Tweeting for Businesses: Increasing the Return on Investment of Social Media by using Links

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ABSTRACT. Nowadays, social media marketing is an ever-expanding method to attract customers. This study tries to explore the impact of social media activities on the return on investment of a company, especially in the business-to-business market. A model provided by Favier (2012) will be used in order to investigate the impact of URLs tweeted on trust, one component of Favier's model, measured in terms of a retweet-to-tweet-ratio in order to gain an understanding of its effectiveness. This paper collects and codes the tweets of Intel and Oracle in order to draw a comparison of their use of social media.
Several linear regression analyses indicate that the general use of links has no positive impact on trust. Only 0.3% of the variance in trust is accounted by the use of links, thus, no correlation could be determined. However, different types of links and its impact on the retweet-ratio were analyzed. The use of video, website and news links show a positive relationship with the retweet-ratio in comparison to no use of links. Furthermore, a positive relationship of communicative links in contrast to informative links can be determined. Nevertheless, not all of the results were found to be significant.

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Keywords
Social media, twitter, return on investment, Intel, Oracle, trust, links

1. INTRODUCTION

Social media activities are recently expanding in every sector. In 2009, social networking platforms like Facebook, Twitter, MySpace or LinkedIn had about 750 million users (Shih, 2009), whereas today even twitter reached more than 500 million and facebook more than 1.1 billion users. Users are actively participating in collaborative projects, blogs, content communities, social networking sites, virtual games and virtual social media (Kaplan & Haenlein, 2010). However, users say that their primary reason for using online platforms is in order to communicate with others (Jones & Fox, 2009). One platform that enables communication with friends as well as socialization and examination with businesses, brands or topics is Twitter with its main function to facilitate communication and interaction (Kietzmann, Hermkens, McCarthy & Silvestre, 2011). The rise of Web 2.0 has not only facilitated easy, fast and cheap communication of the society, but can also enable businesses to use the proliferation of social media for business purposes, to expand their marketing activities in a more dialogue-oriented way and to create more intimate relationships with business customers (Andzulis, Panagopoulos & Rapp, 2012). Businesses are able to enter a new level of marketing to increase customer awareness and to attract customers due to users that are more and more willing to communicate, share content and promote and examine brands (Enders, Hungenberg, Denker & Mauch, 2008; Thoring, 2011). Kaplan and Haelein (2010) already identified that social media activities are a valuable marketing strategy: Dell generated a revenue of $1 million due to sales alerts via Twitter (Case & King, 2010). Several researchers have identified that the business-to-consumer (B2C) market can easily benefit from easy and fast communication, a far reach, viral marketing activities and word-of-mouth (WOM) (Andzulis et al., 2012; Enders et al., 2008; Michaelidou, Siamagka & Christodoulides, 2011). Jansen, Zhang, Sobel and Chowdury (2009) stated that social media platforms have the potential to impact WOM branding, which in turn impacts brand image and brand awareness. Social media platforms are able to generate revenue for users (Enders et al., 2008) and businesses can use their potential in order generate profit.

However, it can be argued that the use of social media marketing is not only effective and profitable for B2C, but also for businesses in the business-to-business (B2B) market. Nevertheless, research on the effectiveness of social media in the B2B market is yet limited and requires further investigation (Michaelidou et al., 2011). Before businesses invest in social media, it is recently even more asked for significant evidence that social media investments are profitable in comparison to other marketing activities that have proven to be successful. Thus, the Twitter activity for B2B firms has to be measured, whereas also no consensus is established (Hoffman & Fodor, 2010). In order to know how much an investment returns, you would have to calculate how much you invest and how much you would earn. However, measuring the benefits of social media activities in terms of profit constitutes a significant problem. This paper bases its theoretical framework and its analysis on the model proposed by Favier (2012), who states that the return on investment (ROI) of social media is affected by four different variables, i.e. time, sentiment, trust and income, whereas this paper will investigate the impact of the independent variable links in a message on trust.

This research project aims to investigate the effect of the independent variable for two specific companies by examining and analyzing their social media activities. This leads us to the final research question:

What is the effect of messages, which contain a link, on trust for companies using social media?

2. THEORY

2.1 Trust

Companies' social media presence has an enormous reach and importance for customers as companies have to evoke trust among customers in order to be effective in the social media environment. Consumers in the online environment do not become loyal by product, price, promotion or place anymore, but by human values involving trust among others (Favier, 2013). Only if customers put trust in a company in a social media setting, WOM or electronic WOM (eWOM) can become effective. Social networks like Twitter or Facebook enable WOM to be even more important and far reaching because people can share any brand-affecting thought anywhere to almost anyone. WOM refers to the process of conveying information from person to person and influencing a person's decision concerning a brand. Thus, friends, colleagues and family play an essential role in building trust in a social network, whereby trust is a powerful determinant of the effectiveness of social media activities (Jansen et al., 2009). Nevertheless, trust can also be directed towards people outside an immediate network (Jansen et al., 2009) or collective groups of people, i.e. organizations or brands (Jarvenpaa & Shaw, 1998).

Trust is a concept in a social media setting and essential for effective marketing strategies. The concept of trust can be seen as multifaceted and influenced by various factors. However, trust is refers to a cooperation and relationship between a trustor and a trustee (Jarvenpaa & Shaw, 1998) and thus, can be influenced by customer involvement, interaction and communication. Morgan and Hunt (1994) and Larzelere and Huston (1980) regard trust as confidence of one party in an exchange partner's reliability and integrity. Furthermore, trust refers to the trustor's belief that the trustee will perform actions that result in positive outcomes and that the trustee will not perform actions that result in negative outcomes (Anderson & Narus, 1990).

2.2 Targeting and Trust

Social media targets a much narrower customer range compared to mass media via television or radio and can thereby be more effective. Targeting refers to a company's intent of pinpointing groups of firms that are of greater interest to the supplier firm (Anderson & Narus, 2004). DiMaggio, Hargittai, Neumen and Robinson (2001) identified that social media activities in contrast to traditional marketing activities evokes more trust among customers. By targeting a specific segment, brands are able to create a trustworthy image. Besides the reason that customers, who have a closer bond to a brand, are feeling valued, instead of being one out of masses, targeting establishes trust by facilitating greater customer involvement and participation compared to traditional mass media (Di Maggio et al., 2001; Favier, 2013). Despite that, it can be assumed that targeted customers are more likely to be active on a social media platform than people who do not even realize untargeted mass media. So if targeted customers read a tweet, comment, favor or even retweet it, then followers' follower, who have higher trust in friends anyway, are targeted as well.

Whether tweets are targeted or untargeted mostly depends on the tweet's content. Businesses can tweet about general topics

that address everyone, or tweet about specific topics, for example software-related news in order to inform and attract customers, news relevant for the end-consumer, or product-related news to reach another customer segment.

Several authors already identified that advertisement focused on a specific group and addressing their specific needs, is more likely to be effective in terms of established trust due to the fact that targeted messages facilitate more customer involvement (DiMaggio et al., 2001; Gurau, 2008; Lopez & Sicilia, 2013; Rybalko & Seltzer, 2010). This can be applied to the B2C as well as to the B2B market. Specifically, Gurau (2008) and Lopez and Sicilia (2013) emphasize that more focus on conversation, which is more facilitated by targeted social media activities and messages, evoke more awareness and thus, more consideration and preference (Favier, 2012).

Users in social media platforms are primarily seeking involvement, participation and relationships (Andzulis et al., 2012; eMarketer, 2010; Dywer, 2007). Therefore, companies have to place great value on targeting and involving customers and building relationships in order to create a trustworthy and successful relationship between customer and company (Favier, 2013; Morgan & Hunt, 1994). Consequently, trust also means targeting; consumers within closer relationships show more trust and thus, can enhance brand value in contrast to untargeted people and strangers (Favier, 2013). We trust people with whom we have closer bonds six times more than acquaintances, whereas we trust acquaintances even 40 percent more than strangers (Favier, 2013). In point of fact companies have to build closer relationships with customers, communicate and interact with them in order to gain their trust. Zaichkowsky (1985) and Dywer (2007) identified that a high customer involvement leads to more brand awareness, i.e. more interest in a product and purchase considerations, which in turn can also lead to worth-of-mouth. Several studies examined that trust is an important attribute of successful partnerships, characterized by commitment, communication and cooperation (Morgan & Hunt, 1994, Mohr & Speckman, 1994; Anderson & Narus 1990; Wilson, 1995). Concluding, the company has to build up relationships with its customers by communicating, involving and interacting with them in order to gain their trust (Favier, 2013; Morgan & Hunt, 1994), but the approach of establishing a relationship with all customers proves to be difficult. Rather it is useful to target the right customer base who in turn shares its thoughts and opinions about products or brands with its network of friends. Thus, social media messages have to be constituted in the way that followers are encouraged to retweet or share brands' messages.

2.3 Links

Due to the fact that trust is essential for effective social media marketing and that trust is most likely to be established between closer bonds, friends and acquaintances that communicate, tweets have to be an incentive to share their content among their virtual network. Therefore, different types of links will be examined in the following. How likely is it that links in a tweet influence the chance of a tweet to be retweeted?

Twitter allows users to forward URLs as a supplement to the tweet in their message. Tweeting links is not only a popular practice of private people, but also of businesses. A study by Thoring (2011) revealed that almost 70% of tweets contain a hyperlink. URLs are automatically shortened by twitter into an "http://t.co"-link in order to tweet also longer URLs without interfering with the given tweet length of 140 characters. Furthermore, a shortening service can be used for research purposes as it measures the amount of clicks a link has (Twitter Support, 2013).

Based on the above mentioned studies that identified that more cooperation and interaction between tweeter and reader leads to more trust, one can assume that tweets, which contain a URL or even a URL that is demanding interaction, establishing cooperation and building up a relationship, are evoking more trust than tweets without a URL or without a communicative URL. Gillbert and Karahalios (2009) figured out that URLs exchanged via social media platforms between strong ties, i.e. trusted friends or family, receive more trust and thus, more clicks. Thus, it can be seen that URLs that are perceived as trustworthy due to interaction, stronger relationships or communication are more effective than others or than no links (Chen, Nairn, Nelson, Bernstein & Chi, 2010). Romero, Galuba, Asur and Huberman (2011) also stated that messages have to be interactive in order to be influential. In addition, Castillo, Mendoza and Poblete (2011) identified that messages exchanged without any URL are perceived as less trustworthy than messages containing a URL.

Furthermore, Duan, Jiang, Qin, Zhou and Shum (2010) revealed that tweets with a URL are more effective in terms of tweet ranking and query than tweets without a URL because the hyperlink entails more information than the normal 140 characters of a tweet and these tweets will be found more often by the query. Thus, it can be concluded that tweets with a URL are more effective than tweets only containing a message. Pete Cashmore (2009) also analyzed whether normal tweets or retweets contain more URLs, and found out that retweets are used to share content and proposed that if your message should be retweeted, you have to include links in your tweets more often.

Based on an adapted classification of Gosh, Surachawala and Lerman (2011), the tweets containing a hyperlink can be classified according to whether it links to a social media website, photos, videos, websites, news, blogs, advertisement, articles or to a review. Social media websites include for example links to a Facebook or Twitter page of a particular person, brand or message. Photos and Videos refer to a link that mainly shows a photo or a video, e.g. a funny image or a YouTube video. The option website mainly refers to links to the homepage or submenu of a website, with the focus on the webpage itself. The categories news, blogs, advertisement, articles and review also include a website but are focusing not on the website itself, but on its content. News refers to links to an official news agency posting an announcement or a headline, e.g. news about a fire. Blogs refer to individuals' or groups' websites that keep an online diary in order to express their opinion. Advertisements include products or brands with a promotional purpose, which are mainly on an online shop's website. An article can be a written text that discusses a topic and is an independent part of a journal, a magazine or newspaper. A review link is often declared as a review website that evaluates mostly products, brands or services. Furthermore, the tweets will be coded in respect of whether a tweet has a link in it or not.

The types of links can be further categorized into two categories. The first category illustrates links that are more likely to raise interest and demand more time and to be a reason to talk about and share it with friends, i.e. more retweets. This category will be called communicative links and includes social media websites, photos, videos and news. Social media websites are mainly links to Facebook or Twitter, which display messages or profiles of persons or brands. These are more likely to be retweeted or shared as they are like normal messages. If someone shares a link on facebook, the messages that shares will also be liked or commented, not only the shared message itself. Photos and videos are closely related to social media

websites as users often post, like or share videos and photos on Facebook. Twitter messages, although they are only posting links to photos and videos instead of posting it directly, are comparable and also raising interest. Furthermore, they are short and illustrative and therefore more likely to evoke interest and interaction. News can be also seen as communicative links due to its nature to raise communication and interest. Although news are informative in the first place, they are likely to be shared with friends in order to address certain topics and state one's opinion.

The second category on the other hand is only for informative purposes; users will read it, but are not likely to share it. This category will be called informative links. Websites, reviews, advertisement, blogs and articles are likely to be read, but are not likely to be shared via social media websites. These types of links are neither socially bringing together people nor a reason to be shared or discussed. The classification of communicative and informative links is mainly based on looking at shared Facebook posts or retweeted Tweets in order to gain an understanding why which tweets are shared or retweeted.

Communicative links	Informative links
Social media websites	Websites
Videos	Reviews
Photos	Advertisement
News	Blogs
	Articles

Table 1. Classification of links

2.4 Propositions

If customers are recognizing a specific focus, they are more likely to interact, communicate and cooperate with a company, which results in an increased trust level between company and customer (Mohr & Speckman, 1994). Providing links could increase the level of feeling targeted and interaction and even some sorts of links focusing on interaction, involvement and communication could be more effective than others.

Links in messages are not only more likely to be exchanged, but also more likely to be clicked between stronger ties, between people who communicate and interact. Furthermore, messages containing a hyperlink are perceived as more trustworthy than text-only messages. Thus, it will be hypothesized that messages that contain a URL are more effective by raising more interest and clicks.

In addition, this paper assumes that trust is an indicator for an effective social media approach. Trust will be further examined in the method section.

The following theoretical propositions can be derived.

H1: Messages in a social media setting that contain a URL are evoking more trust among customers than messages without an URL.

As this paper distinguishes between different types of links, namely social media websites, photos, videos, websites, news, blogs, advertisement, articles and reviews, the hypotheses will be separated into nine sub-propositions in order to gain a more precise outcome.

H2: Messages in a social media setting that contain a link to social media websites evoke more trust than messages without a link.

H3: Messages in a social media setting that contain a link to photos evoke more trust than messages without a link.

H4: Messages in a social media setting that contain a link to videos evoke more trust than messages without a link.

H5: Messages in a social media setting that contain a link to websites evoke more trust than messages without a link.

H6: Messages in a social media setting that contain a link to news evoke more trust than messages without a link.

H7: Messages in a social media setting that contain a link to blogs evoke more trust than messages without a link.

H8: Messages in a social media setting that contain a link to advertisements evoke more trust than messages without a link.

H9: Messages in a social media setting that contain a link to articles evoke more trust than messages without a link.

H10: Messages in a social media setting that contain a link to reviews evoke more trust than messages without a link.

H11: Messages in a social media setting that contain a communicative link are evoking more trust among customers than messages with an informative link.

3. METHOD

3.1 Study subject

In order to investigate the effectiveness of social media activities in the B2B sector, two companies and their Twitter activity will be examined. Intel and Oracle are international B2B firms operating in the same sector and thus, allow a comparison of their social media effectiveness. The tweets of two Twitter accounts of each company will be analyzed for the period of one month.

3.1.1 Intel

Robert Noyce and Gordon Moore founded Intel in 1968 with the aim to produce semiconductor memory products. Intel expanded itself and its product range and got widely known for their innovations in the computer sector. The international company designs and manufactures integrated digital technology platforms, which are sold to original equipment, original design, and industrial and communications equipment manufactures. In addition, Intel sells software and services focused on security and technology integration (Orbis, 2012). According to the North American Industry Classification System (NAICS) codes to segment an industry, Intel is operating in Semiconductor and Other Electronic Component Manufacturing, Semiconductor and Related Device Manufacturing, Computer Systems Design Services, Custom Computer Programming Services, Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, and Other Computer Related Services. Thus, Intel presents a valuable case for investigating the use of social media for B2B firms. Intel's mission is to delight "customers, employees, and shareholders by relentlessly delivering the platform and technology advancements that become essential to the way we work and live" (Intel, 2013). Intel is an international successful company that employs over 105000 employees. Intel's revenue reached over $ 53 billion in 2012, which is almost twice as much as 10 years before, and a net income of $ 11 billion.

3.1.2 Oracle

Larry Ellison, Bob Miner and Ed Oates founded Oracle in the US in 1977 and successfully operate worldwide. Oracle produces computer hardware as well as enterprise software

products and provides services. According to the NAICS codes, Oracle can be segmented in Software Publishers and Custom Computer Programming Services (Orbis, 2012). Oracle faces intense competition, including Microsoft, IBM, Intel or HP. In 2012, Oracle employed over 115000 employees. Its total revenues reached over $ 37 billion, resulting in a net income of almost $ 10 billion (Oracle, 2012). Oracle as well as Intel are very large companies (based on their respective revenue) and therefore, valuable cases for comparison. Both have a very large customer base, a similar, fairly big marketing budget and are thus, comparable in a B2B context.

3.1.3 Twitter

Twitter is a micro-blogging platform that allows user to create a short profile and to tweet short status updates, with a maximum of 140 characters. Furthermore, users can follow other users, i.e. subscribe to all of their tweets, and retweet, i.e. copy a tweet from a friend, a company or a celebrity. Thus, users are enabled to spread messages into another network, beyond the tweeter's followers. Users are also able to comment tweets, but the comments can only be seen by their followers. Since July 13, 2006, companies, private users, brands or celebrities are tweeting, reading, and retweeting via Twitter, Facebook, SMS or email, facilitated through an application of Twitter to integrate Twitter in other web services. Twitter as a platform mainly focuses on facilitating conversation instead of sharing videos or creating an extended profile (Kietzmann, Hermkens, McCarthy & Silvestre, 2011). According to Favier (2013), time spent by twitter users on one tweet is worth $0.02 and brand followers add 40 percent of credibility to a brand by retweeting a tweet. Especially corporations are increasingly interested in Twitter marketing due to the great potential of viral marketing. Thus, Twitter is chosen as social media platform in this case study as value is placed on facilitating conversation, i.e. trust will be an essential key determinant of social media effectiveness, and businesses are actively trying to increase conversation, trust and WOM through viral marketing.

3.2 Measures

Figure 1 shows the hypothesized relationship between the independent and dependent variable. Links in tweets is assumed to have an effect on trust. The measures for each variable and for Favier's model can be found in appendix 1.

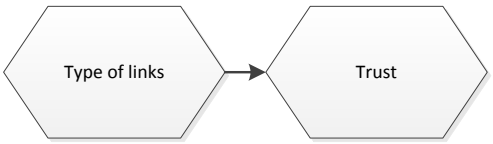

Figure 1. Causal model

In order to calculate the ROI of social media the model provided by Favier (2012) will be used. Favier (2013) proposes in his book that consumers and consumers' network of friends spend their quality time on brands in a social media setting. The quality time of consumers determines the value of brands as it is stated that an extra hour of income is equally valued as an extra hour of quality time, which means that quality time adds value to brands. Favier (2013) further assesses that the value of quality time consumers spend on brands depends on time, frequency, trust, sentiment and income. Thus, the return on investment of social media activities depends on social interaction.

Favier's (2012) ROI model of social media bases on the formula time * trust * sentiment * income for each touchpoint and will be examined in the following.

Touchpoint means the frequency of reading a message.

Time refers to the amount of time that potential readers spend on working with a tweet, i.e. reading, commenting, retweeting or following it. Users that read a tweet can be calculated by the retweet-tweet-ratio by Dan Zarella, that is the average retweets per day divided by average tweets per day, divided by the number of followers. In Twitter, users are spending on average 7 seconds per tweet.

Trust refers to the intimacy and trustworthiness between users in order to investigate how close they are. The level of trust can also be measured by the retweet-tweet ratio. Obviously, we trust close friends more than 'normal' friends or marketers.

Sentiment refers to the message's content and which sentiment it transfers. Does it convey a negative, a positive or no sentiment at all? Jansen et al. (2009) define sentiment as the expression of opinion about a brand, including its product, service or company. Celikyilmaz (2010) also states that coding a tweet's sentiment is not obvious, if any sentiment is in place.

The last aspect of Favier's model, income, is about the demographics of a company's followers. What is the net income of one's fans and followers? How much money are they investing in the company when spending time on a tweet?

3.3 Data collection

The tweets of all Intel and Oracle accounts are collected within a time frame of one month (February 2013). The analysis is conducted within SPSS in order to investigate the effect of links on trust.

The tweets are coded by four persons separately and the Cohen's kappa is calculated in order to test for inter-rater reliability. A coefficient of 0.8 or higher represents an almost perfect agreement between the raters and cancels out the subjectivity while coding. The first group has a coefficient of 0.8635 and the second group a coefficient of 0.94. The inter-rater reliability is given.

3.3.2 Trust

Trust will be a measure for the effectiveness of the tweets and thus, it will have an impact on brand equity. Trust will be calculated according to Favier's (2012) model and Dan Zarella's (2009) retweet-to-tweet ratio that is a solid indicator for the intensity of online interaction and thus, for the tweet's effectiveness. The ratio takes the average retweets per day, divided by the average tweets per day in order to divide them by the amount of followers of the particular account and multiplies it with a large constant, in this case 10000, in order to avoid too small numbers. The formula can be found in appendix 1.

3.4 Type of analysis

The tweets are collected, analyzed and coded and the statistical analysis is conducted. Besides a uni- and bivariate analysis for a first understanding of frequencies, several regression analyses are performed in order to investigate the relationship between the dependent variable retweet-ratio and the independent variable links. In order to draw a more comprehensive conclusion the analysis is divided into three distinct parts. Analysis 1 investigates the impact of a link on the retweet-ratio. Therefore, the tweets are coded as having a link or not; no distinction is made between different types of links.

However, analysis 2 investigates the impact of the different types of links individually on the retweet-ratio. The tweets are coded as containing one of the types of links or not. Thus, a conclusion can be drawn whether a certain type of link is more

effective in terms of retweets than no link. In addition, this analysis will be conducted for all tweets as well as separately for Intel and for Oracle in order to compare their effectiveness and whether the results are consistent. As the variable types of links is a categorical variable and has more than two values, one value has to be left out (k-1) in order to gain binary variables. In this case, 'no link' will be left out and serves as a reference variable to compare each type of links with it. Thus, conclusions whether one type of link has a positive or negative impact on the retweet-ratio in comparison with no link at all can be made. This procedure is referred to as 'dummy coding'.

Analysis 3 uses the categorization of different types of links in order to examine whether communicative links are more effective in terms of retweets than informative links. The tweets were coded as being communicative or informative based on the corresponding types of links. Thus, the regression analysis compares the impact of informative links on the retweet-ratio in contrast to communicative links.

4. Analysis

4.1 Descriptive statistics and correlations

Taking a deeper look at the frequencies of both variables and both companies under investigation, one can see that the there are more tweets that contain an link (78.3%) than tweets that have no link (21.7%). Thus, the sample seems to be representative compared to a study of Thoring (2011) with a sample that has almost 70% of tweets with a hyperlink. Regarding the distribution of the retweet-ratio, one can see that there are fairly many tweets that have a retweet-ratio of zero as no one retweeted the tweet. Furthermore, one can see that 30 tweets have a retweet-ratio of 1.27. By having a closer look into the data set, one can see that the account @OracleCommerce tweeted 30 times on February 12, 2013 due to the Oracle B2B Commerce Summit. Each tweet on this particular day has a ratio of 1.27, as the retweet-ratio displays the average of tweets and retweets per day. Despite that, one can clearly recognize a normal distribution with a mean of 1.24, and a standard deviation of 1.325 as the data has some outliers. Having a look at the boxplots for the retweet-ratio for tweets without a link and with a link, one can see that tweets with a link have a higher amount of retweets in general with a ratio range of 7.66, whereas tweets with no links only have a ratio range of 3.69 with a maximum of 4.37.

Furthermore, the frequency of the different types of links differs as well. Articles are used in 20.4% of the tweets and are therefore the most frequent ones, followed by photos, websites, videos and blogs. Having a look at the data set one can explain the high amount of articles by the Twitter account @OracleProfit, which often tweets links to their own magazine. Nevertheless, social media links and links with a promotional purpose are sparsely used. Oracle mostly tweets articles due to its own online magazine, and Intel mostly tweets photos, videos and websites.

Regarding the distribution of both companies in comparison, one can see that Oracle's retweet-ratio has a fairly higher mean (1.54) and median (1.27) than Intel with a mean of 0.88 and a median of 0.79. Having a look at the histograms of both companies, one can see that the 30 tweets with a retweet-ratio of 1.27 have an impact on the higher mean. Regarding Intel's use of links, it is noticeable that Intel uses links in 95.6% of its tweets, whereas only 64.3% of Oracle's tweets contain a link.

Table 2 represents the descriptive statistics as well as the correlations for the different variables. The analysis of the correlation table indicates that there are no strong relationships. All scores are between -0.19 and 0.13 indicating a very weak or negligible relationship. Furthermore, almost no relationship shows significant results. Nevertheless, one can see three positive relationships between the predictor variable retweet-ratio and the independent variables videos, websites and news. All other relationships indicate a negative relationship.

	Mean	St dev	1	2	3	4	5	6	7	8	9	10
Retweet-ratio	1.24	1.33	1									
Social media	1.01	0.08	-0.08	1								
Photos	1.11	0.32	-0.10	-0.03	1							
Videos	1.12	0.32	0.08	-0.03	-0.13	1						
Websites	1.11	0.32	0.06	-0.03	-0.13	-0.13	1					
News	1.07	0.26	0.13	-0.02	-0.10	-0.10	-0.10	1				
Blog	1.06	0.24	-0.05	-0.02	-0.09	-0.10	-0.09	-0.07	1			
Advertisement	1.02	0.14	-0.07	-0.01	-0.05	-0.05	-0.05	-0.04	-0.04	1		
Article	1.2	0.40	-0.02	-0.04	-0.18*	-0.19*	-0.18*	-0.14	-0.13	-0.07	1	
Review	1.08	0.27	-0.14	-0.02	-0.10	-0.11	-0.10	-0.08	-0.07	-0.04	-0.15	1

Table 2. Descriptive statistics and correlations (Pearson's r)

N = 152

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

4.2 Regression

4.2.1 Assumptions

Before the data is analyzed, part of the process is to check several assumptions in order to make sure that the data is appropriate for a linear regression analysis. If the data is inappropriate, the results will not be valid. The data will be checked via SPSS. However, several compromises have to be made due to the fact that the independent variables of this study are categorical variables. Thus, the first assumption can only be partially accepted as the predictor variable, i.e. the retweet-ratio, is continuous, but the independent variable links is categorical. Secondly, a linear relationship between the two variables is necessary. Normally, a scatterplot is created in order to visually check for linearity, but due to the fact that the independent variables are categorical variables and are coded as

either ‘yes’ or ‘no’, one does not find any pattern in the scatterplot. The scatters are vertically in line with ‘yes’ or ‘no’ and they only vary with regard to the predictor variable. Nevertheless, one can assume a positive and linear relationship from ‘yes’ to ‘no’ as ‘yes’ has higher scatters than ‘no’. Thirdly, the scatterplot does not have any significant outliers.

Furthermore, a Durbin-Watson-statistic is conducted in order to check the data for independent residuals. The size of the residuals of one case does not have to have an impact on the size of the residuals for the next case, otherwise the residuals correlate. The Durbin-Watson-statistic indicates a score of 0.9. A score close to 2 indicates no correlation of the residuals, whereas a score close to 0 indicates a positive correlation. It can be assumed that a score of 0.9 shows a slightly positive correlation. As SPSS does not report any probability for accepting or rejecting a correlation, it can be assumed that the assumption of independent correlation is accepted.

In addition, the data is checked for homoscedasticity, which implies that the variance of the predicted variable is the same for all the data. Whereby, one looks at the scatterplot of the relationship between the residuals and the predicted variable, i.e. the retweet-ratio. If there is a consistent relationship, the data shows homoscedasticity and can be accepted. By implementing a fit line into the scatterplot, one can see that the line is flat, which implies homoscedasticity. The error variance is constant and the values of the predicted variable vary. Thus, the assumption of homoscedasticity can be accepted. All in all, all assumptions are preliminary or partially accepted. The simple linear regression analysis is a valid test for the data.

4.2.2 Analysis 1

The analysis shows that links in general, including all types of links, have a slightly negative impact on the retweet-ratio. $R^2 = 0.003$ means that only 0.3% of the variance is explained by the model, thus there is almost no correlation between the observed retweet-ratio and the predictors links (appendix 2). H1 has to be rejected. According to the F-test and the p-value, the model has no good fit for the data and the data is not significant. As there is no correlation between the use of links and the retweet-ratio, the correlation of the different types of links and the retweet-ratio will be investigated in order to get a more precise result.

4.2.3 Analysis 2

There is a negative relationship between observed and predicted values social media websites ($y = 2.505 – 1.252x$; $R^2 = 0.006$), photos ($y = 1.69 – 0.401x$; $R^2 = 0.009$), blogs ($y = 1.513 – 0.254x$; $R^2 = 0.002$), advertisements ($y = 1.873 – 0.616x$; $R^2 = 0.004$), articles ($y = 1.302 – 0.048x$; $R^2 < 0.001$) and reviews ($y = 1.986 – 0.688x$; $R^2 = 0.02$). One can see that only a low proportion of the variability in trust can be accounted for by the different types of links, thus these types of links cannot be interpreted as having a negative impact on trust. Nevertheless, all results are not significant with an alpha level of 0.05 (see appendix 3). H2, H3, H7, H8, H9 and H10 have to be rejected.

Despite that, the data shows a positive relationship for the predictor variables videos ($y = 0.889 + 0.317x$; $R^2 = 0.006$), websites ($y = 0.953 + 0.262x$; $R^2 = 0.004$) and news ($y = 0.526 + 0.670x$; $R^2 = 0.017$). Videos, websites and news predict a higher retweet-ratio than no links at all (see appendix 3). Although the data is not significant, H3, H4 and H5 will be preliminary accepted.

Having a look at the data of Oracle and Intel, one can see that Oracle, which has a higher retweet-ratio anyway, confirms the data by showing a positive relationship for the predictors videos, websites and news. In fact, these three positive relationships show significant results at an alpha level of 0.05. All other types of links show a negative impact on the retweet-ratio. Despite that, Intel does not confirm all the findings. One can depict a positive relationship for news, but also for photos and blogs. The other types of links show a negative relationship on the retweet-ratio (see appendix 3). Oracle is consistent with the results whereas Intel shows other results. It can be assumed that this is due to a higher retweet-ratio of Oracle compared to Intel. Intel has less retweets in general and thus, has not enough data to confirm the predicted relationships.

4.2.4 Analysis 3

Regarding the classification of link types into more communicative or informative links, one can also see a clear distinction. Communicative links are more likely to evoke higher retweet-ratios than informative links (see appendix 4). If companies include social media websites, news, photos as well as videos in their tweets, they are more likely to raise the retweet-ratio and thus, be more effective in terms of brand equity. H11 will be accepted.

4. RESULTS

The results clearly show that tweeting any kind of links does not have a positive effect on the retweet-ratio. Companies that tweet specific types of links, i.e. websites, videos and news, are more likely to be retweeted than tweeting other types of links. Furthermore, communicative links, which are encouraging communication and interaction, are more effective in terms of retweets than informative links. It can be concluded that websites, videos and news are evoking more retweets due to their nature of encouraging discussion, sharing and communication.

5. DISCUSSION

This study contributes to the effective use of a micro-blogging platform for marketing purposes of B2B companies. How can companies twitter most effectively in order to increase customers’ trust? This study offers insights into social effects of micro-blogging as well as the use of micro-blogging for marketing purposes. Especially the role of trust is examined in regard of how it can be influenced and increased. Furthermore, trust is an essential component for customers’ relationship building. The fact that users trust their own network of friends and acquaintances more than strangers is used in order to explore how micro-blogging can be most effective so that companies can benefit from the trust of followers’ friends. Trust represents an essential factor in effective social media marketing and thus, its influencing factors have to be examined.

This study is mainly content-based and examines the use of links in Twitter messages. Links are examined due to the fact that followers’ friends put relatively high trust in a shared or retweeted message. It is hypothesized that links in a message are increasing the level of trust by the increased chance of being retweeted. However, the use of links in social media messages as well as classifications of links are poorly researched yet.

However, there are several strengths of this research. The companies under investigation are operating mainly in the B2B field and the tweets were analyzed with regard to its impact on business customers. Thus, this study contributes to social media marketing of B2B companies. Furthermore, Intel and Oracle are two major companies in the computer hardware and software

industry and ideally suited for analyzing their tweets without taking into account drawbacks of smaller companies, e.g. a limited marketing budget or a too small customer base not worthwhile for social media marketing. Furthermore, this study bases on a comprehensive literature review and several studies that explored the role of trust extensively.

6. LIMITATIONS AND FUTURE RESEARCH

First, this research is limited by the fact that the analysis does not show any significant results. Nevertheless, the analyses have depicted several positive relationships between predictor and observed values.

Second, this research only examines the micro-blogging platform Twitter. Twitter is by far one of the largest social media platforms, but future analyses could incorporate messages of for example Facebook as well. Twitter is a special case as its messages are limited to 140 characters. In contrast, Facebook enables larger messages and if a link is posted, the message also reveals a preview of the link, with an image and the title. The effect of links in messages could be even larger and thus, represents an interesting area for future research.

Furthermore, the access to both twitter accounts is limited as the researchers only have access to the public visible accounts of Oracle and Intel, and thus, comments and retweets could not be seen. Therefore, the coding is restricted on the public visible tweets. A permission to enter all accounts and analyze the retweets and comments would have extended the research.

Regarding the literature review, it has to be admitted that literature on the independent variable links in messages is clearly limited yet. Therefore, the classification of links is very biased in the way that it mainly bases on links tweeted. Subjectivity in classifying the links is a limitation to the research. Future research has to examine the role of links in a social media setting and establish a universally applicable classification of links.

7. CONCLUSION

There is plenty of research focusing on social media and the importance of trust for marketing purposes, especially in the B2C field. This study contributes to the field of how trust can be increased by Twitter messages of B2B companies.

This research has used the ROI model of social media by Favier (2012) in order to investigate the impact of links used in tweets on one variable of the ROI model, which is trust, in order to draw a conclusion, which impact links have on social media effectiveness. Specifically, the study highlights which types of links are more effective in terms of retweets in order to increase trust. Therefore, tweets were coded according to nine different types of links. Beforehand, the literature review clearly acknowledges that trust enhances brand equity and that links can be a reason for sharing and retweeting and thereby, increases the trust level. The analysis revealed that three out of nine different types of links, i.e. videos, websites and news, have a positive impact on the retweet-ratio, which indicates the trust level. The analysis of the two groups informative and communicative links showed that communicative links are more effective in terms of retweet than informative links.

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10. APPENDIX

Appendix 1

Concept	Definition
Targeting	Targeting refers to a company's intent of pinpointing groups of firms that are of greater interest to the supplier firm.
Trust	Trust is the confidence of one party in an exchange partner's reliability and integrity. Furthermore, trust refers to the trustor's belief that the trustee will perform actions that result in positive outcomes and that the trustee won't perform actions that result in negative outcomes.
Links	Whether a message contains an URL

Table 3. Theory

Variable	Measurement
Touchpoint	Frequency of hearing or reading a message
Time	Amount of time working with a tweet
Trust	Intensity of online interactions Retweet-to-tweet ratio on Twitter (Average Retweets per day)/(Average Tweets per day) Followers
Sentiment	Negative Neutral Positive
Income	Average net income of followers
ROI of social media for each touchpoint	(Time*Trust*Sentiment*Income) of sender and receiver

Table 5 Coding scheme

Concept	Coding
Link	Whether a link was used or not
Types of links	Social media = social media platforms like Facebook or LinkedIn Photos = mainly photos Video = mainly videos, e.g. on Youtube Websites = website itself, mainly homepage News = news organization like CNN Blogs = blog or webpage maintained by an individual or group in order to express opinions Advertisement/Promotion = advertising a product or company, promotional activities or spam Articles Review None

Table 4. Favier's model

Appendix 2 Analysis 1 link or no link

	B	s.e.	p
Link	-0.163	0.261	0.533

Table 6. Simple regression analysis of link compared to no link (independent variable) and the retweet-ratio (dependent variable)

Appendix 3 Analysis 2 Types of links, independently, compared to no link

Social media website	**B**	**s.e.**	**p**
Both companies	-1.252	1.33	0.348
Intel	-	-	-
Oracle	-1.557	1.652	0.349

Photos	**B**	**s.e.**	**p**
Both companies	-0.401	0.341	0.241
Intel	0.011	0.174	0.952
Oracle	-	-	-

Videos	**B**	**s.e.**	**p**
Both companies	0.317	0.333	0.342
Intel	-0.035	0.181	0.848
Oracle	3.462	0.892	<0.001

Websites	**B**	**s.e.**	**p**
Both companies	0.262	0.342	0.444
Intel	-0.211	0.184	0.256
Oracle	3.634	0.884	<0.001

News	**B**	**s.e.**	**p**
Both companies	0.67	0.413	0.107
Intel	0.358	0.229	0.123
Oracle	2.190	0.940	0.022

Blog	**B**	**s.e.**	**p**
Both companies	-0.254	0.457	0.579
Intel	0.063	0.288	0.828
Oracle	-0.473	0.844	0.577

Advertisement	B	s.e.	p
Both companies	-0.616	0.774	0.427
Intel	-0.252	0.365	0.493
Oracle	-	-	-

Article	B	s.e.	p
Both companies	-0.048	0.268	0.858
Intel	-0.319	0.364	0.385
Oracle	-0.398	0.380	0.298

Review	B	s.e.	p
Both companies	-0.688	0.396	0.085
Intel	-	-	-
Oracle	-1.082	0.501	0.034

Table 7. Simple regression analysis of each type of link compared to no link (independent variable) and the retweet ratio (dependent variable)

Appendix 4 Analysis 3 Communicative and informative links

	B	s.e.	p
Informative links	-0.219	0.276	0.428

Table 8. Simple regression analysis of informative links compared to communicative links (independent variable) and the retweet ratio (dependent variable)