Extending Impact Analysis in Government Social Media Research: Five Illustrative Cases

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ABSTRACT

The use of social media by governments is a complex phenomenon that touches upon multiple dimensions, and that involves a wide array of relationships between these dimensions. Existing empirical research on government social media, however, is still mostly focusing on describing isolated aspects of this phenomenon, and falls short of investigating the impacts that these dimensions have on each other.

Drawing on a revised framework for classifying existing social media research foci in the categories of management, context, user behavior, user characteristics, platform properties, and effects, we present five empirical cases to illustrate impacts between dimensions of government social media. The empirical findings from the cases extend impact analysis beyond the existing foci, and enable us to propose a research agenda for future research on impacts in government social media.

CCS Concepts

• **Information systems~Social networking sites**
• **Applied computing~E-government**

Keywords

Social media; government; impact analysis; case study; literature review.

1. INTRODUCTION

The adoption, implementation, management, and use of social media by governments represent a complex phenomenon that involves a number of key dimensions in the relationships between public managers, citizens, platform providers, and society at large.

Social media, defined as "a group of Internet-based technologies that allows users to easily create, edit, evaluate and/or link to content or other creators of content" [33], in fact, does not only represent a quantitative increase in the array of digital channels of interaction that governments have at their disposal.

The core characteristics of social media – its potential for interactivity, collaboration, and government-citizen co-creation – represent a potential paradigm shift in the relationship between governments, citizens as users, and commercial organizations [51].

Social media bring in the potential to enable two-way interactions, transform the role of the citizens from passive consumers of government services to active co-creators [10], increase the smartness of public action [25], and reshape the relationships between public agencies and technology platform providers [50].

Research on social media in the public sector has tried to keep up with such developments, with all the challenges associated with trying to capture the essence of a rapidly moving target [20]. There is a growing body of empirical research literature drawing on cases of social media adoption by government that tackle an array of different aspects of the phenomenon, with diverse and rapidly shifting foci.

However, existing research on social media is mostly focusing on the different dimensions of the government social media phenomena in isolation. Empirical studies that aim at capturing the relationships between the dimensions of government social media in the form of *impacts* are still a minority. For example, while there is no shortage of separate studies on government social media management strategies, and on government social media user behavior, relatively few studies focus on the impacts of the former on the latter, or vice versa [44].

Moreover, from a practice point of view, it is time for public managers to be able to draw on empirical research data to be able to better understand and govern the mechanisms that underlie the different aspects of social media impacts. This is especially relevant now that social media adoption is moving towards mainstream public management practices, and public agencies begin to progressively embed the affordances of social media in policy and standards [15, 17].

In order to tackle these challenges, this article aims at framing and extending the analysis of impacts between different dimensions in government social media research. Our approach is thus driven by the following research question: *how can we frame and extend impact analysis in government social media research?*

We aim at tackling this research question by presenting five illustrative empirical cases of social media use by public agencies. Drawing on a revised framework [44] for classifying existing social media research foci in the categories of management, context, user behavior, user characteristics, platform properties, and effects, we analyse five empirical cases as instances of impacts between these categories. Findings from the cases enable

us to formulate a research agenda for future research on impacts in government social media.

The paper is structured as follows. In the next section, we elaborate on the motivation for focusing on government social media impact analysis. In the following section, we present the distribution of existing empirical research in the six dimensions of management, context, user behavior, user characteristics, platform properties, and effects, and map the foci on impacts between the dimensions in a framework. In section 4, we present the selected illustrative cases and the methods used to collect the case empirical data. In the findings section (5), we assess the cases against each of the impacts of the framework, and present evidence of new impacts to enrich the framework. In section 6, we discuss the implications of this study for government social media research and practice by presenting a three-point research agenda. In the conclusion section, we summarize the paper, and highlight limitations of the study.

2. BACKGROUND

The importance of investigating the impacts of government social media resides in the fact that the social media phenomenon brings in unique features that make it stand out from previous research on Information Technology (IT) in the public sector. Previous reviews of general e-government impacts focused mostly on impacts of IT on domains *within* the public sector [2]. While government social media has been considered partly as an extension of a long wave of digitization efforts [14], social media is mainly defined by social interaction, with its key strengths in the areas of collaboration, participation, empowerment, and real time interaction with actors other than government [11]. Differently from other web-based applications, where information provision and service delivery are at the core of the government activities afforded by the technology, social media provide the possibility for content co-production by both citizens and governments [19, 55], and enable citizen-to-citizen interactions and community building.

Moreover, another important distinction between traditional e-government services and governments' presence on social media platforms is that the former are usually hosted on an agency's server, while the latter are mostly owned and controlled by commercial third parties, outside the direct reach of governments [48]. This aspect can also be expected to radically change the scenario of interactions, power balance, and negotiations between government and private owners of the social media platforms in the definition of objectives, strategies, and features of social media management.

In recent years, a number of efforts to frame the emerging government social media phenomenon have been published. A model proposed by Lee and Kwak [37] focuses on open government policies through social media: it includes five evolutionary levels, from "initial conditions" to "ubiquitous engagement" that public agencies have to progress through in order to increase transparency and openness using social media [37]. A stage model proposed by Mergel and Bretschneider [52] provides a representation of how government agencies adopt social media over time, identifying a first stage in which agencies experiment, a second stage where they recognize the need for social media policies and regulations, and a third stage where they formalize social media strategies and policies [52]. An attempt at providing an overview of social media use by government has also been made focusing on operationalizing its indicators. Mergel [48] proposed a framework consisting of a set of measures of social media interactions – such as number of likes, re-tweets, etc. – and categorized them according to the mission they facilitate (e.g., transparency, participation) [48].

These attempts at providing an overview of the government social media phenomenon have begun to systematize the complexity of the phenomenon. However, they can be argued to fall short on two aspects. Firstly, they are of limited help in guiding future research to identify relevant foci on which to concentrate research efforts. Secondly, they do not specifically focus on impacts between the dimensions of government social media.

3. GOVERNMENT SOCIAL MEDIA RESEARCH: FOCI AND IMPACTS

Empirical research on government social media has now been accumulating for a number of years. The few attempts that have been made at reviewing the related literature either feature a non-systematic, descriptive approach [41], or serve a limited scope, such as providing a quantitative comparison between research disciplines [74].

In order to identify foci and impact analyses in the existing body of knowledge on government social media, we have conducted a systematic literature review [5, 76], analyzing research on government social media in the bodies of literature of the e-government and the Information Systems (IS) disciplines, by scouting leading journal publications.

For the IS research outlets, we selected the eight top IS journals indicated by the Senior Scholar's Basket of Journals of the Association for Information Systems (AIS), *Management Information Systems Quarterly, Information Systems Research, European Journal of Information Systems, Information Systems Journal, Journal of Information Technology, Journal of AIS, Journal of Strategic Information Systems, Journal of Management Information Systems*, in line with Baskerville and Myers [7] and Sidorova et al. [67], using the EBSCO database. For the e-government outlets we selected the top journals in the e-government field, namely *Government Information Quarterly, Information Polity, Transforming Government: People, Process, and Policy*, and *The Electronic Journal of E-Government,* using the latest version of the E-Government Reference Library (EGRL 12.0), a well-established, comprehensive database of 8,181 e-government references, maintained for now a decade at the University of Washington's Information School [65].

Replicating the strategy of van Osch and Coursaris [58], a team of two researchers performed a search of the following keywords in either title or abstract: social medium, social media, social network site(s), social networking site(s), online social network(s). The search had no start date but had an end date of October 2016. This resulted in a total of 119 items.

The main acceptance criteria for inclusion of an academic paper in this review were that each study would draw on an empirical data analysis, that the term social media or any of the abovementioned terms is used as the core technology analyzed or as part of the core argument [58], and that the study would be situated in a public sector context. This second round of selection resulted in 60 unique research articles.

In order to categorize the different dimensions of foci of government social media research, and to classify the impacts between these dimensions, we then drew on a revised version of the framework proposed by Medaglia and Zheng [44]. The six dimensions are:
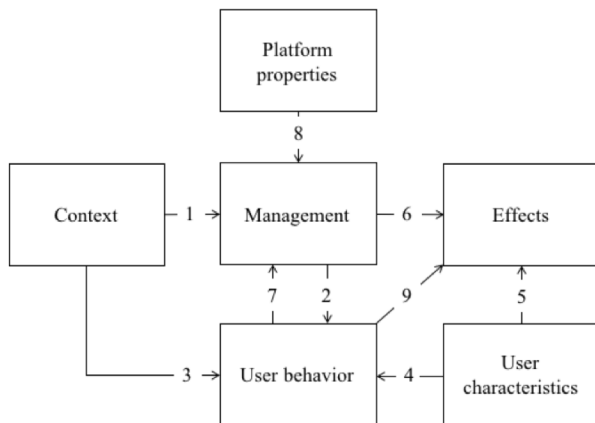
- Social media *platform properties*, including studies focusing on the features of the social media applications used by government, such as characteristics of the application interfaces, interaction capabilities, or limits to the amount or type of content that can be published daily;

- Social media *management*, including studies focusing on the activities by government on social media (such as levels of social media presence, frequency and type of government-generated content), and government social media strategy (such as the public agencies' social media governance structures, policies, and organizational capacities);

- *User characteristics*, including studies focusing on demographics (e.g., age, gender) and attitudes (e.g., trust propensity) of the users of government social media;

- *User behavior*, including studies focusing on observed behavior of the users of government social media, such as user content generation and users networking with each other;

- *Context*, including studies that focus on factors external to the social media platforms and their government and citizen users, such as the macro-economic characteristics of a country, national policies, or the digital divide;

- Social media *effects*, including studies focusing on impacts of government social media on the external environment, or on external actors (not in the role of users of government social media), such as effects on general citizen engagement, or on politicians' empowerment.

In assigning an article to one of the six dimensions, the focus was put on each study's main research question and main unit of analysis, and not on each article's intended audience, nor on the studies' implications for stakeholders. In line with this principle, an article could be categorized in more than one topic area.

The most focused on dimension is *management* (n=35), followed by *context* (n=15), *user characteristics* (n=11), *user behavior* (n=7), *effects* (n=5), and *platform properties* (n=2). A major finding in the review is that the majority of the studies in existing government social media research focuses only on *one dimension*. For instance, out of the 42 research foci on social media *management* (e.g., [34] [69] [32] [53] [59]), and on user behavior (e.g., [1] [46] [35] [70] [9]), only a total of 5 studies focus on the *impacts* of government social media management *on* user behavior [78] [39] [12] [28], or vice versa [16].

Overall, out of 60 studies analyzed in our review, only 20 of them include a focus on the *impacts* between different dimensions. Moreover, studies on impacts in government social media research have started to appear only from 2012, and still represent around a fourth of the studies published in 2016. Given the complexity of the phenomena involved in government social media, it is striking to note that impacts between the different dimensions of the government social media processes are still under-investigated.

In order to start unpacking the nature of these impacts, we have mapped the 20 studies that focus on the relationships between the six dimensions as independent and dependent variables. Table 1 provides an overview of the 20 impact studies, where dimensions treated as independent variables (IV) in each study are listed in the rows, and dimensions treated as dependent variables (DV) are listed in the columns.

Table 1. Studies focusing on the impacts between dimensions (n=20)

DV / IV	Context	User characteristics	User behavior	Management	Effects
Context			[63][39][12]	[49][54][61][13][38][79][39][26]	
User characteristics			[66] [75]		[29][27]
User behavior				[16]	[60]
Management			[78][39][12] [28]		[64]
Platform properties				[17]	

The relationships between the dimensions as they are investigated in existing research can be also captured in a framework. In Figure 1 we outline such framework, with arrows representing the directions of the impacts analysed, and the numbers ranking the impacts from the most investigated one (1), to the least investigated one (9) in existing research.

To exemplify and further extend the proposed framework as a tool for capturing impacts between dimensions, in the next two sections we present and analyse five illustrative cases of social media implementation by public agencies.

4. CASE DESCRIPTION AND METHODS

To exemplify and further extend the analysis of government social media impacts between dimensions, we have selected five cases as examples of public agencies using accounts on the social media platform WeChat to communicate, provide services, and interact with citizens in the city of Shanghai in China. Created in 2011, WeChat is among the most popular social media applications in the world, with 762 million monthly active users as of June 2016 [72]. WeChat is a multi-functional social media platform integrating multiple built-in apps, including news broadcasting, instant messaging, and digital payments. WeChat is increasingly used by public agencies in China to provide information, deliver

Figure 1. Impacts between dimensions investigated in current government social media research.

services, and establish rich interactions with citizens in a wide number of policy areas, especially at the local level of government.

The context of Shanghai, a metropolis characterized by high socio-demographics diversity, swift economic and urban development, and high levels of social media penetration, provides a good balance between homogeneity and diversity between the cases chosen to test the framework. The overall context of China, characterized by rapid socio-economic development, the emergence of complex societal and governance challenges, and a powerful role of local governments in pushing the e-government agenda [79, 80], also provides the cases with richness of data about how the relationships between the constructs presented in the framework play out in an empirical setting. The five cases are briefly described below.

a) *Shanghai Release* (*Shànghǎi fābù*) is the official WeChat account of the Shanghai Municipal Government Information Office, opened in June 2013. This WeChat account regularly publishes information of public use for citizens, offers information inquiry services and other administrative services, such as the possibility to apply for visas, marriage registration, and checking public transportation schedules in real time. Shanghai Release ranks the first among all governmental WeChat accounts nationwide [68].

b) *Shanghai Metro* (*Shànghǎi dìtiě*) is the official WeChat account of the Shanghai subway system. The account was opened in February 2012, covering operation announcements, safety tips, user feedback, and other information on the Shanghai Metro. The account provides advanced features, such as a customized menu and a keyword-based auto-reply function, in order to improve the speed of user access to information.

c) *Shanghai Weather* (*Shànghǎi tiānqì*) is the official WeChat account of the Shanghai Meteorological Bureau, launched in July 2014. The account provides users with access to weather forecast information, meteorological science knowledge, weather index, and other information. Voice interactive weather services and location-based weather information on a three-hour basis are also accessible with this WeChat account.

d) *Shanghai Transportation* (*Shànghǎi jiāotōng*) is the official WeChat account of the Shanghai Traffic Commission, and it was launched in April 2013. The account mainly focuses on interpreting industry policies, responding to public concerns, answering public consultations, handling emergencies, clarifying internet rumors related to transportation, and introducing transportation services.

e) *Shanghai Air Quality* (*Shànghǎi Kongqi Zhiliang)* is a WeChat account managed by the Shanghai Environmental Monitoring Center to provide real-time air quality information and air quality forecasts to citizens. It also provides illustrations and tips to help citizens to better understand the air quality and to protect themselves accordingly.

Data on the five cases has been collected through exploratory interviews with key officials managing the social media accounts, and participatory observations of the interactions of the social media management teams, aimed at capturing the performance and behavior of government officials, users, and platform managers. The data collection is part of a wider research project that includes government consulting aimed at capacity building and performance improvement. Among the five social media accounts, researchers collaborated directly with the management team of Shanghai Release, Shanghai Metro, Shanghai Weather, and Shanghai Air Quality social media accounts. With regard to the Shanghai Transportation account, researchers conducted in-depth interviews with the managers to explore findings. Interview transcripts and observation notes were recorded and analyzed.

5. FINDINGS

5.1 Government Social Media Impacts

Instances of impacts between the government social media constructs in the five illustrative cases are presented below. Each type of impact is numbered according to the framework presented in Figure 1.

1 – Impacts of context on social media management. The role of the complex political-institutional context framing a public agency's social media strategy is exemplified in the Shanghai Release case. In China, most government social media accounts are run by either the publicity department of the Chinese Communist Party (CCP), or by an administrative office of the municipal government. Usually, the former is good at communicating with the public, but not as good at coordinating between various agencies within the government, while the latter is just the opposite. The Party and the government that the two departments belong to are in two separate tracks, and do not necessarily collaborate in managing social media accounts. Shanghai is the only city in China in which the municipal social media account is managed by both the publicity department, and the administrative office of the municipal government. This unique management arrangement is determined by the political context that characterizes the city of Shanghai: both the Party secretary and the Mayor of Shanghai, in fact, pay high attention to the role of social media and the benefits of collaboration.

2 – Impacts of social media management on user behavior. Changes in the behavior and attitudes of social media users as a result of government management are exemplified by a phenomenon observed in the Shanghai Transportation case. The Shanghai Traffic Commission that runs the Shanghai Transportation account on WeChat has decided to have its account managed by its Youth League. The Youth League is a political association of young people in the Commission who are considered to be skilled in using social media. As a result of this management choice, the perception by users of the social media account is transformed. The citizen behavior and attitudes towards the account became particularly positive: the Shanghai Transportation account features an increased number of followers, and its users report a good perceived image of the account, characterized by livelihood and user-friendliness.

3 – Impacts of context on user behavior. The impact of context on government social media user behavior is exemplified by a phenomenon observed across all five cases. Users of the government WeChat public accounts tend to hide or downplay their true personal opinions on a number of issues when interacting online. This phenomenon is influenced, on the one hand, by the political context of China, where public debate on an array of politically sensitive topics is discouraged by both public authorities and by social media platform providers; and, on the other hand, by the social context, especially in the workplace of public institutions, where users of WeChat silence or downplay

their personal opinions on social media, in order to be better accepted by their colleagues and friends.

4 – Impacts of user characteristics on social media user behavior. The impact of user characteristics on the behavior of government social media users is well exemplified in the Shanghai Metro case. In this case, both traditional demographics and user consumer preferences are found to affect the users' social media behavior. Unsurprisingly, users of different ages and education level cohorts adopt and use government social media with different levels of frequency: the younger and better-educated they are, the higher the frequency of using social media is. In relation to the consumer preference characteristics, data from the case shows that the high share of working young people, who have a high interest in the time schedule of the Metro service during rush hour, impacts the high usage rate of the Shanghai Metro's social media account.

5 – Impacts of user characteristics on social media effects. Data from the Shanghai Air Quality case provides an example of evidence of impacts of user characteristics on social media effects. In this case, the users' age has an effect on levels of trust towards public health data: younger citizens using the Shanghai Air Quality WeChat account tend to trust non-governmental data on air quality the most, while older users mostly trust governmental data sources.

7 – Impacts of user behavior on social media management. The users of government social media are found to impact the social media management strategies of government in the Shanghai Metro case. As users are found to continuously require timely information on the Metro service, the public agency responds with speeding up the management and maintenance of the social media account.

8 – Impacts of social media platform properties on management. Among the most relevant sets of impacts exemplified across all the cases, there is the one of the properties of the WeChat social media platform on government's social media management strategies. WeChat has a key limitation among its features for all its public accounts, including both commercial and government accounts: in order to prevent spamming, account managers are allowed to post content only once a day. This limitation of the platform forces public agencies to accurately plan the time of their content postings. The daily posting is usually broadcast in the late afternoon, to minimize the likelihood of an important government-related event later in the day remaining uncovered by government communication.

The five cases provide empirical examples of the complexity of the impacts between dimensions involved in the government social media phenomenon. The evidence brought by these cases on the relationships suggested in the literature brings new insights on the nature of these relationships from a different perspective. For instance, regarding *impacts of context of social media management* (relationship no. 1), the Shanghai Release case provides evidence on the role of the institutional context, by showing how the institutional setting of a single-party political system affects a public agency's social media management strategy. On the other hand, some relationships between constructs provided for by the framework are not covered in the illustrative cases: this is the case of *impacts of social media management on effects* (6), and *impacts of user behavior on social media effects* (9).

5.2 Enriching the Framework: New Impacts Between Government Social Media Dimensions

In pushing the analysis of impacts forward, a key task is to identify unexplored research foci to steer future research efforts. The five illustrative cases provide inputs on impacts between dimensions that have not yet been captured by the existing body of government social media research, but that suggest potentially interesting directions for research on government social media impacts.

10 – Impacts of context on social media platform properties. The illustrative cases provide an interesting example of the impact that contextual factors can have on the properties of a social media platform. Across all cases, the Chinese cultural trait of *guanxi* is observed to influence the affordances of WeChat. The concept of *guanxi*, a Chinese term that can be roughly translated as "connections", or "relationships", describes the dynamics of associating oneself with others in networks of implicit mutual obligations, reciprocity, and trust, to maintain social order [77]. The establishment of *guanxi* has been identified as one of the key behavioral traits of Chinese culture, rooted in the social philosophy of Confucianism. Research has found *guanxi* to influence the use and adoption of information systems [30]. In our cases, the capability of affording *guanxi* behavior can be argued to be one of the key factors in shaping the design of the WeChat platform. In contrast with the second most popular social media platform in China, Weibo, the core function of WeChat is not in its ability to enable wide broadcast of information but, instead, in its capability to create and nurture networks of small groups of individuals. Moreover, WeChat allows to manage the weak ties of these networks, not only via exchanging information, but also by allowing mutual obligations to be signaled and fulfilled. This is the case of the feature that enables financial micro-transactions between users in the form of red envelopes (*hongbao*), a unique feature of WeChat. Physical red envelopes containing cash money are a traditional gift form in Chinese culture, exchanged during holidays, or for special occasions such as marriages, births, or as tokens of filial piety. WeChat allows the transmission of a digital *hongbao* with a specific amount of money to other users as presents, or in exchange for a favor. WeChat also enables digital red envelopes to function as a playful networking feature, by allowing users to send a *hongbao* to a group of contacts as a whole, and then having a limited number of group members receive random fractions of its total amount of money. The features of grouping and of red envelopes are used in association with both commercial and government WeChat accounts. These features of WeChat provide an example of how a specific cultural context impacts the design – and, in the case of WeChat, ultimately the success – of the properties of a social media platform.

11 – Impacts of user characteristics on social media management. The role of changing user characteristics on the transformation of government social media strategies is exemplified by the Shanghai Release case. Managers of Shanghai Release are found to constantly change the style of the content they post to meet the fact that their readers are becoming younger and more diverse.

12 – Impacts of platform properties on user behavior. All five cases illustrate the importance of the impacts of the properties of social media platforms on government social media user behavior. This is well exemplified by the comparison between the two most popular social media platforms in China, Weibo and WeChat.

Weibo's key features are a result of its original intention to market itself as a media platform: Weibo, in fact, allows easy broadcasting of large amounts of content by public account owners, which are subscribed to by large generic audiences, and it enables users to engage in public discussions via the comment posting feature. WeChat, on the other hand, has been originally conceived as a service platform, and therefore it is service principles that shape its features: WeChat incorporates an ecosystem of service applications, including online payments, small financial transfers between users, and taxi hailing. Conversely, the broadcasting properties of WeChat are much more limited, and conversations between users are enabled only within a limited number of contacts. This key difference between a media platform (Weibo) and a service platform (WeChat) has impacted the user behavior and the popularity of the two platforms. In first-tier cities in China, such as Shanghai and Beijing, citizens mostly use WeChat to obtain news and general information, since they can rely on networks of personal contacts with a high level of education, and shared interests in public information. In second and third tier cities, on the other hand, where circulation of news in personal networks are weaker or absent, Weibo is more popular. Moreover, Weibo imposes a limit of 140 characters on user posts, while WeChat does not. The effect of these features on the user behavior is that WeChat users tend to use the platform for sharing longer, in-depth content, which gets discussed in relatively small groups of contacts.

The combination of applying the framework grounded on the mapping of the existing body of literature, with the novel input provided by the analysis of illustrative cases, enables us to enrich the framework with three new relationships between the constructs. The resulting framework is illustrated in Figure 2, where new relationships exemplified by the five illustrative cases are indicated by the numbers in red.
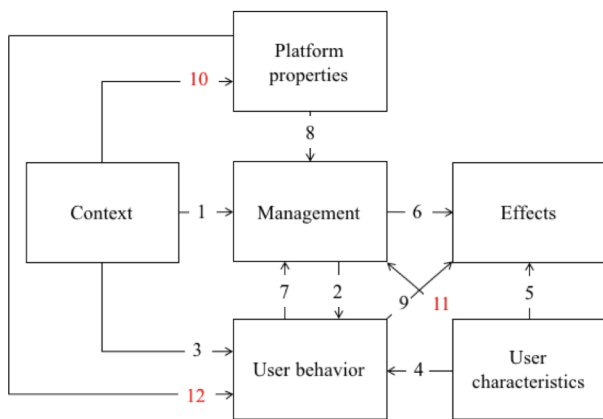
Figure 2. A revised framework of government social media research. Empirically investigated and illustratively inducted impacts between dimensions.

This revised framework of government social media research can function as a ground for formulating an agenda for future government social media research, in order to identify specific issues for moving government social media research forward, from description to impact analysis. This is presented and discussed in the next section.

6. DISCUSSION AND IMPLICATIONS

Findings from the illustrative empirical cases we presented enable us to shape an agenda for future research on government social media impacts. While the review of the literature shows that, in the majority of the studies, the different categories of foci of government social media are still mostly investigated in isolation, and not in their relationship with each other, the illustrative empirical cases suggest the possibility to focus in directions that have not been explored yet. We thus propose a research agenda for the exploration of the relationships between the different aspects of the government social media phenomenon, in order to move research on government social media impact analysis forward. Three agenda points and their implications for research and practice are discussed below.

1. *Increase and refine the focus on impacts of user behavior.*

The core characteristic that should make the phenomenon of government social media stand out is its potential capability to empower users. Social media provide the possibility for content co-production by both citizens and governments [19, 55], by allowing collaboration, participation, empowerment, and real time interaction [11], and thus potentially transforming online users from passive consumers of information, to "prosumers". Existing research, however, only marginally focuses on the impacts of user behavior on the government social media phenomenon.

In particular, impacts of user behavior on government management strategies should be one of the core foci of government social media research: while there is repeated lip service emphasis on the power of social media to establish two-way interactions between governments and citizens, we have very scarce research on how user behavior affects governments. Research questions stemming from this line of enquiry could be, for example: how do increased user demands for information and services affect government social media management practices? What are the consequences of user access to government social media via mobile devices on government channel management strategies? How are the challenges of social media echo chambers and user polarization [43, 45] affecting government social media initiatives? How is flaming in online discussions on government-managed social media tackled by public agencies?

Focusing on these and similar research questions would also have relevance for government practitioners. With increased expectations from citizens using social media for many aspects of their lives, public managers have an urgent need to understand user behavior, that is what citizens actually do with the platforms they establish, and how to align their policy objectives with observed user behavior. The example of user polarization in online discussions is illustrative in this sense: by capturing the dynamics of user interactions, public managers can better devise policies to stimulate constructive debates using e.g., reactive moderation strategies, and providing feedback through content that is relevant to users.

2. *Investigate the relationship between platform properties and government social media management.*

The other key characteristic of the government social media phenomenon, besides the potential for user co-production, is that social media platforms are usually designed, managed, and maintained by commercial third parties, outside the direct control of public agencies [48]. This can be expected to have profound implications on the constraints that governments face in using digital tools to interact with citizens [31]. However, in the current body of research, the area of the relationship between social media platform properties and government management strategies is almost completely unexplored.

Focusing on the impacts of the properties of social media platforms on government management should come with some key caveats. On the one hand, there is no reason for adopting a technologically deterministic view of technology in this endeavor, since technology in general, and social media in particular, are characterized by the fact that participants' uses and interpretations concur to shaping its observable outcomes [57]. On the other hand, however, a socially deterministic view on technology would only stress the role of a technology social understanding, with the result of making the technology artefact "disappear" from the analysis [21, 56]: this seems to be the case in the current body of research, where almost no study pays attention to the role of platform properties on government management strategies.

As illustrated by the cases, the complex two-way impacts between platform properties and government social media management is a key phenomenon worth investigating. We thus encourage future research to focus on impacts of social media platform properties on government social media management strategies, with the awareness that social media shape and constrain organizational practices and structures, but that the latter can also have impacts on technology design. The properties of the platforms to be investigated in relation to government social media management strategies can be therefore fruitfully conceptualized as affordances [73], that is as sets of capabilities that afford such behavior, partially based on the government's use choices, and not as immutable features that dictate government behavior.

Furthermore, the ownership of the social media platforms, which are mostly controlled by commercial third parties, posits key questions related to the power balance and the negotiation processes between public agencies and the business organizations that own the platforms. Social media platform owners are becoming more and more powerful, as their massive user bases consolidate. This gives them unprecedented bargaining powers *vis-à-vis* the other stakeholders in the government social media phenomenon, that is citizens, and public agencies. As exemplified in our illustrative cases, such increased negotiating power is evident even in planned economies like China, were the force of top-down government decisions would be expected to be unmatched. Instead, even though government in China has in principle both the role of social media client and regulator, it is remarkable how the bargaining power of the commercial social media platform owners is still high.

From a research point of view, phenomena like these introduce the need to investigate how the interaction between stakeholders (government agencies and commercial platform owners) results in the implementation of the features that enable and constrain government social media management. Appropriate theoretical lenses to study these phenomena would be, for instance, collective action theory [18, 22, 42, 62], or stakeholder theory [23, 24].

Overall, examples of research questions on the relationships between social media platform properties and government social media management would include: how do limitations on allowed format and type of content posted affect government social media management strategies? What are the consequences of the presence of commercial advertisement in the social media ecosystem on governments' use of the social media platforms? How is the introduction of new features in the social media platform negotiated between governments and platform owners? What are governments' negotiable and non-negotiable principles in accepting feature limitations on social media platforms?

Focusing on these and similar research questions would also have relevance for government practitioners. In comparison to the first wave of digitalization of government activity, public managers using social media have to deal with features and limitations of platforms they do not control, and thus face unprecedented challenges. Understanding the constraints of social media platforms would facilitate practitioners in achieving their social media goals, instead of merely relying on trial and error. Moreover, research on power balances, and on the interaction processes between public agencies and social media owners, would help public managers devise better strategies for negotiating the required features for their social media management objectives.

3. Investigate the relationship between platform properties and user behavior.

The other side of impacts of social media platform properties that needs further investigation is the one of impacts on user behavior. This dimension of impacts features no focus in current research, but, as illustrated by the cases, its relevance should not be underestimated.

Similarly to how social media properties can be expected to enable and constrain government social media management strategies, such properties should also be studied in relation to how they shape user behavior. While, as mentioned above, a technologically deterministic view is to be rejected, social media properties conceptualized as affordances should be analysed in the relevant role they play in shaping observed user behavior.

For example, third party social media platforms are designed with an underlying commercial rationale, that is to maximize user traffic and the stickiness of their features, in order to encourage returning users, prolong the time they spend on the platforms, and extend the exposure to paid advertisement content. These features stay unchanged when it is citizens as users of government service that use the platforms, even though the rationale of government services is often at odds with the one of commercial platforms. For instance a government service, such as tax filing, usually aims at minimizing contacts with user citizens: increased interactions with public agencies would not be considered a measure of success in most of the government digital services [3, 4].

This and other key peculiarities of the platform properties over which users interact with public agencies should be focused on in future research on the relationship between platform properties and user behavior. Examples of research questions tackling this relationship could include: how do features enabling user-generated content affect the frequency and type of citizen-initiated interactions with public agencies? How do users react to advertising content on social media platforms when interacting with government? How is the tone of discussions carried out by citizens on social media influenced by the interface of the social media platform?

Focusing on these and similar research questions would also have relevance for government practitioners. One of the central advantages for public managers establishing a presence on social media is the potentially increased ability to monitor and react to user behavior [8, 40, 71]. By shedding light on how user behavior can be expected to be influenced by the characteristics of a given social media platform, public managers can make better informed decisions on which strategies to adopt in relation to which type of platform they choose, and have a better understanding of what reactions to expect from citizens as users.

7. CONCLUSION

This study has provided two contributions: 1) a case-based extension of foci of impact analysis in government social media research; 2) a research agenda for government social media impact analysis.

As all studies, our approach has some limitations. First, regarding the categorization of the dimensions of impact included in the proposed framework. In adopting the categorization and impact framework proposed by Medaglia & Zheng [44], we also acknowledge some of its limitations. While the literature review forming the basis of the framework relies on what are argued to be the most authoritative research outlets in the IS and e-government fields, it is inevitable that some relevant contributions might have been left out from our sample. Other journal outlets that publish research related to IT in the public sector have been excluded, mainly among outlets in languages other than English. However, we assume this potential weakness of the framework to be counterbalanced by the clarity of argument that is provided by the grounded categories developed in the framework [44] (i.e., context, management, platform properties, user characteristics, user behavior, and effects).

Second, we acknowledge that the framework we used does not draw on existing theories, since it was inductively developed based on a review of the literature and then exemplified using a number of illustrative empirical cases. The need for theory in e-government research has been repeatedly highlighted. As a response, fruitful uses of established theories in e-government research have been pointed out [6], and meta-theoretical literature reviews have been carried out [47]. While we acknowledge the value of building on existing theories in a cumulative fashion, the grounded nature of our study primarily responds to the necessity of capturing novel foci and relationships between constructs in government social media research, which might not be provided for by the existing established theoretical frameworks in e-government research. We call for future research to integrate the proposed foci of impact analysis with established theories in e-government research.

Third, we acknowledge that findings from the cases might be peculiar to the Chinese context which, although very relevant and interesting, might hamper the findings' potential generalizability. While a bigger diversity in the context of the cases might have been desirable, in this study we did not primarily aim at providing generalizable findings applicable to other empirical settings, but rather at investigating concepts and principles that could be applied in other contexts [36].

In conclusion, our illustrative case analysis calls for further research. We call for future work on government social media to use, refine, and validate the framework of impacts by further exploring impacts between dimensions. Social media can be expected to consolidate its transformative role as an arena of complex confrontation between government, platform stakeholders, and citizens, and as such it requires renewed research efforts by the digital government research community.

8. ACKNOWLEDGMENTS

9. REFERENCES

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