Complementing consumer input through text mining social media tools- An exploratory case study

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ABSTRACT
The paper studies in tandem, the application of Text-Mining to Social Media platforms such as Social Networking Sites and Blogs. The research design incorporates triangulated use of a single case study approach to figure out through cluster analysis whether consumer insights can be captured for an organization through the use of Text-Mining software. The research argues favorably in theory and reveals numerically that through Text-Mining software we can acquire novel consumer insights for the new Product Development (NPD) Process. The research tries to open a new avenue for market researchers to collect consumer insights for forming and revising their social media campaigns. The research leaves issues such as complete applicability and appropriate choice of software for further studies.

Purpose of the Study
The researcher has adopted an ambitious approach to find out the exploratory purpose of the paper to collect consumer input from an organizational view point. To achieve the purpose of the paper the following research question has been formulated:

RQ: Can we extract consumer input for an organization through text mining?

Significance of the Study
Gathering relevant information from social media online communities in its various forms can be intriguing to diverse spectra of audience ranging from marketing researchers, New product designers and innovators of new products and services in the domain of technological landscape. By capturing multifaceted and continuous feedback through text-mining these can significantly raise the product quality and hence the consumer satisfaction. This undertaking is targeted for organizations interested in adopting social media marketing bandwagon and social media scanning services can also benefit from this research.

Literature Review
According to Dave Evans (2008) social media is, “The democratization of information, transforming people from content readers to content publishers. It is the shift from the broadcast mechanism to a many-to-many model, rooted in conversations between authors, people and peers”

Due to the inherent changes brought in by the spread of internet, marketing has undergone several changes particularly in the new social media landscape. As a consequence today, marketing practices have become more consumer dominant as evident from the prophetic definition of Dave Evans (2008) cited above for public consumption. The authors have drawn upon their earlier research on social media practices for their classification of social media in the figure (2.1) below.
The data gathered were interpreted through a sequence of coding, noting, abstracting, refining, and generalizing of the representation were generated as shown in Figure (4.2) below.

<table>
<thead>
<tr>
<th>Social Media Type</th>
<th>Study No (1)</th>
<th>No Videos</th>
<th>Study No (2)</th>
<th>No Facebook</th>
<th>Study No (3)</th>
<th>No Blogs</th>
<th>Total Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Videos</td>
<td>374</td>
<td>114</td>
<td>9847</td>
<td>10335</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facebook</td>
<td>1827</td>
<td>393</td>
<td>252960</td>
<td>255180</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blogs</td>
<td>2065</td>
<td>118</td>
<td>190311</td>
<td>21205</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro Blogs</td>
<td>4114</td>
<td>1140</td>
<td>741644</td>
<td>746898</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Images</td>
<td>112</td>
<td>100</td>
<td>4435</td>
<td>4647</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above figure shows that the maximum number of posts was generated Micro Blogs and Facebook and the least number were through images and videos respectively. When the data set were subjected to further analysis the following clusters representation were generated as shown in Figure (4.2) below. The data gathered were interpreted through a sequence of coding, noting, abstracting, refining, and generalizing of the data.

### Consumer Insights and Product Development Process

The consumer insights attained through text mining which are also known as “knowledge discovery in a text” refers to commercialization. However, firms may use a variety of approaches to NPD like concurrent or overlapping stages of NPD. Customer insights are taken to consideration in a multiplicity of ways to shrink the NPD process so as to offer disclosure of products and services ahead of competitors. Urban and Hauser (1993) contends that firms also make effective use of quality deployment function (QFD), product testing, prototype development and test launching to arrive at improved marketing campaigns for new product introductions. On the other hand, some authors such as Ciccantelli and Magidson (1993) contends that consumers have little or no idea about the future offering of firms therefore, the firm cannot truly incorporate consumer insights when developing new products and services. Some critics, on the other hand, believe that in consumers’ goods manufacturing the end-user information is critical for success of new products.

Cairncross, (1997) contends that from a perspective of consumer led-new product innovations the internet provides the ideal platform for collecting new product relevant information as it is ubiquitous and cost effective without geographical restrictions. Likewise, Sawhney et al, (2005) proclaim that larger strata of customers can contribute in NPD when compared to conventional marketing research practices.

### Research Design/Methodology

Unlike major researches which adopts either of the dichotomous approaches ie. Qualitative and Quantitative, this research is based on mixed approach. As a longitudinal study, the authors have tried to triangulate their observations, interviews with cluster analysis of a single case study at a Micro firm in Pakistan. The choice of case study make sense as we are trying to explore a new phenomena of text-mining in real life social media environment, where the concepts are boundary spanning. This approach is in accordance with Yin (2003) who favors case study research strategy when there is both qualitative and quantitative data in the research.

### Empirical Data Analysis

At the Micro firm Pakistan we have a planned strategy to find out insights from social media through text mining using the Generic text mining software. In an effort to confirm of reject the research questions the researchers have garnered the data from the three text mining studies carried out in the following Figure below (4.1)

**Classification of Social Media Types by Kaplan and Haenlein (2010)**

<table>
<thead>
<tr>
<th>Self-Presentation/ Self Disclosure</th>
<th>Social Presence / Media Richness</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Blogs, Social Network Services, Virtual Social Worlds</td>
</tr>
<tr>
<td>Low</td>
<td>Collaborative Projects, Content Communities, Virtual Game Worlds</td>
</tr>
</tbody>
</table>

Source: Adopted from Kaplan and Haenlein (2010)
extracting useful information to be incorporated in the New Product Development at companies.

![Figure (4.2) Social Media Platform Posts of Various Search Terms](image)

The product development flow at the chosen Micro firm has consumer insights as its initial point. According to the company website all the products are a function of consumer driven product development process at the said firm. Inwardly, this means that consumer insights are incorporated at ideation stage of the new product development stage. Further the consumer insights collected from Social media can also be shared with research and development (R&D) so that the consumer perspective is available for a team driven by technological perspectives.

**Conclusions**

This paper proposes a simple method through which businesses can incorporate ongoing consumer discussion over the World Wide Web in their new product development stages. This paper through its novel idea of using social media for capturing consumer insights to be made part of new product development process in an organization has further enhanced the business application of this novel approach at least on academic level. By using a mixed method the research renders a clear view of identifying suitable social media platforms and then collecting the desired consumer insights through text-mining practices. Finally, this research has opened a new avenue for market research firms to collect consumer insights for forming and revising their social media campaigns.

**Reference List**