USING CORPORATE BLOGS

FOR SUPPORTING

INTERACTIVE MARKETING AND CRM

Synopsis of the Thesis submitted in fulfillment of the requirements for the Degree of

DOCTOR OF PHILOSOPHY
in
MANAGEMENT

By

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December, 2009

DECLARATION BY THE SCHOLAR

I hereby declare that the work reported in the synopsis of the PhD. thesis entitled "**Using Corporate Blogs for supporting Interactive Marketing and CRM**" submitted at **Jaypee Institute of Information Technology**, Noida, India is an authentic record of my work carried out under the supervision of Dr. Y. Medury. I have not submitted this work elsewhere for any other degree or diploma.

(Vandana Ahuja)
Jaypee Institute of Information Technology, Noida, India
December 8th, 2009

SUPERVISOR'S CERTIFICATE

This is to certify that the work reported in the PhD. thesis entitled "**Using Corporate Blogs for supporting Interactive Marketing and CRM** submitted by **Vandana Ahuja** at **Jaypee Institute of Information Technology**, Noida, India, is a bonafide record of her original work carried out under my supervision. This work has not been submitted elsewhere for any other degree or diploma.

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1.Introduction

The collaborative version of the internet, termed Web 2.0, as coined by Tim O'Reilly in 2005, has altered the manner in which information is published, consumed and utilized on the internet resulting in a paradigm shift in the way interactions take place within the organizational workspace as well as between the organization and the external customers. Web 2.0 is a collection of open-source, interactive and user-controlled online applications expanding the experiences, knowledge and market power of the users as participants in business and social processes [1].

Web 2.0 tools also represent a significant opportunity for organizations to build new social and web-based collaboration, productivity, and business systems, and to improve cost and revenue returns [2].

These tools of the collaborative web have found applications in the corporate sector in the domains of Marketing, Brand Promotion and Customer Relationship Management.Web 2.0 also appears to have a substantial effect on consumer behavior and on new challenges facing strategists and marketers [3]. Corporate Blogs, Online communities, social networks, wikis, micromedia and folksonomies are some web 2.0 concepts being used by businesses.

Corporate Blogging

The dictionary meaning of a blog is a frequent, chronological publication of personal thoughts and links. Blogs are customizable online webspaces that allow users to post content, which is displayed in reverse chronological order. Blogging has found uses in the organizational domain and is fast moving up the *Slope of Enlightenment* [4] inching slowly towards widescale mainstream adoption as more and more benefits become visible.There are two types of Corporate Blogs-*External* and *Internal*. We focus our research on External Corporate Blogs.

2.Review of Literature

Salient features which emerged after a literature review-

(i)*External* Corporate Blogs, are tools used by organizations to interact with consumers, partners, marketing intermediaries, associates and components of the external environment viz. media, government agencies, and other general bodies. They offer a more uptodate view of the organization as compared to other traditional communication channels. Tapping into this new channel to listen to and interact with their customers requires new initiatives from corporations [5].

(ii)An effective blog fosters community and conversation [6], drives traffic to the product website, and serves as a medium for interaction with consumers thereby shaping consumer perception, eliciting responses, and enabling a two way thought exchange process, hence fostering a connection with the consumers.

(iii)Consumer feedback can be leveraged for organizational consumption with respect to new product development, product features and consumer expectations. People who read organizational blogs perceive an organization's relational maintenance strategies as higher than those who read traditional web content only [7], thereby making a blog a useful tool for creating and maintaining value laden relationships with current and potential customers.

(iv)Benefits to users are social as well as informational, and connecting with their community is an important value sought by all types of users [8]. Heavy users of the system realize the greatest benefits.

(v)The informality of communication helps companies build trust [9], converse with people and even manage public perception by posting suitable responses. The ability of a blog to induce consumer participation by making consumers comment on the posts hosted by the organization creates a dialogue and helps the organization achieve consumer engagement.

(vi)While the ability of a blog to achieve higher volumes of engagement in terms of volume of comments is significant, of greater importance is the knowledge capital created through exchange with consumers which can be mined to extract explicit information which can be leveraged by the organization as a decision support system [10] for consumer segmentation and strategy formulation. The advantage of blogs is that posts

and comments are easy to reach and follow due to centralized hosting and generally structured conversation threads.

(vii)These technologies make use of emergent social software platforms within companies, or between companies and their partners or customers [11] thereby leading to greater content sharing. High degrees of centralization and commonality not only facilitate knowledge capture, but also better levels of productivity due to greater accessibility.

(viii)Marketing has moved from a transaction-based effort to a conversation and Interactive Marketing can be defined as the ability to address the customer, remember what the customer says and address the customer again in a way that illustrates that we remember what the customer has told us [12]. The collaborative web is evolving as a significant interactive marketing tool and the ability to remember what the customer has said is made easier when we can collect customer information online and communicate with the customer easily using the connectivity provided by the internet.

(ix) CRM, which has also been described as 'information-enabled relationship marketing'[13], is an enterprisewide initiative that belongs to all areas of an organization [14]. It comprises processes used by organizations to manage consumer relationships which also include collecting, storing and analyzing data, and is often termed as data-driven marketing. CRM attempts to provide a strategic bridge between information technology and marketing strategies aimed at building long-term relationships and profitability. This requires 'information-intensive strategies'[15]. It is vital to maintain appropriate Customer Information Management systems by acquiring customer databases and consolidating customer feedback.

Companies interact with customers, treat them as organizational assets, learn about them and through the process of incorporating feedback and co-creation, develop a level of intimacy with them. This serves the objective of better marketing investment prioritization as improving marketing intelligence will definitely aid firms in improving the selling context.

2.1.Need of the study

Having used some Web 2.0 tools as part of my earlier work in a previous marketing assignment in an IT organization, strengthened the belief that they could be effectively

used for organizational benefit, both in B2B (Business to Business) and B2C (Business to Consumer) domains. However, when this research commenced, in 2006, most of the published literature available was regarding application of these tools to the field of computer mediated communication. Further, only 8% of Fortune 500 companies had Corporate Blogs and empirical studies from academia exploring corporate weblogs were scarce. We proceeded to derive both research questions and hypotheses to test within future studies after considering already published research in the domain. An empirical study conducted by us [16] linked organizational objectives behind hosting Corporate Blogs to the functions of Customer Acquisition and Retention, which formed the primary goals of Customer Relationship Management.

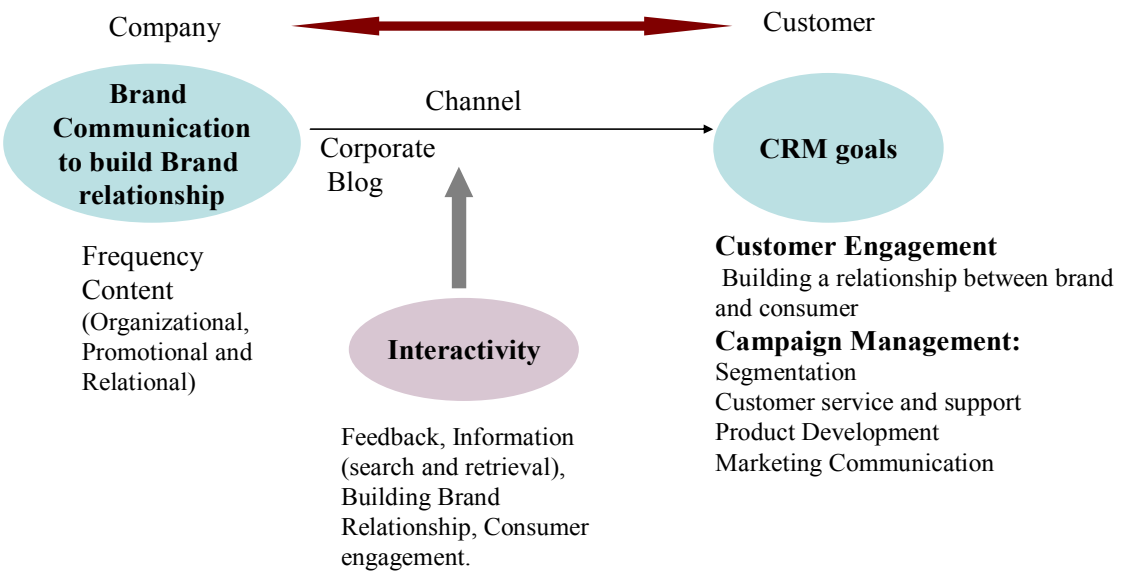
Researchers had commenced working to explore the domains of employee blogging and usage of blogs for internal organizational communication and knowledge management. From our perspective, substantial scope of work was visible with regard to applications of these tools to the domains of Marketing and CRM as the organizational benefits derived in terms of mapping the consumer through these channels were not being adequately studied. In view of these aspects, it was decided to take up 'Interactive Marketing and CRM' as a specific domain and fill the gap by studying the specific CRM goals which benefit from the usage of a Corporate Blog, while taking into account the aspects of Interactivity and Brand Communication.

3.Methodology

3.1.Formulation of the Research model

An integrated conceptual model was developed for understanding how a Corporate Blog can contribute information to help an organization in achieving its CRM goals. This was directed towards understanding the impact of Brand Communication through a Corporate Blogging channel on specific CRM objectives and further exploring the dimension of Interactivity in Marketing. This was done by studying the role of Interactivity in Marketing, on the ability of the online medium to stimulate Consumer Engagement and build a Brand Relationship.

The conceptual model



We further explored the domain of CRM 2.0. This was done by studying the ability of specific blog content typologies to generate greater consumer engagement. We analyzed how appropriate content management strategies with regard to type and volume of content can aid the organization in building a relationship with the consumer. Analysis of consumer responses (consumer comments) helped in extraction of comment typologies. These were subsequently subjected to the process of mining to gauge consumer sentiment and to serve as a decision support system for better segmentation and response management under the aegis of Campaign Management in a CRM solution. A conceptual framework was developed for routing the consumer responses, clustered by creation of tags based on comment typologies to the appropriate CRM functionalities for actioning. The work was divided under the three dimensions of Brand Communication, Interactivity and CRM Goals.

3.2. Formulation of research questions

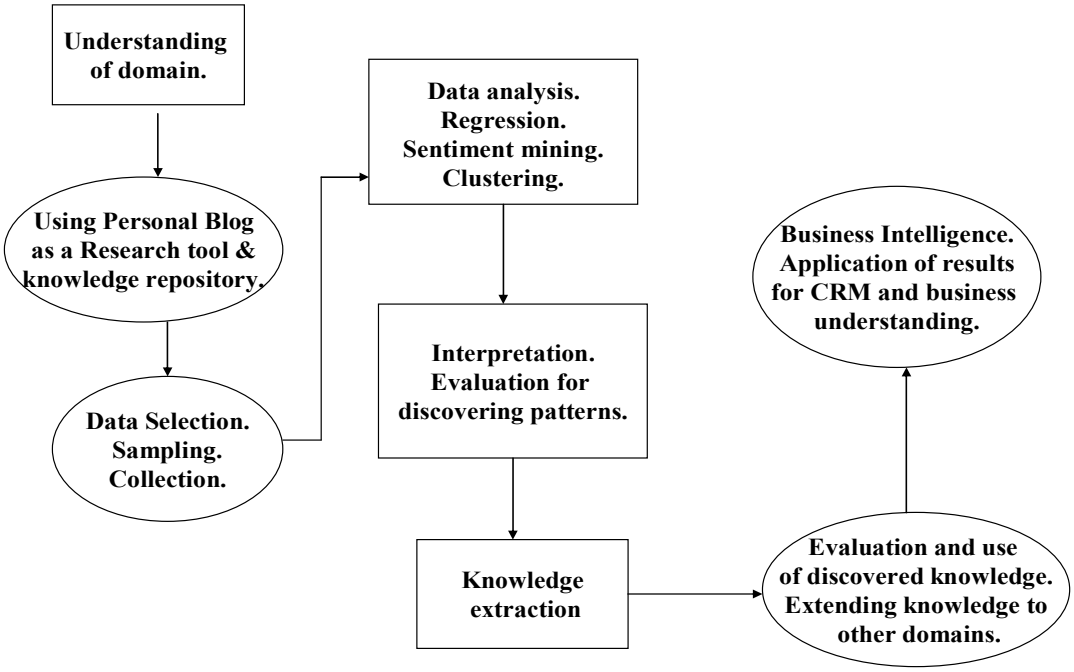
We define the problem as "Using Corporate Blogs for supporting Interactive Marketing and CRM" where we analyze the role of Interactivity in aiding the use of a Corporate

Blog to build a Brand relationship and contribute to the CRM goals of an organization. The Co-objectives are as follows-

- Establish the role of frequency and volume of brand communication through a corporate blog on customer engagement.
- Establish the importance of content categorization and ability of content type to induce consumer engagement.
- Establish the relationship between types of Brand Communication in a blog (Organizational, Relational and Promotion) and Consumer Engagement.
- Establish the role of interactivity in a corporate blog.
- Study factors contributing to interactivity by exploring the perceptual and structural dimensions of interactivity.
- Establish the impact of level of interactivity of a corporate blog on brand communication.
- Establish the impact of level of interactivity of a corporate blog on consumer engagement.
- Establish a Corporate blog as a CRM 2.0 tool.
- Establish means for aggregation of consumer comments to aid the process of information extraction.
- Establish a conceptual model to divert the relevant consumer generated content to respective CRM functionalities for response modeling.
- Establish a procedure for consumer segmentation.
- Establish a blog as a tool for campaign management.
- Establish ways to study campaign effectiveness, extract dominant consumer viewpoints and identify ways to study intercampaign similarity.

4.Methodology

Adapting the Knowledge Discovery Process [17] for the study.



4.1.Understanding the domain-*Corporate Blogs*, *Interactive Marketing, Operational, Analytical and Collaborative CRM*

Based on our review of literature on the above concepts, it is clear that Corporate Blogs can be used by organizations for Collaborative CRM by facilitating interaction between organization and consumer and providing a channel to increase intimacy between them. IT based interactivity has added a new dimension to the marketing function. It is also useful for increasing communication across the organization by giving the employees an open access to consumer viewpoints and also at times allowing employees to respond to the consumer in a moderated environment. While this creates an atmosphere of employee involvement, it also reflects an integrated marketing effort by the company, as by giving employees access to consumer viewpoints, the process of incorporation of consumer feedback can be hastened. Further, by collecting user contact information in the form of user names, email ids, websites etc. along with user viewpoints in terms of the user comments left by current and prospective consumers on the blogs, Operational CRM

objectives can be met. Analysis of this data through sentiment mining and clustering procedures can enable segmentation of the consumers, aid extraction of actionable information from the implicit data available, channelize consumer viewpoints to respective departments for suitable action and formulation of response management strategies. In this way, Corporate Blogs can serve the Analytical CRM dimension.

4.2.Using a personal blog for research

4.2.1.As a knowledge repository

My personal blog, Marketology-Emerging Trends (http://www.vandanaaa.blogspot.com) was used to support my research work. While the blog already existed prior to commencing the research, it served an important role during the tenure, primarily by serving as an online webspace for storing subject related content, reflections, relevant anecdotes, conversations and helped me closely understand the concept of blogging. It helped articulate and organize thoughts, as well as connect with people interested in similar topics, and further develop relationships with other bloggers which opened up a potential for future collaboration. A weblog can be used to store information, because of the following factors-portability and number of access points, preservation of information in it's current state, context, ease of integration into existing structures, communication and information sharing and ease of maintenance [18].

An online weblog provided a better option than a desktop application, owing to ease of access from multiple locations. Outbound links to subject related matter also helped maintain currency of information. This approach served me well while working on this dissertation, when I needed to find current locations of weblog posts that had been moved. Maintenance of a context for a particular link or post hastened recall when the process of compilation commenced. Being a web-based instrument, the weblog allows easy access to the stored information from multiple computers, keeping relevant external information with personally meaningful context and links to the originals, as well as sharing information with others in a non-intrusive way. In sum, the weblog provided me with a space to create a repository of insights that otherwise would be scattered across different spaces.

4.2.2.Content organization

Organization of content was done through a tagging process where each post was assigned a set of tags which eventually hastened the process of content retrieval. Tagging provided a way to add personally meaningful metadata to the posts without restricting which tags should be used or how many of them are assigned. Posts were organized in a chronological manner and date and time were automatically assigned.

4.2.3. Communication, sharing information and knowledge discovery

The personal blog helped link to some Corporate Blogs and also enabled interaction with these corporates as they discovered an inbound link to their corporate blog. It also helped link to people in the domain of corporate blogging - researchers, media personnel, corporates, advertising agencies and other experts.

4.2.4. Blogging as part of research methodology

The personal weblog was utilized as a personal knowledge base as it provided an opportunity to create a flexible personal information management system. It further served as a low-threshold way to create personally meaningful content: writing in small chunks that are easy to fit between other activities, adding personally meaningful context and including information which is not relevant for specific current goals, but might be used in the future. Relevance of content changes with time. Some content which was stored in early 2007 found value only in 2009. The content was organized and maintained in a flexible and personalized way, using chronological archives, tagging or connecting posts via links or titles. The biggest advantage of sharing information is to attract more information from like minded people and utilize their intelligence for developing future ideas for research. This draws from the thought of community formation and benefiting from the intelligence of other members in the community. As a side-effect of blogging, sharing emergent insights this way does not require much additional effort. It is also non-intrusive, as readers can decide themselves if, what and when to read. When information in a weblog is relevant to others, their feedback and further development of it enriches the blogger's own thinking about a topic.

4.2.5. Harnessing Collective Intelligence

I participated in an online community–www.Customerthink.com. The objective was to harness the collective intelligence of the community for learning purposes. By hosting

personal research and participating in the online conversations I was able to solicit feedback and benefit from the intelligence of other members in the community, as also decide/alter course of action in the research. This, on subsequent discussion with my PhD. supervisor helped formulate future strategies for my work.

4.3. Sampling and data collection.

4.3.1. Validation of Primary Objective-

The primary objective was validated by a study carried on across a sample of select corporate blogs. An evaluation grid was developed as a research instrument to identify organizational objectives behind hosting the blogs. A qualitative analysis of content on the blogs along with queries put to blog authors was used to identify the blogging objectives of the organizations. 45 blogs across 38 organizations were chosen through random stratified sampling across B2C category.

After the formulation of the conceptual model, the entire research work was carried under the three dimensions stated above. The process of sampling and data collection is discussed for each of the three dimensions.

4.*3.2. Dimension of Brand Communication-*

Data was collected from a set of individual participants from the 'Consumer Generated Media' forum on Facebook, which served as a focus group to link types of posts hosted on an organizational blog to the organizational objective behind posting them. A subjective analysis of 200 posts helped extract 27 different types of posts. The data collected from the consumers was used to classify the diverse content types under 3 Content typologies, using a confirmatory factor analysis. 1207 posts from four Fortune 500 Blogs, namely, General Motors, Southwest Airlines, Dell and Marriott were studied to analyze the impact of volume and frequency of brand communication on its ability to induce consumer engagement. Existence of blogs for over a period of 2 years was a prerequisite for the study as data for a 20 month period had to be investigated. The data was retrieved from the blog archives.

4.*3.3. Dimension of Interactivity*

Data was collected from a set of individual participants from the 'Consumer Generated Media' forum on Facebook, which served as a focus group to identify functions of 'interactivity' in an online tool. Consumer responses were measured on a 4 point scale. A

set of 33 blogs, chosen by convenient sampling was selected to study the structural attributes catering to the dimension of interactivity in a blog. An evaluation grid was developed as a research instrument for the purpose. Consumer perceptual data was used to generate weights to empirically analyze the secondary data and the same was processed as discussed below.

4.3.4. Dimension of CRM Goals

A set of 400 consumer comments chosen across the four blogs discussed above, helped extract 24 different types of consumer comments on the blog posts. Consumer perceptual data was collected from a focus group of consumers and after processing the same through a confirmatory factor analysis, individual comment typologies could be loaded onto 6 factors, as discussed below. A CASE based approach was adopted to demonstrate the process of consumer segmentation and campaign management and one blog, namely that of SouthWest Airlines was chosen for the purpose. The blog was selected because of availability of adequate volumes of secondary data to validate the results experimentally. 396 consumers across a corpus of 25 promotional campaigns (posts) were evaluated.

4.4. Statistical Analysis and Datamining

The following statistical procedures were run in SPSS 16.0 to determine the empirical results-Pearson's Correlations, Factor Analysis, Regression, Cosine Similarity. Online Tool was used for Simplex Tableaux Method.

Datamining

The process of Knowledge Discovery and Datamining involves matching the goals of a process to a specific datamining technique. Techniques of regression and sentiment mining, along with cluster analysis were used. SPSS 16.0 was used for Hierarchical clustering, based on squared Euclidean distance. Sentiwordnet 1.0 was used for Sentiment Mining.

4.5. Data processing, Knowledge extraction, Using the knowledge for Business Intelligence.

The processed data was evaluated and interpreted and an attempt was made to discover patterns in the data for extraction of knowledge. The same was interpreted in the context of usage and implications for organizations. The extracted knowledge had to be extended

to other domains to contribute to other CRM and Business Intelligence functions. We proceed to discuss these steps of the model, respectively across the three dimensions.

4.5.1. Dimension I:

Brand Communication

We attempted to analyze the impact of Brand Communication (content type and volume) hosted on an organizational blog on it's ability to induce consumer engagement. Organizations can build relationships with their prospective and current consumers through posts on a Corporate Blog and encourage them to participate by commenting on the blog, thereby stimulating consumer engagement. The diversity in the organizational objective behind hosting each post on the blog was used to categorize the content posted on the blog.

Content Categorization

By performing a Confirmatory Factor Analysis, three content typologies-*Organizational* Posts, *Promotional* Posts and *Relational* Posts were extracted. This enabled us to study the importance of content typologies in building a relationship with the customer.

Impact of Content typology on Consumer Engagement

Monthly postage data (representative of volume of posts hosted by the organization) and no. of comments was collected from the blog archives for a 20 month period for each of the blogs. It was subsequently possible to identify the content typology which attracted maximum no. of respondents. This was measured by total volume of consumer comments under a specified content(post) typology.We further observed that Relational content hosted by an organization was able to induce greater volumes of consumer engagement (measured in terms of no. of consumer comments) than any other content typology.

Dependancy of Consumer Engagement on Volume of Content

The analysis of dependency of consumer engagement on the volume of content posted by the organization through a regression analysis indicated a positive correlation between no. of posts and volume of comments. As the organization posted more content, the volume of consumer comments also increased.

Implications

Organizations should associate the appropriateness of content to the target population of onsite visitors and host content which would be attractive to them. By adopting adequate

content management strategies, tools offered by the collaborative web, for instance, Corporate Blogs can be mobilized as channels for building relationships between organizations and consumers. As the organization increases contact with the consumer, by increasing its own efforts, the chances of forming a relationship with the consumer also increase proportionally. Content which is relevant to the consumer in terms of striking an emotional chord with the consumer attracts more visitors and comments. Hence, while it is important to host organization specific content in terms of organizational projects, endeavors and achievements, which is mere statement of fact, it is the relational content which finds greater favor with the consumer.

4.5.2. Dimension II

Interactivity

An Interaction is a touchpoint at which a customer and company exchange information and develop learning relationships. IT enabled interactivity has the potential to affect all businesses and all types of products, with interactive technologies fundamentally changing how all firms relate to their markets in terms of both their philosophy and their strategy [19]. Interactivity is a psychological user orientation viz. a customer's choice to interact, thus making it a *characteristic of the people* involved [20]. Interactivity can also be defined as the *characteristic of the medium* being used to communicate, to stimulate interpersonal communication between the involved entities. Interactivity can further be described as a multidimensional concept [21], which is a combination of user perception and characteristics of the medium [22] involved.

For the purpose of our research we described **Interactivity** as ***the ability of an online tool to provide a 2 way interaction between the organization and the customer*** and used a combination of user perception and structural features to calculate the level of interactivity of a Corporate Blog.

User Perception of Interactivity

A Corporate Blog helps increase the interaction between organization and consumer by helping the customer ask questions, get responses, look for information, contact customer service, contact senior organizational executives, portray his viewpoint, and at times access other forums related to the same organization/product/service, while at the same time helping the organization capture consumer information as well as actionable data to

aid customization of offerings. Collection of feedback from the consumers appears to be a vital function of interactivity. After studying previous research in the domain of perceptual interactivity, we draw inspiration from the Perceived Interactivity Construct [23] developed by Wu to create a framework to measure the user perception of Interactivity. Four functions of Interactivity in a Blog were identified.

(i)Accepting feedback and allowing a two way interaction between organization and user.

(ii)Consumer Engagement.

(iii)Ability to locate information a user is looking for.

(iv)Building Brand Relationships.

Consumer responses were measured on a 4 point scale. As per user perception, the most important function of interactivity in a corporate blog was identified as "*Accepting feedback and allowing a two way interaction between organization and user*."

Structural Interactivity

Previous research indicated that interactivity of an online channel could be manipulated by varying the quantity and quality of channel features [24].In this context, the structural characteristics of the Corporate Blogs which cater to the function of interactivity are of significance when determining the level of interactivity of the online tool and the subsequent impacts on organizational efforts directed towards increasing brand awareness and consumer engagement. The structural features of the blogs were regrouped on the basis of their function in the blog.

After an empirical analysis, it was determined that the maximum number of structural features in the Corporate Blogs appeared to cater to the objective of building a Brand Relationship.

Level of Interactivity

The Level of Interactivity of a Corporate Blog was a weighted function of the structural features and the user perception of interactivity and was calculated empirically. An attempt was made to study the relationship between the degree of interactivity of the blogs with the reach (percent of global internet users who visit the site) as well as the Technorati rating of the blog.

It was observed that there was a positive correlation between the level of Interactivity of a Corporate Blog and the Reach (measured using Alexa.com), which was indicative of the ability to build a brand relationship.

A positive correlation was observed between the level of Interactivity of a Corporate Blog and the Technorati Authority which was indicative of the ability of the medium to induce consumer engagement.

As a higher level of interactivity signifies a higher global reach, as well as greater popularity of a blog, maximizing the level of interactivity of a corporate blog appeared favorable for any organization looking for greater brand visibility. Since the Interactivity score was a weighted function of the structural parameters in the blog, we decided to maximize the interactivity score and thereby arrived at the optimum presence of structural parameters in a blog, catering to specific interactive functions, which would lead to a high level of interactivity.

An optimal solution indicated that organizations should have the highest no. of variables in a blog catering to the function of aiding a customer in his quest for information.

Implications

From a user perspective, collection of feedback from users is the most significant purpose of presence of interactivity in an online tool. The structural features related to interactivity in a Corporate Blog, however significantly cater to the function of building a Brand Relationship. Further, there exists a positive relationship between the Interactivity Score of a Corporate Blog and the Reach of the blog, which is indicative of volume of Brand Communication. A similar result is observed between the Interactivity score and the Technorati authority which is indicative of the popularity of a blog. Maximizing the Interactivity score helps an organization in it's goals towards building greater brand awareness and popularity. In this context, having maximum interactive features catering to a consumer's quest for information is a feasible alternative for any organization, followed by features catering to the function of building a relationship with the brand. Organizations are in the process of using blogs as tools for marketing and fostering consumer relationships. Focusing on the right combination of key structural features in these online tools which in turn will be beneficial to the organizational goals will be the right strategy for any organization.

4.5.3.Dimension III

CRM

Sentiment Mining

We would like to thank Andrea Esuli and Fabrizio Sebastiani [25], for sharing with us their software Sentiwordnet 1.0, a lexical resource in which each WORDNET synset is associated with three numerical scores Obj(s), Pos(s) and Neg(s), describing how objective, positive, and negative the terms contained in the synset are. Considering comments as sets of opinionated text, with the assumption that the text (each set of comments on a single post) is related to a single issue or item, it was observed that consumer opinions were either positive or negative or featured somewhere on the continuum between these two polarities. This was done by converting each comment into a feature vector by using a text processing tool and then identifying the sentiment bearing features. By using the sentiment mining tool, where each opinionated word had been allocated a sentiment score on the basis of its wordnet synset, a sentiment score was calculated for each individual comment. In this context, term occurrence was used as an indicator and not term frequency because in traditional sentiment classification, increased term occurrence does not emphasize/change the sentiment polarity. Further, considering the average of the algebraic sum of the term orientations as representative of the sentiment behind the comment, the score was calculated. It was important here to correlate each term to the correct wordnet synset it belonged to, as that held the key to the score. Volumes of consumers depicting positive and negative sentiment polarity were calculated.

Consumer Segmentation

This sentiment score was used as the basis for Consumer Segmentation. While consumers with positive sentiment polarity could be subjected to consumer acquisition strategies, consumers with negative polarity represent a state of consumer dissatisfaction and could be subjected to strategies for consumer retention. As the sentiment score for the word '*Like*', as per the sentiment mining tool was 0.5, all consumers falling under the 0 to 0.5 bracket were considered to represent a state of liking, and all consumers garnering a sentiment score greater than 0.5 were considered to represent a state of satisfaction. Consumers with comments classified under involvement were segmented separately and

assigned a score of 1 for ease of tabulation. Further, consumers were subjected to cluster analysis on the basis of their sentiment scores. Implications of the same to functions of consumer segmentation, consumer profiling, when a new consumer enters the system, as well as consumer targeting were studied.

Leveraging the power of folksonomies

An analysis of consumer comments across several blogs enabled extraction of 24 comment typologies. We proposed a system where consumers were allowed to tag their comments, from a set of organization defined options which would enable aggregation of user generated information to serve as an aid in better response management. The objective was to derive a model to assign each comment to a class as accurately as possible. Allowing a consumer to tag his comment would enable classification under the theme which most closely reflected the consumer intent, thereby enabling a better aggregation of content reflected in the comments section located under each blog post. A factor analysis linking consumer intent behind a comment with their state of relationship with the organization/product/brand helped load the diverse comment typologies onto 6 different factors-*Liking, Satisfaction, Involvement I, Involvement II, Involvement III, Involvement IV*.

Customer Liking, Satisfaction and Involvement

A consumer passes through several stages viz. liking, satisfaction and involvement in his relationship with the organization. Liking can be defined as a state of fondness, affection or preference for product, brand or organization. This is a preliminary stage of consumer developing a tertiary interest in a product. A consumer moves to the next stage when he starts perceiving greater value in an organizational offering. The perceived value is now equated with perceived quality by customers and due to this customer satisfaction is enhanced [26]. Consumers tend to express their happiness and appreciation in the relationship with the organization and brand. This expression can be treated as representative of consumer satisfaction. IT tools can help in this regard. Consumer involvement is the perceived personal importance and/or interest attached to the acquisition, consumption and disposition of a good service or idea [27]. Several factors influence the level of the consumer's involvement-type of product being considered, characteristics of the communication received by the consumer, characteristics of the

situation within which the consumer is operating, personality of the consumer, exposure to information or product usage. At times consumers depict a consistent high level interest in a product and frequently spend time thinking about the product. As the consumer involvement levels increase, consumers tend to process more product and brand related information, and are likely to give more diligent consideration to information relevant to a particular decision. By identifying the level of consumer involvement organizations can formulate strategies accordingly. While high involvement segments may be early adopters, others may have more extended decision making processes. For the purpose of response management, four levels of consumer involvement are empirically identified, from the consumer comment typologies.

Campaign Management

Campaign effectiveness was calculated on the basis of-

(i) Mean sentiment scores for individual campaigns-Effectiveness of individual campaigns was calculated by calculating the mean sentiment score of each campaign(post). As per the central limit theorem in statistics, the distribution of these mean sentiment scores across various campaigns reflects the average of the entire population. The mean of the population, hovered around 0.23.

(ii) Volume of consumers demonstrating positive and negative sentiment polarity. 17% consumers displayed negative sentiment and 83 % displayed positive sentiment. 57% consumers displayed a sentiment score between 0 and 0.5.

Conceptual Framework for Campaign Management-

(iii) Campaign Effectiveness–Quantitative tag analysis for tags representing comment typologies under a particular campaign(post) can be conducted by generating a tag cloud which can help understand the dominant consumer viewpoint.

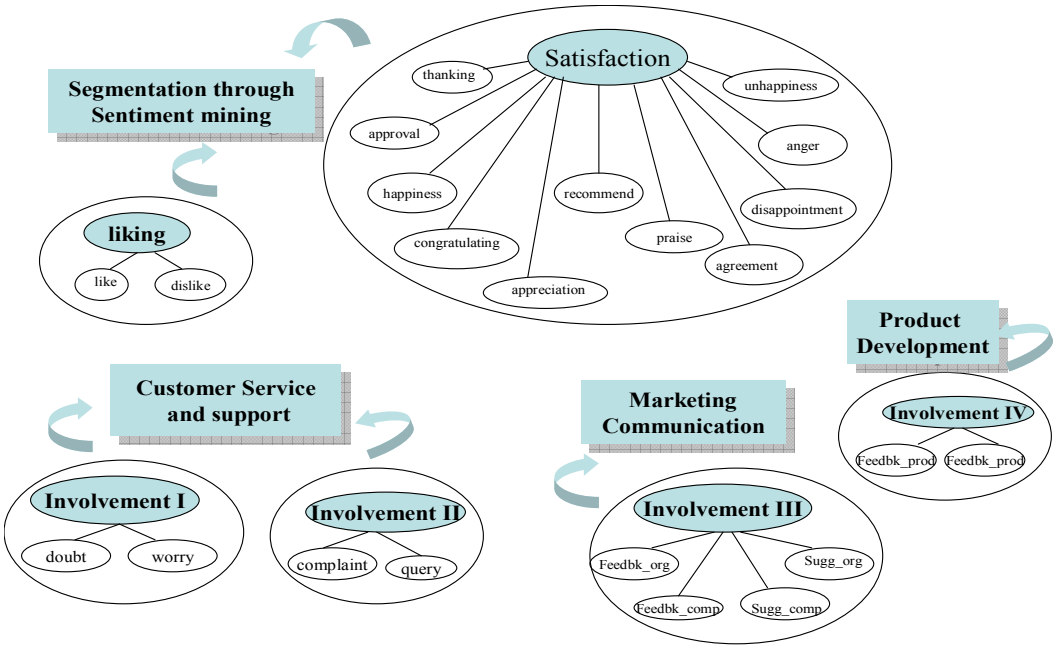
(iv) Tags with maximum frequency are representative of the maximum no. of consumers adhering to a specific comment typology. This indicates consumer intent and hence will represent the predominant consumer thought for that campaign.

(v) *Intercampaign Similarity*: Tag frequency vectors of two campaigns can be used to determine the similarity between consumer responses for two separate

campaigns. Cosine similarity method can be used to help organizations improve targeting of future campaigns.

Implications

Folksonomies related to consumer liking, satisfaction, and involvement were established. Under the proposed conceptual framework, all comments tagged under the tag cluster grouped in the folksonomies of liking and satisfaction could be diverted for *sentiment mining* to aid consumer segmentation. All comments under the tag cluster representing the folksonomies of Involvement I and II were routed to the '*Customer Service and Support'* functionality. All comments under the tag cluster representing the folksonomy of Involvement III were directed to the '*Marketing Communication* 'function and all comments under the tags clustered under the folksonomy of Involvement IV were sent to the '*Product development'* function.



CRM 2.0 : Using a Corporate Blog for campaign management

Organizations can make use of the information available about their prospective and current customers by structuring and mining the vast volumes of data available on the web and formulate strategies for consumers by segregating them on the basis of some factors like the sentiment score represented in the discussion above. Usage of a blog as a CRM tool can be achieved by routing the outcomes of the campaigns, represented by individual blog posts to the other organizational functions. Potential of Corporate Blogs

as Web 2.0 tools to become parts of successful CRM initiatives in organizations is hence proven. The low cost attributes of adaptability and scalability can have long term applications in the marketing and CRM functions in organizations of today.

Thesis Layout

Chapter 1 introduces the concept of the collaborative web and its possible applications. We discuss the prospects of using a Corporate Blog as a tool for Interactive Marketing and CRM in the light of content data, contextual data and analytical data. While Interactive Marketing and CRM are interrelated domains, an effort has been made to keep them separate with a view of giving each domain the respect it deserves. The second chapter reviews literature available. The discussion commences with a foray into the world of Web 2.0, blogging and Corporate Blogging. We discuss how a detailed literature survey into the research work done in the domain of Web 2.0 showcased applications of the collaborative web in a host of areas. This chapter traces our journey where a lack of published academic literature in the field of usage of the collaborative web for Marketing and CRM, in 2007 urged us to move ahead in this domain. The chapter further goes onto trace the concepts of Interactive Marketing and CRM and identifies CRM goals which can benefit with the usage of Corporate Blogs. We explore the realm of collaborative, analytical and operational CRM. Care has been taken to source inputs not only from literature published by academia, but also the business domains which are currently experimenting with these concepts. In view of the above, a conceptual model is developed, which is discussed in Chapter 3. This is directed towards understanding the impact of brand communication through a corporate blogging channel on the various CRM goals of an organization and further studying the impact of interactivity on brand communication and consumer engagement. Chapter 4 covers the methodology where we outline the knowledge discovery process implemented for the study and go on to discuss the usage of a personal blog for research by using the same as a knowledge repository and a personal information management system. The sampling pattern and statistical and datamining techniques used in the study are further discussed in detail. Chapter 5 hosts the results of our study. The conclusions and discussions are discussed under Chapter 6. Chapter 7 contains all the references used for the study and Chapter 8 includes the annexures.

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References

[1] Constantinides and Fountain S.J., "Web 2.0: *Conceptual foundations and marketing issues*", Journal of Direct, Data and Digital Marketing Practice, 231–244, 2008 retrieved January 23, 2009 from, www.palgrave-journals.com/dddmp/journal/v9/n3/.../4350098a.html

[2] Platt, "*Web 2.0 in the Enterprise",* the Architecture Journal, Microsoft Developer Network, MSDN Architecture Centre, 2007.

[3] McKinsey, *"How businesses are using Web 2.0: A McKinsey global survey"*" The McKinsey Quarterly, 2007 retrieved January 5, 2008 from http://www.mckinseyquarterly.com/Marketing /How_businesses_are_using_Web_20_A_McKinsey_Global_Survey_1913_abstract

[4] Gartner, "The Gartner Hype Cycle for Emerging Technologies, 2009", Gartner Research , Gartner Inc., USA.

[5] Kolari, P., Finin, T., Lyons, K., Yesha, Y., Yesha.Y., Perelgut S. and Hawkins, J., "*On the Structure, Properties and Utility of Internal Corporate Blogs*", Proceedings of the International conference on Weblogs and Social Media, USA, 2007, Retrieved January 6, 2008 from http://ebiquity.umbc.edu/paper/html/id/343/On-the-Structure-Properties-and-Utility-of-Internal-Corporate-Blogs

[6] Kathy, "*How can we measure the influence of the blogosphere",* Department of Communication, University of Washington, 2004, Retrieved June 2, 2008 from faculty.washington.edu/kegill/pub/www2004_keg_ppt.pdf

[7] Kelleher, T., and Miller, B.M., '*Organizational blogs and the human voice: Relational strategies and relational outcomes*' , Journal of Computer-Mediated Communication, Volume 11, Issue 2, Article no.1, 2006, . http://jcmc.indiana.edu/vol11/issue2/kelleher.html

[8] Jackson, Yates and Olikowski, "*Why do you blog-a uses and gratification inquiry into blogger's motivations",* Corporate blogging-building community through persistent digital talk, Proceedings of the 40th Hawaii International Conference on Systems Sciences, 2007.

[9] Dwyer, P., "*Building trust with Corporate Blogs"*, International conference on Weblogs and Social Media, 2007, Retrieved October 24, 2007, from http://www.icwsm.org/papers/2--Dwyer.pdf

[10] Shaw, M.J., Subramaniam, C., Tan G.W. and Welge, M.E., *"Knowledge management and data mining for marketing*", Decision Support Systems, Elsevier Science Publishers, 127–137, 2001, Retrieved January 14, 2008 from http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V8S-42M1DPP-

9&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=9745010a38b49c3547cd48ca4dca4815

[11] McAfee, A.P. *" Enterprise 2.0:The dawn of emergent collaboration*", MIT Sloan Review, Vol.47, No.3, 2006

[12] Deighton, "*Manage Marketing by the Customer Equity Test*", Harvard Business Review, July-August, 136-144, 1996.

[13] Ryals,L. and Payne A.F.T., "*Customer Relationship Management in financial services: towards information-enabled relationship marketing*," Journal of Strategic Marketing, 9(March), 1-25, 2001.

[14] Glazer,R., "*Measuring the value of information: The information-intensive organization*", IBM Systems Journal, 32 (1), pp. 99-110, 2005.

[15] Singh,D. and Agrawal, D.P., "*CRM Practices in Indian Industries*", International Journal of Customer Relationship Management, 5 (December–January), 241–57.

[16] Ahuja,V., *"Adding Value to Customer Relationships through Corporate Blogs"*, Indian Journal of Marketing, Volume XXXVIII No.2, 2008.

[17] Cios. K.J., Pedrycz .W., Swiniarski R.W. and Kurgan L.A., "*Datamining, A knowledge Discovery approach*," XV, 606 p, ISBN-980-0-387-33333-5, 2007, Retrieved January 5, 2008 from http://www.springer.com/978-0-387-33333-5

[18] Jones, W., Bruce, H., and Dumais, S., "*Keeping found things found on the web*", 2001, Retrieved June 5, 2008 from http://kftf.ischool.washington.edu/index.htm

[19] Coviello, N. E., Brodie, R.J., Brookes, R.W. and Palmer, R. A,"*Assessing the Role of e-Marketing in Contemporary Marketing Practice",* Journal of Marketing Management, 19, 7, 857-881, 2003.

[20] Schumann, D.W., Artis, A., and Rivera, R., "*The Future of Interactive Advertising Viewed Through an IMC Lens*", Journal of Interactive advertising,Vol1, no. 2, spring 2001, Retrieved June 5, 2007 from http://www.jiad.org/article12

[21] Sohn, D. and Lee B., *"Dimensions of interactivity: Differential effects of social and psychological factors",* Journal of Computer-Mediated Communication*, 10*(3), article 6, 2005, Retrieved 23 June, 2008 from http://jcmc.indiana.edu/vol10/issue3/sohn.html

[22] Choi, Kyun,Y., Miracle, G.E. and Biocca, F.,"*The Effects of Anthropomorphic Agents on Advertising Effectiveness and the Mediating Role of Presence,*" Journal of Interactive Advertising, 2 (1), 2001, Retrieved 5 July 2007 from http://www.jiad.org/vol2/no1/choi/index.html

[23] Jee, J. and Lee, W.N., "*Antecedents and Consequences of Perceived Interactivity: An Exploratory Study"*, Journal of Interactive Advertising, Vol 3, No.1 Fall, 2002, Retrieved 5 March , 2007 from http://www.jiad.org/article28

[24] Tremayne, M., "Lessons learned from Experiments with Interativity on the Web", Journal of Interactive Advertising, Vol 5, No. 2, spring 2005 Retrieved March 7, 2007 from http://www.jiad.org/article62

[25] Esuli A. and Sebastiani F., "*Sentiwordnet: A publically available lexical resource for opinion mining"*, 2006, retrieved January 2008 from http://swn.isti.cnr.it/download_1.0/

[26] Mithas, Sunil, Krishnan, M.S. and Fornell, C., "*Why do customer relationship management applications affect customer satisfaction*", Journal of Marketing, 69(4): pp 201-209, 2005.

[27] Mowen, J. and Minor. C., "*Consumer Involvement* ",Consumer Behavior, a framework-chapter 3, Fifth edition, Prentice Hall, 2001.

Publications

Ahuja V., Medury Y., *CRM in a Web 2.0 world-Using Corporate Blogs for campaign management,* Journal of Direct, Data and Digital Marketing Practice, Palgrave-Macmillan Journals, ISSN-1746-0166, under review, October, 2009.

Ahuja V., Medury Y., "*Driving loyalty in a virtual world-building participation and harnessing collaborative intelligence*", ICFAI Business Executive, ICFAI University Press, Pg 32-35, 2009.

Ahuja V., Medury Y., "*Improving Corporate Blog Interactivity for increased brand communication* ", Research Library, Customerthink Corp.(formerly crmguru.com), C.A., U.S.A, 2008.

Ahuja V., Medury Y., "*Interactive Marketing Communication tools for managing customer relationships"*, International Conference on Technology and Innovation in Marketing, Conference proceeds-Technology and Innovation in Marketing, Pg. 137-146, Allied Publishers, 2008.

Ahuja V., Medury Y., "*Datamining Consumer Generated Media*", International Conference on Database Management, India, 2008.

Ahuja, V., "*Adding Value to Customer Relationships through Corporate Blogs",* Indian Journal of Marketing, Volume XXXVIII No.2, India, 2008.

Ahuja, V., *"Social Media and the Customer Relationship"* Customer Relationship Management Forum, Le Meridien , Mumbai, India, 2007.

Ahuja, V.,"*Web 2.0 and its impact on BTL Marketing*", International Conference on BTL Marketing, India, 2006.