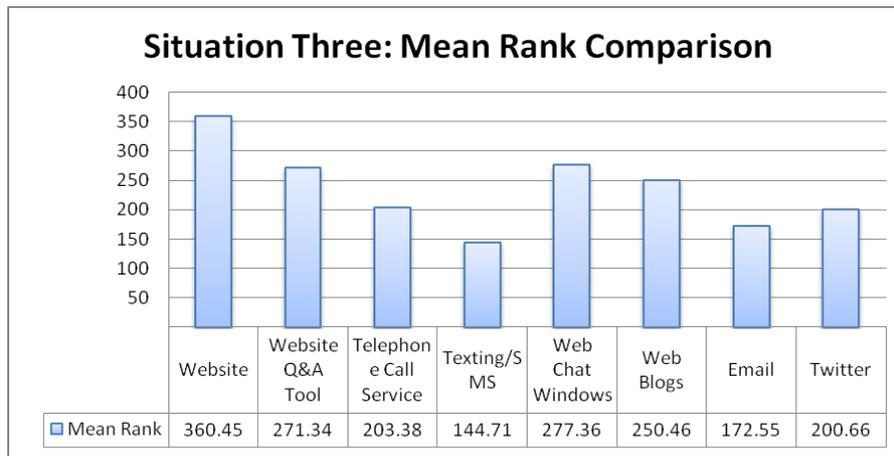
Table 4-6: Mean Rank Comparison of Situation Three: Inquires for Product Accessories

In the final situation, as shown by the sample result, website still holds its place as the most preferred technology (mean rank=377.03) and texting/SMS is the least preferred technology (mean rank=117.68) when the users have general inquiries about the company or its products. In the sample, twitter was ranked the second least preferred technology with a mean rank of 183.29 (see table 4-7).

Situation Four: Mean Rank Comparison

	Website	Website Q&A Tool	Telephone Call Service	Texting/SMS	Web Chat Windows	Web Blogs	Email	Twitter
Mean Rank	377.03	301.53	194.08	117.68	250.55	252.75	203.87	183.29
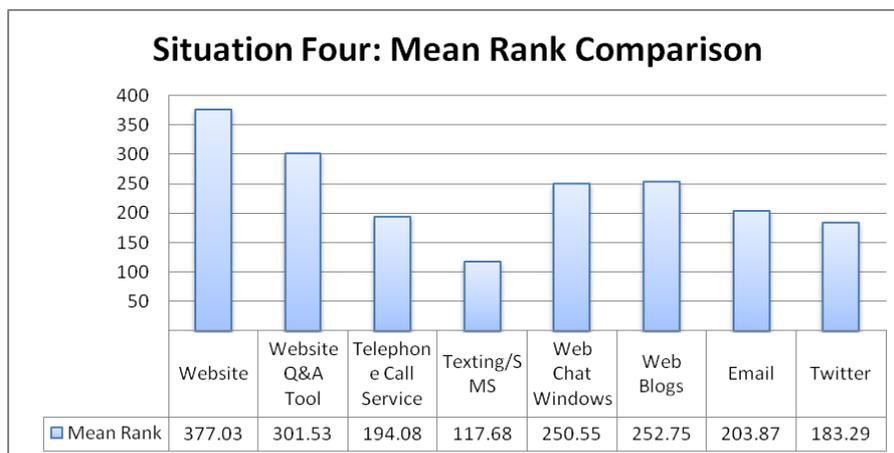
Table 4-7: Mean Rank Comparison of Situation Four: General Inquires

Although twitter was ranked relatively low overall, the previous results have revealed a slight difference in its rankings across different situations. The mean ranks of twitter in situations one to four are 112.85, 156.00, 200.66 and 183.29 respectively. Thus,

the Mann-Whitney U was employed to determine whether the difference is statistically significant on a significance level of 0.05. The Mann-Whitney U test is a non-parametric test under the null hypothesis that two independent valuables come from the same distribution. If the null hypothesis is rejected, there exists a statistically significant difference between the two variables. In the following table, the results indicate that there is a statistically significant difference between the ranks of twitter in situation one and three with a p-value of 0.001 as well as in situation one and four (see table 4-8) with a p-value of 0.005. However, in other cases, the null hypothesis cannot be rejected (see Appendix F for all results).

Situation	Twitter Mean Rank	P-Value (Situation One vs. Three)	P-Value (Situation One vs. Four)
Situation One	112.85	0.001	
Situation Three	200.66		0.005
Situation Four	183.29		

Table 4-8: Twitter Mean Rank Difference Significance Test

Although the difference is not statistically significant, the results still show that people rank Twitter, as a customer service technology, differently when they have different communication purposes. The indication is similar to what Boorshtein has revealed in her study on text messaging strategies that college students use for different purposes (Boorshtein). As suggested by her study, the choice of communication channel, when equally available, varies differently in relation to the intention of the communication. This supports some companies' decisions to meet the customers where they are by providing various communication channels for them to choose from.

The full set of responses was further broken down to examine if different user

groups would rank the technology differently. Two null hypotheses were generated. First, there is no statistical significant relationship between how long users have a twitter account and their rankings of twitter in different situations. Second, there is no statistical significant relationship between twitter users' frequency of use and their rankings of twitter in different situations. In order to test the hypotheses, the Spearman's rho test was employed with a significance level of 0.05. The Spearman's rho test is a non-parametric measure of the statistical dependence on typically two ranking variables. In the results tables (see Appendix G), Q3 represents the survey question, "How long have you been using twitter" and Q4 represents "How often do you use twitter" (see Appendix C). Q68, Q78, Q88, Q98 represents the rankings of twitter under the four different situations respectively (see Appendix C for Question 6 to Question 9). The results indicate that the first hypothesis cannot be rejected. Although a positive relationship exists between the two variables within the sample data, the relationship is not statistically significant and therefore, cannot be inferred to the population. However, the same analysis performed on Q4 and Q68-98 has revealed different results. As the following table shows, a statistical significant relationship has been revealed between Q4 and Q68 (Spearman rho=0.285, p-value=0.029, N=59) as well as Q4 and Q98 (Spearman's rho=0.422, p-value=0.001, N=60). Therefore, in these two cases, the null hypothesis was rejected. The above results of the correlation analysis indicate that power twitter users, people who use twitter more frequently than others, would rank twitter higher as a communication channel for them to solve problems with their products or obtain general information on the company or its products.

	Q4 & Q68	Q4 & Q98
Spearman's rho	0.285	0.422
P value	0.029	0.001
Sample Size N	59	60

Table 4-9: Correlation Analysis Result

4.4. Answers to Research Questions Based on 4.1 & 4.2

1. What advantages and/or disadvantages does Twitter have compared with other

   customer service technologies (call center and CMC technologies)?

   The research findings indicate that Twitter is a "mixed bag" when used as a tool for

   customer service. On one hand, companies consider its real-time searchability,

   immediacy in responses to customers, cost-effective nature, and ability to provide

   valuable market research information as the biggest advantages for them to provide

   quality service to the customers. On the other hand, companies are concerned about

   the ability to filter the responses from the customers and find valuable information

   with them and its character limitation. Although review of relevant literature has

   revealed security as an issue with using Twitter for customer service, company

   interviews have not indicated the same result.

2. What are the rationales or motivations behind companies moving towards Twitter for

   customer service?

   Company interviews have indicated that there are four main categories of rationales

   including having an interest in what customers are saying about the company, seeking

   to establish a better personal relationship with the customers, attempting to assist

   customers in a timely and responsive fashion, and meeting customers where they

already are. Others have also reported expressing corporate culture and reducing

customer service costs as their rationales of adopting Twitter for customer service.

3. How do Twitter users rate Twitter for customer service, as compared to other methods.

(call center, CMC)

Survey data from the users reveals that Twitter has been ranked as the least preferred

technology no matter what the customer service situation is. However, users rank

Twitter slightly differently in each situation, which indicates that when selecting from

equally available communication media, people would prefer one technology more

than another for different communication purposes. The survey results also indicate

that there is a statistically significant relationship between how often people use

Twitter and their rankings of Twitter in two situations: one, when they have a problem

with a product or service; and two, when they have general inquiries about the

company or its products or services.

4. What methods of using Twitter for customer service are proved to be successful from

the perspective of companies?

The research findings indicate some best practices and suggestions of using Twitter

for customer service. First, as indicated by the user survey, users are more likely to

use the service as a channel to receive important information. Based on users'

perceptions of the technologies, they will select the methods that most satisfy their

needs. Twitter is good for customer information, but might not be able to replace

traditional methods such as telephone call centers or electronic mails. Therefore, first

introducing Twitter as a news distribution channel would be a great start for the companies seeking to adopt Twitter for customer service. When a company gets more followers and believes that the users are more comfortable with the technology, then the company could engage in conversations with them. If one successful conversation solves a product problem or handles a complaint, news will travel very fast though the power of word of mouth and people would be willing to accept the service you provide on Twitter. What is left is a matter of how to develop metrics to assure the quality and efficiency of the customer service that is offered on Twitter. Second, some tools would be very useful in monitoring the tweets and searching for references directed at a particular company. The interview results show that search.Twitter.com and TweetDeck would allow the companies to search for real-time information within the last one minute, five minutes, ten minutes, etc. Other tools, such as Co-Tweet would enable the companies to assign responses to subject matter experts across different departments within the company. Last but not least, some companies interviewed suggested that most of the responses should be made to public so that it can be shared across the Twitter community in case other people have similar questions. However, in the case where customer private information is involved, it is best to switch to traditional communication media such as telephone call service or electronic mail to handle the service request.

5. Summaries and Further Research Possibilities

5.1. Summary

The study first examines the uses of traditional and CMC technologies (including Twitter) for customer service through reviewing relevant literature. The study then focuses on several companies on their adoptions of Twitter and provides an answer to the question, "Why They Twitter" through an investigation of the companies' web presence and eight case studies. In order to gather user opinions towards the adoption of Twitter, the study also surveys Twitter users on their preferences towards the technology as compared to other customer service technologies in different situations. After collecting enough data, a qualitative analysis was performed on the interviews conducted with the companies and a quantitative analysis was conducted on the user survey results. Finally, based on the results of the above examinations and analyses, the study aims to provide rationales behind the adoption of Twitter by companies, users' preferences towards it as a customer service technology and some best practices for companies that are currently using it or seeking to adopt it in near future.

The investigation of the traditional and CMC technologies that companies use currently to provide customer service reveals a large presence of Twitter adoption. The interviews indicate that companies use Twitter for various purposes. The common rationales concluded from interview results are having interest in what customers are saying about the company, seeking to establish a better yet personal relationship with the customers, attempting to assist customers in a timely and responsive fashion, and meeting customers where they already are. Other rationales also have been revealed by a small portion of the companies interviewed. Survey results indicate that Twitter is not preferred

by most people as a customer service contact platform and power users tend to rank the

technology higher than regular users when they are seeking help with a problem or

general inquiries about the company or its products.

Therefore, there seems to be a misconnection between the widespread adoption of

Twitter by companies and the low rankings of Twitter by users. The research findings

indicate that Twitter is still new, companies and users are still exploring it. In the future, it

may emerge as a strong player in providing customer service or it may simply remain as

one of the many possible customer service channels that companies have.

5.2. Further Research Possibilities

There are three further research possibilities. First, it may be interesting to

examine the companies who do not use Twitter to connect to their customers or who have

considered Twitter, but finally decided against the idea. In this case, the study could

focus on the factors that influence their final decision. Second, a larger user sample

across different demographics would be useful in determining user preferences towards

Twitter in the whole Twitter population. It would be interesting to examine the

differences among different user groups in terms of their preferences towards using the

technology for customer service. Third, a study with more interview responses would

generate more useful data in understanding the rationales behind companies' adoptions of

Twitter and a study with a longer period of time on companies' Twitter strategies would

reveal how their strategies change over time from the initial experiment to modifications

based on feedbacks to a mature stage and finally to a declining status, if applicable.

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7. Appendices

Appendix A – Company Investigation

Company Name	Customer Service Technologies									
	Website	Website Q&A	Telephone Call Service	Texting/ SMS	E-Mail	Web Blogs, forums, bulletin boards	Online Chat Windows	Twitter	Twitter Page	No of Followers
Exxon Mobil	√		√		√				http://twitter.com/ExxonMobil	1,798
Wal-Mart Stores	√	√	√		√	√		√	http://twitter.com/Walmartkelly	1,076
Chevron	√	√	√		√			√	http://twitter.com/chevron	2.586
ConocoPhillips	√	√	√		√			√	http://twitter.com/conocophillips	865
General Electric	√	√	√		√			√	http://twitter.com/ge_reports	4,583
General Motors	√	√	√		√	√		√	http://twitter.com/Gmblogs	13,943
Ford Motor	√	√	√		√			√	http://twitter.com/ford	29,048
AT&T	√	√	√		√		√	√	http://twitter.com/ATTCustomerCare	2,810
Hewlett-Packard	√	√	√		√	√	√	√	http://twitter.com/HPNews	15,432
Valero Energy	√		√		√					
Bank of America Corp.	√	√	√		√		√	√	http://twitter.com/BofA_help	6,477
Citigroup	√	√	√		√		√	√	http://twitter.com/askciti	409

Berkshire Hathaway (Geico)	√	√	√		√	√	√	√	http://twitter.com/GEICO	950
International Business Machines	√	√	√		√	√		√	http://twitter.com/IBMEvents	27,03
McKesson	√		√		√			√	http://twitter.com/McKesson_HIT	1,604
J.P. Morgan Chase & Co.	√		√		√		√			
Verizon Communications	√	√	√		√	√	√	√	http://twitter.com/VERIZON	7,390
Cardinal Health	√		√		√			√	http://twitter.com/CVS_Extra	3,728
CVS Caremark	√	√	√		√					
Procter & Gamble	√		√		√			√	http://twitter.com/PGNewsUS	3,656
JetBlue	√	√	√		√	√		√	http://twitter.com/Jetblue	1,602,649
Comcast	√	√	√		√	√	√	√	http://twitter.com/comcastcares	41,835
Zappos	√	√	√		√	√	√	√	http://twitter.com/zappos	1,685,047
Best Buy	√	√	√		√	√		√	http://twitter.com/twelpforce	25,224
Southwest Airlines	√	√	√		√	√		√	http://twitter.com/southwestair	1,033,468
Dell	√	√	√		√	√	√	√	http://twitter.com/Direct2Dell	4,283

* Data Gathered on 04/14/2010 and the number of followers is based on the twitter account for customer service or corporate communications.

Appendix B – Interview Questions

1. **What are the reasons that your company started to use Twitter for customer service?**
   (When did it begin? Is Twitter being used on a trial basis or has it become a mature
   methodology for your company?)

2. **Are you satisfied with the use of Twitter and why?** (Does it increase the level of
   interaction between your company representatives and the customers? Is it more convenient
   for your employees to use than other technologies – see question 3 for the technologies?
   Does it provide better/faster services to the customers? Does it increase overall customer
   satisfaction? Is it more cost effective?)

3. **If any, what do you see as the advantages and/or disadvantages of Twitter compared to
   other technologies for customer service?** (Telephone call center, Email, SMS/Text
   Messages, Web Chat Windows, Twitter, Forums, etc.)

4. **Can you roughly estimate what percentage of customer service has been handled among
   all the technologies that your company uses? If not, can you roughly estimate what
   percentage has been handled through Twitter?** (Telephone call center, Email, SMS/Text
   Messages, Web Chat Windows, Twitter, Forums, etc.)

5. **What types of information you provide to your Twitter followers the most?** (Answers to
   general inquiries, problems with the product/services, updates/accessories for the product,
   complaints, etc.)

6. **What do you see as the future of the use of Twitter for customer service?** (Will it replace
   traditional methods? Will it be abandoned?)

Appendix C – Survey Questions

1. **If you consent to participate, please provide us with your email address (abc1234@psu.edu): _____**

2. **Do you have a Twitter account?**

   - Yes
   - No

3. **How long have you been using Twitter?**

   - More than 24 months
   - 18-24 months
   - 12-18 months
   - 6-12 months
   - 1-6 months
   - 1-3 weeks
   - Less than a week
   - N/A (I do not have a Twitter account)

4. **How often do you use Twitter?**

   - Everyday
   - Several times a week
   - Once a week
   - Several times a month
   - Once a month
   - Several times a year
   - Once a year
   - Never

5. **What do you use your Twitter account for?**

   - Stay connected with friends
   - Build online reputation
   - Getting updates on news and events
   - Customer service (communication with the company about their products/services and get updates on their deals)
   - Follow celebrities or famous people

- Other, Please specify _____
- N/A (I do not have a Twitter account)

For each of the types of customer support below, please rank the technologies (Website, Website Q&A, Telephone Call Center, Texting / SMS, Email, Web Chat Windows, Twitter, etc.) that you prefer to use to obtain that specific support. Rankings cannot be duplicated.

6. Problems with a product / service / online application or used

    a) Website

    b) Website Q&A tool

    c) Telephone Call Center

    d) Texting / SMS

    e) Web Chat Windows

    f) Web Blogs

    g) Email

    h) Twitter

7. Complaints about a product or a service

    a) Website

    b) Website Q&A tool

    c) Telephone Call Center

    d) Texting / SMS

    e) Web Chat Windows

    f) Web Blogs

    g) Email

    h) Twitter

8. Inquiries about updates or accessories of the product

    a) Website

    b) Website Q&A tool

    c) Telephone Call Center

    d) Texting / SMS

    e) Web Chat Windows

    f) Web Blogs

    g) Email

h) Twitter

9. General inquiries about the company or its products / services

a) Website

b) Website Q&A tool

c) Telephone Call Center

d) Texting / SMS

e) Web Chat Windows

f) Web Blogs

g) Email

h) Twitter

10. Other types of customer services, please specify _____

a) Website

b) Website Q&A tool

c) Telephone Call Center

d) Texting / SMS

e) Web Chat Windows

f) Web Blogs

g) Email

h) Twitter

Appendix D

Question 1: How long have you been using Twitter?		
Answer Options	**Response Percent**	**Response Count**
More than 24 months	13.2%	9
18-24 months	10.3%	7
12-18 months	13.2%	9
6-12 months	32.4%	22
1-6 months	23.5%	16
1-3 weeks	4.4%	3
Less than a week	2.9%	2
N/A (I do not have a Twitter account)	0.0%	0
answered question		**68**
skipped question		**0**

Question 2: How often do you use Twitter?		
Answer Options	**Response Percent**	**Response Count**
Everyday	20.6%	14
Several times a week	14.7%	10
Once a week	13.2%	9
Several times a month	11.8%	8
Once a month	4.4%	3
Several times a year	17.6%	12
Once a year	10.3%	7
Never	7.4%	5
answered question		**68**
skipped question		**0**

Question 3: What do you use your Twitter account for?		
Answer Options	**Response Percent**	**Response Count**
N/A (I do not have a Twitter account)	0.0%	0
Stay connected with friends	48.5%	33
Build online reputation	14.7%	10
Getting updates on news and events	57.4%	39
Customer service (communication with the company about their products/services and get updates on their deals)	14.7%	10
Follow celebrities or famous people	25.0%	17
N/A (I do not have a Twitter account)	0.0%	0
Other (please specify)	19.1%	13
answered question		**68**
skipped question		**0**

N0.	Response Date	Other (please specify)
1	Feb 25, 2010 12:29 AM	Want to try some new stuff.
2	Feb 25, 2010 12:16 PM	Wanted to try it out. I prefer Facebook.
3	Feb 25, 2010 12:22 PM	personal learning network - to acquire information from people who know more about my area than i do.
4	Mar 2, 2010 12:08 AM	Nothing, it's been a useless service as far as I'm concerned.
5	Mar 2, 2010 7:17 PM	use as my microblog
6	Mar 3, 2010 5:28 PM	Keep up with Technology Use
7	Mar 4, 2010 1:07 AM	Lab Assignments for the classroom
8	Mar 4, 2010 3:02 AM	Ranting, one-line thoughts.
9	Mar 4, 2010 5:26 PM	class
10	Mar 15, 2010 3:21 PM	no reason...just have one
11	Mar 15, 2010 4:28 PM	extra hours at work were posted to the work twitter account
12	Mar 15, 2010 5:02 PM	have an account but do not use
13	Mar 15, 2010 8:35 PM	I only have it because I had to make one for my IST 110 class

Appendix E

Codes	Responses
Rationales	
Express Company Culture	Z3, Z11, Z16, Z20e, S952
Better Corporate Brand and Reputation (not ignore)	D844, A325, Z20c, D734
Establish Personal and Better Relationships with Customers	Z4, Z6, Z9, Z11, Z16, Z34, A318, D782, D822, D843, J504, D928, V1108, Z36
Meet Customers Where They Already are	C72, C73, C109, J475, B595, D803, S962
Engage Customers/Have Real-Time Conversations	C87, J403e, J403a, J407, J478, A368, D850, A347, V1010, V1092j
Make us Available / Assist When we can	C74a, C106, B644, J478, S963
Listening Tool	C74g, A361, J439, J440, B635, D734, D742, J405, V1092l
Early Warnings of Problems / Customer Service Issues	A238, B634, C711, D841e, J492, D791, S998, V1011
Enable us to Help Customers quickily	A278, A282, B569, D791
Cost Effective	B605, D928, B685
Learn from Customers	D733, A360, D743, V1011
Gather Feedback and Make Improvements	A298, J405, D783
Customer-inspired Innovation	D842, D753, V1013
Revenue Generation	D841r
Motivations	
Positive Feedback	C76f and c, A268, A270, B567, B569, B678, B576
Negative Comments decline / Critics Solved	D790, A274
Wide Spread Attention	J420, B568, S990
Not Short-term ROI but long term relationship	Z36
Great for Recruiting Purpose	Z40
Advantages	
Real-time Searchability	C192, C153
Immediacy / Information Travels Fast	C153, Z26, C198, A278, C192, B682
Great Market Research Tool	J464, J465
Cost-Effective	B605, B685
Disadvantages	
Character Limit	C82, B691
Finding Informatino	B689, C714
Small Percentage	
C184, A305, B, C718, V1106	
Experiment	
D906, S969, B535e	
Marketing (deals and promotions)	J410, J507, S985, V1049, V1033, D757
Not push marketing information	C87, A250, A253, B640, Z44
News Updates	C185, A252, B640, D755, S985
Place to have conversations or help customers	J407, B646, S985, V1020, V1035, D752, D754

Further Explore	Z53, C207, B592, C723, S969
Continue to Find More Channels to Connect to Customers	Z53, C208, B591
Best Practices	
Listen Enough, Then Engage	B703, J480, D921, V1072
Twitter Monitoring Tools	A340, C192
Utilize Tools to Assign Reponses to Resources Within the Company	J487
Suggestions	
Code of Conduct (Set Rules, Learn Norms)	B531, B533,B535r, B540, B547
Keep Promotions Account Separate	J413, D926
Try Answering Publicly, if not, Use Traditional Safe Channels	A242, B665, B667, B668
Start Small	J447
Seek Feedback From Users on How to Improve Twitter Strategy	J460

Appendix F

Ranks

	Grouping6	N	Mean Rank	Sum of Ranks
Ranking6	68	60	53.43	3205.50
	78	57	64.87	3697.50
	Total	117		

Test Statistics[a]

	Ranking6
Mann-Whitney U	1375.500
Wilcoxon W	3205.500
Z	-1.880
Asymp. Sig. (2-tailed)	.060
Exact Sig. (2-tailed)	.060
Exact Sig. (1-tailed)	.030
Point Probability	.000

Ranks

	Grouping6	N	Mean Rank	Sum of Ranks
Ranking6	68	60	50.50	3030.00
	88	60	70.50	4230.00
	Total	120		

Test Statistics^a

	Ranking6
Mann-Whitney U	1200.000
Wilcoxon W	3030.000
Z	-3.226
Asymp. Sig. (2-tailed)	.001
Exact Sig. (2-tailed)	.001
Exact Sig. (1-tailed)	.001
Point Probability	*.000*

Ranks

	Grouping6	N	Mean Rank	Sum of Ranks
Ranking6	68	60	51.38	3082.50
	98	59	68.77	4057.50
	Total	119		

Test Statistics[a]

	Ranking6
Mann-Whitney U	1252.500
Wilcoxon W	3082.500
Z	-2.819
Asymp. Sig. (2-tailed)	.005
Exact Sig. (2-tailed)	.005
Exact Sig. (1-tailed)	.002
Point Probability	.000

Ranks

	Grouping 6	N	Mean Rank	Sum of Ranks
Ranking 6	78	57	53.99	3077.50
	88	60	63.76	3825.50
	Total	117		

Test Statistics[a]

	Ranking6
Mann-Whitney U	1424.500
Wilcoxon W	3077.500
Z	-1.586
Asymp. Sig. (2-tailed)	.113
Exact Sig. (2-tailed)	.113
Exact Sig. (1-tailed)	.056
Point Probability	.000

Ranks

	Grouping6	N	Mean Rank	Sum of Ranks
Ranking6	78	57	55.44	3160.00
	98	59	61.46	3626.00
	Total	116		

Test Statistics[a]

	Ranking6
Mann-Whitney U	1507.000
Wilcoxon W	3160.000
Z	-.982
Asymp. Sig. (2-tailed)	.326
Exact Sig. (2-tailed)	.328
Exact Sig. (1-tailed)	.164
Point Probability	.001

Ranks

	Grouping6	N	Mean Rank	Sum of Ranks
Ranking6	88	60	61.82	3709.00
	98	59	58.15	3431.00
	Total	119		

Test Statistics[a]

	Ranking6
Mann-Whitney U	1661.000
Wilcoxon W	3431.000
Z	-.588
Asymp. Sig. (2-tailed)	.556
Exact Sig. (2-tailed)	.558
Exact Sig. (1-tailed)	.279
Point Probability	.001

Appendix G

Correlations

			Q3	Q68
Spearman's rho	Q3	Correlation Coefficient	1	0.134
		Sig. (2-tailed)	.	0.308
		N	68	60
	Q68	Correlation Coefficient	0.134	1
		Sig. (2-tailed)	0.308	.
		N	60	60

Table 4-1: Correlation Analysis of Q3 and Q68

Correlations

			Q3	Q78
Spearman's rho	Q3	Correlation Coefficient	1	0.093
		Sig. (2-tailed)	.	0.493
		N	68	57
	Q78	Correlation Coefficient	0.093	1
		Sig. (2-tailed)	0.493	.
		N	57	57

Table 4-2: Correlation Analysis of Q3 and Q78

Correlations

			Q88	Q3
Spearman's rho	Q88	Correlation Coefficient	1	0.123
		Sig. (2-tailed)	.	0.348
		N	60	60
	Q3	Correlation Coefficient	0.123	1
		Sig. (2-tailed)	0.348	.
		N	60	68

Table 4-3: Correlation Analysis of Q3 and Q88

Correlations

			Q98	Q3
Spearman's rho	Q98	Correlation Coefficient	1	0.155
		Sig. (2-tailed)	.	0.24
		N	59	59
	Q3	Correlation Coefficient	0.155	1
		Sig. (2-tailed)	0.24	.
		N	59	68

Table 4-3: Correlation Analysis of Q3 and Q98

Correlations

			Q4	Q98
Spearman's rho	Q4	Correlation Coefficient	1	.285[*]
		Sig. (2-tailed)	.	0.029
		N	68	59
	Q98	Correlation Coefficient	.285[*]	1
		Sig. (2-tailed)	0.029	.
		N	59	59

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			Q4	Q88
Spearman's rho	Q4	Correlation Coefficient	1	0.101
		Sig. (2-tailed)	.	0.442
		N	68	60
	Q88	Correlation Coefficient	0.101	1
		Sig. (2-tailed)	0.442	.
		N	60	60

Correlations

			Q4	Q78
Spearman's rho	Q4	Correlation Coefficient	1	0.142
		Sig. (2-tailed)	.	0.293
		N	68	57
	Q78	Correlation Coefficient	0.142	1
		Sig. (2-tailed)	0.293	.
		N	57	57

Correlations

			Q4	Q68
Spearman's rho	Q4	Correlation Coefficient	1	.422**
		Sig. (2-tailed)	.	0.001
		N	68	60
	Q68	Correlation Coefficient	.422**	1
		Sig. (2-tailed)	0.001	.
		N	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

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ACADEMIC VITA of Qiwei Liu

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