

## Social media perspectives in business and government

## 31st of March 2014

## School of Business and Management

## Queen Mary University of London

## Organisers:

## Prof. Savvas Papagiannidis, Newcastle University Business School

## Dr Thanos Papadopoulos, University of Sussex

## Dr Panos Panagiotopoulos, Queen Mary University of London

The workshop takes place at room 3.26 at the Francis Bancroft building which is located at the Mile End campus.

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| 09:30 - 09:50 | Arrival, registration and coffee |
| 09:50 - 10.00 | Welcome note by the workshop organisers |
| 10:30 - 11.00 | *Federico Iannacci and Christine Pole* (Canterbury Christ Church University)  Explaining acceptance and non-acceptance of social media by SMEs based in the South East of England: a set-theoretic approach |
| 11.00 - 11.30 | *Hing Kai Chana and Eweline Lacka*  (University of East Anglia and University of the West of Scotland)  Extracting social media data for analysing operations management performance |
| 11.30 - 12.00 | *Abdul Rehman Shahid and Amany Elbanna* (Royal Holloway University of London)  The impact of social action through social media on community resilience, during disaster situations |
| 12.00 - 12.30 | *Layla Branicki* (Birmingham Business School)  Unpacking the impact of social media on the management of crisis |
| 12.30 - 13.30 | Lunch break (near the workshop room) |
| 13.30 - 14.20 | Guest speaker: *Jane Tinkler*  (London School of Economics)  Social media for building relationships between academic, government and businesses |
| 14.20 - 15.00 | Software demonstration by *Philip Brooker*  (Brunel University London)  Chorus Analytics: a tool for facilitating social media analysis |
| 15.00 - 15.15 | Coffee break (near the workshop room) |
| 15.15 - 15.45 | *Offiong Helen Solomon and Thierry Rayna* (De Montfort University UK and ESG Management School France)  Impact of social media on economic growth – evidence from Facebook |
| 15.45 - 16.15 | *Maxim Wolf, Julian Sims and Huadong Yang*  (Birkbeck, University of London)  Paradoxes in social media utilisation in human resource management |
| 16.15 - 16.45 | *Bashir Sezuo Tenuche and Anastasia Papazafeiropolou* (Brunel University London)  Social media in the business world: customer engagement in brand communities |

**Explaining acceptance and non-acceptance of social media by SMEs based in the South East of England: a set-theoretic approach**

*Federico Iannacci and Christine Pole Canterbury Christ Church University*

**Abstract**

*Drawing on a revised model of technology acceptance, this paper deploys a set-theoretic approach to unravel the causal complexity associated with acceptance and non-acceptance of social media by SMEs based in the South East of England. Our findings show the causal asymmetry between acceptance and non-acceptance. While customer attraction, raising the company’s profile and learning to use social media effortlessly lead to the acceptance of social media, non-acceptance requires finding social media not easy to use in combination with a lack of improvement of customer relations and work not becoming easier to do. Theoretical, methodological and practical implications are discussed by highlighting the dynamic and asymmetric ways by which configurations of causal conditions combine to produce the outcomes of interest.*

***Key words****: Social media; QCA; fuzzy sets; technology acceptance; cognition*

Outline

Set-theoretic methods are increasingly being deployed to study the adoption of innovations (Ordanini, et al. 2013). We follow in the footsteps of (Ibid) to show that set-theoretic methods capture complex interaction effects involving three or more conditions that contribute to the presence and absence of the outcome of interest in an asymmetric fashion, meaning that the causes leading to the presence of the outcome of interest are often different from those leading to its absence (Fiss, 2011; Ragin, 2008; Schneider and Wagemann, 2012). Based on a revised version of the technology acceptance model (TAM) (Mandal & McQueen, 2012; Venkatesh et al., 2003) and in-depth interviews with Alpha’s (a pseudonym) Managing Director, we have identified a salient number of causal conditions leading to the acceptance of and adaptation to social media (or the lack thereof)[[1]](#footnote-1). Our purposive sample of B2B SMEs based in the South-East of England encompasses highly innovative microbusinesses that are quite diverse with regard to their sectors of operation.

Our results show that attracting new customers and raising the company’s profile are necessary but not sufficient conditions for social media acceptance. However, when such necessary conditions are combined with improved customer relations OR ease of working with social media OR ease of learning to use social media OR skillfulness in using social media OR ease of interaction with social media they lead to acceptance of and adaptation to social media (See Table I below)[[2]](#footnote-2). Note that in the table below Coverage is a gauge of empirical importance and expresses how much of the outcome is covered by each sufficient configuration of causal conditions. Unique Coverage is the proportion of the outcome that is uniquely covered by a single configuration (or “path”). Instead, Consistency is a gauge of theoretical importance and indicates the extent to which a configuration of causal conditions is a subset of the outcome of interest, namely social media acceptance. Although each path to social media acceptance is theoretically important, the configuration involving ease of learning is the most empirically-relevant configuration (due to its highest Raw and Unique Coverage values).

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| **Table I: Solution for positive cases (\* = Indicates logical AND, that is the conjunction or intersection of sets. Consistency necessity= 0.96; consistency sufficiency: 0.85; necessary conditions in bold)** |
| **Raw Unique** |
| **Coverage Coverage Consistency** |
| -  ----------- ---------- ---------- |

**fscustomer\_attr**\***fscompany\_profile**\*fsrelations 0.91 0.00 0.96

**fscustomer\_attr**\***fscompany\_profile**\*fsease\_working 0.73 0.00 1.00

**fscustomer\_attr**\***fscompany\_profile**\*fsease\_learning 0.95 0.02 1.00

**fscustomer\_attr**\***fscompany\_profile**\*fsskillfulness 0.90 0.00 0.98

**fscustomer\_attr**\***fscompany\_profile**\*fsease\_interact 0.93 0.00 0.98

Solution coverage: 0.95

Solution consistency: 0.96

Conversely, the analysis of the negative cases (i.e., non-social media acceptance) reveals that non-improved customer relations, non-ease of working with social media, non-ease of learning to use social media, non-skillfulness, AND non-ease of interaction with social media are conjuncturally necessary but non-sufficient configurations for non-social media acceptance[[3]](#footnote-3). However, when such necessary configurations are combined with either a deteriorating company’s profile OR the lack of attraction of new customers, they do determine non-social media acceptance (see Table II below). Using the same rationale underpinning the positive cases, the most empirically-important path to non-social media acceptance is the configuration involving non-customer attraction (due to its higher Raw and Unique Coverage).

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| **Table II: Solution for negative cases (\* = Indicates logical AND, that is the conjunction or intersection of sets; (~ = indicates absence of the condition in question. Consistency necessity: 0.90; consistency sufficiency: 0.90; necessary conditions in bold)** |
| **Raw Unique** |
| **Coverage Coverage Consist** |
| ------------ ---------- --------- |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **~fsrelations\*~fsease\_working\*~fsease\_learning**\***~fsskillfulness**\***~fsease\_interact\***~fscompany\_profile 0.62 0.00 1.00 | | | | | | | | | | | **~fsrelations\*~fsease\_working\*~fsease\_learning\*~fsskillfulness\*~fsease\_interact** \*~fscustomer\_attr 0.83 0.21 0.97 | | | | | | | | | | | Solution coverage: 0.83 |  |  |  |  |  |  |  |  |  | | Solution consistency: 0.97 |  |  |  |  |  |  |  |  |  | |

Implications

Our research has theoretical, methodological and practical implications. Theoretically, it underscores that the lack of ease of use is a necessary condition for non-acceptance of social media[[4]](#footnote-4) and that ease of learning is empirically involved in the ongoing acceptance of social media. Since social media are in a constant state of flux (Hogan & Quan-Haase, 2010; Kane et al., 2013), learning to use them in an effortless fashion will lead to the ongoing adaptation to new features, policies, and applications provided that social media attract new customers and raise the SMEs’ profile. Methodologically, our research is an original attempt at applying the configurational logic of set-theoretic methods to the field of innovation adoption in general and acceptance of and adaptation to social media in particular. We believe that our methodology has far-fetched potential because usage of and adaptation to social media is an ongoing process that depends on several conditions working jointly and synergistically rather than in isolation from each other. Lastly, our research has implications for design and management practice. Since ease of learning impinges upon usage patterns well beyond the initial adoption stages, both web and platform designers should endeavor to design interfaces that are intuitive, easy to learn, and easy to interact with so as to promote mutual learning between contributors and readers in an ongoing fashion. In addition, managers should be aware that, though social media are objectively easy to use, network externalities and power law effects can put a strain on employees’ attention whether staff are actively contributing or simply following online discussions, threads, and posts. Therefore, a tool which is objectively easy to use may turn out to be difficult to use precisely because it entails dealing with a growing amount of content. Given that the value of social media depends on the number of users (Dickinger et al., 2008), social media may not make it easier for SMEs’ staff to do their work while leading to deteriorating customer relations. In this context, if there is no attraction of new customers, there will be an outright rejection of social media. Thus, SMEs’ managers need to counteract this negatively-compounded effect by deploying additional tools, applications, and mechanisms that selectively filter the burgeoning amount of content associated with the increasing number of users, interactions, and levels of complexity.

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Extracting social media data for analysing operations management performance

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**Extended Abstract**

Increasing popularity of Facebook, Twitter, and other social media platforms has led to the availability of huge amount of valuable information. As a consequence, those social media platforms have generated a good source of data which are available openly to the public, and of course to researchers. In short, social media web-sites of companies are the platforms for customers to exchange their comments, probably with the organisations’ interests (Xiang and Gretzel, 2010). The information is particularly useful for analysing consumer behaviour (Mostafa, 2013), which can then help formulate business strategy (Ngai et al. 2009). Nevertheless, how to make good use of the information is a challenge. Furthermore, application of the social media data for operations management research has not been well-attended. This can be verified by a simple simultaneous search of two keywords “social media” and “operations management” in Google Scholar.

Although social media data are not linked to operations management attributes directly, such enormous size of dataset still provides useful information for research purpose and has some practical applications. Unfortunately, there are not many studies available in the literature. Among them, Noone et al. (2010) suggested that such data would be useful in hotel revenue management, in spite of the fact that no systematic approach was proposed. Yates and Paquette (2011) discussed how social media can facilitate knowledge sharing during a disastrous event. Their discussions, however, is limited to high level implications mainly on managing the data across boundaries and the challenges of using social media data. More recently Hu et al. (2013) made use of social media data to assess the risk associated with software projects. A comprehensive approach is proposed.

Like other data, usage of social media data is not free of criticisms. Marketers find it difficult to quantify the return of investment in social media web-sites; moreover the associated analysis is also difficult, if not impossible, to assess, especially if traditional approaches are employed (Hoffman and Fodor, 2010). Another challenge is the subjectivity of the data. Social media web-sites are essentially the platforms to exchange word-of-mouth information electronically (Litvin et al., 2008; Jansen et al., 2009; Shih et al., 2013). This, on the one hand, can positively affect online consumption decision (Cheung et al., 2008) but on the other hand, this may add additional uncertainty regarding the credibility and persuasiveness of the information being used (Cheung et al., 2009; Zhang et al., 2010). Therefore, research extracting high quality information from social media data is very popular especially in the computer science domain (e.g. Agichtein et al., 2008; Gilbert and Karahalios, 2009; Asur and Huberman, 2010). The scholars of this strand of research aim to develop intelligent data mining approaches in so doing. For example, Asur and Huberman (2010) developed an approach to better forecast future events based on Twitter data. These algorithms are of significant academic value, but may not be user-friendly enough in real-life applications due to their complexity.

The aim of this study is to explore a proper approach to analyse social media data for operations management applications. The main objective is to help identify the factors/themes/issues from the social media data through content and cluster analysis. Applications could be linked to product development, process design, and also supply chain management. This can then associate to and facilitate decision-making research, which is the main concern of operations management research. The focus of this paper is put on product innovation management, as a demonstration, with respect to different operations management performance indicators in order to demonstrate the concept. Product innovation management has an important relationship to operations management (Lau et al., 2010).

This research is facilitated by the latest version of NVivo, a content analysis tool, which incorporates a new web browser plug-in called NCapture capable of capturing social media data (in raw format). This plug-in provides a channel to download associated social media data for further analysis by the software NVivo. For the purpose of this research data from Facebook, one of the most popular social media platforms, was used in order to demonstrate the procedures for utilisation of social media data in operations management research. To retain focus on product development as the subject of this research, it was decided to employ SAMSUNG’s Mobile Facebook page of the Samsung smartphone, Samsung Galaxy S4 released in late April 2013. Four months of data (10 June to 10 September 2013) in the form of consumers’ comments was downloaded for analysis. These comments are provided by the end users. The content analysis was carried out using conceptual analysis and then relational analysis with the help of statistical cluster analysis, as visualized in Figure 1.

**Content Analysis**

**Social Media Data Collection**

**Relational Analysis**

**Conceptual Analysis**

**Figure 1. Research method**

Two general categories of content analysis were employed: conceptual analysis and relational analysis. The conceptual analysis was used to establish the existence and frequency of concepts/ codes in the data. The relational analysis building on conceptual analysis aided examination of the relationships among concepts/ codes in the data. The approach of conducting conceptual analysis and relational analysis is discussed below.

The conceptual analysis involves quantifying the occurrence in the dataset of concept/codes chosen for examination, which can be both implicit and explicit in nature. As data used for the purpose of this research comes from a social media website where users freely post their comments, the data gathered seems to be implicit and hence it is subject to limitations previously discussed. In order to overcome possible limitations of using implicit secondary data, including possible subjectivity in the analysis, and thus poor reliability and validity of research findings, a systematic coding strategy was employed. Building on conceptual analysis, the relational analysis was conducted to examine relationships among concepts/ codes. In order to statistically examine these relationships, the cluster analysis was conducted and Pearson correlation coefficient test was run. Details of the results will be presented in the workshop.

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# The impact of social action through social media on community resilience, during disaster situations.

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# ABSTRACT

Although both man-made and natural disasters can result in severe casualties, history has shown that the number of deaths from natural disasters has been more than that of man-made. In 2012 alone, there was around 905 natural disasters worldwide which caused damage of around US$170 billion. The geographical spread of these disasters was also wide; 37% of natural disasters occurred in Asia, 25% in the United States, 15% in Europe, 11% in Africa and 6% in Australasia. Examples of recent disasters include the 2010 Haiti earthquake that killed more than 230,000 people and the 2004 Indian Ocean tsunami that killed between 250,000 and 300,000 people. Community resilience is emerging as a key research area due to the debate in the literature that suggests that the resilience of communities around a rapidly globalising world is being threatened, in which economic, social and environmental vulnerability is becoming more common ([Butler et al., 1979](#_ENREF_4); [Gao, Wang, et al., 2011](#_ENREF_9); [Norris et al., 2008](#_ENREF_18); [Shaw, 2006](#_ENREF_21); [worldwatch.org, 2012](#_ENREF_27); [Zook et al., 2012](#_ENREF_29)).

The digital age and specifically the proliferation of social media tools has allowed communities around the world to capitalise on certain social and technological affordances that boost overall community resilience, during disaster situations. Amongst other benefits, these ICTs have been shown to support interpersonal communication and collaboration amongst users from all across the world. Despite literature highlighting how social media tools have been actively used by communities, there is scant literature that goes beyond mere description to zoom in and provide an in-depth understanding of how for example crowdsourced maps have been deployed or how crowdfunding has been achieved. An emphasis on better understanding individual and community based social action in the age of social media tools and the impact that these tools have could prove fruitful, not only for research purposes, but also for practical purposes ([Briones et al., 2011](#_ENREF_3); [Dufty, 2012](#_ENREF_6); [Jan et al., 2012](#_ENREF_12); [Merchant et al., 2011](#_ENREF_17); [Norris et al., 2008](#_ENREF_18); [Rogers, 2013](#_ENREF_19); [Shklovski et al., 2008](#_ENREF_22); [Yates et al., 2011](#_ENREF_28)).

On the research side, the theoretical implications for the social and technical dynamics that these tools make possible are not entirely clear and currently seem to contradict with many existing social theories. As Latour boldly put it *“we have the social theory of our datascape. If you change this datascape, you have to change the social theory”* ([Latour, 2011, p. 802](#_ENREF_16)), and identifying these dynamics is challenging. The phenomena where users from around the world come together to form virtual communities through social media during disaster situations cannot be fully understood through existing theoretical assumptions and understanding. Previous literature which documents the usage of social media in disaster situations has highlighted popular adoption and many successes, which highlights the difference between theory and practice. This difference means that existing theoretical understandings have to be rethought in the age of the digital, as the social action that is proliferated through social media is not being accurately represented through existing theoretical assumptions. Where existing theory cannot be adapted, it is important to develop new theory or theoretical concepts which accurately reflects on the affordances of social media tools ([Bimber et al., 2005](#_ENREF_1); [Gao, Barbier, et al., 2011](#_ENREF_8); [Gao, Wang, et al., 2011](#_ENREF_9); [Joerin et al., 2012](#_ENREF_13); [Langman, 2013](#_ENREF_15); [Norris et al., 2008](#_ENREF_18); [Shklovski et al., 2008](#_ENREF_22); [Urquhart et al., 2012](#_ENREF_24)).

On the practical side, this research could support government and aid organisations in their efforts to understand how to support communities to recover from disasters and how social media could facilitate this.

This study aims to understand the impact of social action through social media on community resilience, during disaster situations. To this end, it adopts concepts, which were developed in the examination of a real life community, to the understanding of the digital community and shed light on complex social action that takes place in this context ([Bourdieu, 1977](#_ENREF_2); [King, 2000](#_ENREF_14)).

The research setting of this study is Typhoon Haiyan (locally known as Typhoon Yolanda), a powerful tropical cyclone that struck Southeast Asia and in particular the Philippines in November 2013. The social media tool that this study will focus on is Twitter, which has gained increased attention in academic and practical circles. Twitter, which was originally introduced as a medium for casual communication, now finds itself being used and relied upon not only by those not involved in the disaster, for reasons including information retrieval and sharing, but also by those who finds themselves in the midst of disaster situations. This increased attention has been due to these circles curious as to how a tool that was originally designed for casual communication, now finds itself being used for something far more critical with social actors from all around the world willing to help through its capabilities. For the purposes of this study, tweets have been collected for a one month period around the most relevant and prominent hashtags ([Chatfield et al., 2013](#_ENREF_5); [Eustace et al., 2012](#_ENREF_7); [Hughes et al., 2009](#_ENREF_10); [Imran et al., 2013](#_ENREF_11); [Sakaki et al., 2013](#_ENREF_20); [Starbird et al., 2011](#_ENREF_23); [Vieweg et al., 2010](#_ENREF_25)).

In conclusion, this study attempts to understand the social and technical dynamics that social media make possible that could support different and existing types of community resilience. The study acknowledges existing theoretical shortcomings for understanding social action in the age of the digital and argues for imperativeness for researchers to re-interpret or re-theorise social action in the age of the digital to stay abreast with practical changes that are taking place before our very eyes.

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**Unpacking the impact of social media on the management of crisis**

Extended Abstract

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The analysis presented in this paper emerges from a multi-disciplinary EPSRC funded study **‘Game Theory and Adaptive Networks for Smart Evacuation’.** The paper focusses in upon a sub-set of the data collected for this overarching project in order to address three key inter-related questions. (1) How does the use of social media by the public impact upon crisis information exchange? (2) What are the threats and opportunities created to crisis management as a result of social media use? (3) What is the public sector response? This paper therefore examines the extent to which the use of social networking technologies by the public poses a challenge to traditional modes of government to citizen communication and ultimately the management of crisis events. It draws upon qualitative research conducted in three distinct and highly varied UK city locations. The sampled cities represent high and low density populations, reliable to unreliable telephone and Internet coverage and varied first responder levels of engagement with social media as a communication channel. The data is collected through the following four methods: comparative website analysis; city-level focus groups; expert interviews and data validation events. Research participants were drawn from national and local level emergency planning teams, blue light services, the media, social media experts, and citizen or business network groups. The term emergency manager is used throughout to refer to those individuals or teams that are engaged in creating, managing or enacting official government emergency communication strategies at the local or the national level (i.e. first responders, local authority or national government emergency management / resilience teams).

***Finding 1: assemblages not networks***

The research found that during a period of crisis that information exchanged via SNTs is competing with traditional flows of media (e.g. television) and that this has consequences for how emergencies are managed. The use of these technologies creates geographically diffuse and self-organising networks whereby individuals can source information for themselves in real-time. The research also indicated that the term network is insufficient to describe the structure of SNT facilitated communication. Kanter argues that, *‘maintenance of organizations as structures is less important than assembling resources to get results, even if the assemblage itself is loose and perishable’* (blog 2009). ‘Assemblages’[[5]](#footnote-5)can be understood as weak, emergent and time bound networks of actors and/or ideas. In the context of broadcast social media (e.g. Twitter) the ability of individuals or groups of actors within the ‘assemblage’ to yield influence is increased due to the presence of multiple horizontal interconnections. The concept of increased ‘resilience’ through horizontal connection is well established within the field (Boin et al, 2005; Tierney, 2006; Tierney et al, 2001; Wachtendorf, 2004).

***Finding 2: social media challenges traditional media and official messages***

A further key issue identified in the research was the manner in which SNTs facilitated synchronous observation of and communication about an event (e.g. through mobile technologies such as Smartphones). One community representative reported that,

*Social networks like Twitter are actually run in real-time ... the interesting statistic in the local area where I am, is that there’s an average of five people on the network for every street. So they can be the eyes and ears. The community is on the ground, on the spot, 24/7, so they’re going to be the first ones to start talking about any event*.

SNTs present an opportunity for new and more immediate modes of organisation such as the crowdsourcing of information (e.g. the capture of damage in 7/7 through citizen images). Traditional forms of media (e.g. TV news) have been at least supplemented and in some cases replaced by SNT facilitated communication that is more frequent, accessible and interactive. Expert interviewees reported that this trend will increasingly bypass the need of the individual to engage with formal media as SNTs offer an alternate, searchable and ground level basis for finding out, at least rumours, about events as they unfold in real-time.

The research also found that if a number of individuals agree about an event and communicate this via social media that there is the potential for the aggregated interpretation to take on the status of reality, regardless of formal messages from the national or local level. One participant stated that,

*I think that the public trusts information it receives multiple times from multiple sources**and if I was to put out a hundred different rumours to say that the new Mayor of Birmingham was actually blue and I was to put it over 30,000 different websites in all different ways and then a trusted authoritative person was to stand on the Council steps and say “No, the Mayor is not blue” I guarantee everyone is going to think the Mayor is blue* (Business Network Leader).

In this process the citizen is recast from passive recipient to potential searcher, creator or collator of communication.

***Finding 3: social media brings new managerial challenges***

The self-sourcing of information, whilst arguably more democratic, may present challenges for government control and coordination and for equality of access (e.g. technology inequalities). The research found support for The Red Cross finding that ‘*the major obstacle to the use of social media in crisis situations is the same obstacle to adoption we've seen since the beginning of the technology: a hesitation to shift from broadcasting information to engaging information*’ (American Red Cross survey, 2010). Getting emergency managers in particular to embrace and adapt to these new technologies in an age of not only uncertainty but resource scarcity is a key challenge.

***Conclusion***

SNTs arguably create virtual-spaces in which information can be shared with trusted agents, broadcast to the masses or traded through reciprocal, but largely informal and self-regulated, mechanisms. It has been argued that these technologies facilitate forms of communication which have come to compete with traditional media. One way of conceptualising this is through the lens of the *assemblage* as SNTs allow individuals and more importantly unconnected and emergent sets of individuals to yield influence. This influence, of the ‘assemblage’ rather than of the individual per se, is arguably very robust due to its high degree of re-configurability. Whether emergency managers choose to ignore, suppress or harness these ‘assemblages’ is as yet to be seen and this offers ample scope for future research.

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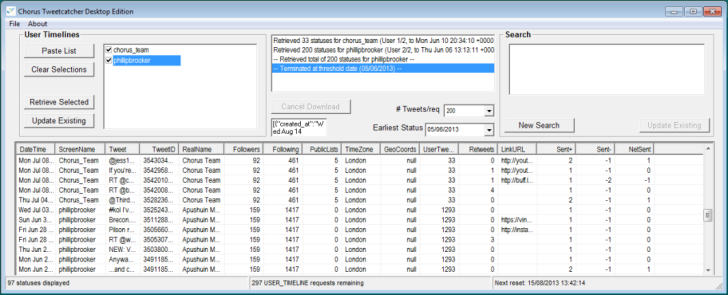
**Chorus as a Tool for Facilitating Social Media Analytics**

*Dr Philip Brooker*

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This talk will provide a practical demonstration of Chorus (www.chorusanalytics.co.uk); a software tool for enabling and facilitating social research projects involving Twitter data. Chorus is the product of an interdisciplinary collaboration of information and computing scientists and researchers from the social sciences, who have worked together to build a platform to provide for intuitive and insightful social research across academia, industry and policy. This talk will demonstrate the different ways that Chorus allows users to approach data collection and visual analysis, using two example datasets constructed around the recent UK badger culling activities and the discussions that have formulated around this topic online.

*Chorus-TCD (TweetCatcher Desktop)*



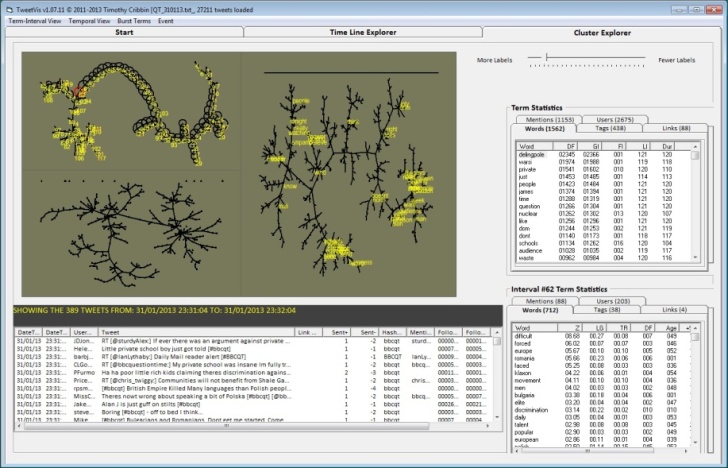
Chorus-TCD automates the process of retrieving data, requiring minimal input from users, and allows users to take control of their own data collection with full compliance to the Twitter T&Cs. There are two data collection strategies available: Query Keyword searches allow users to input terms to collect data that matches a set of linguistic criteria, accumulating data around usages of those terms. User-Following searches allow users to follow the timelines of lists of specified Twitter usernames.

*Chorus-TV (TweetVis)*

Chorus-TV is a powerful visual analytic suite which allows users to drill down into their datasets with an array of visual representations and metrics.



The *Timeline Explorer* (above) allows users to trace the ebbs and flows of Twitter talk across time, featuring various metrics such as sentiment analysis and homogeneity/novelty measures. The *Cluster Explorer* (below) provides a non-time-dependent view of the data via a series of cluster maps which visualise topics as linked clusters of semantically-related terms.



IMPACT OF SOCIAL MEDIA ON ECONOMIC GROWTH

-EVIDENCE FROM FACEBOOK

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ABSTRACT

We estimate the impact of social media on economic growth using data collected from Social Baker’s website on Facebook in 2012. This is because social media can be seen as an online dimension to the formation of social capital which leads to the formation of meaningful relationships. The vast literature has shown that there is a significant positive relationship between social capital and economic growth. However, few studies have examined the impact of the online dimension of social capital on economic activity. In this paper, we adapt an endogenous growth model as an attempt to measure the effect of Facebook on economic growth using cross-sectional data drawn from 99 countries. Our model is an adaptation of the growth model by Czernich et al. (2011) which estimated the impact of broadband infrastructure on economic growth for a panel of OECD countries. However, our model estimates a cross-sectional regression rather than a panel regression owing to the scarcity of time series data on on social media. Consequently, we are unable to capture the effect of Facebook on economic growth over a period of time for our panel. We estimate the effect of Facebook on economic growth using the number of subscribers per country, Gross Domestic Product (GDP) per capita and variables used in the standard growth literature. The data on Facebook was obtained online from *Socialbakers* while the rest of the data was obtained from the World Bank. The other variables include physical capital measured as the ratio of gross capital formation to GDP, human capital accumulation measured as duration in secondary school and population measured using the Labor Force Participation rate.

To capture the effect of technology diffusion, we use internet penetration rate and mobile phone penetration rate measured as the number of subscribers per 100 inhabitants respectively as well as the number of users with fixed broad band internet. Finally, we use interaction terms to capture the impact of technological diffusion on social media. Our findings from our various model specifications show that a 1% increase in the number of Facebook users leads to a 22% increase in GDP per capita. This seems to support existing evidence that Facebook is good for developing bridging social capital which is formed when people join associations or networks. Our preliminary conclusion is that the popularity of Facebook as a result of the number of its subscribers amplifies the effect of social capital on economic growth. This is because online social media provides an additional dimension to the transmission of social capital which enables people to accumulate human and intellectual capital. We also find that the impact of social media on economic growth increases as more people have access to Internet and the use of mobile phones. Interestingly, we find that the Internet penetration rate and the mobile penetration rate measured leads to higher economic growth.

On the other hand, broadband Internet does not significantly increase the impact of social media on economic growth. Our empirical analysis suffers from two important weaknesses. First, we are unable to control for endogeneity as we cannot tell whether the effect of social media on economic growth is due to the effect of the services offered by Facebook or the effect of the Internet. Secondly, we are unable to include time dummies that would enable us control for periods of recession such as the recent financial crisis. Our goal for undertaking this exercise is to understand more about how social media affects economic activity so as to improve our methods for estimating its impact.

Czernich, N., Falk, O., Kretschmer, T. and Woessmann, L.,(2011). Broadband Infrastructure and Economic Growth\*. The Economic Journal, 121(552), pp. 505-532

Paradoxes in Social Media utilization in Human Resource Management

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**Abstract**

Social Media is a contemporary social phenomenon that is yet to be further explored (Roth, Bobko, Van Iddekinge, & Thatcher, 2013), specifically, its impact on Human Resource Management. Guest (2011) for instance, critiques insufficient research into the emergence of new Human Resource Management (HRM or HR) practices, Brown and Vaughn (2011) as well as Roth et al (Roth, Bobko, Van Iddekinge, & Thatcher, 2013) also stress the lack of empirical studies and peer-reviewed outlets investigating the use of SM in selection and staffing decisions.

This paper introduces an ongoing PhD research project that investigates the role Social Media in High Commitment HRM. Initial findings on how Social Media is changing the communication dynamics in HRM are showcased in two pilot case studies.

*Social Media as Information System*

Social Media is not a single application, but as a set of interconnected and integrated information technologies: a User Generated *Information System* formed through unification of single components to offer its users unique value (Kaplan & Haenlein, 2010). Social Media opens new avenues for communication and differs from other computer mediated communication systems (Leonardi, Huysman, & Steinfeld, 2013) by supporting transparent communication and trusted sources (Fieseler, Hoffmann, & Meckel, 2010; Hauptmann & Steger, 2013), (2) allowing universal (multiple devices and protocols) and egalitarian (ease to join, no-cost) access to communication channels and information for participants at all levels (Boyd & Ellison, 2008; Kaplan & Haenlein, 2010) and by (3) providing accessible and uncensored two-way communication platforms which contributes to dialogue (Hauptmann & Steger, 2013; Lim, 2012).

Every-time and everywhere access, ease of use and lack of censorship suggest that a bottom-up Social Media adoption is possible. That means, that certain Social Media features could be used by organizations without prompt from management and new practices can emerge outside organizational control. How does this fit with the concept of High Commitment HRM?

*High Commitment HRM*

High Commitment HRM (HCHRM) is one of the three main theoretical perspectives of HRM identified in the literature (Guest, 2002) and has been linked to sustained competitive advantage (Lawler, 1988; Walton, 1985). In this paper HRM will be theorized as a communication process which aims to integrate content and process effectively to link to organizational performance (Bowen & Ostroff, 2004), or, to put it plainly, a communication process of management and employees negotiating expected behaviour and performance. To be considered effective HRM needs to be distinctive, consistent and high in consensus (Bowen & Ostroff, 2004). To ensure *distinctiveness*, the message needs to stand out from its environment, for example come from a hierarchically higher level. To be *consistent*, messages across different HR activities and time need to be coordinated at the higher HRM-process level. Finally, to contribute to *consensus*, a dialogic negotiation of meaning should exist between the recipient (employee) and the sender (management). In addition to the three factors above, communication strength is supported by provision of processes and rules for two-way symmetrical communication (Kent & Taylor, 1998), and as Sanders and Yang show that commitment increases, if employees understand HRM message (Sanders, K., & Yang, H., accepted). Arguably, top-down, strategic approach to HRM process would support strong HRM as suggested above.

*Top-Down and Bottom-Up paradox*

While the three major HRM perspectives adopt the top-down approach and elevate HRM to the strategic level (Guest, 2002), Social Media is emerging bottom-up, finding its way into organizations from the “shop-floor”-level. Is Social Media a disruptive force that jeopardizes HCHRM message or is it a value neutral technology whose capabilities can be successfully enlisted to support HRM? Can Social Media be used “top-down” to enhance HCHRM? Can Social Media be utilized only “bottom-up” and will it therefore force HRM transformation with new services offered to secure employees’ commitment?

*Social Media Utilization Mapping – Model and Empirical Studies*

This paper introduces a model for mapping of Social Media utilization in HRM across three dimensions of system strength – distinctiveness, consistency and consensus. Two completed pilot studies demonstrate the application of the model and present two organizations with contrasting approaches to Social Media and different levels of Social Media utilization.

Both organizations are utilizing Social Media to engage with potential, current and former employees. The levels of Social Media utilization vary significantly depending on organization and on HR activity. One common factor is that the utilization of Social Media tools appears to happen “bottom-up”, with practices emerging first and triggering the necessity for policies and strategy adjustment. Public Social Media tools appear to be predominantly used for engagement with external groups of employees (Selection and Attraction-Activity) and this type of engagement also seems to acquire a greater level of attention from policy and strategy makers within the organizations. In case of Consumer Goods it is notable that publicly available Social Media tools are being utilized for internal employee to employee collaboration without support from higher hierarchy levels.

*Limitations*

The model and pilot studies are part of an ongoing case-study PhD project to investigate the role of Social Media in HCHRM. The case studies presented here are used as a trial application of the proposed model. The findings are very limited and, considering the organization sizes of well over 100,000 employees, the interviews conducted represent just snapshots of reality. The juxtaposition of the two organizations is not unproblematic in itself insofar as the workforce, market and consumers of each organization are different and the approaches to recruitment, training and retention as well as alumni engagement are therefore different. Finally, respondents were not presented with a list of possible Social Media applications thus some Social Media applications that are being utilised were possibly not mentioned. Further data collection within these two and across multiple organisations and involving more respondents will provide a fuller and more consistent picture. It is hoped, that the findings of these study will not only contribute to current body of knowledge in IS and HRM, but also be of value and interest to HR practitioners dedicated to HC HRM and interested in Social Media.

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**SOCIAL MEDIA IN THE BUSINESS WORLD:**

**CUSTOMER ENGAGEMENT IN BRAND COMMUNITIES**

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Keywords: Social media, virtual communities, customer engagement

The use of social media in organizations help them forge relationships with existing as well as new customers and form communities that interactively collaborate to identify and understand problems and develop solutions for them. The interactive nature of these digital media not only allows sellers to share and exchange information with their customers but also allows customers to share and exchange information with one another as well. Customers often add value by generating content and even becoming passionate advocates for the organisation and this can greatly influence decisions and ideas of others in peer-to-peer interactions. A customer’s desire to participate stimulates his intention to revisit the community and this behaviour makes the customer more active in the community and in turn can become a loyal customer (Porter, 2004). Customer engagement in particular includes all communication through brand communities, blogging and social media, it involves the behaviours of the customer that go beyond transactions and can be specifically defined as the customer’s behavioural manifestations that have a brand or firm focus - beyond purchase, resulting from motivational drivers. Customer engagement differs in each community as customers in each community share a particular interest. Regardless of community type, they engage in different types of behaviours in these communities, such as interacting with other customers or sharing experiences with them. Some customers engage in non-interactive behaviours which may include reading comments or lurking and this attitude also enhances customer loyalty potentially as much as commenting does (Gummerus et al, 2012). Relationship benefits identified in previous studies are social, entertainment and economic. The outcomes of these relationships between customers and the firms are measured by factors which include customer satisfaction, trust, commitment, customer engagement and loyalty of the customer to the organisation (Chen et al, 2013; Sashi, 2012). The customer engagement concept is intended to increase the time or attention a customer gives to a brand on the web or across multiple channels or repeated interactions between a customer and a brand that strengthens emotional, psychological or physical investment a customer has in a brand (Sashi, 2012).

Brand communities are a platform in which customer engagement behaviour is used by organisations to engage customers. A virtual brand community has been described as a group of people who interact online with others in a consistent manner and are not bound by physical geography (Chen et al, 2013). These communities are a group of people with common interest in a specific brand that create a subculture around the brand with its values, myths and vocabulary, and for the purpose of this work, are subdivided into includes two first-level categories: Member-initiated and Organization-sponsored (Gummerus, 2012). Member-initiated communities are those where the community was established by, and remains managed by, members. Organization-sponsored communities are communities that are sponsored by either commercial or non-commercial (e.g. government, non-profit) organizations. Sponsoring organizations have key stakeholders and/or beneficiaries (e.g. customers) that are an inherent part of the sponsoring organization's mission and goals (Porter, 2004). Facebook pages are an example of a social network – based online brand community (Pöyry et al, 2013).

Little is known about the extent to which customers engage in different online behavior i.e. the relationship between customer behavioral engagement and other proximal constructs. A previous study examined the influence of intrinsic motivations on customers’ behavior in virtual brand communities (Chen et al, 2013). The study showed that brand love, entertainment value, social norm, and group referent positively influence the brand experience. The intrinsic benefits represent the joy and pleasure the customer hopes to derive from being a member of the communities. This study aims to examine the factors which provide customers with positive brand experience from customers’ extrinsic motivations and demonstrate how companies can improve intention to use their Facebook pages. Extrinsic motivations to use a medium can be described as the need to use that medium because of its usefulness. When an individual feels a system is useful, he or she thinks positively about the medium (Lin & Lu, 2011). (Lee, 2009; Huang et al, 2010) found that users thinking of a system as useful has great influence and will positively relate to the adoption of the system.

In social networking sites users are concerned about whether the SNS will allow them to effectively build and maintain relationships among the mechanisms that allow strangers to become acquainted and keep in touch. The study therefore proposes that developmnet of a ‘sense of community’ could have a positive effect on continuous customer engagement in a Facebook brand community. To achieve this, an online questionnaire will be used to conduct the empirical research, followed up by a qualitative data collection method such as interviews and/or focus groups. The results will inicate how much value customers attach to brand communities and how beeing part of such communities is considered an advantage for their shopping behaviour. Finally, the study results will determe whethere this sense of community has a positive effect on the intention of customers to continue to be members of the company’s community page.

This is an initial attempt to develop a theoretical framework for customer engagement based on extrinsic motivations and further research is necessary to expand and understand each aspect of the framework. As companies seem to do not fully understand consumers’ interaction with business related social media communities there seems to be a gap between what businesses think the consumers care about and in reality what the consumers say they want off these virtual communities. Understaning the brand community in depth will help both consumers and companies to be more effective in their communication over these means.

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1. Please note that acceptance was calibrated with one-item Likert scale couched on a five-point scale ranging from strongly disagree to strongly agree (i.e., “we accept and adapt to social media quickly”). Perceived ease of use and perceived usefulness instead were calibrated with three (i.e., ease of learning, skilfulness and ease of interaction) and five-item scales (i.e., enhancing business performance; improving customer relations; attracting new customers; raising the company’s profile; ease of working with social media) respectively. [↑](#footnote-ref-1)
2. Logical OR denotes the inclusive union of several causal conditions. Logical OR is also designated by the plus sign (+). [↑](#footnote-ref-2)
3. Logical AND denotes the intersection between two or more conditions. Logical AND is also designated by the asterisk (\*). [↑](#footnote-ref-3)
4. Using the “AND” operator (\*) to arrive at higher-order constructs (i.e., ~fsease of use=~fsease\_learning\*~fsskillfulness\*~fsease\_interact), non-ease of use has a consistency score of 0.95 and a coverage score of 0.89 as a necessary condition for non-acceptance. Therefore, the consistency necessity is well above the 0.90 threshold we used for the negative cases. [↑](#footnote-ref-4)
5. The term ‘*assemblage’* is drawn from the work of Deleuze and Guttari (1987) and De Landa (2006). This paper is an attempt to ‘*think otherwise*’ about ‘*the analytical task at hand*’ rather than to give a full account of the theory (Deleuze and Foucualt, 1977: 208 cited in Haggerty and Ericson, 2000: 608). [↑](#footnote-ref-5)