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## Comparing coverage of disruptive change in social and traditional media: Evidence from the sharing economy

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### ABSTRACT

How do social media differ from traditional media in their coverage of disruptive technological change? We explore how two entrants transforming the personal transportation and accommodation sectors are covered in social and traditional media. Using content analysis, we conclude that these two forms of media differ substantially. Traditional media is focused on how the two entrants affect society and their respective sectors at large, whilst social media instead function as accelerators for the entrants as they receive predominantly positive coverage. Therefore, our findings suggest that the rise of social media may accelerate the growth of disruptive innovations which can, in turn, reduce the window for response.

### 1. Introduction

The increased prevalence of Information and Communication Technologies (ICT's) has profound effects on the business landscape. New opportunities are created continuously through increased connectivity (Hong et al., 2015), access to big data (Mavragani and Tsagarakis, 2016), and digital fabrication methods (Ford et al., 2016; Sandström, 2016). Not only have ICT's influenced the conditions under which firms operate (Lockett, 1996), they have also resulted in competitive turbulence (Amankwah-Amoah, 2016; Millar et al., 2010), the restructuring of entire industries, and, at times, also the downfall of established firms (Tripsas, 1997).

Up to now, extant research has been devoted to how entrants and incumbents handle the emergence of ICT's. A large and growing body of literature has investigated factors determining whether successful firms are found among entrants or if the established players remain dominant when an industry is digitized (Ernkvist, 2015). Less attention has been devoted to how ICT's, such as social media, affect the conditions under which entrants and incumbents battle for market share when an industry undergoes disruptive change. There is, therefore, a general need for studies of how the macro and meso environments of industries are influenced by social media, and in what ways such changes may affect the pace of disruption.

In this paper, we explore how social media are different from traditional media in coverage of disruptive technological change. To do so,

we analyze and compare how social media differ from traditional media in their coverage of two ongoing disruptive battles: Uber in the taxi industry, and Airbnb in the accommodation industry. We show that sharing-economy firms Uber and Airbnb receive more positive coverage in social media than in traditional media. Hence, we provide evidence indicating that social media in comparison to traditional media function as accelerators as they fuel the growth of disruptive entrants by increasing their legitimacy.

The remainder of the paper is organized as follows. Next, we review current literature on disruptive innovation, whilst also addressing the topics of social media and the sharing economy in further detail. The following section describes the employed method, and subsequently, results are presented and analyzed. Finally, a concluding remark is provided.

### 2. Elements of the topic

It is well established that innovation undergoes periods of continuous technological evolution, occasionally punctuated by the introduction of a radically different technology (Dosi, 1982). The implications of radical technological change have received extensive academic interest. Previous research on technology's impact on industry structure and competition has shown that new technology gives rise to extensive uncertainty, experimentation, and the entry of new firms. After an era of ferment, the industry eventually settles on a dominant

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design, which leads to a shake-out and increased focus on incremental improvements (Utterback, 1994).

A large body of research has addressed how and why incumbent firms are displaced by entrants under conditions of disruptive technological change (e.g., Cooper and Schendel, 1976). This stream of literature has devoted extensive attention to a wide range of factors that determine the fate of firms facing or introducing disruptive innovations. Firm-internal aspects such as technology's impact on competencies (Tushman and Anderson, 1986), organizational structures and product architectures (Henderson and Clark, 1990), non-technical assets (Tripsas, 1997), and cognitive factors (Benner and Tripsas, 2012) have been investigated in detail. The influence of established market segments on firms' resource-allocation processes received particular attention from Clayton Christensen and colleagues in a series of articles in the 1990s (e.g. Christensen and Bower, 1996) and were subsequently popularized in several books in which the term disruptive innovation was diffused to a wider audience.

More recently, the interplay between disruptive technological change, established institutions, and the competitive rivalry between entrants and incumbents has been covered in further detail (Ernkvist, 2015; Gurses and Ozcan, 2015). This research stream has shown that it takes considerable time before novel technologies and related business models gain widespread adoption (Sabatier et al., 2012). One reason is that incumbent firms may have more legitimacy and access to superior resources (Dobusch and Schüßler, 2014; Gorham and Singh, 2009) which enable them to influence the institutional regime. Generally speaking, important actors in the industrial environment such as regulators, supervisors, and interest groups tend to have a conservative impact on technology-induced battles between entrants and incumbents (Kaplan and Tripsas, 2008) and vested interests are usually able to delay institutional changes (Acemoglu and Robinson, 2006; Mokyr, 2003).

Though ongoing research into technological change and institutions has paid more attention to the surrounding environment, thus far, most studies have focused on the actions of entrants and/or incumbents rather than the environment in which the disruptive battles take place. As stated in the introduction, the emergence of ICT's such as social media have transformed the business landscape in several ways. It is, however, presently unclear how this development affects the competitive rivalry between entrants and incumbents under conditions of disruptive technological change. Therefore, we fill an important gap in research by comparing and contrasting how social media differ from traditional media in their coverage of disruptive technological change.

### 2.1. Social media

Social media can be defined as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content” (Kaplan and Haenlein, 2010, p. 61), where Web 2.0 refers to contents and applications which are regularly modified by users in a participatory and collaborative manner. User-generated content is defined as the sum of different ways in which people use social media.

The emergence of social media has transformed the media landscape in several important ways (Manika et al., 2015). New channels have been created and are extensively used by governments and firms, both as a complement to (Jung and Valero, 2015; Lipizzi et al., 2016) and a substitute for, traditional media (Manika et al., 2015). The rise of social media has also enabled new methodological approaches related to the usage of big data (Durahim and Coskun, 2015). Moreover, it has become a space where consumers, amateurs, and non-professional users develop novel practices (Pihl, 2013; Pihl and Sandström, 2013).

Whilst there are few studies exploring how social media disrupt traditional communication channels and media (Palekar and Sedera, 2015; Pegoraro, 2014), some scholarly work has investigated how these new channels differ from traditional media. Unlike traditional media,

social media comprise a mix of consumers and professionals where the demarcations between these two spheres are at times difficult to untangle. In some industries, boundaries between amateurs and professionals have become so blurred that institutions related to certain professions, such as journalism, have been transformed (Laurell and Sandström, 2014). Other scholars have shown that content in social media tends to be more emotional than rational (Al-Saggaf and Simmons, 2015).

Some researchers have explored the impact of social media on innovation activities. Social media can generate interactions and bring actors together to foster innovation (Ooms et al., 2015). Relatedly, literature on open innovation has focused attention on how firms can leverage their innovation capabilities by drawing upon social media (Huston and Sakkab, 2006; Turban et al., 2011).

It is, therefore, clear that the emergence of social media has affected both the media landscape and the innovation activities of firms. Up to this point, however, no direct attempt has been carried out to illustrate how social media differ from traditional media in coverage of industries undergoing disruptive technological change.

With regard to innovation, social media can be conceptualized as communication channels in Rogers' (1995) framework on diffusion of innovations. A communication channel is the means by which a message gets from one individual to another. The presence of a new communication channel might increase the pace of diffusion and, in that context, social media can therefore function as accelerators. Literature on Word Of Mouth (WOM) drawn from the research field of marketing would arguably support such an argument. Several studies show that at least half of all consumers rely on WOM in their buying decisions (Engel et al., 1969; Walker, 1995). Informal communication networks also link firms together so the diffusion process is, in many ways, similar for firms as it is for consumers (Czepiel, 1974). Research into WOM also suggests that news about an innovation can spread quickly, partly due to the fact that WOM can be retransmitted (Bristor, 1990). Moreover, the retransmission speed for Electronic Word Of Mouth (eWOM) is considerably higher (Phelps et al., 2004), which has also been shown to affect consumers' product judgments (Lee and Youn, 2009), customer perceptions of product value, and the willingness to recommend a product (Gruen et al., 2006).

As stated previously, however, the emergence of a disruptive innovation often implies extensive arguments as entrants and incumbents try to influence the institutional set-up and obtain legitimacy (Ernkvist, 2015) and, hence, the social media landscape might become more of a battleground where framing contests take place. On one hand, the medium might even be captivated by incumbent interest groups who often posit more financial and relational resources (Dobusch and Schüßler, 2014; Gorham and Singh, 2009). On the other hand, the consumer-oriented and highly interactive nature of social media (Kaplan and Haenlein, 2010) might—along with the blurred boundaries between commercial and non-commercial activities (Laurell and Sandström, 2014)—make the medium inherently hard for incumbents to control.

Summing up, it is unclear how social media differ from traditional media in their coverage of industries undergoing disruptive technological change. If social media in comparison with traditional media catalyze disruptive innovations, incumbents will have less time to respond and will, therefore, be more likely to be displaced by entrants. Before turning to the Method section, we expand on specific characteristics of this paper's empirical setting identified by contemporary scholarly work, namely the sharing economy.

### 2.2. The sharing economy as a disruptive innovation

The term sharing economy has gained widespread popularity in recent years (Felländer et al., 2015), especially due to the emergence of firms such as Uber and Airbnb, who introduce a platform logic in traditional industries such as transportation and accommodation (Laurell

and Sandström, 2017). A recent definition of the term and the related notion of collaborative consumption was introduced by Möhlmann:

“Collaborative consumption, often associated with the sharing economy, takes place in organized systems or networks, in which participants conduct sharing activities in the form of renting, lending, trading, bartering, and swapping of goods, services, transportation solutions, space, or money.”

(2015, p. 193)

Whilst both concepts presented above are concerned with both profit-maximizing firms and non-commercial activities, in this paper we are explicitly concerned with the former. These sharing-economy firms can be thought of as a vertical disintegration where activities are unbundled. A traditional taxi firm provides both a booking service and a customer contact along with cars and drivers. Uber, on the other hand, only provides the interface and lets drivers and customers interact on its platform. Vertical disintegration usually implies increased scalability and flexibility (Powell, 1990), which explains how these firms have grown partly by substituting incumbent solutions in several countries.

Sharing-economy firms also seem to be disruptive in relation to those institutions that govern established industries. Regulatory ambiguities have been exploited by these firms, often at the expense of generating resistance from vested interest groups. Therefore, firms like Uber have been conceptualized by previous research as both an institutional and technological disruption (Laurell and Sandström, 2016).

### 3. Method

To explore how social media differ from traditional media in their coverage of disruptive technological change, case industries undergoing disruptive change were identified. As industry cases also needed to attract attention in social media, they were sampled based on an adapted version of Kozinets' (2010) criteria for digital research approaches: (1) the relevance of a case in relation to the formulated purpose; (2) its potential to attract engagement among social media users; (3) its potential to generate interaction between social media users; (4) that a case reaches a substantial amount of engagement in social media; (5) that it attracts a heterogeneous user group; and (6) enables the collection of a rich data set. Based on these criteria, two industries and related entrants were selected for further study. In the personal transportation sector, Uber has been widely discussed in social media and traditional media. In the accommodation industry, Airbnb has been subject to similar interest. As both cases represent entrants that are international and with global ambitions, whilst also fitting the aforementioned criteria, they were selected for this study.

#### 3.1. Data collection—social media

Data collection in social media has in recent years become more popular, resulting in the emergence of social media analytics (SMA). SMA is an interdisciplinary approach that combines, extends, and adapts methods for analysis of social media data (cf. Jung et al., 2017; Stieglitz et al., 2014). The main challenge for SMA researchers in terms of data collection is the fragmented social media landscape and the lack of standardized ways of accessing user-generated content across different platforms. More specifically, researchers who want to utilize APIs to collect data rather than RSS/HTML parsing often face particular challenges when opting for a multiplatform approach. The increased demand among researchers to explore social media data has, however, enabled a variety of services offering structured access across platforms to establish themselves. In this study, one of these services, Notified, was used to track user-generated content published across a diverse set of social media platforms. The main benefit of using services like Notified is that the researcher gains access to data from all major social media platforms directly, which facilitates the process of data collection substantially. Another benefit relates to the possibility of collecting data

with the help of specific filters which, for instance, enable the research to focus on specific geographical areas of interest. One of the drawbacks of using these services, however, relates to potential changes in APIs during the data collection process that the researcher might not be aware of. To handle this potential drawback, the researcher needs to ensure that data is collected using the same procedure throughout the whole data collection period—especially when the research question relates to changes in sentiment over a time period.

To use the tool, the user first enters a keyword or a set of keywords. Next, all publicly posted user-generated content from Twitter, Instagram, Facebook, blogs, forums, and YouTube is collected in a database in real time. This allows the researcher to collect data from a broad set of social media platforms in a structured manner.

For this study, two data collections were carried out for the two respective industry cases. From June 16 to August 16, 2015, the keyword “Uber” was tracked, using the service. This generated a data set amounting to 6550 social media posts over a period of two months. From December 3, 2015 to February 3, 2016, the keyword “Airbnb” was tracked. This generated a data set amounting to 1106 social media posts, also over a two-month period.

The two data sets only contain user-generated content written in Swedish or posted by Swedish users on text-based social media applications. There are two reasons for this: First, filtering data collection to a specific language and user origin allows for a more focused approach. This is important, because certain keywords can have several connotations in different languages as well as being rare or common in everyday vocabulary across languages. For example, in the two sampled industry cases, the usage of “Uber” and “Airbnb” in the Swedish language is very limited. Therefore, user-generated content including the keywords was assumed to have a relatively high degree of relevance to the industry cases in question. Second, the methods for analyzing text-based social media are much better developed than content analysis tools for photos and videos.

#### 3.2. Data collection—traditional media

Corresponding data sets from traditional media concerning the two sampled industry cases were collected by using the most comprehensive database for printed press articles in Sweden—called Retriever—which enables access to text-based material, i.e., articles from all major daily newspapers, provincial newspapers, and hundreds of magazines, journals, and periodicals across the country. As in the case of previous data sets drawn from social media, two data collections were also carried out for the two respective industry cases in traditional media. Between June 16 and August 16, 2015, a database search was carried out using the keyword “Uber,” generating a data set amounting to 148 press articles. Thereafter, between December 3, 2015 and February 3, 2016, a database search using the keyword “Airbnb” was conducted, which generated a data set amounting to 150 press articles.

#### 3.3. Data analysis

The data sets were analyzed by applying content analysis (Silverman, 2006) in two sequential steps. First, the data sets were reviewed to exclude user-generated content from the social media data sets and press articles from the traditional media data sets that related to phenomena other than the ones at hand. This review identified 1680 user-generated posts and 1 printed press article in the Uber data sets, and 306 user-generated posts and 1 printed press article in the Airbnb data sets relating to other phenomena. These were excluded from the data sets, leaving a total of 4870 user-generated posts and 147 press articles in the case of Uber, and 800 user-generated posts and 149 press articles in the case of Airbnb. Table 1 presents the distribution of collected data for the two industry cases per social media platform.

Second, content analysis was applied by qualitatively reviewing the data sets to identify central themes and to assess in what ways coverage

**Table 1**  
Collected and publicly posted user-generated contents concerning the two respective entrants per social media platform.

Social media	Uber		Airbnb	
	n	%	n	%
Blog	144	3.0%	99	12.4%
Facebook	106	2.2%	44	5.5%
Forum	198	4.1%	51	6.4%
Twitter	4422	90.8%	606	75.8%
Total	4870	100.0%	800	100.0%

was positive, neutral, or negative. A scale of four thematic categories and their associated balance was drawn from the material. The first category was called “organizational” and referred to the entrants, their offering, and business activities. The second category was named “inter-organizational” and referred to the entrants' relation to one or several competitors from their respective industries. The third category was called “sector” and referred to how the entrants were thought to transform their respective industries. The fourth category was named “societal” and referred to the societal consequences and potential implications associated with the entrants. With the help of these categories, the respective data sets drawn from social media and traditional media were then reviewed and coded.

**4. Results**

Table 2 presents the differences in frequency, share of thematic categories, and valence between traditional media and social media for Uber, Airbnb, and the total material. For the total material drawn from traditional media, a majority of 53.1% of the press articles are neutral in character, whilst 32.0% are negative, and 15.0% are positive. For the total material drawn from social media, a majority of 59.6% of the user-generated posts are neutral in character, whilst 20.4% are positive, and 19.9% are negative.

In contrast to press articles, user-generated posts are considerably more focused on the organizational category. In terms of user-generated content and press articles found within the inter-organizational thematic category, minor differences are to be found. User-generated content focuses on sector implications to a greater extent than press articles. In terms of societal implications, more than half of press

**Table 2**  
Frequency and share of thematic categories and valence between social media and traditional media for Uber, Airbnb, and the total material. (TM = Traditional media; SM = Social media).

Thematic category	Valence	Uber				Airbnb				Total				Difference TM to SM
		TM		SM		TM		SM		TM		SM		
		f	%	f	%	f	%	f	%	f	%	f	%	
Organizational	Negative value attribution	3	12.0%	410	16.2%	3	4.7%	55	8.7%	6	6.7%	465	14.7%	8.0%
	Neutral organizational reference	20	80.0%	1642	65.0%	48	75.0%	490	77.3%	68	76.4%	2132	67.5%	- 8.9%
	Positive value attribution	2	8.0%	369	14.6%	13	20.3%	76	12.0%	15	16.9%	445	14.1%	- 2.8%
	Advertisements	0	0.0%	104	4.1%	0	0.0%	13	2.1%	0	0.0%	117	3.7%	3.7%
	Subtotal	25	17.0%	2525	51.8%	64	43.0%	634	79.3%	89	30.1%	3159	55.7%	25.6%
Inter-organizational	Greater value than competitors	1	100.0%	127	76.0%	4	26.7%	8	50.0%	5	31.3%	135	73.8%	42.5%
	Neutral inter-organizational reference	0	0.0%	29	17.4%	11	73.3%	5	31.3%	11	68.8%	34	18.6%	- 50.2%
	Lesser value than competitors	0	0.0%	11	6.6%	0	0.0%	3	18.8%	0	0.0%	14	7.7%	7.7%
	Subtotal	1	0.7%	167	3.4%	15	10.1%	16	2.0%	16	5.4%	183	3.2%	- 2.2%
Sector	Positive transformation of the sector	0	0.0%	71	5.5%	0	0.0%	3	5.0%	0	0.0%	74	5.4%	5.4%
	Neutral transformation of the sector	14	56.0%	1161	89.3%	14	100.0%	53	88.3%	28	71.8%	1214	89.3%	17.5%
	Negative transformation of the sector	11	44.0%	68	5.2%	0	0.0%	3	6.7%	11	28.2%	71	5.2%	- 23.0%
	Subtotal	25	17.0%	1300	26.7%	14	9.4%	59	7.5%	39	13.2%	1359	24.0%	10.8%
Societal	Positive societal value attribution	19	19.8%	407	46.4%	11	19.6%	5	5.6%	30	19.7%	412	42.5%	22.8%
	Neutral societal value attribution	44	45.8%	9	1.0%	28	50.0%	33	36.7%	72	47.4%	42	4.3%	- 43.1%
	Negative societal value attribution	33	34.4%	462	52.6%	17	30.4%	53	57.8%	50	32.9%	515	53.1%	20.2%
	Subtotal	96	65.3%	878	18.0%	56	37.6%	91	11.3%	152	51.4%	969	17.1%	- 34.3%

articles are to be found in this category, whereas the corresponding share in social media is more limited.

Within the largest thematic category in traditional media, the societal category, common topics concern taxation and regulation. Two illustrative examples were published on July 3, 2015 and February 3, 2016:

“Swedish Radio has made an anonymous survey of the car-sharing service Uber Pop. [...] It shows that three out of ten drivers openly admit that they do not pay any tax.”

“The number of Airbnb rentals in Stockholm doubled in 2015. But many neighbors are anxious as unfamiliar persons move in the stairwells and condominium associations are perplexed. The regulations for short-term rentals are unclear.”

Within the largest thematic category in social media, the organizational category, common topics involving Uber concern price, service, convenience, safety, punctuality, experience, and trustworthiness. Discussions involving Airbnb revolve around price, location, personal feeling, and value for money. Two illustrative examples were published on July 27, 2015 and January 23, 2016:

“#Uber 25 % cheaper than @taxistockholm from #Stockholm to #brommaairport #savedmoney.”

“There are so many nice apartments on Airbnb, which you can rent cheaper than hotels.”

**5. Analysis and discussion**

This section first compares traditional media and social media. Next, we assess and discuss social media's impact on disruptive battles between entrants and incumbents.

*5.1. Differences between traditional media and social media*

In view of the presented results, there are several important differences between traditional media and social media. One of the most striking differences is related to the topics covered (see Table 2). More than 50% of the content in traditional media concerns the disruptive innovation's impact at a societal level. Social media deals with this aspect to a much lesser extent, as only 17% of the published material is concerned with the societal aspect. Whilst traditional media pay

attention to the societal dimension, it is also clear that the organizational dimension receives much more interest in social media. Here, statements regarding the value of using Airbnb or Uber are much more common (55% versus 30%).

One of the characterizing traits of these statements, besides being more frequent, is that they are also considerably more simplistic compared to traditional media (cf. the societal category examples drawn from traditional media and the organizational category examples drawn from social media). More specifically, statements tend to be short and focus on the value of a certain offering, but there is usually little space for ample reflection.

The observed differences between social media and traditional media, beyond their technical features, can be explained, arguably, by the fact that social media comprise consumers to a large extent whereas traditional media are populated by professionals trying to describe an innovation's impact on society. Even though occasional statements from professional actors are also to be found in the analyzed material drawn from social media, the consumer perspective still dominates.

### 5.2. Social media's coverage of disruptive technological change

Our data suggests that social media tend to favor disruptive innovation compared to traditional media, as the share of posts providing a positive comparison to the previously dominant solution is 42.5 percentage points higher in social media than in traditional media. In addition, the fact that social media are much more concerned with the offering and less about the societal consequences also suggests that social media represent more uncritical communication channels compared with traditional media where a wide range of information and associations about the innovation is created and diffused.

As stated in the theory section, the majority of consumers tend to rely on WOM in their buying decisions (e.g., Walker, 1995). Bearing in mind that messages spread and are retransmitted even faster through eWOM (Phelps et al., 2004), in light of the presented results, we would expect diffusion to increase in terms of purchase and usage of a specific innovation. Social media can potentially accelerate the diffusion of disruptive innovations because of the ways in which social media enable consumers to increasingly take part in the attribution of meaning and value associated to specific innovations, not least in the context of actually experiencing specific innovations. Consequently, social media raise the awareness of a disruptive innovation which, in turn, is likely to accelerate the pace of adoption (Rogers, 1995).

Where extant literature suggests that important actors in the industry environment might be captivated by incumbent interest groups who posit superior financial and relational resources (Acemoglu and Robinson, 2006; Dobusch and Schüßler, 2014), new communication channels found in the social media landscape might therefore be subject to controlling efforts applied by vested interest groups. One potential way for incumbents to exercise control is to increasingly populate social media (Laurell and Sandström, 2014). In contrast, however, the analyzed empirical material exhibits few instances where incumbent interest groups take part and try to influence discourse in social media. Instead, the distributed nature of social media and the presently high level of consumer participation seems to make the medium inherently hard to control for established interest groups.

With regard to extant literature exploring how social media disrupt traditional communication channels and media (Palekar and Sedera, 2015; Pegoraro, 2014), the demarcations between consumers and professionals in social media—which, at times, are difficult to untangle—might represent one aspect of the potential impact of social media on disruptive technological change. Given that roles between non-commercial and commercial users in social media have been shown to be considerably more blurred in specific industries compared to traditional media (Laurell, 2014), a shift in non-commercial and commercial user composition might affect the impact of these media on disruptive technological change. Considering that social media content

has been shown to be more emotional than rational, being populated more by consumers (Al-Saggaf and Simmons, 2015), a change in composition might enable greater control to be exercised by established interest groups. Even though this might be the case, the blurring of roles that seems to be associated with social media in more commercialized sectors as well, suggests that social media might only be controllable to a certain degree.

## 6. Concluding remarks and future research

In this paper, we have compared how social media and traditional media cover ongoing disruptive technological change. Our findings show that social media tend to be more uncritical of and more focused on an innovation's attributes rather than its societal consequences. Social media, therefore, tend to function as communication channels that raise the awareness of an innovation (Rogers, 1995) and we find no evidence of these media being captivated by incumbent interest groups. Drawing upon literature on eWOM and its impact on consumer behavior (Gruen et al., 2006; Lee and Youn, 2009; Phelps et al., 2004), our findings therefore indicate that social media are likely to accelerate the growth of disruptive innovations. Consequently, these findings also imply that the window of response for incumbents may be reduced and, possibly, that the process of creative destruction is likely to accelerate due to the emergence of social media.

Whilst it is hard to assess the relative magnitude of this development, i.e., how large this effect is compared to other changes in the macro environment, a potentially higher speed of displacement has implications for policy. If incumbent firms are disrupted more quickly, the need for policies to enable entrepreneurship and the formation of new ventures becomes more pressing, especially bearing in mind that new jobs tend to be created by new, fast-growing firms (Delmar and Wennberg, 2010).

Much remains in assessing how the digitization of the media landscape affects disruptive technological change. We welcome further research on the topic, especially international comparisons between social media and traditional media.

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## References

- Acemoglu, D., Robinson, J.A., 2006. De facto political power and institutional persistence. *Am. Econ. Rev.* 96 (2), 325–330.
- Al-Saggaf, Y., Simmons, P., 2015. Social media in Saudi Arabia: exploring its use during two natural disasters. *Technol. Forecast. Soc. Chang.* 95, 3–15.
- Amankwah-Amoah, J., 2016. Competing technologies, competing forces: the rise and fall of the floppy disk, 1971–2010. *Technol. Forecast. Soc. Chang.* 107, 121–129.
- Benner, M., Tripsas, M., 2012. The influence of prior industry affiliation on framing in nascent industries: The evolution of digital cameras. *Strateg. Manag. J.* 33 (3), 277–302.
- Bristor, J., 1990. Enhanced explanations of word of mouth communications. In: *Research in Consumer Behaviour*. 4. pp. 51–83.
- Christensen, C.M., Bower, J.L., 1996. Customer power, strategic investment, and the failure of leading firms. *Strateg. Manag. J.* 17, 197–218.
- Cooper, A., Schendel, D., 1976. Strategic Responses to Technological Threats. *Bus. Horiz.* 19 (1), 61–69.
- Czepiel, J.A., 1974. Word-of-mouth processes in the diffusion of a major technological innovation. *J. Mark. Res.* 11 (2), 172–180.
- Delmar, F., Wennberg, K., 2010. Knowledge intensive entrepreneurship: The birth, growth and demise of entrepreneurial firms. Edward Elgar Publishing.
- Dobusch, L., Schüßler, E., 2014. Copyright reform and business model innovation: regulatory propaganda at German music industry conferences. *Technol. Forecast. Soc. Chang.* 83, 24–39.
- Dosi, G., 1982. Technological paradigms and technological trajectories: a suggested interpretation of the determinants and directions of technical change. *Res. Policy* 11 (3), 147–162.
- Durahim, A.O., Coskun, M., 2015. #iamhappybecause: Gross National Happiness through Twitter analysis and big data. *Technol. Forecast. Soc. Chang.* 99, 92–105.
- Engel, J.F., Blackwell, R.D., Kegerreis, R.J., 1969. How information is used to adopt an

- innovation. *J. Advert. Res.* 9 (December), 3–8.
- Ernkqvist, M., 2015. The double knot of technology and business-model innovation in the era of ferment of digital exchanges. *Technol. Forecast. Soc. Chang.* 99, 285–299.
- Felländer, A., Ingram, C., Teigland, R., 2015. *Sharing Economy: Embracing Change With Caution*. Stockholm, Entreprenörskapsforum.
- Ford, S., Mortara, L., Minshall, T., 2016. The emergence of additive manufacturing: introduction to the special issue of technological forecasting and social change. *Technol. Forecast. Soc. Chang.* 102, 156–159.
- Gorham, M., Singh, N., 2009. *Electronic Exchanges: The Global Transformation From Pits to Bits*. Elsevier, London.
- Gruen, T.W., Osmonbekov, T., Czaplewski, A.J., 2006. eWOM: the impact of customer-to-customer online know-how exchange on customer value and loyalty. *J. Bus. Res.* 59 (4), 449–456.
- Gurses, K., Ozcan, P., 2015. Entrepreneurship in regulated markets: framing contests and collective action to introduce Pay TV in the US. *Acad. Manag. J.* 58 (6), 1709–1739.
- Henderson, R.M., Clark, K.B., 1990. Architectural innovation: the reconfiguration of existing product technologies and the failure of established firms. *Adm. Sci. Q.* 35 (1), 9–30.
- Hong, J., Shin, J., Lee, D., 2015. Strategic management of next-generation connected life: focusing on smart key and car-home connectivity. *Technol. Forecast. Soc. Chang.* 103, 11–20.
- Huston, L., Sakkab, N., 2006. Connect and develop. *Harv. Bus. Rev.* 84 (3), 58–66.
- Jung, K., Valero, J.N., 2015. Assessing the evolutionary structure of homeless network: social media use, keywords and influential stakeholders. *Technol. Forecast. Soc. Chang.* 110, 51–60.
- Jung, K., Chilton, K., Valero, J.N., 2017. Uncovering stakeholders in public-private relations on social media: a case study of the 2015 Volkswagen scandal. *Qual. Quant.* 1–19.
- Kaplan, A.M., Haenlein, M., 2010. Users of the world, unite! The challenges and opportunities of social media. *Bus. Horiz.* 53 (1), 59–68.
- Kaplan, S., Tripsas, M., 2008. Thinking about technology: applying a cognitive lens to technical change. *Res. Policy* 37 (5), 790–805.
- Kozinets, R.V., 2010. *Netnography: Doing Ethnographic Research Online*. Sage Publications, London.
- Laurell, C., 2014. *Commercialising Social Media: A Study of Fashion (Blogo) Spheres* (Doctoral dissertation). Stockholm Business School, Stockholm University, Stockholm.
- Laurell, C., Sandström, C., 2014. Disruption and social media – entrant firms as institutional entrepreneurs. *Int. J. Innov. Manag.* 18 (3), 1–17.
- Laurell, C., Sandström, C., 2016. Analysing Uber in social media – disruptive technology or institutional disruption? *Int. J. Innov. Manag.* 20 (7).
- Laurell, C., Sandström, C., 2017. The sharing economy in social media - analyzing tensions between market and non-market logics. *Technol. Forecast. Soc. Chang.* 125, 58–65.
- Lee, M., Youn, S., 2009. Electronic word of mouth (eWOM). How eWOM platforms influence consumer product judgement. *Int. J. Advert.* 28 (3), 473–499.
- Lipizzi, C., Iandoli, L., Marquez, J.E.R., 2016. Combining structure, content and meaning in online social networks: the analysis of public's early reaction in social media to newly launched movies. *Technol. Forecast. Soc. Chang.* 109, 35–49.
- Lockett, M., 1996. Innovating with information technology. In: Earl, M.J. (Ed.), *Information Management: The Organisational Dimension*. Oxford University Press, Oxford.
- Manika, D., Papagiannidis, S., Bourlakis, M., 2015. Can a CEO's YouTube apology following a service failure win customers' hearts? *Technol. Forecast. Soc. Chang.* 95, 87–95.
- Mavragani, A., Tsagarakis, K.P., 2016. YES or NO: predicting the 2015 GReferendum results using Google Trends. *Technol. Forecast. Soc. Chang.* 109, 1–5.
- Millar, C.C.J.M., Millar, P.H., Choi, C.J., 2010. Technology standards and increasing returns: Microsoft versus Nokia and Linux. *Int. J. Technol. Manag.* 49 (4), 357–369.
- Mokyr, J., 2003. Thinking about technology and institutions. *Macalester Int.* 13 (1), 33–66.
- Ooms, W., Bell, J., Kok, R.A.W., 2015. Use of social media in inbound open innovation: building capabilities for absorptive capacity. *Creat. Innov. Manag.* 24 (1), 136–150.
- Palekar, S., Sedera, D., 2015. Destabilizing Digital Business Strategy Through Competing-complementarity of Social Media. (PACIS 2015 Proceedings. Paper 53).
- Pegoraro, A., 2014. Twitter as disruptive innovation sport communication. *Commun. Sport* 2, 132–137.
- Phelps, J.E., Lewis, R., Mobilio, L., Perry, D., Raman, N., 2004. Viral marketing or electronic word-of-mouth advertising: examining consumer responses and motivations to pass along email. *J. Advert. Res.* 44 (4), 333–348.
- Pihl, C., 2013. When customers create the ad, and sell it – a value network approach. *J. Glob. Scholars Market. Sci.* 23 (2), 27–143.
- Pihl, C., Sandström, C., 2013. Social media, value creation and appropriation – the business model of fashion bloggers in Sweden. *Int. J. Technol. Manag.* 61 (3/4), 309–323.
- Rogers, E.M., 1995. *Diffusion of innovations*, 4th ed. Free Press, New York.
- Sabatier, V., Craig-Kennard, A., Mangematin, V., 2012. When technological discontinuities and disruptive business models challenge dominant industry logics: insights from the drugs industry. *Technol. Forecast. Soc. Chang.* 79 (5), 949–962.
- Powell, W., 1990. Neither market nor hierarchy: network forms of organization. *Res. Organ. Behav.* 12, 295–336.
- Sandström, C., 2016. The non-disruptive emergence of an ecosystem for 3D printing – insights from the hearing aid industry's transition 1989–2008. *Technol. Forecast. Soc. Chang.* 102, 160–168.
- Silverman, D., 2006. *Interpreting Qualitative Data*, Third edition. SAGE Publications, London.
- Stieglitz, S., Dang-Xuan, L., Bruns, A., Neuberger, C., 2014. Social media analytics. *Bus. Inf. Syst. Eng.* 6 (2), 89–96.
- Tripsas, M., 1997. Unraveling the process of creative destruction: complementary assets and incumbent survival in the typesetter industry. *Strateg. Manag. J.* 18 (1), 119–142.
- Turban, E., Bolloju, N., Liang, T.P., 2011. Enterprise social networking: opportunities, adoption, and risk mitigation. *J. Organ. Comput. Electron. Commer.* 21 (3), 202–220.
- Tushman, M.L., Anderson, P., 1986. Technological discontinuities and organizational environments. *Adm. Sci. Q.* 33 (3), 439–465.
- Utterback, J.M., 1994. *Mastering the Dynamics of Innovation*. Harvard University Press, Cambridge, MA.
- Walker, C., 1995. Word of mouth. *Am. Demogr.* 17 (7), 38–44.

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