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Research Note

Search engine marketing is not all gold: Insights from Twitter and SEOClerks

Reema Aswani[a], Arpan Kumar Kar[a], P. Vigneswara Ilavarasan[a], Yogesh K. Dwivedi[b,*]

[a] DMS, Indian Institute of Technology, Delhi, India
[b] Emerging Markets Research Centre (EMaRC), School of Management, Swansea University, Swansea, UK

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ABSTRACT

The study highlights how digital marketing is often detrimental, when it is done by unskilled service providers. It highlights how the hyped services of search engine marketing (SEM) are not as successful as they seem to be and sometimes affect firms negatively. This study uses social media analytics to derive insights from Twitter using descriptive, content and network analytics. Methods like hashtag analysis, polarity and emotion analysis, word analysis, topic modeling and other relevant approaches have been used to mine user generated content. A qualitative case study on an e-market is used for validation of findings. SEM services provided by small organizations and freelancers are not as beneficial as the ones by established players. The services provided by these firms proved detrimental for the customers based on user experiences surrounding these services in the social media and forum specific discussions. This study highlights how SEM often not only fails to provide benefits but also destructs value if not done properly. Transaction costs like agency problems, coordination costs, loss of non-contractible value and cost of fit are also identified with potential fallouts which affect the long-term benefits. Inputs will be beneficial to practice in planning SEM and outsourcing.

1. Introduction

The investigation of marketing and retail activity on the web established that web interactivity is one of the key aspects of success (O'Keefe, O'Connor, & Kung, 1998). The internet and the use of ICTs have completely transformed the customer supplier relationship and the subsequent marketing strategies for business (Pires, Stanton, & Rita, 2006; Shiau, Dwivedi, & Yang, 2017; Simintiras, Dwivedi, Kaushik, & Rana, 2015; Simmons, 2008). With the emergence of Web 3.0, increasingly firms are striving to have a stronger presence on the internet in general and search engines (SE) in particular (Dwivedi, Kapoor, & Chen, 2015). SE have emerged as the most popular platform that users across the globe are now using to garner information (Hennig-Thurau et al., 2010; Rangaswamy, Giles, & Seres, 2009). Studies demonstrate the effectiveness of these SE in retrieving relevant documents from the web and directing traffic towards relevant offerings from brands (Dou, Lim, Su, Zhou, & Cui, 2010; Jansen & Molina, 2006). This has resulted in launch of popular advertising formats including search engine marketing (SEM) (Green, 2003) and optimization (SEO) approaches. SEM works primarily on keyword based searches and visibility of websites on the SE. The new entrants often face a cold start problem lacking experience and data to determine ranks that may maximize profit from keywords (Abou Nabout, 2015). A comparative effectiveness of various SEM campaigns highlight that the advertising budget and keyword matching play a vital role in engaging customers (Olbrich & Schultz, 2014). Literature highlights that SEM strategies are used in electronic markets to enhance search and promote sponsored results (Chen, Shih, Chen, & Chen, 2011; Ghose & Yang, 2009; Shih, Chen, & Chen, 2013). Further; studies also highlight that by identifying the key determinants for hit-rate may be of great value to both small and large scale firms by enhancing their web visibility (Dholakia & Rego, 1998).

Literature reveals that the order in which results are displayed on the SE greatly impacts the brand equity of an organization and helps shape brand perceptions among consumers (Drèze & Zufryden, 2004; McCoy, Everard, Polak, & Galletta, 2007; Rangaswamy et al., 2009). Firms have realized that a first page ranking in search engine results page (SERP) is necessary for it to be visible for the target customer (Davis, 2006; Sen, 2005). Higher visibility on SE positively impact brand equity, higher offering visibility and revenue from sales (Dou et al., 2010; Keane, O'Brien, & Smyth, 2008; Skiera, Eckert, & Hinz, 2010), due to which consulting firms have started providing SEM services. SEM is a broader discipline that encompasses SEO. SEM includes both paid search results and organic search results (Nabout & Skiera, 2012; Yao & Mela, 2009). Over the years, it has been recognized that SE have become gatekeepers of information and affect the decision making of consumers (Vogl & Barrett, 2010). Gori and Witten (2005) compare web to a library with huge amount of information availability and this

* Corresponding author.
E-mail address: y.k.dwivedi@swansea.ac.uk (Y.K. Dwivedi).

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information access is mediated by SE operators who compete in a race for dominance. This results in SEO services being provided at highly differential price points. These website owners get into a continuous process of buying visibility additionally using link building approaches resulting in a local self-reinforcing imitation. Depending on the pricing, the services may use techniques that may result in a short-term gain of visibility but with the downside of being massively penalized in the long run.

The digital marketing (DM) sector has witnessed exponential growth over the past decade and has taken several leaps (Ryan, 2016). Studies highlight the use of specific internet tools and their applicability in creating brand equity including metrics like experience, traction and search characteristics (Pakkala, Presser, & Christensen, 2012; Simmons, Thomas, & Truong, 2010). It is predicted that business firms would be spending an estimated $613 billion for DM services worldwide (Sullivan, 2016). Further, it is predicted that the SEM industry will continue to boom to $79 billion by 2020 growth (DeMers, 2016). Considering the rampant growth of the SEM industry, several new service providers enter this industry every year. Further, most of the barriers to entry is less impactful because the new entrants perceive that the industry is not resource/knowledge intensive (Porter, 1991). Further there is no significant upfront capital investment required to start the business. Since, most of the entry barriers are not applicable in the SEM industry, several firms provide these services at varying costs. This exponential industry expansion raises question whether all these companies are successfully able to provide effective DM services or not.

The purpose of this study is thus to highlight how digital marketing often proves to be detrimental, when such services are outsourced to less reputed and low priced (often less skilled) service providers who often lack required domain knowledge. The primary focus of the study is to explore how the hyped services of SEM are often not as effective as they seem to be. These services sometimes may even have adverse effects on the firms outsourcing to low cost inexperienced service providers. The study uses user generated content (UGC) extracted from Twitter on discussions surrounding SEM to examine the effectiveness of these DM initiatives. Further, the transaction cost dynamics associated with the same are also explored to highlight the adverse effects of non-reliable services provided by the small-scale firms and freelancers at low costs. A mixed research methodology has been adopted in the current study which draws inspiration from both big data analytics in social media and case study based research.

The remaining sections are organized as follows. Section 2 establishes the basis of gauging the effectiveness of SEM using Twitter discussions surrounding it. Section 3 and 4 explore the content, descriptive and network analytics aspects for the analysis of the UGC surrounding SEM. Section 5 validates the results of Section 4 through a case study conducted on an e-marketplace called SEOClerks.com. Subsequently discussions are made on the contribution of the study, the implications to practice, existing limitations and the future research directions.

2. Is SEM as glorious as it seems to be?

The domain and approaches of SEM are highly hyped and firms are investing substantial resources to achieve this objective. The SE operators often promote their marketing services on social media (SM) platforms like Twitter/Facebook and e-markets like SEOClerks.com to engage with their potential target customers. This makes these SM platforms a great source of UGC and discussions surrounding the domains and the quality of services. These platforms thus may be utilized to get a holistic picture about the customer satisfaction in the domain. The focus of this study is to mine these discussions in SM for gaining a good understanding of the dynamics of this niche industry. The insights gained from the analysis can be used to evaluate whether this hyped industry of SEM is that glorious and beneficial as it seems to be from outside. For meeting this objective, the following research questions have been identified:

1. What are the dominant themes of discussion surrounding SEM?
2. What are the dominant sentiments surrounding these discussions?
3. What is the structure of the network that participates in these discussions?
4. Are the customers satisfied with the services surrounding SEM?
5. What are the drivers for dissatisfaction if any?

The analysis of the data retrieved from Twitter discussions, is basically used to see the customer satisfaction in the services provided by this niche domain. It highlights how the industry of DM, specifically SEM related services and doesn't always result in long term benefits for the customers. For answering these questions, the study attempts to analyze tweets using specific analysis like descriptive analysis, content analysis and network analysis, the details of which are provided in subsequent sections.

3. The research approach

The mixed research methodology is heavily dependent on the approaches adopted for SM analytics to draw inferences in line with the research questions. SM analytics is rapidly emerging as a prominent area of research which can provide key intelligence through the analysis of both structured and unstructured data. There are numerous instances where it has shown signs of enabling organizations with competitive insights on their products, customers and the industry. SM data has been mined for getting insights in domains like stock price fluctuations, prevention of diseases, event monitoring, election result predictions, disaster management, brand management, public relations, public opinion polling and domain specific exploration (Arias, Arratia, & Xuriguera, 2013; Chae, 2015; Hughes & Palen, 2009; Inauen & Schoeneborn, 2014; Joseph, Kar, Ilavarasan, & Ganesh, 2017; Kim 2014; Lipizzi, Iandoli, & Marquez; Williams, Terras, & Warwick, 2013; Wu & Shen, 2015).

This study uses Twitter's UGC for analyzing whether the hyped about domain of SEM is actually gold and worth investing resources by the firms in a race for web visibility. We collected a total of 61,456 tweets related to SEO/SEM, over a period of four months to understand and gain insights on the same. The tweets are extracted through the R's Twitter API, by means of a hashtag and keyword based search, hashtags #seo, #sem and #digitalmarketing. This process was performed periodically repetitively to enable the collection of a larger sample of data. Cleansing of tweets is important from the analysis perspective for improving the quality of findings. Further, topic modeling is done for identifying most discussed topics/themes, so that analysis could be done on these clustered tweets. Also, a clustering algorithm implemented to isolate the tweets for separate analysis.

The study incorporates three main approaches or analyzing the user generated content extracted from SM including descriptive analysis, content analysis and network analysis (Chae, 2015; Joseph et al., 2017). This gives a holistic view of the knowledge that may be mined from the Twitter discussions surrounding SEM. An overview of the various types of analysis that may be possible for each type is illustrated in Fig. 1, with a special focus on the analysis which is adopted in this study.

4. Results

This study incorporates key analytical techniques to extract actionable insights from Twitter data on SEO and SEM. The following analysis is carried out on the collection of 61,456 tweets extracted from Twitter within a period of four months from 11th January 2016 to 9th May 2016. The descriptive statistics provide an overview of the nature of tweets, the nature of users who engage in Twitter and nature of content which gets shared (Bruns & Burgess, 2013). Among 61,456 tweets; 49% were original tweets, 26% were replies to these tweets and 25% were retweets. This indicates that there is very strong interaction among the different stakeholders who discuss the theme of SEM and

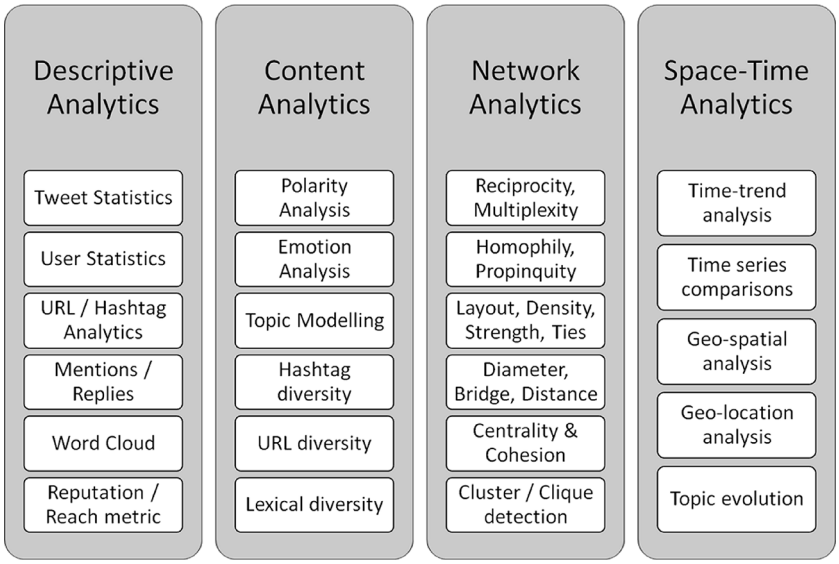


Fig. 1. Dominant types of Analysis in Social Media Analytics.

SEO in Twitter. It is seen that 6246 unique hashtags, ranging from popular seo/sem hashtags (eg. #seo, #sem, #marketing, #ppc) to others, such as #contentmarketing, #commerce and #blogging. Over 20,178 tweets (33% of the total tweets) contained multiple hashtags, indicating that a substantial percentage of tweets lie in multiple areas under the mentioned domains. The commercial nature of marketing of different services is evidenced in the nature of hashtags, which were associated with the tweets that were analyzed. We found 11,174 unique users in the dataset. This means each user sends out, on an average, 5.5 tweets: 2.7 original tweets, 1.4 retweets and 1.3 @replies per user. Active users are inferred on the basis of the total number of tweets (original tweets + retweets + @replies). The visibility of the users can be inferred from the number of retweets received. It is seen that most of the users discussing about the topics are active and visible on Twitter and thus the content generated by them can be utilized to gain relevant insights.

The analysis revealed 49,286 unique URLs, with 58,934 (96%) tweets containing URLs. The most popular domains in the URLs turned out to be maria-johnsen.com (Multilingual Digital Marketing Expert), SEOClerks.com (SEM Marketplace), moz.com (SEO Software, Tools and Resources), various URLs from custom RSS provider sites such as feedburner.com, fullcontentrss.com etc. and various other blogs and webpages with guides/tutorials themed content. The URL analysis highlights that Twitter is a widely-used platform by such SEM providers to promote the lucrative deals and services. These SEM service providers use SM for spreading information surrounding SEM services (e.g. seoclerks.com, which is an e-marketplace for such services) and for promoting new tools for SEM. Further, content analysis (Chau & Xu, 2012; Wang, Wei, Liu, Zhou, & Zhang, 2011) focuses on text mining to transform unstructured user generated content in the form of discussions surrounding SEM into structured form to enhance the understanding and to mine useful insights.

A deeper look into the data highlights that the most popular words used in the discussions in the tweets (excluding seo and sem) are qwory (freq. 6983), check (6852), secret (6682), pros (5882), please (5065), google (2612), how (1868), professionals (1823) and website (1655) among others. A similar analysis of the hashtags demonstrates that a total of 3023 unique hashtags were found in the tweets, and they appear 46,148 times. The analysis highlights that the hashtags (other than #seo and #sem) #marketing, #ppc, #socialmedia, #smm and #adwords are the most popular in tweets related to SEM.

An adjacency matrix is used to find associations between keywords and hashtags that illustrate the use of hashtags used in conjunction with each other. It is evident from the word/hashtag analysis that popular terms include several words that are advisory in nature and suggest best practices for implementation (e.g. tips, please, check, know, why). Further, words that are promotional in nature including “google”, “email”, “ppc” and “package” are also among the most popular terms that resulted from the analysis. This is reinforced in the findings of word association/adjacency graph and hashtag association and adjacency graph where associations of the top 10 most frequent words is plotted on a network graph, as has been illustrated in Fig. 2.

A detailed thematic analysis highlights that, “check” is majorly associated with “please”, “qwory” and “secret”, which indicates advisory

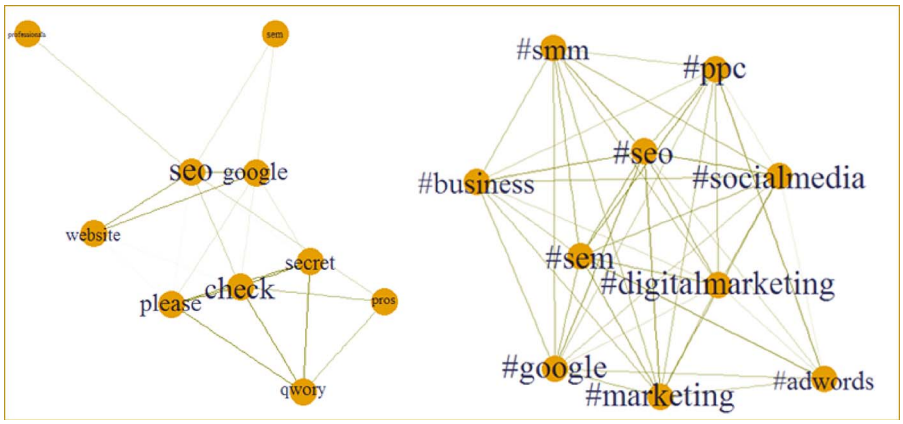


Fig. 2. Association of the most frequent words and hashtags used in Twitter.

themes surrounding how firms can attract customers using "business specific search engines" like Qwory and create value through sales. The major associations of hashtags can be found out through the above matrix. As can be seen, "#sem" is majorly associated with "#ppc" and "#adwords", similarly, which are indicative that the tweets are promotional in nature and most of the times, service offerings surrounding these promotion models are being discussed. Some of the associated hashtags and words highlight the prominence of website development and designing, which plays an integral part of SEO.

The network analysis aspect uncovers relationships between interactions and how the Twitter profiles engage with the community in large using techniques and models from network theory (Burt, Kilduff, & Tasselli, 2013; Carrington, Scott, & Wasserman, 2005). This facilitates extraction of information from multi-dimensional noisy unstructured data with respect to nature of interaction, degree of cohesion and their scalability potential (Ahn, Han, Kwak, Moon, & Jeong, 2007). In this study, a large social network is constructed including 1685 nodes and 1498 edges. Nodes represent the users who sent out or received a reply, and edges are the relationship between those users. The average path length is 1.7, which indicates that participants about 2 nodes away from each other. This suggests that the participants discussing about these themes are very closely knit, and professionally having close proximity to each other. The network diameter, viz. the longest distance between any two nodes in the network, is found to be 8. The topology in Fig. 3 shows a high cohesive network, with the presence of many small groups, and a few large groups.

Further, among the node-level centrality metrics (Wasserman & Faust, 1994), in-degree indicates the number of links to a user (node). It is hence a reflection of the popularity of a user. Also, a high degree value indicates that the user/node is a key hub in its community of nodes. Fig. 3 highlights the presence of few larger firms which control majority of the interaction while there are many small firms which have very little presence in the discussions. This gives an indication of a highly-concentrated industry with very few large firms, with lots of fragmented smaller firms, startups and professional service providers. These larger firms cover the major chunk of the SEM market and provide the services at a higher cost but on the same hand prove to be reliable. It is evident from the degree that there are smaller number of users around who most of the discussions are centered. These also include SEM marketplaces like SEOClerks (English marketplace) and OlimpoSEO (Spanish marketplace).

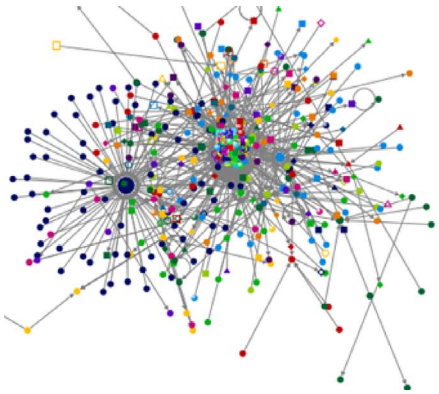
The community analysis (Wakita & Tsurumi, 2007) demonstrates a graph density of 0.00028, which indicates that the SEO/SEM network is quite sparsely distributed. A network with over 900 communities is used. The density graph and betweenness centrality for top 10 nodes is demonstrated in Fig. 4. The groups in the network may "know" each other but the interaction may be very limited as indicated by the statistics. It is possible that the connections are due to memberships in the same professional groups and platforms, rather than social acquaintances. The graph indicates that in totality there are 7 large communities. However, the cluster network diagram indicates that out of these 7, there are 5 large communities (clusters) with a high betweenness centrality node in between, indicating key "Influencers", which support our previous propositions. Thus, these network statistics including centrality, topology and community analysis give us an insight about the network dynamics of the major players in the SEM industry.

To see whether the discussions surrounding SEM are inclined towards a positive connotation it is important to do sentiment analysis, which is the process of mapping a text with an associated sentiment level (Liu, 2012). In this study, the tweets are classified on the basis of six emotions including joy, sadness, surprise, anger, fear and disgust (Chaumartin, 2007), and positive, negative and neutral polarity (Speriosu, Sudan, Upadhyay, & Baldridge, 2011). A word cloud visually depicts the result of the polarity and emotion analysis done for the discussions. Fig. 5 illustrates the word clouds based on polarity and emotions indicating that majority of words which are advisory are neutral in sentiment, but in response to many tweets, the sentiment is both positive and negative. This indicates that many of the retweets could be responses to services consumed from SEM service providers. Such huge variation indicates that many customers are often not happy with the services provided by SEM firms and have a lot of complaints surrounding what was promised versus what is delivered.

Sentiment analysis (Feldman, 2013; Pang & Lee, 2008) by polarity highlight that the overall sentiment when it comes to SEM is majorly positive, which indicates that social media marketers mainly share successful strategies or techniques through tweets, though many cases of customer complaints also happen. About 48% of the original tweets came out to be positive, 20% of the tweets neutral however 32% tweets turned out to be negative. This clearly indicates that SEM is not that glorious as it is being hyped about.

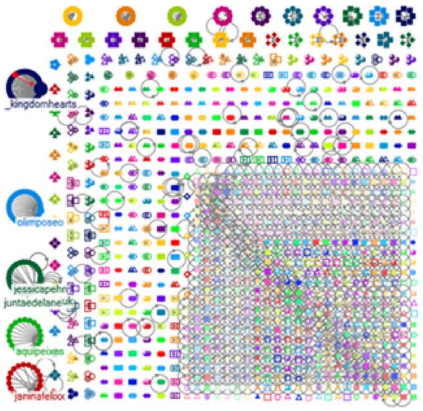
The sentiment analysis by emotion reinforces this proposition as emotions like sadness, fear, anger and disgust are significantly present in the tweets occupying about 29% of the total while tweets that are joyful in nature constitute 24% of the share. There is a major chunk that depicts no specific emotion (47%). A closer exploration in these tweets which portray no emotion highlights that these tweets comprised mostly of shortened words, acronyms and localized dialects which the parser failed to analyze automatically. It is evident from these discussions surrounding SEM that people are often not very satisfied with services received by them. This niche industry has been really hyped about the whole concept of enhancing their position in the SERP using these services. But a deeper look into the discussions surrounding the same on SM gives a contradictory image of the same. This is because most of the service providers use techniques that often generate spam content and links for attracting traffic. These contracts are often very short term while it takes longer time for the results of these services to materialize. By this time these service providers that provide lucrative deals often deactivate these links that they had generated earlier.

Further analysis of collected tweets clustered in accordance with 9



User	In-Degree	Out-Degree	Degree
_kingdomhearts	71	0	71
olimposeo	30	0	30
aquipeixes	28	0	28
googleexpertuk	26	1	27
janinafelixx	23	0	23
aquiescorpiao	22	0	22
seoclerks	20	0	20
juntaedelane	8	0	8
leticiamagrella	8	1	9
victorbrandon_	6	1	7
pattienceollg	6	0	6
alepompeu_	5	1	6

Fig. 3. Findings of Topological analysis and Centrality analysis.



Top 10 users by Betweenness Centrality

Node (User)	Betweenness Centrality
olimposeo	870
googleexpertuk	605
juntaedelane	393
janinafelixx	284
jessicapehn	252
cecqc3love	142
digihubwales	138
aquiescorpiao	132
seoclerks	132
milleneperes	112

Fig. 4. Results of community analysis of the SEO/SEM twitter profiles.

Fig. 5. Word cloud based on polarity of sentiments and emotions respectively.

Fig. 6. Sentiment analysis of word clusters based on topic.

prevalent themes/topics identified, showcases a generic positive sentiment in most themes including blog, business, social media, except for majorly marketing and professionals. This highlights that for the SEM industry, many services often fail to deliver the value desired for clients against keyword specific rankings (Fig. 6).

5. Case study

A qualitative case study based on an e-market place providing SEM services is explored to understand the reasons for our findings through Twitter Analytics. This market place is dedicated for connecting buyers and solution providers of SEM services. It has thousands of services from link building to social signals. Different sellers registered with the portal can sell services at various price ranges, and the platform charges a percentage of the fee per transaction. These sellers can provide services related to Social Networks or SEM. The services provided by these SEM firms thus often range from expensive packages to cheaper ones depending on the quality. Further, they also attract more visitors and enhance their online presence by doing so. The service provider gets paid after the service is delivered within a period of 3 days, unless the customer rejects the order due to late delivery or quality concerns. Most of the services provided here are very cheap in terms of cost and quality is often compromised. However, the end customer is usually not aware of how the quality matters in the long run in the domain of SEM techniques like link building and often gets trapped by opting for lucrative deals comprising of building links in bulk.

These organizations use various approaches to boost a websites visibility on the web including link building through blog comments, directory submissions, link developments, link pyramids, link wheels, links from Private Blog Networks (PBNs), site link sales and wiki links. Further social shares across platforms like Facebook, Twitter, Youtube, Instagram and LinkedIn is also provided through network based voting mechanisms and bots for automated voting. The objective is to improve the customer's website in terms of parameters like SERP, Domain Authority, Page Authority, Moz Rank, Trust Flow, Citation Flow, Alexa Rank, Page Rank, Google Index, URL Rating and Domain Rating. These metrics are provided by organizations like Moz (Fiorelli, 2015), Majestic (Boulter, 2015), Ahref (Soulo, 2016), Google and Alexa who index

Table 1
Brief description of website quality indications.

Objective	Metric	Used By	Brief description
Traffic Indicator	Alexa Rank	Alexa	Traffic from Alexa toolbar user
	Web Rank	Ranking	Traffic from unique visits
Domain Reputation	Page Rank	Google	Rank websites in SERP (discontinued from 2014)
	MozRank	Moz	Uses link popularity
	Page Authority	Moz	Authority of a specific individual pages or URLs
	Domain Authority	Moz	Authority of domain including the sub-domains.
	Domain Rating	Ahref	Overall back link profile of a given webpage
	Ahref Rank	Ahref	Compares the back link of the website.
Link Benefit Transfer	MozTrust	Moz	Measures trustworthiness for receiving links/sources
	Trust Flow	Majestic SEO	Trustworthiness of a web page by considering domain age
	Citation Flow	Majestic SEO	Uses sites linked for predicting influence of a web page
	URL Rating	Ahref	Uses strength of back link profile or a target web page

the web and publish metrics to assess quality and popularity of websites using different metrics. Many of the popularly used website specific quality indicators like Google Page Rank, Moz Domain Authority and Moz Page Authority are dependent on the number of back links from different domains and the quality of those websites which link back on the same quality indicators. A brief description of these popular metrics, which are boosted, is indicated in Table 1. To validate the propositions made in the research findings, our study considers a case of SEOClerks.com that is a dominant market place of SEM service provider. Another major e-market place was OlimpoSEO but since the language on the portal and discussions on the offerings is non-English, only SEOClerks is considered for further analysis. A deeper look into @ mentions to SEOClerks highlighted that from 2898 tweets from 1838 customers, 1284 customers are not happy with the services. SEOClerks provides about 34,246 SEM services on its portal as on 31 March 2017 and the sellers belong to over 47 different countries. Many of the services providers selling SEM services on this e-market place are not native English speakers and that greatly affects the quality of content they create for the clients. The major problem with these services is that once the amount is paid, mostly black hat SEM techniques are used comprising of article spinning, link building and link farming (Malcolm & Lane, 2008; Zuze & Weideman,2013). Article spinning is a mechanism used by service providers where in original content is spun by replacing words with synonyms and shared on blogs, social media portals and other sources. This creates back links and is often one of the cost effective Black Hat SEM techniques that are adopted (Malcolm & Lane, 2008).

Another such approach is keyword stuffing where keywords are added in content of the customer's website or meta-tags. This helps the service providers gain an unfair advantage when it comes to ranking of the web pages on SE (Zuze & Weideman, 2013). Further, link farming is also a common practice in this sector after the service providers realized the importance of link popularity for search engine ranking. Spamming of web search engine indexes is done by creating link farms that improve the rank of a page on various SE. All of these are off-page SEM techniques and are deemed illegal and result in penalization of the customer websites. The generated content and links become de-active over a period of time and the customer is rendered helpless. This is a very common practice by smaller firms and as a result such websites are sometimes banned by the SE.

Once the customer hires an SEM service provider to boost their website ranking on SE, most of the small-scale firms deploy software like Scrapebox. These tools mainly comprise of features like keyword and proxy harvesters where in a list of long tailed keywords is generated from a single word for the purpose of keyword stuffing. Further, the proxy harvesters generate free proxies that may be used. The comment poster is another such method that is used where in comments posted in bulk with the websites back link on dozens of platforms. These techniques are often categorized into Black Hat SEM and there have been instances where in SE like Google have penalized sites adopting such practices after the activity is detected which normally takes months. Such websites are often delisted or banned from the SE, or their quality scores on metrics are considerably lowered. Other such popularly used Black Hat SEM tools include software like XRumer, SeNukeXcr, Rankwyz, GSA Search Engine Ranker, Market Samurai, The Best spinner and so on (Link Searching, 2015). On the other hand, there are certain blog articles on SEO related blogs that educate customers about such penalties and highlight that practices like posting duplicate content, keyword spamming, buying links and so on often result in a penalty (Banga, 2015).

Further, Moz also publishes metrics on page level spam analysis and domain level spam analysis (Fishkin, 2015). The page level spam analysis discusses concepts like keyword stuffing, manipulative linking, cloaking and low value pages. Websites focusing on tricking SE use these tactics to enhance their content volumes, backlink volumes and keyword density in the content. It further discusses how SE have become smarter and the aggressive step by Google's Panda, Penguin, Hummingbird and Pigeon (Slegg, 2016) that used machine learning algorithms to combat spam and reduce low value pages across the web. The focus of such algorithms is to weed out web pages which have no unique content and tries to provide more contextually and location wise relevant search results to the user. Instead of just identifying individual pages as spam, in addition the domain level spam analysis is used by SE to identify traits and properties across entire root domains or sub-domains that could categorize them as spam. Such mechanisms do an in depth analysis of trustworthiness, content value and linking practices. Metrics like Domain Trust by Moz and Trust Flow and Citation Flow by Majestic address such challenges in identifying website quality and the value transferred by them while they link to other websites. If a website links back to too many less reputed websites, the performance of the website on these metrics is lowered. Examples from the past that have engaged in regular manipulative linking practices including the famous case of JC Penny Google penalty as exposed by the NYTimes (Segal, 2011; Weintraub, 2011). However, all these unethical practices take few months to be detected and the website to be subsequently penalized.

The problem with sellers and freelancers on e-market places like SEOClerks.com is similar to the above discussion and they often tend to use these Black Hat SEM approaches to attract traffic and enhance their ranking on the search engine. The customers are often unaware of the consequences of the techniques employed by the service providers and often end up getting penalized if the purchased links persist. While community feedback mechanisms are available in SEOClerks, the feedback needs to be provided within 3 days after the service provider delivers the service, and thereby in the long run, the purpose is often defeated. Several theories of transaction cost economics may thus be useful to explore these phenomena while investigating outsourcing decisions (Ngwenyama & Bryson, 1999).

Transaction cost economics becomes critically essential while making outsourcing decisions in the domain of information services like SEM highlighting cost of fit, cost of short term contracts, coordination and agency costs (Clemons, Reddi & Row, 1993). In this context these transaction costs are equally prevalent without the customer actually realizing them. The cost of fit for instance may be incurred when the customer is looking for SEM services like bulk link purchases and has a finance related website, the low-cost service provider does not always provide all the links pertaining to the client domain. This potentially creates a lot of back links from websites which aren't relevant to domain, thereby lowering the authenticity and impacting the website metrics negatively in the long run. The customer also ends up paying for links that they not only do not require but also proves to be detrimental. Further, the primary purpose of these freelancers and low-cost service providers is not long term quality relationship with the client but managing to get plenty of short term contracts with different customers. Due to this the customers suffer from the potential loss of non-contractible value due to the short term contracts between the service providers and the customers (Bakos & Brynjolfsson, 1993). In addition to this, the client may hire different service providers for the same category of services like for building a variety of links. However, there are high chances that the services of the different vendors may not be aligned with each other or may even be contradictory incurring coordination costs to the customer (Clemons & Row, 1992). It is possible while purchasing multiple link building services from different service providers, the customer may end up getting multiple links from the same domains instead of enhancing diversity of backlinks. These links may also be unrelated, thereby adding to the problem of cost of fit.

The agency cost on the other hand is the most prevalent problem when it comes to SEM services where in the interests of the service provider and the customer clash once the payment is completed (Chen et al., 2011; Ross, 1973). More often, once the payment is made, these SEM providers de-activate these links on their own and the entire exercise becomes futile. This is done by the service providers to prevent their own ranking metrics from being lowered as the purchased links stay active for a short duration. Thus, to reduce the number of outgoing links from the domain, webmasters start removing older links. This gives rise to the agency problem (Chen et al., 2011; Ross, 1973) where in the agent, the service provider in this case, takes decisions against the principal best interest. The principal here is often not aware of the de-activation of links over a period of time and often ends up paying for a service that is actually not beneficial in the long run. Further another agency problem is witnessed, when links are created from comments in blog posts and new blog posts in such platforms by automated bots which create content by article spinning. Manual creation of content is time and effort intensive, which is bypassed by the usage of these automated software. These result in spam generation, which often penalizes the principal's website after few months by SE due to violation of webmaster's guidelines surrounding quality content and natural link building. For example, Google's Panda and Penguin update for ranking web pages penalizes such blogs massively due to generation of spam comments with exact keywords and spun content. The blog discussions on such e-market places highlights similar issues about being banned from SE, web site delisting and links being removed from PBNs after payments.

6. Discussions

Studies in literature highlight how Search Engine Marketing (SEM) has been beneficial to the organizations that are not only paying for inclusion in SE but also know the performance benefits of being on top of the SERP (Green, 2003). Further, studies also identify key factors that affect the brand positioning of these organizations based on their SERP considering the underlying concepts of marketing, e-commerce, psychology and cognitive computing (Dou et al., 2010). In addition, SEO has proven to be effective in improving the SERP and the traffic on websites making these more profitable and sustainable than pay per click marketing campaigns (Malaga, 2007). The impact assessment studies also attempt to analyze the impact of using SEO to enhance the marketing campaigns (Xing & Lin, 2006). On the downside, it is highlighted that search engine revenues are often not as high compared to the amount spent by the advertisers (Berman & Katona, 2013). However, none of the studies highlight the concerns when it comes to using these SEM services especially when outsourced to less skilled service providers due to monetary constraints. This study thus attempts to explore the niche industry of SEM through the review of discussions made in the public domain of social media and e-markets.

The insights indicate the presence of firms having a very dominant presence in the industry while there may have numerous smaller firms, who provide similar services. It is evident from the network analytics that the interaction between these service providers is very limited, despite being connected over a social network. Thus, based on the network dynamics, the industry concentration appears to be high, although highly fragmented. The reason for this trend may be due to the low entry barrier (in terms of infrastructure, capital and knowledge based resources) due to which many startups are providing these services though customer experiences have not been as positive in many such engagements. However, for actual success, a lot of investment would be needed in the long run, on capability development, as this is a highly knowledge extensive domain. The presence of negative emotion surrounding independent SEM professionals indicates that these professionals may not be able to provide the desired quality of service to the customers. However, the existing studies do not highlight any such dissatisfaction for the SEM services opted by the customers as demonstrated by Green (2003). It is evident from the analysis based on the social media discussions that SEM is definitely not benefiting all customers and has several repercussions when outsourced to service providers lacking adequate expertise. This is counter intuitive since the main reason behind outsourcing in IT services like SEM is the lack of adequate technical skills (Aubert, Rivard, & Patry, 2004). A recent study has argued that a wide digital skills gap exist in the digital marketing domain (Royle & Laing, 2014). Therefore, the transaction cost economics come into picture and often arise when conflict of interest arises between the service provider and the customer outsourcing the services (Arnold, 2000). Studies highlight the service provider's value proposition when it comes to IT outsourcing and suggests that the set of their competencies can generate benefits to the customer. This largely depends on the ability of the customer making the outsourcing decision to ensure consistency between the clients' needs and the service providers' competencies (Levina & Ross, 2003). However, our study highlights that in the long run this is often not the case in the SEM industry where the service providers often engage in Black Hat SEM techniques which harm the clients in the long run.

As demonstrated by Malaga (2008), SEO isn't always about promoting the web visibility using original content development and referencing but a major chunk comprises of unethical Black Hat SEM practices both for on-page and off-page optimization. These service providers who solely compete on price points tend to remove the created links after a few months of purchase to avoid their own quality metrics from being negatively affected. The customer isn't really aware of such practices and by seeing short term gain in traffic and rank enhancement becomes complacent. This is an example of the agency problem where the service provider's interests conflict with the long-term interest of their customers. This results in de-activation of the links that were deployed to promote web visibility for the customer over a period of time. These Black Hat SEM techniques have become very prominent of lately and are mostly prevalent in small scale SEM service providers and freelancers. Such mechanisms might result in short term gains in terms of attracting traffic but in the long run, the links become de-active and the purpose behind the whole exercise is defeated resulting in no actual gain of online visibility.

All of these scenarios in this niche industry of SEM make us wonder

whether the firms should actually go for outsourcing in the SEM industry or not. Ågerfalk and Fitzgerald (2008) highlight the challenges faced and strategies adopted when outsourcing to an unknown firm. Further, the outsourcing client needs to maintain an optimal outsourcing rate having the ability to acquire knowledge from the outsourcing service provider to keep knowledge coordination (Cha, Pingry, & Thatcher, 2009). The degree of IT outsourcing is positively corelated to the business and cost structures while it negatively impacts the IT performance (Loh & Venkatraman, 1992). However, our study highlights that when Black Hat SEM services are adopted by less skilled service providers it negatively impacts the client's business in the SEM industry while the cost structures pertaining to transaction cost economics show a positive correlation. This is one of the major reasons of customer dissatisfaction when opting to outsource SEM services considering the market hype of increased traffic and web visibility. Further, studies highlight various transactional risks that arise because of factors like issues in monitoring the performance of the service providers, size of the contract outsourced and specialty and competencies of assets of the service provider resources (Oh, Gallivan, & Kim, 2006). Also, studies explore risks in terms of transaction costs and agency theory based perspectives when IT services are outsourced (Bahli & Rivard, 2003). Our study also re-establishes similar concepts related to transaction cost economics when customers outsource SEM services to low cost service providers incurring several transaction costs including agency problems, coordination costs, loss of non-contractible value and cost of fit.

Further, for the purpose of validation of the insights from twitter analytics a qualitative case study pertaining to the approaches adopted by search engine operators, SEOClerks.com, is also taken into consideration. This has been done to explore the reasons for such dissatisfaction when startups provide such services. The case exploration demonstrates that various approaches for SEM including link building through blog comments, directory submissions, link developments, link pyramids, link wheels, PBNs, site link sales and wiki links are prevalent. The services provided by the sellers registered with such e-market places range from expensive packages to cheaper ones depending on the quality. The end customer is usually not able to distinguish between the implications and the quality of the service due to the secretive nature of many of the reports. Further benefits of short term and its trade-off with long term penalties, when applied, is often not made aware to the customers. Since popular discussions surrounding SEM predominantly highlight link building, service customers often get trapped by opting for lucrative, low cost deals. These deals comprise of building links in bulk by using approaches of article spinning, keyword stuffing and link farming. The content that is generated is often not original and is usually recreated from other websites and often results in penalization in the form of delisting of the websites by SE once these practices are detected. This is when the purchased links persist for a longer time to actually attract traffic. Moreno and Martinez (2013) provide a guide to how SEO may be beneficial in improving web accessibility by highlighting that apart from these techniques, the originality and quality of content supporting White Hat SEM is a necessity for SEO to be effective.

6.1. Contribution to marketing literature

The current literature surrounding SEM emphasizes the importance of web visibility in this era of digitization (Drèze & Zufryden, 2004; Gori & Witten,2005). Further, discussions surrounding the impact of position in SERP on brand equity of organizations in shaping brand perceptions are also prominent in literature (McCoy et al., 2007; Rangaswamy et al., 2009). Organizations now understand that SE positively impact the visibility of their offerings and subsequent revenue models (Dou et al., 2010; Keane et al., 2008; Skiera et al., 2010). But with the advent of Web 3.0, the visibility on the web is not solely dependent on the organizational websites but is also greatly affected by the social media presence of the firms. It is demonstrated that the customers' cognitive network and social ties has an impact on the "likes" and brand outcomes (Wallace, Buil, & de Chernatony, 2017). Shih et al. (2013) highlight how internet marketing strategies may be made for firms using search engine optimization and social networking sites in conjunction. There are no studies in literature that highlight how firms are leveraging these internet platforms to identify requirements and perception towards the services provided. Further, none of the studies explore the downside of SEM. This study provides a theoretical contribution by examining the cons of SEM services when outsourced to less skilled service providers. A deeper look into the disadvantages of going for search engine optimization to expand web visibility is demonstrated in this study with the help of social media analytics considering transaction cost economics. Transaction cost theory dynamics including agency cost, coordination cost, loss of non-contractible value and cost of fit are also identified with respect to services provided on e-market places like SEOClerks.com.

6.2. Implications for practice

Our study does not directly provide insights for practice but based on published literature, we see synergies for providing guidelines for digital marketing practitioners. These unethical and detrimental practices in the domain of SEM can be avoided by the customers by proposing outcome based pricing approaches and contracting. Most often information based service providers focus on a cost based model of pricing keeping in mind the time, effort, complexity and resource requirements (Pasura & Ryals, 2005). However, the end customer is often more concerned with the outcome rather than the processes. Brennan, Canning and McDowell (2007) highlighted that these models are not always successful when it comes to addressing customer price sensitivity and how the potential competitors would act. Therefore, it is often recommended to price such information based services based on their value as perceived by the customers (Harmon & Laird, 1997). Such a model scores above others in terms of helping the customer clarify its return on investment and proved to be beneficial in terms of mapping the value propositions to the customer to actual quantifiable returns when converted in terms of monetary benefits (Kar & Rakshit, 2015). It is also important for such services to identify suitable high quality websites for SEM and on what metrics these may be evaluated (Kar, 2014).

To further improve satisfactory outcome to the customers, medium term contracts may be used by the customers. Wu, Ding, and Hitt (2012) demonstrate how IT contract designs can benefit firms to best capture business value of investments. Studies highlight that when it comes to making market transactions, there is a positive relationship between the transaction characteristics, the contract design and subsequent performance of the service provider (Anderson & Dekker, 2005). The study further highlighted that the cost of contracting also affects the use of contract terms and the after sales services. Also, it was suggested that future performance problems can be mitigated to an extent by including non-trivial costs of contracting while entering into a contract with the service providers. It is highlighted that contract positions across monitoring, contingency provisions and resolution of disputes may be used in such services to reduce transaction and agency costs (Chen & Bharadwaj, 2009). Thus, it is often suggested that customers should enter into a medium-term contract (at least over 6 months) when opting for SEM services as these services take a longer time to actually show visible outcomes. Such a contracting approach may drastically reduce potential agency problems as fallouts of black hat SEM would be evident to the clients.

7. Conclusion

The study provides insights on customer perceptions surrounding digital marketing services provided by e-market places like SEOClerks.com. The discussions surrounding search engine marketing on Twitter highlight that approximately 32% of the total discussions have a

negative polarity indicating that SEM is not as profitable as it seems to be. It indicates a high percentage of unsatisfied customers. The analysis clearly demonstrates that most people aren't satisfied with the marketing professionals when it comes to SEM services. This is further validated by a case study on SEOClerks.com where in similar propositions are established. This study is an attempt to analyze user generated content to ascertain customer perceptions about the hyped SEM services. The dissatisfaction of customers is evident from the case study following the twitter analysis results. Further detailed analysis reveals that major reason behind the dissatisfaction is outsourcing of these digital marketing services to inexperienced service providers or freelancers in search of low cost solutions. These unskilled service providers not only provide ineffective SEM solutions due to lack of knowledge but also use Black Hat SEM techniques like article spinning, keyword stuffing and link farming that prove to be detrimental for the customer website. Such techniques when detected by SE lead to penalization in the long run.

The study is thus an eye opener in the domain of SEM and its effectiveness when it comes to practical implementation of the techniques. It may prove to be beneficial for organizations and individuals in a quest for quick web visibility solutions, preventing them to fall for the lucrative deals provided by the service providers on e-market places. The transaction cost dynamics associated with this including agency costs, coordination costs and cost of fit have also been elaborated to warn customers while outsourcing these services.

Further the study highlights that the service providers need to improve their services and the outcomes from them. This can be done by gaining a better understanding of the domain and how SE like Google rank websites (Evans, 2007) with their consecutive algorithmic updates (Slegg, 2016). A thorough understanding of domains like natural language processing, machine learning, web ontologies, data science and social networks would be required from the service providers (Frost, 2017; Voniatis, 2017). This will enable service providers to have better outcome for the clients in the long run as compared to the currently popular Black Hat SEM strategies.

7.1. Limitations and future research directions

The study utilizes Twitter discussions to conclude the ineffectiveness of SEM services when outsourced to inexperienced service providers. However, results could have been richer if other social media platforms were considered. However, platforms like Facebook are often not conducive for such data extraction and analysis which limited our focus to only analyze Twitter data. The study further lacks an empirical result validation where in a structured questionnaire may be used for analyzing the actual reasons for the dissatisfaction from service customers of SEOClerks.com. This is since there is no way to contact these customers as profiles are highly concealed and very little information beyond the profile ID is available as disclosure. Also, a more accurate picture of the effectiveness of the services can only be captured if the specific service provider feedbacks are considered including the blog comments on their websites. However, the lack of API to extract such private discussions made it difficult at this point of time to analyze such data. The validation of the users posting about these services is also another limitation of the study, since there are no grounds to ascertain whether the posts have been made by legitimate users or it is just negative word of mouth from the competitors. Future research may focus on hypothesis building since the current literature has no constructs showcasing and demarcating the dominant areas within SEM. Further, studies may also focus on how the identified concerns may be addressed by keeping in mind brand equity on social media along with just attracting organic traffic from SE for web visibility.

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