Social Media and Analytics for Competitive Performance: A Conceptual Research Framework

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Abstract. Social media websites have managed in a very short period of time to attract and maintain a massive user. Recognizing their potential, the vast majority of companies are deploying strategies in order to harness their potential in various ways, and ultimately, to establish their competitive position. Nonetheless, being relevantly novel, it still remains unclear as to how it is possible to make the most out of social media, especially in competitive and highly dynamic environments. As with any new technology, it is important to understand the mechanisms and processes through which social media can be of business value for companies in order to incorporate them into their competitive strategies. To this end, the present paper aims to provide a theoretical discussion leading up to a conceptual research framework that can help explain the mechanisms through which social media and analytics lead to competitive performance gains. The conceptual research framework builds on the resource-based view (RBV) and dynamic capabilities view (DCV) of the firm, and provides a synthesis of the two theoretical perspectives.

Keywords: business social media analytics; dynamic capabilities, competitive performance, resource-based view, environmental dynamism, IT strategy

1 Introduction

Social media have become increasingly popular over the years by connecting a wide variety of users worldwide. They have also become very important for companies, since they have the potential to provide a competitive advantage with a proper strategic implementation on various facets of a firms activities [1]. Their penetration is very high, offering various opportunities for companies (especially low cost innovators and start-ups) to reach end user and access new, untapped markets. As such, it is of high interest for executives and academics to understand the mean through which these tools can be leveraged appropriately. To do so, it is important to build on past research of business-IT value, as well as on theoretical perspectives of management. Researchers should help practitioners by offering insight on how to make better use of the available technologies and tools, how to better engage with

their customers, and how to optimally employ social media to strengthen their competitive position.

Social media literature is rather nascent, and mainly focuses on how firms behave on social media and how they use such platforms for marketing and commerce purposes. Through social media firms are able to market new products or services, build new avenues for commerce activities (e.g. social commerce), and interact directly with their customers. Similarly, social media may help firms built trust with their customers and increase their loyalty. Furthermore, they can be used to enable firms to rethink their current means of operation and adjust their business resources and strategy. Nonetheless, there is little research on how firms should adopt social media and specifically what factors will help them achieve this [2].

The most compelling effects of social media in business have not yet been documented, because the requirements and conditions for their proper implementation in business strategies remain understudied. This paper aims to identify how managers and decision makers in companies can make better use of social media, take advantage of the vast content that is available publicly, filter it, and proceed to decisions that affect the whole company both externally and internally. Our main objective is to propose a theoretical framework including innovative practices that will help in designing social media for businesses, such as social media functionality, its technical infrastructure that enables the creation of user generated content, and creative consumers that use social media to interact with the companies. Based on our aims and objectives we pose the following research questions:

RQ1: What are the core building blocks that should be taken into account when considering social media and analytics? What leveraging mechanisms need to be put in place in order to constitute them as a source of a competitive advantage?

RQ2: What conditions moderate the effectiveness of social media and analytics tools? In what areas and under what contingency aspects do social media analytics enable firms to achieve a competitive edge?

The rest of the paper is organized as follows. In the next section we present a literature review on the area of social media analytics in the business context. In section 3 a theoretical discussion is presented introducing the main perspectives employed. Section 4 describes the proposed research framework and how the theories are contextualized for social media and analytics purposes. Finally, section 5 concludes the paper with a brief summary and suggestions for future work.

2 Literature Review

Social media are a great example of the impact of information technology on business, both within and outside company boundaries, and both at a corporate and an operational level [3]. They transform the way that companies relate to both their customers and employees [4]. Through appropriate implementation social media platforms have the potential of renewed business value creation along with increased

productivity and innovativeness[1]. The importance of business analytics is evident throughout the literature, and as they evolve they have various applications creating multiple emerging research areas [5]. In addition, the critical role of social media analytics has already been identified and there are numerous studies in various contexts on the impact of analytics from social media [6-9]. Yet, existing studies fail to connect social media analytics with business needs and strategic management, a connection that would offer companies' significant ways to evolve and gain competitive advantage.

A research framework has been recently proposed to help researchers into studying social media [10]. In detail, social media are divided into four fairly broad categories of activities, namely; design and features, strategy and tactics, management and organisation, measurement and value. Further, each activity can be analysed on a different level based on who uses social media (i.e., consumers and society, platforms and intermediaries, firms and industries). To this end, the functionality designed into social media has been identified as a very important factor because of its role on all types of social media users.

An alternative perspective that is equally important is the functionality that social media enable, with a recent framework documenting the main affordances [11]. The objective of the abovementioned framework is to explain how social media operate and how businesses should engage with them. The functionality of social media consists of seven blocks, and the proposed framework may be used to examine and explain both users' experience with social media and firms' implications from them. Such implications include suggestions for business strategies that will help them monitor, explain and act depending on the various social media activities.

The aforementioned frameworks offer valuable insight to researchers and practitioners, however a theoretical framework would be more robust if it also examined social media from a strategic management point of view. To do so however, requires a hands-on approach with the companies in order to identify their needs and expectations from social media, as well as clarify how their managers and decision makers view social media. Towards this end, a very recent study aims to identify challenges and opportunities in social media for business by interviewing professionals from large organisations [12]. The interviews reveal different challenges and opportunities, which can be categorised in six different areas (e.g., social media analytics) for further research and analysis. Nonetheless, various challenges remain for organisations and managers to tackle in order to use social media for their business in the most efficient manner.

Recent studies suggest that businesses are not able to properly manage the opportunities or threats that arise from social media and analytics, because their decision makers do not fully comprehend what they are and how they function, thus they cannot visualise their potential benefits. Extant research in the area of social media and analytics (SMA) for businesses [13] proposes innovative approaches to aid companies' in collecting, monitoring, and analysing user-generated content. Their goal is to obtain valuable insights from these data and to acquire a competitive advantage in the market. Further, many challenges have been identified in the

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[1] Business opportunities: Social Media. (2013). https://ec.europa.eu/growth/tools-databases/dem/sites/default/files/page-files/social_media_v1.1.pdf.

literature of SMA, and are based on problems that occur with the gathering and analysis of data obtained from social media [14]. However, focusing on user generating content is only a small part of the possibilities incorporated in social media. In order companies to make the most out of social media and analytics, they should incorporate them in their overall business strategy.

3   Theoretical Discussion

The growing interest in social media analytics requires a focused discussion on how it can be examined and what theoretical prisms can be employed in order to understand the critical success factors as well as its business value. Information systems literature has used various theoretical perspectives to explore these issues, with recent attempts building on the convergence of theories. When examining the impact of IT investments at the firm level of analysis, the Resource Based View (RBV) of the firm has been the primary theoretical perspective applied over the past two decades [15]. The main of the RBV is that IT resources that are valuable, rare, in-imitable, and non-substitutable are the building blocks of a competitive advantage [16]. IT resources have been distinguished into tangible (IT infrastructure), human (IT human skills & knowledge), and intangible (culture and relationships) [16]. This has enabled researchers and practitioners to identify the different types of IT resources their firms should aim to acquire and strengthen. However, although the RBV provides a basis for the raw material that are necessary to build a competitive advantage, it fails to explain how these resources are leveraged [17]. In addition, the RBV provides little explanation as to how companies react in the face of external changes [17]. These shortcomings of the RBV have also been documented in the IT literature, and have caused academics to rethink the theoretical perspectives that could complement this gap.

A growing body of literature is emphasizing on the role of dynamic capabilities as a source of sustained competitive advantage, especially in turbulent and uncertain environments. The dynamic capabilities view (DCV) of the firm posits that the ability to purposefully adapt an organizations resource and capabilities in the face of external pressures is ultimately the source of sustained competitive advantage [18]. While the DCV has only recently begun to attract the interest of IS scholars in terms of helping determine how an IT-based competitive advantage can be achieved, there have been several papers that employ the theory empirically [19]. The rationale developed in these studies is that IT that is embedded in specific capabilities can provide a competitive edge. As such, the value of IT does not lie in IT resources *per se*, although their availability is a prerequisite, but rather, on the process of integrating them into the organizational fabric. The DCV has seen a maturing in terms of its theoretical grounding over the past few years, and has been tested in empirically in several different contexts, providing a clear understanding on how to conceptualize and measure the firms' capacity to do so. The general consensus in these empirical studies is to identify between the routines or capabilities of which dynamic capabilities comprise [18]. While there are some differences in terms of the routines used, the underlying philosophy remains the same in most of these studies.

While the RBV and DCV build on different ideas to support how a company can achieve of competitive advantage, there is a growing body in literature which identifies their complementarities [20]. Despite the DCV being more appropriate in explaining competitive advantage in turbulent and unpredictable business environments, it is noted in literature that the types of resources that a firm possesses will ultimately have an effect on the responses they can initiate. The types of resources and their influence on responsive actions have also been noted in IT literature, thus reinforcing the theoretical linkages [21].

4   Research Framework

A vast amount of data is inherent in social media and most companies are already trying to process this data in order to extract specific information that will increase their value. In order to achieve their goals various tools, methods and analytical concepts are applied such as text mining or sentiment analysis. However, the amount of data is huge thus leading to information overload for company managers, decision makers and executives. Decision makers do not have the proper guidance on how to adopt and implement SMA procedures and outcomes on their business strategies. To this end, we propose a theoretical framework that will aid the integration of social media strategy with the overall strategy of the company.

The theoretical discussion of the previous section provides a basis for understanding how to approach social media analytics for business purposes and develop a research framework for future reference. The proposed research framework can therefore be used in order to avoid common pitfalls of IT research, especially in terms of novel solutions in which it is important to understand the boundaries of their business value and under what circumstances it can be attained. To do so, we demonstrate how the theoretical perspectives are associated, what core notions and aspects are relevant, as well as what contingency factors shape these relationships. Already there are several studies that attempt to define the business value of social media analytics, yet, there is no coherent theoretical framework, or an underlying unifying framework to provide a clear view of the overall business potential.

We start this discussion by isolating the different levels and dimensions pertinent to each theoretical perspective, identify how they are relevant to the context of social media business analytics, and finally attempt to describe their interdependencies. The initiating point is to demarcate the RBV in the IT context. Over the past decade there have been several studies that define the levels at which the RBV can be decomposed as aforementioned in the previous section. Building on the distinction between IT infrastructure, IT human skills and knowledge, and relational IT resources, we overview some of the work that could be used to guide researchers in the social media analytics area. In terms of IT infrastructure and the different types that exist several papers have proposed aspects that should be considered [16]. In the context of social media analytics there have been some attempts to describe the necessary infrastructure which span hardware, software, and mathematical and analytical tools [5]. Employees working in this area should have analytical thinking, ability to handle large amounts of data, knowledge of analytics techniques and statistical modeling, as

well as the capacity to tackle problems with a data-driven approach [22]. In terms of relational IT resources, in the context of social media analytics it is important that companies establish a virtual presence on such mediums and clearly articulate communications and interactions strategies with their existing or potential customers [23]. Although the three afore-mentioned aspects of social media analytics are critical to establish in order to gain a competitive edge, they are of limited value if not leveraged appropriately. This means that the infrastructure, human skills and knowledge, and relational resources must be put into action and into specifically directed initiatives. To do so, a firm must have the IT competencies, i.e. the collective capacity to coordinate activities and transform and bring together individual IT resources into IT-enabled dynamic capabilities.

While the ability to effectively orchestrate IT resources may also result in operational capabilities, the focus of our research framework will be on dynamic capabilities due to their importance in contemporary businesses. Therefore, we seek to explain the routines of which IT-enabled dynamic capabilities comprise, and how social media analytics can be infused into them with the purpose of augmenting them. Researchers have sought to quantify the notion of dynamic capabilities by identifying distinct and measurable dimensions, or else, capabilities [19, 24-26]. These capabilities include sensing, learning, coordinating, integrating, and reconfiguring [25]. A sensing capability concerns the capacity of a firm to spot, interpret, and make sense of opportunities and threats in the business environment [24]. Social media analytics can be leveraged to enhance a firms sensing capability by helping identify customer requirements, gaining feedback on existing products or services, or even monitoring competitor moves and their customers' responses [27, 28]. A learning capability is defined as the capacity to acquire, assimilate, transform, and exploit new knowledge that enables informed decision making [29]. While this capacity closely resembles a sensing capability, it differs in that it doesn't solely rely on spotting trends, but creates distilled information that can be used in competitive actions. A coordinating capability is defined as the ability to orchestrate and deploy tasks and resources, and synchronize activities with involved stakeholders [30]. Through feedback iterations with customers over social media and developing meaningful analytics, firms can coordinate their efforts with various departments and at different stages of development, and come up with products or services that are tailored to their likings. An integrating capability includes the capacity to evaluate external resources and competences, and embed and exploit them in new or revamped ways [31]. Social media analytics can be employed towards strengthening this capability by gathering information from multiple sources and utilize them in combination, or else, through the process of bisociation. Finally, a reconfiguring capability is defined as the ability of a firm to effectuate strategic moves and demonstrate agility when there is a need to change existing modes of operation [32]. For this particular capability social media analytics are particularly relevant since by generating information at a constant flow, or else nowcasting, decision makers are equipped with knowledge that allows them to respond instantaneously, thus increasing operational agility.
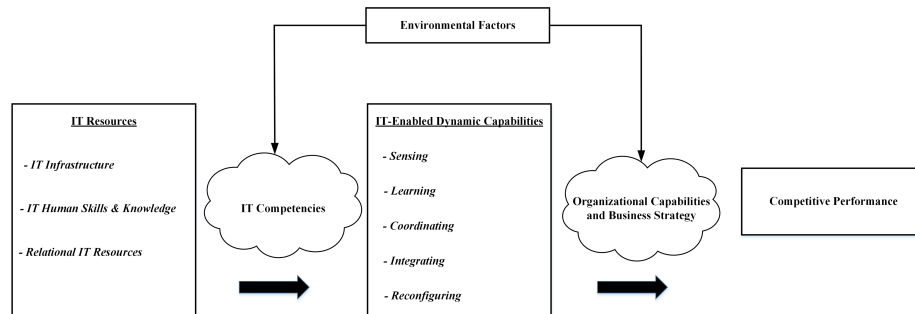
Figure 1 Research Framework for Social Media Analytics

Building on the main theoretical arguments presented and their underlying concepts and notions, the research framework presented above and the main associations can help guide future studies in determining the business value of social media analytics. By separating IT resources from IT-enabled dynamic capabilities, it is possible to discern the nexus of relationships through which competitive performance gains can be realized. While IT resources related to social media analytics are necessary, they are of very limited value if they are not transformed into IT-enabled dynamic capabilities through effective orchestration and management (i.e. to develop the necessary IT competencies at the group or business unit level). IT-enabled dynamic capabilities have been shown to be an important part of gaining a competitive edge, especially in turbulent and highly dynamic markets. Nevertheless, their effect on competitive performance has empirically been proven to be and indirect one, mediated by other organizational capabilities and contingent upon business strategy [33]. It is therefore important to examine how IT-enabled dynamic capabilities relevant to social media analytics operate, in terms of changing the existing modes of operation and decision making.

5 Discussion

Companies and their customers are increasingly using social media to interact with each other in various ways, thus leading to the creation of a vast amount of data on a real-time basis. For companies to gain a competitive advantage in the market and differentiate from their competitors it is important to exploit these data which will offer them valuable insights. Companies that use analytics have increased performance, and towards this direction business social media analytics may help companies identify strengths, weaknesses, transform their strategies and gain competitive performance. This work identifies the need for a paradigm shift on firms' business models and focuses at the same time on the yet underserved but highly need and requested area, that of social media and analytics for business.

To this end, this study proposes a conceptual framework that is based on concepts from social media and analytics literature based on theoretical arguments developed

in strategic management literature. Therefore, it will provide a sound basis for the wider implementation of social media in businesses. Additionally, the framework may be accompanied by multi-modal content targeting different types of companies with different needs from social media (e.g., start-up companies, small and medium enterprises). The vast literature in social media analytics focuses on tools and technical methods (e.g., data mining, text analysis, sentiment analysis) and network analytics, but a conceptual framework on how to implement social media analytics into a company's strategy to enhance their competitive position is not available to date. Thus, the proposed framework contributes to the social media analytics literature by covering the aforementioned gap. It is more important for managers and decision makers to learn how to implement social media analytics in their competitive strategies, than to simply perform data analysis on user-generated data sets.

Furthermore, this study argues that the main source of a competitive edge, especially in highly dynamic and turbulent environments will stem from companies being able to reinforce their dynamic capabilities through targeted use of social media and analytics. This of course does not lessen the importance of IT resources, since their availability and VRIN characteristics can determine the strength of the associated IT-enabled dynamic capabilities developed [34]. The concepts used in the proposed framework may help managers better understand, plan and organize the process of implementing social media analytics within a business strategy.

This paper offers a theoretical framework on how to increase business value and competitive performance with social media analytics. Future studies should empirically test and evaluate this framework by using surveys, interviews, observation, focus groups with experts (e.g., managers, decision makers) and with customers', as well as case studies from the industry. Also, both qualitative and quantitative methods of data collection should be employed. For each different type of data, more than one ways of analysis should be used (e.g., structural equation modelling, qualitative comparative analysis).

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