The Competing-Complementarity of Social Media

Research-in-Progress

Introduction

The popularity of social media, built on the technological platform of Web 2.0, and user-generated-content as the sum of ways that people use it (Kaplan and Haenlein 2010) are profound developments in the communications and information systems domain (Zeng and Wei 2013). The ubiquitous networking capabilities and user-directness of social media are impacting the nature and context of communication exchanges, buying decisions and marketing plans of businesses (Glynn et al. 2012). In addition, through social media, the idiosyncratic talents and skills of users are gaining remarkable visibility, variety and quality, whereby user-generated-content is ‘rivaling content produced by professional agencies’ (Zeng and Wei 2013). Despite the positive impacts of social media on a firm, practitioners and professionals eschew engaging with it due to the lack of understanding of how social media could affect a firms’ reputation, identity and relationships (Kietzmann et al. 2011). For example, a study by Kwak et al (2010) exploring the potential of Twitter finds that Twitter deviates from known social networking characteristics and shows prospects of becoming a strong medium for news. This indicates that the precise innovative role of social media is not adequately understood and requires more theory-guided explanations.

Using Teece’s (1986) notion of complementary assets¹, Rosemann et al (2011) conceptualize social media (Rosemann et al refer to Facebook, Twitter as large digital service providers) as digital complementary assets, further sub-dividing them as digital public goods (DPGs) and digital public assets (DPAs) based on their differing characteristics. Using Teece’s descriptions of how innovating firms engage with such assets, Rosemann et al (2011) describe four characteristics of DPGs, i.e. non-excludability, non-rivalry, versatility and positive network effects and offer firms three modes of engagement with them. Although we concur with the concept of DPGs, the abstraction raises pertinent questions on their complementing attributes such as (i) what exactly do DPGs complement in innovating firms? (ii) Are DPGs truly public, as firms do pay for corporate use of social media (e.g. LinkedIn)? (iii) If DPGs are not entirely public, then, does it make their non-rivalry disposition misleading, thereby exposing their competing potential?

We address these issues by placing forth a proposition for social media providing complementarity to firms, yet showing the potential to compete with the very firms that sought complementarity. We draw on Porter’s (2001) and (2008) work on competitive forces shaping strategy and businesses on the Internet and propose three characteristics depicting the competing nature of social media: (i) operational effectiveness (ii) strategic positioning, and (iii) complementing. Complementing as an attributing element to the competing potential of social media seems rather paradoxical and unique. For example, we observe that the complementarity of social media quintessentially strengthens its prowess as a rival to firms producing informational products (e.g. newspapers). This is because the structural fixed costs of producing such products are high to news publishers but marginally low to social media for reproducing them (Karagiannopoulos et al. 2005). So, by offering complementarity in creating, sharing and delivering information, social media is able to provide, for example, newsworthy information faster and cheaper than traditional news providers. We conceptualize this unique phenomenon as the competing-complementarity of social media. Specifically, we investigate two research questions:

- Does social media provide complementarity to a firm?
- Does a complementing social media compete with a firm?

We analyze the competing-complementarity phenomenon through the impact of social media on news firms. The news industry presents an inimitable environment for understanding and evidencing competing-complementarity, as the industry has been flagged as ‘entirely disrupted’ by social media (Aral

¹ Tangible goods and/or services that have IP attributes and are perceived to be alike by all stakeholders
et al. 2013). News and informational products (e.g. newspapers, television broadcasts) created and delivered through traditional news mediums are becoming increasingly digitized with content migrating to the Internet (Karagiannopoulos et al. 2005). Through the complementarity that social media provides, content and content providers are becoming highly visible, easily available and instantly collaborative through vast user networks (Sundar 2009; Vuori 2012). This is valuable to news firms as the fit of social media capabilities (e.g. low cost, ubiquitous utilities, open access) to the communication requirements of fulfilling tasks (e.g. delivering news) influences the firms’ communication performance. But, people are also skirting way from traditional news products (e.g. newspapers) and instead, following, sharing and creating news directly through social media (Gil de Zúñiga et al. 2012). We posit that this phenomenon makes social media a potential competing force to news firms. Our paper aims to contribute to the development of a pragmatic theory to build the understanding of the innovativeness of social media.

This paper proceeds in the following way. The next section provides a comprehensive explanation on conceptualizing the competing-complementarity of social media and is followed by the section on evidencing competing-complementarity. We end by discussing future work, implications and limitations.

**Conceptualizing Competing-Complementarity**

We conceptualize competing-complementarity as the potential benevolent and malevolent nature of social media, intertwined to its capabilities and influencing its role as a benefactor and a competitor.

**Complementarity of Social Media**

On a generic level, complementarity arises when two or more factors jointly support each other to produce more value than if each were operating independently (Caruso 2009). These factors can be physical (and portable) devices, actions, policies and practice. Milogram and Roberts (1995) define complementarity as ‘doing more of one thing increases the returns to doing more of another.’ Based on the above, we define the complementarity of social media as *its functional worthiness supplementing and adding value to existing services, processes and functions of firms*. Leveraging the complementarity of social media is vital to firms for strengthening their roles and values as business entities. We elucidate the characteristics of complementarity based on the attributes of DPGs put forth by Rosemann et al (2011). These characteristics are derived through the idea of public goods as defined in economics, the technology-acceptance model and network theory (Rosemann et al. 2011). We explain those in the context of social media providing complementarity to news firms.

**Non-Excludability**

Similar to the Internet, social media use is free for all and does not require any contractual pre-conditions for general-purpose use. Besides, there are no technical requirements or restrictions for accessing and using social media (except Internet access. Usability is intuitive). These elements depict the non-excludability of social media, i.e. anybody can access and consume the utilities without any constraints (Rosemann et al. 2011). News media practitioners (e.g. journalists) routinely use social media for (a) sourcing information by engaging with online communities and groups (e.g. building networks through Facebook, LinkedIn), obtaining information (e.g. following Twitter feeds), sharing ideas (e.g. posting on LinkedIn), and exchanging information (e.g. commenting on YouTube), and (b) delivering information for attracting users to news websites (Hong 2012), disseminating news to large user bases (Dugan 2011), and appealing and influencing news audiences through personal tweets, blogs and Facebook accounts (e.g. Anderson Cooper, anchor of AC360, CNN has 2+ million Twitter followers). These activities illustrate the opportunity, freedom, choice and low cost of use that social media offers to all.

**Non-Rivalry**

Users of social media do not compete against each other, as it is available 24/7 and accessible in any geographical location (subject to Internet access) through disparate devices such as smart phones and tablet computers (Weinberg and Pehlivan 2011). This signifies unlimited delivery, consumption and
creation of information through social media. For example, a user tweeting does not constrict other users’ microblogging space (on Twitter) or reduce their tweeting time. Therefore, any user using social media does not impact its availability to other users. This characteristic is referred as non-rivalry. Such non-competing aspect complements news firms, as they can connect and communicate with mass users instantly (Glynn et al. 2012) (e.g. posting a breaking news video clip on YouTube), access information discretely and deliver news globally without having to worry about the scalability of social media for storing, processing and delivering information. Such complementarity provides news firms more and faster ways for gathering and expressing information with the explicit aim of informing and shaping public beliefs and opinions (McCombs et al. 2011).

**Versatility**

Large social media websites (e.g. Facebook) are generally branded successful due to their apparent ease of use (Rosemann et al. 2011). Ease of use is explained by user attitudes and intention to use an innovation (Choudhury and Karahanna 2008). However, the value of social media use based on perceived usefulness is beyond the scope of this paper. Rosemann et al (2011) describes three principles of service-oriented design for achieving ease of service consumption that accentuates the versatility of DPGs, i.e. ‘abstraction, messaging and composability.’ In the context of social media, abstraction refers to the core design principle on which a social media application is based. For example, a first-time user of Twitter need not comprehend how tweets are delivered. News firms do not have to grasp how information is uploaded on social media compared to traditional practices of news production and delivery (e.g. newspaper), where news firms require knowledge and control of processes such as printing and delivering a newspaper. Messaging denotes a well-defined model of interacting with users. This streamlines the manner of consumption through social media thereby standardizing the mode of interaction (e.g. a tweet is limited to 140 characters). Such controls help news firms in providing brief headlines or breaking news. Composability denotes simple and easy efforts in creating new properties by bundling multiple services of various social media applications (e.g. a news firm integrating YouTube videos on its Facebook page).

**Positive Network Effects**

Social media is based on Toffler’s (1980) ’Prosumer’ model cited by Rosemann et al (2011) where users create value proposition by using it (e.g. uploading videos on YouTube). More users of social media result in more content being created. This increases the chances of finding information during non-intended use by other users. This associates the quality of social media positively with the number of users, reflecting positive network effects. According to Aral et al (2013) network effects dramatically influence consumer demand. For example, videos on YouTube can be ranked based on the popularity ratings awarded by mass users. This signals users providing feedback and contributing to social media’s quality and value. Such network effects are extremely vital for news firms in finding newsworthy information.

**Complementarity of Social Media on Processes**

Through the characteristics of social media (refer Table 1), we observe complementarity on two key processes of news firms (i) news sourcing, and (ii) news delivery.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
<th>Literature</th>
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<tbody>
<tr>
<td>Collaborative</td>
<td>User-generated-content and sharing</td>
<td>(Hong 2012; Vuori 2012)</td>
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<tr>
<td>Convergent</td>
<td>Multimodal and voluminous content</td>
<td>(Sundar 2009)</td>
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<tr>
<td>Connectedness</td>
<td>Ubiquitous, direct interaction (e.g. likes)</td>
<td>(Glynn et al. 2012)</td>
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<td>Availability</td>
<td>Free, public, 24/7, omnipresent</td>
<td>(Kaplan and Haenlein 2010)</td>
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<tr>
<td>Selectivity</td>
<td>Discrete selection of content (e.g. upload)</td>
<td>(Kietzmann et al. 2011)</td>
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<tr>
<td>Accessibility</td>
<td>Consumption through mobiles, ipads etc.</td>
<td>(Weinberg and Pehlivan 2011)</td>
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**News sourcing:** The traditional news sourcing process involves identifying people, publications, events (e.g. conflicts) and phenomena (e.g. weather related events) for obtaining newsworthy information, which are objectified as influential sources that shape news reports (McCombs et al. 2011). However, sourcing through social media constitutes a new paradigm shift for finding information, as it comprises (i) engaging with online communities and groups (e.g. building networks through LinkedIn) (ii) extracting information (e.g. by following Twitter feeds) (iii) sharing ideas (e.g. posting on Facebook for extracting responses), and (iv) exchanging information (e.g. commenting on YouTube). This makes users and their content instant sources of information (Sundar 2009). Sourcing through social media is advantageous to news firms, as it is (i) globally available, 24/7, and free (ii) collaborative with the capability to connect and communicate with multiple users and find content from multiple sources, and (iii) easily accessible through portable devices. These dynamic approaches to sourcing information provide news firms more and faster ways to gather and organize information through a new class of citizen informants.

**News delivery:** Social media offers complementarity to news firms by providing its medium for delivering news (e.g. CNN tweets news to its 4+million followers). The traditional news delivery process of news firms involves distributing finite quantities of news content in predefined formats (e.g. newsprint) through fixed instruments (also interchangeably referred as mediums) such as a newspaper and at pre-scheduled times. In contrast, news delivery through social media integrates and converges various interactive communicative elements such as audio, video, pictures and text into a ‘single multimedia presentation representing a news story’ (Watters et al. 1998). The content is then uploaded on social media for instantaneous and immediate deliveries. Although scheduled deliveries are discretionary, they require minimal authoritative controls and are interactive, as they evoke multiple sub-deliveries through responses, comments etc. from users. Such a delivery process is cheap, fast and offers an innovative approach for (i) attracting users to news websites (Hong 2012) (ii) disseminating news to large user bases (Dugan 2011), and (iii) appealing and influencing news audiences through personal tweets, blogs and Facebook accounts. This gives news firms extensive news coverage while speedily connecting with mass users, which traditional news mediums (e.g. newspapers) cannot do. Such deliveries are instantaneous and cost effective given social media’s ‘multimedia richness, global accessibility and low costs of communication’ (Fuller et al. 2006). This is vital for news firms in retaining and gaining new audiences.

**Competing Potential of Social Media**

Social media provides a faster, cheaper and convenient way for creating, sharing, consuming and collaborating information, which traditional businesses (e.g. publishing companies, news firms) cannot do. We define the competing potential of social media as its innate superior capability of (i) influencing and increasing its value to users (ii) offering an affordable low cost interactive medium for ‘conveyance and convergence of information’ (Dennis et al. 2008), and (iii) making information viral (i.e. the ability to diffuse information instantaneously across large user networks). Drawing on Porter’s (2001) and (2008) work on competitive forces shaping strategy and businesses on the Internet, we propose three characteristics depicting the competing nature of social media: (i) operational effectiveness (ii) strategic positioning, and (iii) complementing. According to Porter (2001), sustainable competitive advantage is achievable by either operating at a lower cost or imposing a premium service and price or both. Such an advantage is attainable by being operationally more effective than competitors and by doing things differently from those of rivals. We explain these in the context of social media potentially competing with news firms. However, we note that similar to the Internet, social media was not created to compete against any specific industries or businesses. Rather, its ubiquitous and pervasive characteristics and the congregation of mass users creating and sharing information have and are impacting traditional firms constricted by high costs of communications, information gathering, and processing business transactions (Porter 2001). Amongst those hard hit are the news and publishing industries (Aral et al. 2013).

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2 Hong’s study shows 82% of newspapers have Facebook accounts while 84% have Twitter accounts
3 Anderson Cooper, anchor of AC360 of Cable News Network has 2+ million Twitter followers
Operational Effectiveness

Operational effectiveness implies doing things similar to those of competitors but doing them better (Porter 2001). Accruing competitive advantage can take numerous forms such as operating on better technologies or having a more effectual management structure. The operational effectiveness of social media can be observed, for example, through its strong capabilities of creating, exchanging and collaborating information instantaneously in real-time. Social media companies (e.g. Twitter Inc.) themselves operate in a highly nascent and embryonic industry where there is belligerent experimentation for attracting and retaining users (Santos and Eisenhardt 2009). Besides, there is chronic development of technology, products and services resulting in continuous creation, co-development and testing of new technologies, novel products and services unbounded by time and firm boundaries (Gnyawali et al. 2010). In addition, there is aggressive value co-creation through partnerships and strategic alliances for building quality applications and services (Gnyawali et al. 2010). This speed and agility of technology, application and product development makes it easier for social media companies to design and implement new applications and services, which play out as new innovations to traditional industries. Such a rapid pace of development is unheard and difficult to imitate in traditional innovating firms where IT development, adoption and implementation have longer lifecycles and complex and laborious processes (Gnyawali et al. 2010). Therefore, traditional firms cannot cope with, innovate or easily imitate what social media do. So they converge on their innovations for leveraging its advantages. However, in doing so, they make social media companies highly valuable and competitive. Product and service improvements in the newspaper industry have been rather nonexistent except migrating news to the Internet. Rather, the predictive outlook for the industry (in the United States) has been sluggish evidenced by its struggling circulation and declining revenue models (Mitchell and Rosensteil 2012). News firms are already sourcing, sharing, creating and delivering news through social media (e.g. Twitter) making it a repository for newsworthy information. Such operational effectiveness of social media is also attractive to advertisers already shifting business to social media (Mitchell and Rosensteil 2012).

Strategic Positioning

Strategic positioning is doing things differently compared to competitors (Porter 2001). This is achieved by (i) delivering unique services (e.g. video calls through Skype) that add greater value to existing services (ii) offering different features (e.g. likes or timeline on Facebook), and (iii) offering an array of services (e.g. Yahoo). By strategically positioning their applications and services, social media has acquired exponential growth in terms of users, which is then leveraged for attracting advertisers and other firms wishing to market their services. As a test example, a 2012 Dow Jones report stated that Facebook was preparing to aggregate job postings from third parties. This makes Facebook a potential competitor with professional networks such as Linkedin as well as online and offline job recruiters in an estimated $4.3 billion online job-recruitment industry. The news industry, already hard hit by social media could face a more disastrous fate, if Facebook or Twitter began aggregating and providing a broad suite of news and newsworthy informational services on a subscription based model.

Complementing

Complementarity arises when the combined value of two products is greater than the sum of each ‘product’s value in isolation’ (Porter 2001). Complements can play a key role in triggering demand for a firm’s product and services (Porter 2001). Higher dependency on a complementing product or service can make that firm providing it highly competitive to its rivals. For example, social media complements news firms existing news sourcing and delivery processes. So, greater reliance on Facebook and Twitter creates a greater demand for its usage. Other business entities and individual users also create, source, deliver and share news and information through social media. This complementing attribute of social media greatly boosts its competitive potential to generate, create and broadcast news (e.g. YouTube). Here, we posit that the non-excludability characteristic of social media complementarity limits free consumption to a specific threshold. Thereafter, it potentially imposes charges for increasing use of services (e.g. Linkedin). Anderson (2010) investigating pricing models finds that products and services offered free to customers are often strategies for attracting users and ‘upselling some of them to a premium level.’ His model widely referred as ‘freemium’ is applied to digital products and services. However, the tipping point
of complementarity into competitive mode is debatable requiring more empirical evidence. Likewise, Rosemann et al's (2011) depiction of DPGs only make them public to a specific level. Beyond that, they constitute a price for usage, fragmenting their non-rivalry position into potential competition.

On the user level, we observe social media’s cumulative merits of (i) supplementing traditional news mediums (e.g. breaking news first on Twitter) (ii) disintermediation (e.g. disengaging any mediating mechanism such as scheduled times for news) (iii) replacing communication intermediaries (e.g. Facebook as one-stop news medium), and (iv) interactivity (e.g. users create, share, news) extremely appealing and cost effective to users, thereby epitomizing its competing potential.

**Evidencing Competing-Complementarity**

We build the understanding of competing-complementarity by analyzing opinionated data using the ‘sentiment analysis and opinion mining’ approach. This method enables studying individual opinions, sentiments, emotions and attitudes from text and is increasingly used for understanding voluminous textual information on social media (e.g. reviews, blogs, tweets, comments) (Liu 2012). In this paper, we use commonsense reasoning to analyze opinions at the sentence level (instead of computational analysis that aggregates the polarity of general sentiments at the document or paragraph level). Commonsense is information that individuals normally know but usually do not state in a conversation. This is because such communication is usually based on shared background knowledge of understanding the relationship of objects in the context of their environments, events or situations (Cambria et al. 2010).

**Example 1:** Opinion expressed by Rob Johnson, campaign manager for Governor Rick Perry in the 2012 U.S. presidential elections, “We no longer click refresh on websites or wait for the paper boy to throw the news on our porch. We go to Twitter and learn the facts before others read it” (Youngman 2012).

**Opinion analysis:** “We go to Twitter and learn the facts” - People use Twitter for free without requiring technical knowledge or contractual agreements. News firms can also use it for delivering newsworthy information. Many users can access the same information. This shows non-excludability and non-rivalry indicating complementarity. “No longer click refresh on websites or wait for the paper boy,” “Learn the facts before other read it” - Twitter is easy to use. It provides news faster than other mediums do. It is a preferred news medium. This shows Twitter’s operational effectiveness signaling competing potential.

**Example 2:** Focus Group. Opinions expressed by seven individuals (Five higher degree research students and two staff) of a large academic institution on their generic use of news mediums (traditional and social media) and also related to two recent events (i) the death of Margaret Thatcher (Apr. 8, 2013), and (ii) the Boston marathon bombings (Apr. 15, 2013). (Note: Due to limitations on page length, only a snapshot of the complete focus group discussion is presented).

Quotes: “I found that Margaret Thatcher died when a friend posted it on Facebook.” “I have friends in Boston who put up a video of the Boston bombings (on Facebook and YouTube) even as news channels (TV) were starting to show it.” “I prefer social media for news because traditional media and even news websites tend to be a bit periodic. I won’t wait for the next day to hear what the (news) update is.”

**Opinion analysis:** Social media offers news leads on major news events. People follow such leads similar to following news announcements on radio or television. Through Facebook and YouTube, users are able to broadcast news similar to traditional news broadcasters. Frequent Facebook users are able to get news similar to news subscribers scheduling their news consumption habits. News firms can also source such videos through social media and use them in their newscasts. This clearly evidences the characteristics of non-excludability (anyone can use, access Facebook, YouTube without constraints), non-rivalry (users do not compete for space, time, content and use of Facebook, YouTube), versatility (shows how easily user can convey information) and positive network effects (sharing news). On the other hand, Facebook, YouTube provide users their medium to create and share news (complementing). With a billion users, they can deliver news instantly making news viral (operational effectiveness, strategic positioning). Traditional news mediums do not have such capabilities. Facebook, YouTube allows modality of information (complementing) and greater frequency of timeliness (strategic positioning).

Social media offers variety of news created by users (complementing). There is no generic pattern of offering similar news for all (strategic positioning). This is more appealing to people that wish to get different kinds of news at a flexible pace and time, which, for example, a newspaper offering standardized news or a television channel offering scheduled programs cannot provide. These evidence the competing potential of social media.

Discussion

Social media are emerging as important mediums for news given their low operating costs, instantaneous real-time broadcasting and ‘collective ability to act as leading indicator(s) of future news coverage’ (Farrell and Drezner 2008). But, news firms struggle in understanding how to influence users that consistently use social media. Competing-complementarity brings new understanding to the innovativeness of social media capabilities. Its dichotomous influence poses an elusive challenge and dilemma to traditional news firms to innovate operational capabilities (for leveraging the complementarity) and invoke strategic structural changes (e.g. new processes and technologies) to combat its competing potential. However, the reflective nature of competing-complementarity raises several questions of its homogeneity over all digital social mediums. Similar to the Internet, social media is not a monolithic concept but a collective of many websites that represent different technologies and capabilities (e.g. Twitter is not the same as YouTube) (Wattal et al. 2010). Therefore, it is unclear, which generic characteristics of social media would instigate competing-complementarity. However, through the understanding of complementing (explained earlier as a characteristic of the competing potential of social media), we posit that complementarity precedes competition. This implies that social media can only compete with firms if it provides the same firms complementarity first. Only by attracting users and creating mass demand for its services first can social media potentially compete. This indicates a phenomenal shift in the way competition occurs (in the social media space). Based on this understanding, we propose our future agenda for researching competing-complementarity. This is structured around investigating (i) whether the phenomenon is occurring across all digital social mediums. If so, why (explanation)? This paper provided some evidence of its occurrence. (ii) How does competing-complementarity evolve (prescription)? Our paper presented an egalitarian depiction of both intertwined and visible almost simultaneously. This needs further investigations of time and content boundaries (control variables) that potentially influence either or both elements; either setting them apart or exhibiting tipping points where for example, one becomes dominant while the other insignificant and whether that is cyclic or unique? (iii) What are the repercussions of the phenomenon on businesses (design)? And how can firms leverage its value (tools)? This paper provided some explanation of how news firms use social media for sourcing and delivering news. However, more research is required in understanding how firms respond to a competing social media.

This paper presented new understanding of the nature of social media through competing-complementarity. It exposed the vulnerabilities news firms face alongside the opportunities it enjoys. This raises important questions such as (i) will social media allow traditional businesses to compete and survive (competition)? (ii) Which social media applications could diminish the role and value of traditional firms (evolving mechanisms)? (iii) Will social media radically change user interaction with traditional products (e.g. news) given that underlying technologies offer ‘affordances of active participation’ (Wattal et al. 2010) (evolving relationships)? Our concept of competing-complementarity presents an excellent opportunity to IS researchers in better understanding the unrecognized role and capabilities of social media. Historically, the IS discipline has studied the use, impact and effects of media on communications within a bounded enterprise architecture. This study opens a new paradigm for studying external media (e.g. social media) capabilities and their deep impacts on organizational communications, processes and products as well as users.

This study evidenced a snapshot of the competing-complementarity of social media. Generalizations based on our findings are limited by our data, approach and the mediums investigated. There may be a potential bias in selecting Facebook or Twitter (or major events) to evidence competing-complementarity. Therefore, expanding the study to several other social media applications will allow a more systemic understanding and analysis of competing-complementarity. Opinions and focus groups can be suggestive. Therefore, more empirical studies are required to conclusively validate our findings. This study does not focus on which medium is superior to the other or the underlying reasons why users select or prefer one to the other. Rather, the study is scoped to only highlight and evidence the unique nature of social media.
References


