

Measuring Effectiveness of Social Networking Sites Using AHP

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Abstract

Technological advancements and Internet facility is changing the way a marketer communicates and attracts its customers. Interactive media is being used as a part and parcel of company's marketing strategy. The popularity of social media marketing has increased significantly in the past couple of years. Despite, it has been observed that measuring the effectiveness of social media is a not an easy task. Academicians and the marketers are keen to learn how social media can benefit (or harm) the business. Marketers are interested in calculating the ROI of their social media efforts. Social media marketing provides a wide range of qualitative and quantitative benefits to the organizations and it is not easy to measure them as a whole. The problem is that due to vagueness in current measurement tools many important aspects remain unmeasured and still depends on personal assessments of the marketer. This study addresses the concern and develops a model that helps marketers in measuring the return on investment they have made in social media activities. For developing this model we identified various factors attributable to a social networking sites. Analytic hierarchy process is being used to develop the model for ranking various social networking sites with respect to their effectiveness. This model can be used by marketers to rate various social networking sites before using them in their marketing strategy.

Keywords: Return on Investment, AHP, Social Networking Sites.

INTRODUCTION

In recent years a radical change has been observed in the way people interact and communicate. With the advent of Internet and emergence of e-commerce, business activities are becoming digital. It is shifting to online platforms. The technological advancements have led to popularity of social media. Social Media provides flexibility to organizations to gather consumer-based input and also helps them to market their products, promote

their brands and services. Social Media has added a participatory element where an individual not only receives information but can also take part in the generation and distribution of content. In last couple of years, the use of Social Media (SM) has significantly increased with millions of users creating voluminous amounts of data every day. As per DOMO report (2017) "Data Never Sleep 5.0", some 41, 46,600 videos are watched on You tube, 4, 56,000 tweets are sent on Twitter and 4, 67,500 photos are posted on Instagram every minute.

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Social Media Marketing (SMM) refers to interventions through social media to increase brand awareness of product and services. It helps in understanding how technology has made it easier for customer to connect socially how marketer can gain from it. However, it is not sufficient for marketers to sheerly introduce social media, for example, in the form of creating a promotional video on Youtube or posting a picture on Instagram.. It is important to use social media in an effective manner, and have a plan to implement it. The primary reason for the popularity of social media amongst the marketers is to exploit social networking sites to market their products or offerings. It has been perceived that only financial gains can be measured in tangible form. However intangible gains such as customer satisfaction, interaction with the customer, brand loyalty etc from social media may be significantly rewarding. But measuring such intangible benefits is not easy.

Inspite the novelty of the research problem and the lack of effective measurements it is clear that the SMM has already attracted a good amount of attention amongst practitioners and academicians. Marketers are facing difficulties in measuring effectiveness of social media. Majority of the existing frameworks are largely driven by “reach and frequency” and are not suitable to the interactive social media environment. Therefore measurement of social media marketing efforts and development of performance measurement system shall assist companies in evaluating effectiveness of social media marketing A good marketing strategy is an outcome of systematic and logical thinking applied by marketers at the time of selection of social media platform. Sometimes marketers put their efforts on a social media platform in the beginning but during execution the marketers realize that it is not worth investing time, money and energy. This could happen due to inadequacy of data and lack of measurement tools available for measuring effectiveness of a platform.

This study addresses the given problem and

develops a model to measure various social networking sites. These platforms are ranked according to various factors that are attributable to them. In Section 2, this research identifies various attributes that must be kept in the mind while choosing a social media platform for a SMM campaign. Based on identified attributes, a model has been developed that will help marketers to choose a social media platform that best suits to them. This model ranks various social media platforms according to their weighted average score on various attributes. Section 3 of the paper discusses methodology used in the research. Analytic Hierarchy Process (AHP) has been used in the study to design and develop the model. Section 4 of the paper discuss the findings and results of the study, Section 5 of the paper concludes the study and present implications of the research.

LITERATURE REVIEW

There has been a significant literature in the area of social media marketing in last decade. This section presents how marketing through social media had been evolved and how the measurement of effectiveness of social networking sites have always been a challenge for practioners and academicians.

Rooney (2011) in his study stated that social media allows marketers to interact with customers personally and build closer relationships. Social media also enabled companies to reach their target audience that they could not reach before. Agostino and Sidorova (2016) suggested that social media is an online tool which comprises of on user generated content and social interactions and. Social media allows organizations to interact with multiple people instantly. These qualities of social media heightened the urge of using social media at both personal and organizational level.

To measure the effectiveness of Social networking sites (SNS), one has to evaluate the SNS based on various parameters. A SNS's effectiveness is the extent to which a SNS is able to meet the expectations of users. Is a SNS is poorly designed or

is not able to provide adequate amount of security, users are tend to switch to other SNS. Rodriguez and Trujillo (2013) stated that SNS evaluation is problematic because the objectives, approaches and criteria are diverse in nature. Kizildag et. al. (2017) stated that growth of social media has provoked companies to customize their products, services and strategies that can match the requirements of the target audience. In short, social media is changing the internal structure of firms. McCann and Barlow (2015) in their research state that social media has become an integral component of everyday life to interact and share information. It is cost effective and convenient to use and therefore can assist organizations to connect with customers. However, to ensure the effective use of social media, marketers must have a blueprint highlighting how it will be utilized and what it will be utilized for. Keegan and Rowley (2017) in their research found that numerous companies are spending on social media marketing. These organization have started appreciating the need for social media presence to protect brand image and engage customers. As companies started investing in social media marketing therefore it is pertinent to measure the return on investment and fulfilment of marketing objectives. Larson and Watson (2011) emphasised that measuring effectiveness of social media is the matter of concern for the marketers. It is difficult for the organizations to plan their social media activities without measuring the consequences of their marketing campaign. McCann and Barlow (2015) observed in their study that the measurement of effectiveness social media has initiated the discussions in recent times, as companies are adopting the use of social media. However estimating the return on investment can be a complex phenomenon yet any business not able to do so will be deprived to reap full benefits. Agostino and Sidorova (2016) stated that quantification of social media effort are also gaining popularity in other academic discipline. The literature also established that "SNS need to be evaluated for their effectiveness", highlighting the importance for organizations to measure the tangible gains of social media campaigns. Keegan and

Rowley (2017) observed that there has been significant work in the domain of measurement frameworks. There is a need to have a better clarity of goals, objectives and metrics to measure the effectiveness of social media platforms. They have also developed the model that relates measurement with SMM decision making and campaign planning. However, the model has not been tested using primary data, and therefore prescriptive in nature rather than emperical. Romero (2011) in his study suggested that there is a misconception that internet activities can easily be quantified. It is difficult to measure return on investment just on the basis of web visits and the number of comments. Barger and Labrecque (2013) found that the measurement challenge is further complicated by the consumer-to-consumer interactions that social media enables. Grizanea and Jurgelaneb (2017) found in their study that since more than 50% of the profiles are fake on the social media one cannot simply rely on the number of followers to assess the effectiveness of social media. Also all of the social media platforms are not equally popular among users, therefore the most effective networks are those which communicate with the user best. Hoffman and Fodor (2010) have proposed that a good social media measurement framework should not rely only on return on investment rather it should begin by taking customer motivations and level of customer engagement into account. That is, instead of emphasizing their own marketing investments and calculating the returns in terms of customer response, managers should begin by considering consumer motivations to use social media and then measure the social media investments customers make as they engage with the marketers' brands. McCann and Barlow (2015) identified in their paper that when they asked if the respondents had any primary reason behind the usage of social media. 82% respondents stated that yes they had a primary reason. Those reasons include factors such as brand awareness and Consumer engagement. Agostino and Sidorova (2016) found that interaction indicators support the quantification of network interactions and helps in measurement of social media activity of

users. These indicators include awareness, engagement, word-of-mouth and virality. The ability of an organisation to establish dialogue is measured by its power of engagement is based on the quantification of responses to a social media post. For example, the engaging power can be calculated by counting the number of replies on Twitter, through the number of subscribers on Youtube and by the number of comments on Facebook. Tsai et al. (2010) identified navigability, speed, links, information, relevancy of information, information richness, currency, attractiveness, security and personalization as attributes of a social media site. Smith (2001) suggest two group of criteria i.e information content and ease of use.

Tang (2015) applied analytic hierarchy process to select a site. He identified four major attributes namely content, functionality, usability and privacy. Braddy et al. (2008) found that some factors such as website usability and website attractiveness are the two major factors that influence the impression of an organization.

Majority of the researches have been carried out for website (commercial and government). However there is a lack of framework for assessing effectiveness of social networking sites. In the study we examine various criteria based on characteristics of social networking sites.

METHODOLOGY

After extant review of literature, in-depth interviews were conducted. In total, three in-depth interviews were conducted. The first expert represents an academician from reputed business school researching and teaching courses related to social media. Second expert represented a practioner from a leading social media company. Third expert represented social sector extensively using social media. Based on interviews a comprehensive list of metrics were identified to measure effectiveness of social media. Further to quantify these attributes analytic hierarchy process was used.

Analytical hierarchy process is a methods of evaluating various alternatives. In this method the factors/criteria are identified, and if there are sub criteria, they are arranged in a hierarchy descending from an overall goal to criteria, sub-criteria and alternatives (Satty, 1990). The AHP is a useful method for making decisions when various selection criteria and alternative are available. Vaidya and Kumar (2006) stated in their study that AHP can be practically applied in three categories. One of those applications is for evaluation and selection of an alternative. It involves use of relative scale which basically measure and weights those factors for which there is no standard scale of measurement example love, political etc. A relative scale is required wherever there is a need to represent subjective understanding (Satty, 1990). The value on relative scale are derived from judgements given by experts in pairwise comparison of criteria on Satty scale (Table-2). Pairwise comparison of criteria in a hierarchical structure is most unique feature of Analytical Hierarchy Process as it allows comparison of homogenous factors and segregates the heterogeneous factors. The pairwise comparison values are normalised using Satty's (1980) eigen value method and accordingly priority weights are calculated for six criteria. Priority weights are put to test of consistency. Once the priorities (weights) satisfy the consistency requirements, Satty also proposed methodology for converting Local priorities into global priorities as per the problem hierarchy. The AHP is used with two types of measurement-one is relative and second is absolute. In case of Relative measurement we make pairwise comparisons throughout the hierarchy starting from Criteria to alternatives. But in case of Absolute measurement, we restrict pairwise comparison to criteria only and Alternatives are simply rated on a scale with respect to each criteria (Satty, 1990, P. 14). You can read details on full methodology of analytical hierarchy process in the work of Satty (1980; 1990).

Table-1 Satty Scale

Intensity of Importance on Absolute Scale	Definition	Explanation
1	Equal Importance	Two Criteria are Equally important for Goal Achievement
3	Moderate importance of one over other	In opinion of experts one criteria is contribute moderately more in goal achievement than other
5	Strong importance	One Criteria is strongly favoured over another
7	Very strong Importance	One criteria stands preferred over another very strongly
9	Extreme Importance	Dominance of one Criteria over another is extremely stated
2,4,6,8	Intermediate values between two value judgements	When compromise is needed

Source: Satty (1990): How to Make a decision: Analytical Hierarchy Process

Using analytical hierarchy approach we determined the weights of various criteria and developed 'Criterion matrix' for identification and selection of a good research problem. The details about the same have been discussed in the next section of this paper.

FINDINGS

The aim of the paper is to find out the relative worth of a social networking site for realising this goal, we have identified six major attributes. Pairwise comparison of attributes were made. Results of pairwise comparison of attributes are presented in Table-1. It indicates the eigen vector of attributes identified in the study. In order to test validity of score, consistency ratio was calculated. A consistency ratio is less than 10% (λ_{max} 2.50, CR = 0.02), the priority vectors indicates valid score based on consistent judgement. Amongst these criteria, Customer Engagement scores the highest followed by customer experience, content quality, brand awareness, privacy and security and news and

update oriented content. The study reveals that engagement with customer is most critical aspects for social networking site.

Table-1

Attributes	eigen Vector
Brand Awareness	0.134
Customer Engagement	0.348
Customer Experience	0.183
Content Quality	0.175
Privacy and Security	0.096
News and Update oriented content	0.064

Source:- Based on Primary data

After deriving the weights of criteria, a matrix was developed where various social networking sites can be ranked. In the study top 5 social networking sites namely Facebook have been identified and rated on

the given parameters. The matrix developed in the study has been named as Social Networking Site Ranking Matrix which is shown in the Table 2.

Table-2 - Social Networking Site Ranking Matrix

Ranking the SNS's											
Criteria	eigen vector	A1	A2	A3	A4	A5	Factor Scores				
		Facebook	Twitter	Linked In	Youtube	Instagram	A1	A2	A3	A4	A5
Brand Awareness	0.134	5	3	5	5	5	0.67	0.402	0.67	0.67	0.67
Customer Engagement	0.348	7	5	3	5	7	2.436	1.74	1.044	1.74	2.436
Customer Experience	0.183	7	7	3	7	5	1.281	1.281	0.549	1.281	0.915
Content Quality	0.175	5	7	7	5	3	0.875	1.225	1.225	0.875	0.525
Privacy and Security	0.096	3	5	5	3	3	0.288	0.48	0.48	0.288	0.288
News and Update oriented content	0.064	5	7	3	3	3	0.32	0.448	0.192	0.192	0.192
							5.87	5.576	4.16	5.046	5.026
							1	2	5	3	4

Source:- Compiled based on Primary data

After rating, these ratings have been multiplied by the eigen vector of each criteria to reach weighted score of each alternative on each criteria. These weighted score have been summed up to reach to their final score. On the basis of there scores, 5 alternatives have been ranked.

The results shows that Facebook (A1) has been judged most effective on given criteria. It is rated as highest in creating brand awareness, customer engagement, and customer experience. The eigen vectors of these three criteria are relatively high. However Facebook is not doing well in other criteria but still it is ranked first because these three criteria have relatively low eigen value. Facebook is followed by Twitter (A2) YouTube (A4) Instagram (A5) and Linked In (A3).

CONCLUSION

Social media marketing is a trending phenomenon. Every marketer desires to take advantage from the social media but selecting a social network can be a strenuous exercise. Before deciding the platform for

their social media campaign, organisations must understand their goals and their own criteria on which they will evaluate a social media. Running social media campaign on a social network is not an easy task and if the network is wrongly chosen then it can result into a disaster. The present research focused on this problem and provides a matrix that can help marketers to rank various social networking sites. In the study, various criteria have been identified through the extent review of literature. However the list of criteria is not exhaustive and marketers can add further criteria according to their own experience. The study identified relative importance of attributes measuring the effectiveness of social networking sites. Facebook had been judged as most effective SNS based on the identified attribute. The present study highlights customer engagement is the most important criteria for evaluating the effectiveness of SNS. Marketers can determine their communication strategy depending upon effectiveness of SNS identified in the study. Though an attempt has been made to quantify the qualitative attribute, however some of these attributes may not be truly quantifiable. The study

evaluated only 5 popular SNS however there could be more depending upon target group. The study lacks empirical estimation usually carried out through primary data collected by surveys. Future researches can focus on exhaustive list of attributes and covering more number of SNS.

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