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Prioritizing Decision Alternatives for Social Media Planning

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Abstract

Purpose: Social media is paving the way to a new way of looking at markets. Consumers have now become a source of insight. The Indian Internet market is growing very fast and so is the use of social media. Therefore there is need to examine methods for social media selection problems. **Methodology:** The Analytic Hierarchy Process (AHP) has been used to model a complex problem based on multiple non-parametric criteria in a hierarchical structure showing the relationships between goals, criteria, uncertainties and alternatives, where experience, insight and intuition can all be used in a logical manner to derive standardized ratio scale priorities or weights. **Findings:** Based on the criteria Facebook had the highest composite weight followed by Twitter and finally Youtube. This result agrees with the findings of research based on survey of organisations. **Implications:** The paper recommends use of AHP as a useful supplement to intuitive decision-making that is normally reserved for media selection problem solving. **Originality:** Most of the original work in this area is qualitative. This quantitative paper will help in designing innovative and effective social media platform selection strategies for greater social mobilization. AHP can be assessed in terms of the clarity gained, the ability to judge more thoroughly, the scope for adaptation and change, and legitimisation of decision-making.

Keywords: AHP, Online Advertising, Online Marketing, Social Media Planning

1. Introduction

Social media is paving the way to a brand new way of looking at markets as companies and organizations begin to realize the value of the Internet as a primary component of their communication platform. Consumers have gained importance as a source of insight. The digital platform is no longer just another messaging channel. The issue is now about engagement and how advertisers can connect with people. Brands no longer only talk to people, they are now trying to listen and generate conversations, and convert leads and issue call-to-actions that are responsive. This objective can be realized through a viral, guerilla or events-based marketing in a cost effective manner when integrated with social media. We are currently in a transition from the Industrial age where the focus was on production economy to a Relationship age where the focus is on attraction economy where brands rely heavily on Context, Contact and Creativity.

Consumer purchase decisions are highly influenced by opinions and decisions of peers, that include advice received through word of mouth[1,2] and in this they are able to influence even more than advertising channels[3,4] especially when they are happy or unhappy with a product[5,6].

The advent of the Internet has created an opportunity for individuals and future potential customers to interpersonally connect and thus it becomes a powerful means to disseminate information about a product or service. Thus these marketing messages are no longer unidirectional with messages being exchanged between the customers[7]. Social networking websites aim to create a platform to build social networks or relations among people who share interests, activities, backgrounds or real-life connection. These websites have gone from conventional friendly get-

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togethers to more business-oriented purposes. Modern businesses use social networking websites to advertise their products to more diverse range of audience.

In this, a network of friends causes even more rapid dissemination of information[8] and therefore Social networking sites are more effective due to the high level of consumer engagement and opinion leaders can reach a wider audience through blogs and social networks[9].

Overall, people generate 500 billion online influence impressions on each other about products and services every year. And this influence is highly concentrated — 16% of the people generate 80% of the influence[10].

Levine et al.[11] argue that markets are conversations consisting of human beings and not demographic sectors and the Internet is enabling conversations among human beings that were simply not possible in the era of mass media and therefore companies that do not belong to a community of discourse about human concerns will die[12]. Brand communities or 'a group of ardent consumers organized around the lifestyle, activities and ethos of the brand'[13] can be created by understanding the needs both social and individual of the consumers and being able to connect consumers along these lines through an affiliation with the brand. Social networks can help in this as it can provide an insight into the consumer needs and by promoting brand loyalty involvement[14].

The problem of social media selection is as challenging as media selection itself, because of the multiplicity of reasonable alternatives, complexity of advertising objectives and certainly the costs. The objective of media planning is to allocate resources to a set of alternatives in order to maximize profits, however most traditional procedures for media selection rely mainly on judgment and usually are unable to consider large combinations[15]. Armstrong and Kotler[16] suggest a decision support system that functions in a real world environment to deliver the best reach, frequency and impact for the money.

In this context, it is reasonable to worry about the Indian market scenario where the number of active Internet users have increased from 50 million in 2008 to 120 million in 2012[17], where there is a steady rise in the number of Internet-habituated consumers in cities and towns beyond the top 20 cities and where only a third of the users reside in the country's top eight cities. Further there were already 380 million mobile phone users in 2012, 40 million smartphone users, 50 million PCs/Laptops users and 4 million tablet users and according to TRAI the number of broadband connections have increased from 10.3 million in 2010 to 14.7 million in 2012 with an estimated 60 million users[17]. There were 71 million Facebook users in India in 2012**.** Online advertising market touched Rs 2,000 crore in 2012 and is expected to grow at a whopping 32% and yet of this only 10% of the revenue is spent on social networks[17].

Therefore it is necessary to study in greater detail about the frequently used and most popular social media websites namely Facebook, Twitter and Youtube as a platform for publicity and advertising.

Not many studies have focused on the aspect of social media selection in the Indian scenario and as such the author feels a quantitative research will add to the existing literature on the subject. The focus of this paper is to develop a managerial model for social media selection.

2. Research Question

Social media is used by advertisers for a variety of reasons, the most important reasons being as a tool for research on customer's needs, perspectives and perceptions, as a platform to highlight brand development news, as a means to provide better customer service, to be able to generate leads and to be able to build community advocates for the brand[18].

Against this background this paper makes a modest effort to design a model to evaluate the social media strategy goals based on the related metrics of the three popular social media platforms in the Indian context to find the best suited social media platform in a given context.

3. Study Design

The present study is based both on primary and secondary data sources. The constant changes and developments in the digital media and marketing scenario imply a scarcity of updated academic literature in this area. In order to get an appropriate range of secondary resources, wide reading was done of the following resources: analysts' reports, industry and academic journals, Blogs, Twitter, Facebook groups, white papers. Further interviews were conducted with marketing heads, academicians and marketers of digital solutions to gain an overall knowledge of the present scenario in India based on a questionnaire to gain a first hand knowledge regarding their views on

pair wise comparisons of reasons for advertising in each media platform. A survey was also conducted on 30 individuals who had either advertised using Facebook, Twitter or Youtube or who had watched advertisements on these three in an attempt to understand the perception by the population on the probability of choosing the alternatives. They were asked to fill up a questionnaire asking questions like, "Between Facebook, Youtube and Twitter, as a digital medium, how would you rate them on a scale of 1, 3, 5, 7, 9 on the following parameters as per the attached Table 1"?

This data was then used to create five, 3x3 pair-wise comparison matrix for the alternatives as shown under methods of analysis.

4. Methodology

The method of social media selection is a combination of human judgment based on the experience of decision makers as well as a well-formulated analytical model to be able to deal with many factors. The Analytic Hierarchy Process (AHP) developed by Saaty[19] can tackle many of these issues and can make a significant contribution to this end by allowing decision makers to model a complex problem based on multiple non-parametric criteria in a hierarchical structure showing the relationships between goals, criteria, uncertainties and alternatives, where experience, insight and intuition can all be used in a logical manner to derive standardized ratio scale priorities or weights[20–23]. The author has therefore attempted the use of this method of AHP in the present paper.

Table 1.

Value	Interpretation
1	-j and k are equally important
3	-j is slightly more important than k
5	-j is more important than k
7	-j is strongly more important than k
9	-j is absolutely more important than k

Please fill this table with your rating:

Parameters	Facebook	Twitter	Youtube
Research			
Platform to build a brand			
Customer Service			
Generate Leads			
Build Community Advocates			

5. Methods of Analysis

The structure of the decision problem is summarized in Figure 1. The problem involves a single hierarchy (level) with 5 criteria (research, as a platform for highlighting brand news,as a tool for customer service, to generate leads and to build community advocates) and three popular decision alternatives (Facebook-FB, Twitter-TW and Youtube-YT)[18].

In selecting the best social media platform, an advertiser would like to achieve multiple objectives namely-research, highlight brand, improve customer service, generate leads and build community advocates.

The AHP will be implemented by first computing the vector of criteria weights followed by computation of the matrix of option scores and finally the options will be ranked.

In order to compute the weights for the different criteria the pair-wise comparison matrix (m x m) has been created based on secondary data obtained from the Ernst and Young Report 2013 as shown below, where an opinion survey of advertisers in the digital media was conducted,

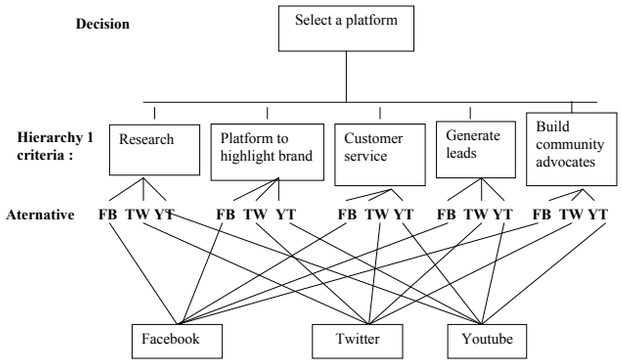
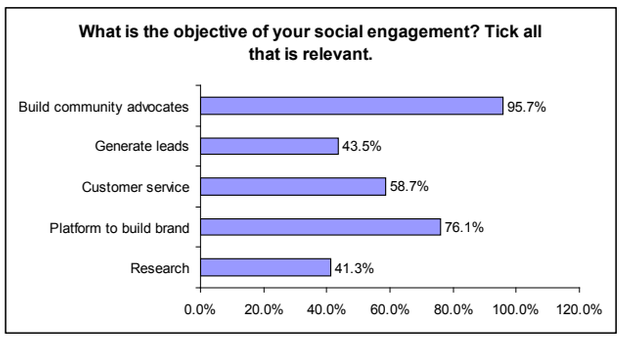


Figure 1. The structure of the decision problem.



Source : E & Y report 2013.

where m is the number of evaluation criteria considered and here it is five.

Using the above chart the pair wise comparison matrix was formed for Hierarchy 1 as follows:

When Research (R) versus Platform to build brand (P) was considered: of the advertisers surveyed, 41.3% said that the objective of their social engagement was 'research' versus 76.1%, who said it was 'to build a platform for the brand'.

Each entry a_{jk} of the matrix represents the importance of the j^{th} criterion relative to the k^{th} criterion. The following Table 2 has been used for the same.

Thus by using the Table 2 and the secondary data, if 'Research' is considered 1, then in comparison, 'Platform to build the brand', may be considered 5, 'Customer service' as 2, to generate leads as 1 and to 'build community advocates' as 7. Similarly the other rows of the comparison matrix have been computed and the Comparison matrix (which is also a reciprocal matrix) of hierarchy 1 has been computed as under:

After establishing the pair-wise judgements, the next essential step is to adjust values measured on different scales to a denoted common scale (normalization). In this case the normalization calculation was done by dividing the figures of one column by the total of that column. At this stage the author found the weights of the criteria.

The Principal Eigen value was obtained from the summation of products between each element of Eigen vector and the sum of columns of the reciprocal matrix (Table 3).

Table 2. Table of relative scores

Value of ajk	Interpretation
1	-j and k are equally important
3	-j is slightly more important than k
5	-j is more important than k
7	-j is strongly more important than k
9	-j is absolutely more important than k

In order to check the discordances between the pair-wise comparisons and the reliability of the obtained weights, one must further compute the Consistency Ratio (CR). In AHP, the consistency used to build a matrix is checked by a consistency ratio, which depends on the number of parameters. For a 5 x 5 matrix (as it is in the present case), the consistency ratio must be less than 0.1 to accept the computed weights, otherwise it is necessary to review the subjective judgement[24].

For computing the Consistency Ratio (CR) at first the weighted sum matrcies were computed by multiplying the respective priority with the eigen vectors. Then the average or λ_{max} was calculated by dividing all the elements of the weighted sum matrices by their respectvie priority and then calculating the average. Thereafter the CI (Consistency Index) was computed by using the formula.

$CI=\lambda_{max}-n / n-1$. CI was found to be 0.12. The Random consistency ratio (RI) from Saaty's scale (1980)[21] for a matrix size of 5 was found to be 1.12 and then the CR (Consitency Ratio) was computed by dividing the CI by the RI and was found to be less than 0.1(0.09) and so the pair-wise comparison evaluation was found to be consistent and thus acceptable.

The above methodology was repeated to evaluate the pairwise comparison matrices in terms of 'Research', 'Platform for highlighting brand', 'Customer service', 'Generate leads' and 'Build community advocates' of alternatives Facebook, Twitter and Youtube (Tables 4-8). The selection of the appropriate scores was guided by the method discussed in methodology. The CR in each case was found to be less than 0.1 (as reported below alongside each Table) and so the pair-wise comparison evaluations were found to be consistent and thus acceptable.

6. Findings and Discussion

The study weighted 'Building community advocates' (w=0.39), the highest followed by 'Platform to highlight brand' (w=0.35) 'Research'(w=0.13), 'Generating leads'

Table 3. Comparison matrix, hierarchy 1

	Research (R)	Platform to build brand (P)	Customer Service (CS)	Generate Leads (GL)	Build community advocates (BCA)
R	1	5	2	1	7
P	1/5	1	1/5	1/3	1/3
CS	½	5	1	½	1/5
GL	1	3	2	1	7
BCA	1/7	3	5	1/7	1

Table 4. The pair-wise comparison matrix and the relative importance of each factor in relation to the others in the context of Research

	Facebook	Twitter	Youtube
Facebook	1	1/2	1/5
Twitter	2	1	1/2
Youtube	5	2	1

CR=0

Table 5. The pair-wise comparison matrix and the relative importance of each factor in relation to the others in the context of Platform to highligt brand

	Facebook	Twitter	Youtube
Facebook	1	1/2	1/3
Twitter	2	1	1
Youtube	3	1	1

CR=0

Table 6. The pair-wise comparison matrix and the relative importance of each factor in relation to the others in the context of Customer Service

	Facebook	Twitter	Youtube
Facebook	1	2	1/2
Twitter	1/2	1	1/3
Youtube	2	3	1

CR=0

Table 7. The pair-wise comparison matrix and the relative importance of each factor in relation to the others in the context of Generate Leads.

	Facebook	Twitter	Youtube
Facebook	1	2	2
Twitter	1/2	1	2
Youtube	1/2	1/2	1

CR=0.04

Table 8. The pair-wise comparison matrix and the relative importance of each factor in relation to the others in the context of **Build community advocates**.

	Facebook	Twitter	Youtube
Facebook	1	1	1/2
Twitter	1	1	1/2
Youtube	2	2	1/2

CR=0

(w=0.08). and finally 'Customer service' (w=0.05). The consistency ratio was found to be acceptable.

Priorities were derived by calculating the eigenvalues and eigenvectors of the reciprocal matrices[21].

Pairwise comparison in terms of 'Research', weighted Facebook (w=0.6), Twitter (w=0.28) and Youtube (w=0.12) (CR=0). Pairwise comparison in terms of 'Platform to highlight brand' weighted Facebook the highest at 0.45, followed by Twitter at 0.39 and finally Youtube (w=0.16). Pairwise comparison in terms of 'customer service' weighted Facebook 0.53, Twitter 0.17 and Youtube 0.3. In terms of 'Generates leads' weighted Youtube 0.49, Twitter 0.31 and Facebook 0.2 and finally Facebook ranked highest at 0.5 in terms of 'Build community advocates' while both Twitter and Youtube stood at 0.25 each. In all the above pairwise comparison matrices the Consistency ratio was found to less than 0.1 and hence the matrices were consistent.

Based on the above, the composite weights were calculated and Facebook had the highest composite weight (0.47) followed by Twitter (0.3) and finally Youtube (.23).

This result agrees with the findings that 89.6% of all surveyed organizations in India placed Facebook as the most important platform for engagement, followed by Twitter at 56.3% and Youtube at 39.3%[18].

7. Conclusion and Implications

This study explored the potential of AHP as a support system for guiding Social media selection and found that results agreed with surveyed findings. Advantages of AHP appear to be an elaborate model structuring, the blending of rational and intuitive thought and assessment of judgement consistency. AHP can be assessed in terms of the clarity gained, the ability to judge more thoroughly, the scope for adaptation and change, and legitimisation of decision-making. Therefore AHP appears to be a useful supplement to intuitive decision-making that is normally reserved for media selection problem solving. However the propositions outlined in this paper would need to be empirically tested on a larger sample of cases.

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