



# Kent Academic Repository

**Standing, Craig, Mingers, John and Standing, Susan (2018) *The Use of Social Media in Supporting the Development of Open Organizations for Innovation*. *Systems Research and Behavioural Science*, 35 (6). pp. 838-855. ISSN 1092-7026.**

## Downloaded from

<https://kar.kent.ac.uk/67155/> The University of Kent's Academic Repository KAR

## The version of record is available from

<https://doi.org/10.1002/sres.2521>

## This document version

Author's Accepted Manuscript

## DOI for this version

## Licence for this version

UNSPECIFIED

## Additional information

## Versions of research works

### Versions of Record

If this version is the version of record, it is the same as the published version available on the publisher's web site. Cite as the published version.

### Author Accepted Manuscripts

If this document is identified as the Author Accepted Manuscript it is the version after peer review but before type setting, copy editing or publisher branding. Cite as Surname, Initial. (Year) 'Title of article'. To be published in *Title of Journal*, Volume and issue numbers [peer-reviewed accepted version]. Available at: DOI or URL (Accessed: date).

## Enquiries

If you have questions about this document contact [ResearchSupport@kent.ac.uk](mailto:ResearchSupport@kent.ac.uk). Please include the URL of the record in KAR. If you believe that your, or a third party's rights have been compromised through this document please see our [Take Down policy](https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies) (available from <https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies>).

# The Use of Social Media in Supporting the Development of Open Organizations for Innovation

## Abstract

Open systems theory purports to offer many benefits related to developing an innovative and sustainable organization. In this paper, we examine if collaborative tools afford a move towards a more open orientated organizational form that can support innovation capability and the issues that need to be managed in the process. Constructs that characterize open systems are identified from the literature and these are used to frame the case analyses on the nature of collaborative tools and changing organizational forms. The validity of the open systems concept is explored through an examination of three case studies. Although collaborative tools offer potential organizational benefits, issues exist in relation to its management and use that can circumscribe its impact. Collaborative tools were used in contexts where there was a weak understanding of open systems concepts and this resulted in a weak conceptual strategy. The lack of methodological guidance on how to use collaborative tools to become more open was a significant issue. The combination of these two issues created a number of implementation problems including lack of widespread participation and an inability to obtain and leverage knowledge via collaborative tools to improve innovation. The paper highlights that a tool focused collaborative systems approach produces less effective integration of collaborative tools and creates problems in moving to an a more open organizational form.

**Keywords:** Innovation; open systems; social media; case studies

Professor Craig Standing (Corresponding author)

Centre for Innovative Practice  
Edith Cowan University  
270 Joondalup Drive, Joondalup  
W.A., Australia  
[c.standing@ecu.edu.au](mailto:c.standing@ecu.edu.au)  
tel: 61863045545  
fax:61863045555

Professor Craig Standing is a Foundation Professor of Strategic Information Management in the School of Business and Law at Edith Cowan University. Craig studied at Lancaster University, University of Manchester, and the University of Western Australia. He has published in the top ten Information Systems journals and has presented at many international conferences. He has obtained significant research funds including the prestigious Australian Research Council Awards.

Professor John Mingers

Kent Business School  
University of Kent  
Canterbury  
UK

[J.Mingers@kent.ac.uk](mailto:J.Mingers@kent.ac.uk)

John Mingers is Professor of Operational Research and Systems at Kent Business School, University of Kent.. He is a past Chair of the UK Systems Society and has been a member of the Council of the OR Society. John has published in information systems, operational research and systems journals. He has made significant contributions to the philosophy of Critical Realism and its applications.

Dr. Susan Standing

Centre for Innovative Practice  
Edith Cowan University  
270 Joondalup Drive, Joondalup  
W.A., Australia

[s.standing@ecu.edu.au](mailto:s.standing@ecu.edu.au)

Dr Susan Standing is a Research Assistant in the School of Business and Law at Edith Cowan University. She has published in leading IS journals and has presented at major international conferences.

# The Use of Social Media in Supporting the Development of Open Organizations for Innovation

## **Abstract**

Open systems theory purports to offer many benefits related to developing an innovative and sustainable organization. In this paper, we examine if collaborative tools afford a move towards a more open orientated organizational form that can support innovation capability and the issues that need to be managed in the process. Constructs that characterize open systems are identified from the literature and these are used to frame the case analyses on the nature of collaborative tools and changing organizational forms. The validity of the open systems concept is explored through an examination of three case studies. Although collaborative tools offer potential organizational benefits, issues exist in relation to its management and use that can circumscribe its impact. Collaborative tools were used in contexts where there was a weak understanding of open systems concepts and this resulted in a weak conceptual strategy. The lack of methodological guidance on how to use collaborative tools to become more open was a significant issue. The combination of these two issues created a number of implementation problems including lack of widespread participation and an inability to obtain and leverage knowledge via collaborative tools to improve innovation. The paper highlights that a tool focused collaborative systems approach produces less effective integration of collaborative tools and creates problems in moving to an a more open organizational form.

## **Introduction**

An organization's capability in acquiring and managing information and knowledge is closely associated with its innovation performance (Frishammar & Horte, 2005). Recent research has highlighted the significance of collaborative social networks in fostering organizational innovation representing a paradigm shift in the conceptualization of innovation processes to a more open platform (Dahlander, & Gann, 2010; Smart, Bessant, & Gupta, 2007). Open systems interact extensively with their environments

and use the knowledge to bring about purposeful change (Emery, 2010). Researchers argue that innovation processes require the support of collaborative technologies because they help in the efficient storage and retrieval of codified knowledge, bring people together to innovate, enable the formation of virtual teams to carry out the innovation process and create an organizational climate that favors product innovation (Kohler et al., 2009; Sharif, Irani, & Lloyd, 2007). Social media, because of its collaborative principles, have been proposed as having the potential to support open systems that can support innovation (Jarvenpaa, Staples, & Teigland, 2015; Dahlander, & Gann, 2010; Kane, Alavi, Labianca, & Borgatti, 2014). Without a strategy and process for using enterprise social media the results are likely to be disappointing and so there is a need for research in the area (Lam, Cheung & Cheng, 2016). We argue that open systems theory provides a basis for using social media in organisations to improve innovation.

This paper investigates the potential of social media technologies to support an open organizational form that facilitates innovation. The specific question we seek to answer is: *What is the role of social media in supporting the development of open organizations for innovation?* Social media are increasingly being used on a corporate level to interact with clients, suppliers and customers and can facilitate the exchange of information and knowledge in a collaborative and cost effective manner (Fischer & Reuber, 2011). However, research has highlighted difficulties in realizing the benefits of social media adoption (Miranda, Kim, & Summers, 2015; Standing & Kiniti, 2011) and there is a gap related to the use of social media to improve openness to support sustainable innovation (Lam, Cheung & Cheng, 2017).

The basic proposition of open systems theory is that open systems have permeable boundaries and consequently are open to their environments (Emery, 2000, 2004, 2010; Bertalanffy, 1950). At the organizational level, an organization learns from its environment and implements plans to be more effective in this environment, a form of purposeful adaptation. The implication of open systems theory is that the more an organization can be purposively adaptive within its environment the more effective it will be as an organization. Organisations must have some open characteristics to function but

organisations differ in that they have varying degrees of openness in terms of interactions with the environment. An organization's environmental interactions include strategic alliances, supply chain partnerships, customer relationships, and professional and industry networks. The effectiveness of these ties is often critical to the success of an organization due to their role in acquiring information and knowledge that can be used for organizational improvement and innovation (Yang, Watkins & Marsick, 2004). However, inter-organizational relationships and communication with external groups including customers are often hindered because of a lack of motivation or the inability to absorb and transfer knowledge (Larsson, Bengtsson, Henriksson, Sparks, 1998).

There are conceptual links between social media, open systems theory and open innovation that have not been fully explored. Open systems theory provides an integrated theory for creating and exchanging knowledge and knowledge exchange is a fundamental basis of open innovation. The term 'open innovation' describes innovation from three different process perspectives inside-out, outside-in and coupled (Agarwal & Selen, 2011; Enkel, Gassmann, & Chesbrough, 2009). The inside-out process refers to earning profits by bringing ideas to market, and transferring ideas to the outside environment. The outside-in process integrates suppliers, customers and external knowledge sources to enrich the organisation's knowledge base, and the coupled process refers to co-creation through alliances, cooperation, and joint ventures where some project flexibility and negotiation is crucial for the success of the project (Enkel et al., 2009). Although there has been much interest in open innovation in recent years (Gassmann, Enkel & Chesborough, 2010), and links between openness and innovation have been shown to exist (Laursen, & Salter, 2006) an integrated conceptual basis is still in need of further exploration (Dahlander & Gann, 2010).

The euphoria in research surrounding enterprise social media use has subsided and been replaced by the issues, challenges and problems associated with its use. Yet, organizational benefits can be significant

with mindful strategies and implementation (Jarvenpaa, Staples, & Teigland, 2015). The following section examines open systems as a conceptual basis for using social media in organizations with the aim of improving innovation. The research design for the case studies is explained before the findings are presented. The discussion summarises the main findings from the case studies and includes recommendations and challenges related to the role of social media in supporting open organizations for innovation.

### **Open Systems Theory, Open Organisations and Social Media**

This section of the paper explains how social media can be used to support open organisations, particularly to innovate. Social media make use of range of tools. They are generally interactive tools such as wikis and blogs, communication tools such as Twitter, Yammer, YouTube and Facebook, and business networking tools such as LinkedIn and Viadeo. Social media use has been widely adopted on a personal level for social interaction and is increasingly being used in organizations. The latter is seen as contributing to better internal communication and improved relationships with customers (Luo, Zhang & Duan, 2013, Hajli, 2014; Agnihotri, Dingus, Hu, & Krush, 2016). Social media use within a corporate setting has also been proposed as a way to overcome some of the problems associated with creating, sharing and managing knowledge (Ellison, Gibbs, & Weber, 2015; Lam, Yeung, & Cheng, 2016). However, the literature reports that many efforts to adopt and use social media in organizations fail to deliver the intended benefits (Gibbs, Rozaidi, & Eisenberg, 2013; Wu, 2013; Aral, Dellarocas, & Godes, 2013; Standing & Kiniti, 2011). Key reasons for the failures include the lack of collaborative work practices (Kaplan, & Haenlein 2010).

#### *Interacting with the environment*

Approaches in organizational research built upon open systems principles as it became widely acknowledged that organizations need to interact with their environment and these principles were

integrated into managerial decision-making (Allen and Sawhney, 2010). Emery (2004) expresses the nature of a system's relationship with its environment in terms of planning and learning. The system components interact with the environment through planning activities and the system learns from the environment (figure 1). Knowledge brought into the organization must be shared and assimilated to bring about a change in organizational culture. Although open systems theory posits that an organization adapts to the environment, it does not preclude organizations from determining their future states. Adaptation in this sense involves a form of environmental scanning and the implementation of proactive and purposeful planned actions. In doing this, an organization transforms itself and exists in a continual, dynamic state of self-production (Mingers, 2002). Social media technologies enable organizations to interact with the environment both internally and across organizational boundaries (Luo, Zhang & Duan, 2013) and should enable an organization to improve environmental interaction, learn from the environment and proactively plan along open systems theory principles.

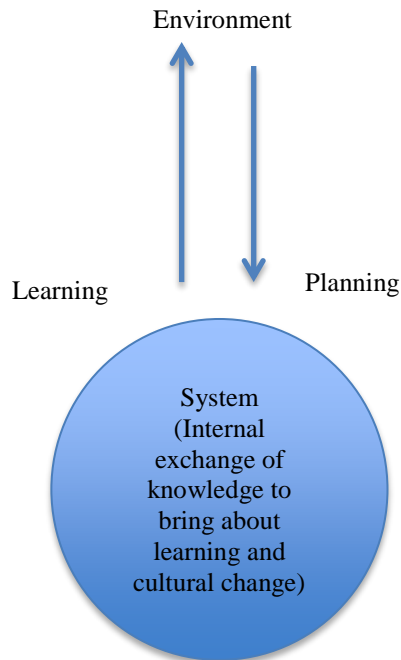


Figure 1: A model of an open system (Emery, 2004)

### *Open systems and complexity*

Open systems are seen as a basis for managing organizational complexity (Anderson, 1999). Organizational complexity is assessed by the number of activities or subsystems within an organization (Daft, 1992). This includes the number of levels in an organizational hierarchy (vertical complexity), the number of departments (horizontal complexity) and the number of geographical locations (spatial complexity). From an environmental perspective, complexity is related to the number of external tasks that have to be managed simultaneously (Scott, 1992). Given that alliances and partnerships can be complex relationships to manage social media have significant potential as supporting technologies. For example, social media flattens hierarchical structures, assuages problems of distance and time zones, and is a many-to-many channel within and external to an organization.

#### *Open systems and culture*

Although open systems describe organization structure they also impact on organizational culture. Bringing about cultural change is inherent in the open systems concept (Emery, 2000). Open systems principles and their reliance on interconnections with the external environment facilitate cultural change within organizations as information and knowledge is transferred and begins to influence norms, values and behavior over time. From a partnership or alliance perspective this has advantages since the ‘system’ is more able to dynamically adapt to its environment not just in terms of structure and knowledge but also in terms of its collective ‘mindset’. Social media tools can be used as supporting mechanisms for achieving this because of their capability to facilitate the creation and sharing of ideas both internally and externally at many points of contact (Huang, Baptista & Galliers 2013) and because of their embedded collaborative work values and practices (Kiron et al. 2012).

#### *Open systems and learning*

Open systems theory emphasizes the learning that must take place for organizations to purposively adapt to their environment (Emery, 2004). Senge (1990) took a systems thinking approach explaining that an



organization exhibits adaptive capacity and generativity (the ability to create alternative futures). Within this view, learning at the individual and team levels are stressed and this can be supported by social media (Standing, Standing, & Law, 2013). A strategic view of learning emphasizes the organizational skills to create, acquire, and transfer knowledge and then modifying organizational behavior to reflect new knowledge and insights (Garvin, 1993). Goh (1998) also saw the ability to transfer knowledge across organizational boundaries as important along with shared vision, leadership, a culture that encourages experimentation, teamwork and collaboration.

Yang, Watkins, & Marsick (2004) examined the key constructs that form the concept of the *learning* in organizations. Their results show that individual and group level learning activities (continuous learning, dialogue and inquiry, team learning, and empowerment) had indirect significant effects on organizational outcomes. System connection, embedded system, and the provision of leadership for learning (top management support) are three organizational factors that serve as mediators of the relations between the individual learning activities and organizational outcomes. Except for *provide leadership for learning* which was in fact the only variable that had direct influence on financial performance, the others, including embedded system and system connection affected financial performance indirectly through knowledge performance. Their work also highlights that individual knowledge sharing needs to improve before group level and organizational impacts are possible. Social media systems need to be implemented and used with an agenda for change and improvement, in the open systems terminology of Ackoff and Emery (1972) they need to be the technology part of purposeful systems.

Knowledge and its effective management are seen as a pre-requisite of innovation. Research has recognized that to achieve competitive advantage organizations need to understand what they know and what they need to know (Zack, 1999). Further, innovation through knowledge acquisition should impact on the organization's bottom line (Standing & Kiniti, 2011). This is only likely to happen if organizations

understand how knowledge creates value (McIver, et al. 2013; Yang, Watkins & Marsick, 2004). Corporate social media use has been viewed as an open innovation approach to acquire and share external knowledge (Du, Yalcinkaya, & Bstieler, 2016). Social media innovation hubs for example access knowledge from diverse sources and support innovation in a wide network (Mount & Martinez, 2014). Firms can access market and technical information about customers and products to better understand current and future market needs and develop innovative solutions and products that cannot be achieved by relying on internal sources. Social media can also speed up the development of new products (Du, Yalcinkaya, & Bstieler, 2016).

## **Methodology**

In order to investigate the relationship between social media use and its impact on organizational effectiveness we analyse three different case studies (Silverman, 2000) of organizations using and experimenting with social media. We used the characteristics of open systems theory explained earlier in the paper to develop the interview questions. The interview data is the primary source for the case analysis and is consistent with the qualitative research approach and methods followed by Wynn and Williams (2012), Marion, Friar, and Simpson (2013) and Karjalainen and Snelders (2010).

The case study organizations were deliberately chosen (purposive) because of their use of social media internally and externally with stakeholders and they represent different industry sectors with different competitive environments (Silverman, 2000). The latter was important because we wanted to examine the value of open systems concepts from the literature in different organizational contexts. The case study method was used because it enables the exploration of social media use in organizational contexts (Yin, 2009). Cases also provided us with information about the organisations in relation to their objectives and type of business. The researchers could then investigate and explore their use of social media and how they impacted on the various features of openness. Cases enabled the researchers to explore the “why?” and “how?” questions in relation to the organisations’ use of social media (Silverman, 2000; Yin, 2009)

and enabled the researchers to obtain illustrations and examples from each organization. The selection criteria for the organizations included the significant use of social media, a user of social media for over a year rather than being a new user and different sectors to highlight the possibility of different objectives and demands. All three organizations agreed to participate because they were interested in reading the findings of the study. The participants in each organization were selected based upon their own use of social media and their knowledge of their organization's experiences with social media, including the benefits and barriers in its use. After interviewing several senior people we requested names and email addresses of other employees to interview and sent an email to them requesting participation. The case interviews were undertaken on the premises of the interviewees during normal office hours and lasted between 50 to 60 minutes. We maintained an observer role and did not participate in discussions in order to make recommendations within the organizations. At the start of the interviews interviewees were asked for their personal work experiences with social media, including the applications they interacted with. The questions asked of participants were related to the open systems constructs but were expressed in relation to their work context and expressed in language appropriate for their practice domain. These included:

- Has social media increased the level of information sharing internally and externally and whether/how that is used to bring about change?
- Does social media reduce information asymmetry in organizational relationships?
- Does social media support the management of complexity (vertical, horizontal and geographic complexity)?
- What is the relationship between collaborative culture and using social media?
- Has social media use supported continuous organizational learning and reflection?
- Does social media have an impact on organizational performance?

The questions asked about the process of using social media as well as the outcomes and impact of their use. Each question was followed with the request for examples and further explanation when needed (Yin,

2009). The interviews were recorded with the permission of the interviewees and transcribed later. The interviews were recorded and transcribed verbatim to allow for nuances in the interviews to be apparent in the text. The interviewees' details were coded to allow for anonymity, although all interviewees were aware that it might be possible to identify them from the content of the text. A grounded coding scheme was developed through analyzing the responses to the questions with two of the researchers coding independently and then coming together to compare schemes. Any differences were identified and resolved or accommodated through further analysis. We were guided by the work of Urquhart, Lehmann and Myers (2010) in this process who state that grounded theory studies can have a theoretical basis where the aim is to enhance theory as in our study but that the researchers should have an open mind when analyzing the data and not force the findings to fit the theory.

The case study organizations are a library of a major university in Australia (Oz\_Library), a leading Australian consulting company (KM\_Services), and a Malaysian animation company. All three organizations had experimented with a range of social media initiatives over a number of years. We interviewed eleven employees at the consulting firm KM\_Services (table 1). These included senior partners and consultants. We focused on social media strategy and use and included some people who were infrequent users of social media. We interviewed twelve people at Oz\_Library. Those interviewed included those using social media frequently and several who used social media less. Twelve people were interviewed at Animation Central including managers responsible for managing social media applications.

<b>Organisation</b>	<b>Number of Participants</b>	<b>Roles of participants</b>
KM_Services	11	2 Senior Partners, 4 Senior Managers, 5 Consultants
Oz_Library	12	Head librarian, 5 Senior Librarians, 6 Librarians
Animation Central	12	Ceo, 4 seniors managers, 3 Designers, 4 Animators

Table 1: People interviewed in the cases

The formal interviews were supplemented with many other less formal interactions, meetings and discussions. The transcriptions were analysed on a conceptual level using a qualitative content analysis approach to classify responses to the questions (Yin, 2009). Two researchers analysed the transcripts and classified the responses according to the key perspectives. Following guidelines proposed by Urquhart, Lehmann and Myers (2010) our literature review played a role in understanding the responses from participants. An example of our coding approach is shown in table 2. In this process we identified from the transcripts mention of varying levels of social media use, and the properties are features of the theme. Any anomalies between the researchers were resolved through discussion and re-analysis of the transcripts (Krippendorf, 2004), if this process did not resolve the ambiguity then the interviewee was contacted again to clarify the point. The context of the organization was researched through analyzing company reports, media releases, and web sites, including their social media presence (Crotty, 1998). The context is important to provide an historical and multi-leveled perspective to the artifact (social media) being researched (Yin, 2009).

Open code theme	Properties	Examples of participants' words
Partial information sharing via social media	Sharing ideas externally Sharing ideas internally Time to use social media Non-participation by some working	Some senior staff struggle with social media Participation (in social media) is not as high as we would like We are better at sharing (information via social media) internally than externally It is difficult to integrate social media into your daily work It's (social media) helped us connect better with fans We don't use it a lot internally

Table 2: An example of data coding

### *Case Organisations*

KM\_services is a country wide business and consulting company with offices in all of the major cities in Australia. Its work takes place across all sectors of the economy and has over 5000 employees with

revenue over \$1 billion. The firm is proactive in developing new products and services and is also a leader in using information and communication technology throughout the firm to generate new income sources. In 2009, the firm embarked an ambitious plan to be major users of social media to improve innovation levels. Senior staff planned to develop at least a third of the new products and services within two years. The social media tools adopted included Yammer, Twitter, Facebook, corporate wikis, crowdsourcing tools and specialized mobile applications developed in-house. Yammer is used as a corporate social networking tool to exchange information, ideas and knowledge within the organization and sub-groups have been formed around departments, interests and projects.

Oz\_library is the library of a large university with over 20,000 full and part-time students. In 2007, the library embarked on a plan to use social media including Facebook, Twitter and professional blogs with 20 library staff. However after a year the library's Facebook presence was deemed to be a potential source of conflict with the university's Facebook page and it was closed down. This meant that the library's social media involvement was restricted for several years until they were given the go ahead to use social media to improve the level of interaction with students and staff. The aim has been to interact directly with students and staff at the university to inform stakeholders about the library's offerings and obtain useful information and recommendations from library users. The overall strategy is driven by client service and the need to be more interactive with library users.

Les Copaque is a Kula Lumpur animation company formed in 2005. The name was derived from local Malay-English slang "last kopek" which means "final chance", which was modified to appear as a French phrase. Their most notable animations are based around the adventures of young twins Upin and Ipin. These series of animations have achieved national recognition with many millions of viewers per episode. Les Copaque has gone on to develop a ninety-minute animation film called Geng based around the characters. Their animations have sold extensively internationally including, Indonesia, Brunei, Turkey

and Middle Eastern countries. The company has developed merchandise, theme parks and a chain of fast food cafes. The firm uses social media extensively to connect with their viewers and fans using YouTube, Facebook, twitter, Line, Instagram and blogs.

## **Findings**

The findings from the case study organizations are explained in relation to the main themes that emerged from the grounded analysis. Each organization is examined in turn to provide adequate insight into their experiences with social media. A number of themes emerged across the cases and we have structured the findings according to them: social media and partial information sharing, lack of disclosure via social media, social media creates its own complexity, lack of recognition given to collaborative culture needed for social media use, accelerated learning for some but not others, and benefits of social media being real but lacked an integrated strategy. Each organization was different in the way it used social media and these differences are discussed both in the findings and the discussion.

### *Social media and partial information sharing*

**KM\_Services:** KM\_Services uses social media to support the development of new products and services. This is a deliberate strategy to involve more employees and external clients in the planning and development within the innovation process. Yammer is used internally to keep employees informed, share ideas and to obtain feedback on ideas through a simple voting option in the software. The sharing of suggestions and ideas across a large number of their employees allows a quick, early innovation stage to take place. If ideas appear to be popular then a small amount of money will be used to develop the idea further into a prototype or a set of slides that can be used in discussions. For example, the firm asked employees “*what are the dumbest things we do?*” and this received a large number of responses that were analyzed with a view to making organizational improvements. A senior employee explained: “*Yammer serves as an ideation platform for floating new strategies or new areas of business we may wish to*

*consider but has also been taken up by more junior employees for floating their own ideas and getting feedback. Importantly, as a tool Yammer is sticky, friendly, and simple and its use becomes addictive”.*

The open knowledge exchange approach used by KM\_Services is a deliberate approach to try and keep ahead of the competition. Twitter has been used to promote ideas both internally within the organization and externally for such things as conference promotion to clients. The intention is to maintain a continual flow of information in and out of the organization but more success has been obtained using social media internally rather than with clients who were more likely to read and observe than contribute information and knowledge. Wikis are used to work internally on projects and externally with clients to share documents and links related to specific projects. Facebook is used as a public face for KM\_Services to disseminate information to clients and potential clients. Crowdsourcing tools have been used for client projects to obtain suggestions from their customers.

Oz\_Library: Oz\_Library's involvement with social media is still at a developmental stage after a period when the central administration curtailed its use. Although knowledge and information gained via social media are used by individuals in making decisions and recommendations it is used less formally as an environmental scanning tool to form strategy and change policies and procedures. Nonetheless, the approach to interact more with library users emphasizes a desire to develop two-way exchanges of information and become a more open and dynamic system.

The library uses a range of social media to interact with students and staff outside of the library, and it is used on a professional basis to interact with people in their professional networks. The relaying of this type of information is done on an ad-hoc basis with some staff acting as champions for knowledge sharing. Twitter is used to publicize events to students and to obtain feedback on library services and answer questions. Four staff members are now in charge of Twitter feed as before when it wasn't anyone's



responsibility tweets were only sent infrequently. The library also follows other Twitter accounts in the university to keep in touch with what is happening in those areas. The library's news and events now feed into the university's Facebook page. Flickr has been used to present photographs of how to use the library as a training guide. Yammer is used internally to share information and knowledge between library staff. Some of the library staff are extensive users of social media on a personal level and they explain that it is one way of keeping on top of the latest trends in the sector and for also developing a professional network that can be used for finding answers to questions. In this respect, it has been an empowering exercise for those that have been proactive in its adoption. The decline in the number of students using the library has led to the exploration of new ways to engage with students and social media was adopted because of its perceived popularity with students. Some staff were struggling to integrate social media in their working day and processes and thought the guidelines on its use and importance were as yet unclear: *"It's easy to let a few days go past without posting if I am busy, it's not easy to find a slot for it sometimes (Librarian)."*

Animation Central: Social media are used by Animation Central to develop and interact with their animations' fan base. Feedback on their products is one driver of social media adoption. For example, posting their shorter animations on YouTube enables the firm to obtain feedback on what people liked and disliked about them. Corporate blogs are used to float ideas and invite responses from their fans. However, their Facebook page for Upin and Ipin is by far the most popular social media application with over 10 million likes. This feedback obtained from social media are used to develop not just future animations but merchandise also.

Animation Central does not have a formal knowledge management strategy. The main driver of social media use is to create a vibrant online fan community. In the process of developing this online community knowledge is obtained from fans about their likes and preferences but this information is not part of an overall knowledge management strategy: *"We float ideas online on social media and get the views of fans."*

*It sometimes confirms what we are thinking (Animator).*” Facebook and YouTube enables knowledge to be obtained from fans and given their large number acts as a simple form of crowdsourcing strategy. As the firm doesn’t use social media internally, knowledge about what fans like is communicated on an ad-hoc basis although it is discussed at senior levels and is used to plan future episodes and projects.

#### *Lack of disclosure via social media*

KM\_Services: KM\_Services adopted social media to involve more people in the innovation process. In the idea generation stage some information and knowledge is disseminated related to each suggestion. However, the focus is not information provision either internally or externally to the organization. The knowledge exchange process is more focused on idea development than explanation and information dissemination. Senior managers are unclear what type of information is required by employees and clients and thought that it was gap in their strategy: *“we need to find out what information could be provided to external partners and clients, as it is we don’t do this well.”* (Senior manager)

Oz\_Library: Librarians using social media informed students of events and news about services offered. It was thought that many students were lacking information on current library services. However, social media was not used to focus on specific issues and provide information to students to involve them in solutions. Some Oz\_Library staff internally disseminated information via Yammer (using links) obtained from outside sources to plug knowledge gaps and blogs had been used to provide insights to students on library activities. Although Oz\_Library makes some attempts to provide information to students, an integrated strategy is lacking in addition to insights about the benefits of reducing information asymmetry: *“The library has discussed how we can inform students better about what we are doing but we need to revisit this one.”* (Senior librarian)

Animation Central: Animation Central has an evolving strategy of releasing segments of animations online to solicit feedback from fans. The feedback has been useful, for example it highlighted that many viewers were adults and so future animations increased the focus on adult characters. The strategy in using social media was experimental rather than being entirely preplanned. Senior managers explained that there was no model for using social media when they started their approach.

### *Social media creates its own complexity*

KM\_Services: KM\_Services embarked an ambitious plan to be major users of social media to improve innovation levels. The objective involved developing at least a third of the new products and services within the previous two years. This ambitious plan is complex because it involves a high internal participation rate related to innovation that includes junior and senior staff as well as obtaining a continual supply of external input. At KM\_Services individual users varied in the frequency of contributions they made via social media from those who used it everyday, those who interacted with it a few times a week and those that rarely used it. Many employees used social media but of those a substantial proportion were observers rather than contributors.

Oz\_Library: Oz-Library was faced with the wider problem of understanding how to adapt to the changing nature and role of libraries. Increasingly content is being delivered and accessed online and this has resulted in fewer students visiting the library. This global trend created a situation where the library staff felt they were not connecting with or properly understanding their users' needs. In this fundamental questioning of the role of libraries social media was being used to obtain a closer connection with students in the hope it would provide their changing needs. Yammer is used internally to share information and knowledge between library staff. This has incorporated social information, work related information exchange as well as ideas for innovations. As a senior librarian stated: *"The social element makes using*

*social media fun and can be an encouragement for people to participate”*. A further tool was used for sharing and brainstorming ideas but many staff were reluctant to reveal their identity online as they thought that senior people may read their comments and suggestions. Although there was some questioning of the role of the library, the library management were struggling to harness social media to work a redefined purpose.

Animation Central: Animation Central has a complex problem to manage since because they want to create a community of fans and in doing so develop their brand. This would be difficult to achieve through traditional methods given the cost of television and newspaper advertising and telephone market research. Social media enables Animation Central to engage with their fans in an interactive manner and provide timely news and information. It also enables the firm to obtain useful feedback about popular/unpopular features of the animations influencing future episodes. Only a small number of internal Animation Central staff had responsibility for managing their social media presence and social media was not used extensively for the sharing of information and idea internally. The focus had been on engaging with fans and developing brand loyalty and awareness.

*Lack of recognition given to collaborative culture needed for social media use*

KM\_Services: KM\_Services employees used social media for a range of work functions. Employees participated in social media use because they felt it was part of their job and it enabled them to stay on top of the latest trends and topics. In addition, it was also seen as a way of developing their personal brand and network. There was a perceived high degree of trust between users and employees felt they could contribute in an open and transparent manner. Although employees are appointed at KM\_services because of their collaborative skills and nature, some employees rarely contributed to social media posts and proposals. In a survey, staff were also critical of some senior managers who rarely used social media.

Oz\_Library: Oz\_Library's approach to using social media has incorporated social information, work related information exchange as well as ideas for innovations. As a senior librarian stated: *"The social element makes using social media fun and can be an encouragement for people to participate"*. A further tool was used for sharing and brainstorming ideas but many staff were reluctant to reveal their identity online as they thought that senior people may read their comments and suggestions. At Oz\_Library intensive social media users act as champions for a more collaborative way of working, although it is too early to assess whether it has had an impact on the culture of the group or impacted on the bottom line metrics of the organization. Recently, teams have been developed to manage different social media tools and the offline discussions and meetings also help information and knowledge sharing. The trend emerging in the library is to increasingly strategize on social media, manage it more effectively and evaluate its contribution organizationally. Only a relatively small number of students contributed to the Facebook page, and it was hard to gauge how many people read Oz\_library's tweets.

Animation Central: Animation Central focused on developing stronger ties with their fan community by providing them with more information about the animations and the firm itself. Fan-to-fan communication also was encouraged through Facebook and Instagram. In addition, the fan base could participate in online competitions and provide feedback on their likes and dislikes related to the animations and merchandise. The informality of social media is working well with their fans who obviously only participate on a voluntary basis. The facility to upload photographs to Instagram enables people to share their experiences and invite comments from other fans. Many of the photographs uploaded to Instagram show children with Upin and Ipin toys. The marketing staff involved with the social media management provided analysis and insights to the executive level decision makers on a regular basis. As the focus is building a fan community at Animation Central the emphasis has not been on developing internal collaboration.

Designers take into account the feedback from fans through social media and work collaboratively with this information when designing the storylines for new episodes.

*Accelerated learning for some but not others*

KM\_Services: Top management has been a strong supporter of social media use from the start. Discussion about its use is integrated in innovation processes and evaluated at regular meetings. Having said that some senior managers struggle with its use but can obtain support from active social media users. Some junior staff felt that senior partners needed to encourage its use more. Social media are having a significant impact on decision-making in the organization. Social media use is a key item on the agenda at senior meetings since it is seen as a method of improving innovation. Data is tabled at monthly meetings on the ideas proposed through social media, such as Yammer and Twitter, and which ideas have the most merit.

Oz\_library: The initial attempts at using social media in 2007 included Facebook, Twitter and professional blogs that started with 20 library staff. However after a year the library's Facebook presence was deemed to be a potential source of conflict with the university's Facebook page and it was closed down. This meant that the library's social media involvement was restricted for several years until they were given the go ahead to use social media to improve the level of interaction with students and staff. The approach has the support of the Head of Library Services and several key social media users serve as champions.

*"It is better now that we have approval from the top to use social media because before there was always some uncertainty surrounding whether we were doing the right thing. Also because we have a supportive Head Librarian now we have more a focus and strategy to use it to improve customer service."* (Senior Librarian) Social media systems are used as stand alone applications and are not integrated with other IT systems and databases.

Animation Central: Top management fully endorsed the use of social media to promote the brand and products in an experimental approach. The average age of employees is between 20-30 and the firm started to use social media as soon as it had animations to promote. Senior management support has certainly aided in the learning and experimentation involved with social media use. *“Using social media is not just desirable but essential for developing Animation Central as a whole”* (Senior manager). Although Animation Central has been successful in their social media efforts, with over 10 million likes on Facebook for example, it has not fully integrated social media into its corporate systems from a data analytics and business intelligence perspective. Social media analysis does feed into boardroom decisions but this relies more on qualitative assessments of the comments and feedback.

*Benefits of social media real but lacked an integrated strategy*

KM\_Services: The firm monitors the number of ideas suggested at regular meetings and it has been clear that the adoption of social media has been instrumental in increasing the level of innovation. Some of the ideas that have been suggested have been implemented. Social media has been used in to obtain feedback from internal staff and external clients in the design and implementation stages. One of the main champions of social media use says *“Without social media we can’t innovate at an acceptable level because we need that constant exchange of ideas and fast responses. So, for example, I can have an idea over the weekend and can ask: What do you think about this? We can even vote as to whether it has any promise and this can involve a large number of staff across the firm.”* (Senior manager) The improved levels of innovation have had a positive impact on financial performance. Although senior management were keen to increase innovation through increased idea sharing they had not considered the impact of social media on organizational form.

Oz\_library: The staff interviewed explained that social media use increased the amount of information and knowledge exchanged, including between students and library staff, and this had resulted in improved

customer service. Social media were used to obtain feedback on opening hours and the refinements made as a consequence provided cost savings. One senior librarian expressed the impact social media was having “*We are finding our way with social media and now have the support of the Head Librarian. We have to experiment and learn from that and make sure we set aside time to implement suggestions that are made. So far it has made a difference and we are being proactive.*” (Senior Librarian). The staff saw social media as a convenient tool to communicate with students and academic staff. In particular, they thought it wise to operate in the online social media space that students used rather than employ traditional posters and leaflets. However, they had not considered that it might change the organization to a more open form.

Animation Central: Senior management agree that Animation Central would not be as popular or profitable without the use of social media. This is on large part due to the success of using social media to increase brand awareness, sell merchandise and create a loyal community of fans. The knowledge about the likes and dislikes of fans is perhaps secondary but nonetheless significant in the success of Animation Central. “*Social media enables us to create a huge online sounding board for our animations and merchandise that would be difficult to replicate in any other way.*” (Senior manager). The social media platform served at times as a crowdsourcing platform to obtain product knowledge and information in a time and cost effective manner. Senior managers had not really considered how social media had changed the organizational form or structure. The online community of fans, although recognized as being critical for the domestic success of the firm was not seen as changing the fundamental nature of the organization.

## **Discussion**

Our overarching question that is driving this research is: *What is the role of social media in supporting the development of open organizations for innovation?* We explain in this paper that social media has the



potential to support a shift to an increasingly open organizational form that can be used for innovation but the process presents many challenges. Analysis of the three case studies highlights the areas in which social media can contribute to open organisations and also the challenges and issues that these technologies present.

When we examine the features of open systems theory that were presented in the literature earlier in the paper in relation to the cases we find the following (table 2). The findings for the three cases indicate that social media has to some extent increased the level of information sharing and this resulted in organizational change and innovation. However, each organization faced different issues in implementing social media both internally and externally across a wide range of participants. For example, Les Copaque were particularly successful in using social media to engage fans but didn't implement the same level of interaction with its own employees. The imported knowledge via social media could to be used as a catalyst for new initiatives and bring about organizational change including cultural change (Dodgson, Gann & Salter, 2006). Without comprehensive internal sharing of knowledge and information there is less likelihood of the cultural change that is deemed to be a part of open system evolution.

Organisations need to provide external clients with information if they are obtain useful information that can be used in the innovation process (Luo, Zhang & Duan, 2013). Likewise internal social media use should involve a two-way exchange of information. KM\_Services was more adept at exchanging information in a two way dialogue internally but provided much less information to external clients. Generally, the information asymmetry concept was not well understood in the organisations although Les Copaque engaged in a two-way dialogue with its fans, often providing them with lots of information.

Using social media proved a cost effective method of obtaining ideas and feedback that could contribute to organizational innovation (Jarvenpaa, Staples, & Teigland, 2015; Dahlander, & Gann, 2010; Kane,

Alavi, Labianca, & Borgatti, 2014). However, doing this without a conceptual framework or methodology proved difficult and created a new set of complexities. These included increasing participation rates of staff, managing the ideas and suggestions from people, integrating social media in daily work practices, and incorporating social media issues in planning processes. A combination of issues that stemmed from more fundamental challenges in each case created challenges that was not easy to solve. For example, increasing staff participation rates in social media use at KM\_Services was linked to factors such as willingness to collaborate and share knowledge that was not solved by encouragement and some people leading by example.

A collaborative culture is necessary in open organisations because it supports knowledge exchange both internally and externally. Knowledge is deemed a basis for innovation (Kaplan, & Haenlein 2010). The three cases were different in relation to the emphasis on collaboration. KM\_Services considered a prospective employee's collaborative outlook before being employed. This was thought to help in the level of knowledge exchange via social media. Even so, many employees contributed little on social media. The senior library staff at Oz\_library acknowledged the importance of a collaborate culture but thought they could improve in this regard and Les Copaque had not considered it as important to collaborate externally with fans. Although the case organisations thought that they had learnt more about their clients, the learning was generally confined to those participating in social media communication. Social media adoption was viewed as having a positive impact on innovation for but all three organisations thought they needed to improve. KM\_Services has intergrated social media strategy and performance in senior manager meetings and had noticed continual improvement in innovative suggestions.

In the cases, social media were largely used as a tool to achieve ends such as: sharing knowledge, developing better relationships with fans, interacting more with library users and informing clients of organizational developments (Ellison, Gibbs, & Weber, 2015; Lam, Yeung, & Cheng, 2016). Social media

were not deliberately adopted in the case study organizations to be more flexible, dynamically capable and sustainable. In other words, social media use without the conceptual basis of a framework such as open systems theory is likely to lead to lost opportunities to bring about fundamental change.

<b>Open systems feature</b>	<b>Social media role</b>	<b>Challenges in using social media</b>
Information sharing internally and externally and used to bring about change	SM improves internal information sharing SM improves external information sharing Information via SM is used for planning	Lack of participation by some people, including some senior staff Using social media both internally and externally SM information not fully integrated with planning
Reduction of information asymmetry in organizational relationships	Provide as much information as received by SM External clients are informed by SM	Social media could be used to inform partners of issues and challenges Challenges in co-creation of services There was a weak understanding of the need to share information with external clients in order to inform and educate
Open system supports the management of complexity	SM contributes to a system of innovation SM integrates features of open systems	Lack of methodology and techniques on how to integrate social media within organisation The on-going costs of using social media Difficulties in obtaining widespread participation.
Collaborative culture	SM supports collaborative culture by increasing the level of interaction and sharing	Ambiguous expectations in relation to collaboration Developing a collaborative culture that fits with social media usage Collaborative culture was dependent on those predisposed to its use such as younger, technologically savvy employees
Continuous organizational learning and reflection?	Information obtained via SM is used in a learning cycle	Learning confined to those engaged in social media use Social media not integrated with organisational planning
Impact on organizational performance	SM makes a contribution to organisational innovation through ideation and design improvements	Lack of an integrated conceptual strategy Social media benefits can be piecemeal and sporadic and circumscribed by adoption rationales

Table 2: An emerging conceptual framework for using social media to develop open organisations for innovation

### *Contribution to Theory*

The paper has examined how social media can be used to support open organizational strategies. Open systems theory is used as a theoretical basis to create a framework for social media use. The open systems theory literature has argued that its principles can be applied at the organizational level (Emery, 2000; Emery, 2004). What we have done is to extend this work to include the role of social media. ICT has a major role to play in changing the nature of organisations in terms of structure and process (Standing, Standing, & Law, 2013). Social media use in the corporate world has the capability to improve communication flows and knowledge sharing but the cases show that they lack a guiding framework in its adoption and use. Systems theory enables us to see the limitations of the strategies employed by the case organisations and to propose recommendations on how to improve. The perceived lack of a comprehensive theory to support corporate social media use is a major impediment to its development and we believe this paper provides one solution for organisations to consider. The features of open systems theory that apply to organisations are listed in the first column of table 2.

There are unanticipated outcomes that can be positive or negative resulting from planned organizational change (Balogun & Johnson, 2005). Mackay and Chia (2013) argue that unintended consequences are more likely to occur where the environment is unpredictable and processes, related to the use of a technology for example, are not owned or easily managed as is often the case with social media. As Ciborra (1996) explained in relation to ICT and the network organizational structure “what prevails is a pragmatic muddling through” (p. 116), in other words a type of practical experimentation with technology rather than a strategy to change form to be more effective and flexible. Using open systems theory provides a framework within which to experiment with social media.

The limitations of the study in relation to theory development stem from the case study methodology. It relies on three organisations and therefore findings cannot be generalized. We suggest future research can conduct surveys across a broader range of organisations.

*Implications for Practice:* Managers need to be aware of the issues related to using social media as a tool to improve knowledge exchange. Fundamentally, this includes failing to realize social media's potential contribution in changing organizational structure to a more open and collaborative form and the benefits of that. Without the deliberate intention to create an adaptable open organization, benefits from social media use are likely to be piecemeal. Resulting from this are other possible unintended consequences such as employees feeling less innovative if they do not participate in social media forums. Not all employees understand social media etiquette and norms and this can be a barrier to becoming involved even if they would like to participate (Ramsay, 2010), hence some discussion and awareness training is required.

The development of a more open organisation should be viewed as a strategic initiative and be supported by resources and capabilities (Dahlander, & Gann, 2010). Using social media without an integrated strategy or adequate resourcing may create tensions with other practices in an organization especially in relation to job requirements and the time spent using social media. For example, some employees through their use of social media may act as boundary spanning knowledge brokers (Pawłowski & Robey, 2004) but could become frustrated by their current job design constraints or the lack of mechanisms to exploit their newly found knowledge. Hence, channels and mechanisms are required to rank, select and implement worthwhile ideas so that participants can see that social media is a means to an end and not an end in itself.

For social media to be effective in organizational transformation all components of open systems theory need to be developed. This includes providing information to consumers and organisations, receiving

information and using that to bring about change. Open systems theory is based upon open and collaborative principles. Without this collaborative foundation, or at least a strong desire to develop in this area, the benefits of social media are likely to be limited to information exchange.

## **Conclusion**

In terms of our research question, we have explained where social media has the potential to contribute to the development of open organisations to improve innovation (table 2). Social media can support the development of open organisations and improve innovation but it is a complex process to do well. There were many challenges found in the three organisations we examined even though they were deriving benefits from using social media. Many issues we suggest arise when adopting social media when a conceptual framework is lacking. We have proposed open systems theory as a conceptual basis for leveraging social media applications in organizations. This concept has the potential to encourage managers to think more deeply about collaboration, knowledge exchange and organizational change and provide a reflective basis to understand and manage unintended consequences that arise from social media adoption. Although overall experiences with social media can be positive, the lack of a conceptual perspective can result in lost opportunities to effectively leverage their potential and in some contexts may create as many problems as benefits in the innovation process.

## *Future Research*

Although the interviews took place over many weeks, a longitudinal analysis of one or more cases over several years would be interesting to examine how social media use changes through time and how its impact on the organization might change. Theories such as Critical System Heuristics could also be used frame the findings as opposed to open systems theory. Further research could survey organisations to find out if the findings discovered from the three cases hold true over a representative sample of organisations in the economy. For example, further cases could examine if alternative approaches to using social media were used and what the implications were. Studies could also examine if organisations in particular sectors

of the economy use social media in the same way to achieve increased openness. Finally, surveys could be developed to determine whether individuals/employees fundamentally understand the purpose behind using social media in their organisation.

## References

- Ackoff, R. L. & Emery, F. E. (1972). *On Purposeful Systems*. Chicago: Aldine Atherton.
- Agarwal, R., & Selen, W. (2011). Multi-dimensional nature of service innovation: operationalisation of the elevated service offerings construct in collaborative service organisations. *International Journal of Operations & Production Management*, 31(11), 1164-1192.
- Agnihotri, R., Dingus, R., Hu, M. Y., & Krush, M. T. (2016). Social media: Influencing customer satisfaction in B2B sales. *Industrial Marketing Management*, 53, 172-180.
- Allen, J., M. & Sawhney, R. (2010). *Administration and Management in Criminal Justice: A Service Quality Approach*. Sage Publications.
- Anand, B.N. and T. Khanna T. (2000). Do Firms learn to create value? The Case of Alliances, *Strategic Management Journal*. Vol. 21, pp. 295-315.
- Anderson, P. 1999. Complexity Theory and Organization Science. *Organization Science*. 10(3): 216–232.
- Aral, S., Dellarocas, C., & Godes, D. (2013). Introduction to the special issue-social media and business transformation: A framework for research. *Information Systems Research*, 24(1), 3-13.
- Balogun, J. & Johnson, G. (2005). From Intended Strategies to Unintended Outcomes: The Impact Of Change Recipient Sensemaking. *Organization Studies*, 26(11), 1573-1601.
- Bertalanffy, L. v. (1950). The theory of open systems in physics and biology. *Science*, 111: 23-29.
- Ciborra, C. (1996) The Platform Organization: Recombining Strategies, Structures, and Surprises, *Organization Science*, 7(2): 103–18.
- Crotty, M. (1998). *The Foundations of Social Research*. Sage Publications.



- Daft, R. L. (2001). *Organization theory and design (7th ed.)*. South-Western College Publishing: Florence, KY.
- Dahlander, L. & Gann, D.M. (2010). How open is innovation? *Research Policy*. 39(6), 699–709.
- Dodgson M., Gann D. & Salter A. (2006). The role of technology in the shift towards open innovation: the case of Procter & Gamble. *R&D Management*. 36(3), 333– 346.
- Du, S., Yalcinkaya, G., & Bstieler, L. (2016). Sustainability, social media driven open innovation, and new product development performance. *Journal of Product Innovation Management*, 33(S1), 55-71.
- Ellison, N. B., Gibbs, J. L., & Weber, M. S. (2015). The use of enterprise social network sites for knowledge sharing in distributed organizations the role of organizational affordances. *American Behavioral Scientist*, Vol. 59(1) 103–123.
- Emery, M. (2000). The Current Version of Emery's Open Systems Theory. *Systemic Practice and Action Research*, 13(5), 685-703.
- Emery, M. (2004). *Open Systems Theory*. (43-69). In J. J. Boonstra (Ed.), *Dynamics of Organizational Change and Learning*. John Wiley and Sons.
- Emery, M. (2010), Refutation of Kira & van Eijnatten's critique of the Emery's open systems theory. *Systems Research and Behavioral Science*, 27(6), 697–712.
- Enkel, E., Gassmann, O., & Chesbrough, H. (2009). Open R&D and open innovation: exploring the phenomenon. *R&d Management*, 39(4), 311-316.
- Faraj, S., & Azad, B. (2012). The materiality of technology: An affordance perspective. In P. M. Leonardi, B. Nardi & J. Kallinikos (Eds.), *Materiality and organizing: Social interaction in a technological world*. NY City: Oxford University Press.
- Fischer, E. & Reuber, A. R. (2011). Social interaction via new social media: (How) can interactions on Twitter affect effectual thinking and behavior. *Journal of Business Venturing*, 26, 1-18.
- Frishammar, J. & Hörte, S. A. (2005). Managing External Information in Manufacturing Firms: The Impact on Innovation Performance. *Journal of Product Innovation Management*, 22(3), 251-266.

- Fulk, J. & Yuan, Y.C. (2013). Location, motivation and social capitalization via enterprise social networking. *Journal of Computer-Mediated Communication*, 19(1), 20-37.
- Garvin, D. A., Edmondson, A. C., & Gino, F. (2008). Is yours a learning organization? *Harvard Business Review*, March: 109-116.
- Gassmann, O., Enkel, E., & Chesbrough, H. (2010). The future of open innovation. *R&D Management*, 40(3), 213-221.
- Gibbs, J. L., Rozaidi, N. A., & Eisenberg, J. (2013). Overcoming the “ideology of openness”: Probing the affordances of social media for organizational knowledge sharing. *Journal of Computer-Mediated Communication*, 19(1), 102-120.
- Gresov, C. & Drazin, R. (1997). Equifinality: A Functional Equivalence Perspective, *Academy of Management Review*, 2: 403-428.
- Gulati R. 1999. Network location and learning: the influence of network resources and firm capabilities on alliance formation. *Strategic Management Journal* 20(5): 397-420.
- Hajli, M. (2014). A study of the impact of social media on consumers. *International Journal of Market Research*, 56(3), 387-404.
- Hennig-Thurau, T., Malhotra, E. C, Frieger, C., Gensler, S., Lobschat, L., Rangaswamy, A. & Skiera, B. (2010). The Impact of New Media on Customer Relationships. *Journal of Service Research*, 13, 3, 311-330.
- Huang, J., Baptista, J., & Galliers, R. D. (2013). Reconceptualizing rhetorical practices in organizations: The impact of social media on internal communications. *Information & Management*, 50(2), 112-124.
- Huy, Q. & Shiplov, A. 2012. The key to social media success within organizations. *MIT Sloan Management Review*, 54(1): 73-81.
- Jarvenpaa, S. L., Staples, A., Teigland, R. (2015). Editorial. *Journal of Strategic Information Systems*, 24, 45-48.

- Kale, P., J. Dyer and H. Singh (2001): Value creation and success in strategic alliances: alliancing skills and the role of alliance structure and systems. *European Management Journal*, 19(5), 463-471.
- Kane, G. C., Alavi, M., Labianca, G. & Borgatti, S. P. (2014). What's Different About Social Media Networks? A Framework and Research Agenda. *MISQ*, 38(1), 275-304.
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business horizons*, 53(1), 59-68.
- Karjalainen, T. & Snelders, D. (2010). Designing Visual Recognition for the Brand. *Journal of Product Innovation Management*, 27, 6-22.
- Kiron, D., Palmer, D., Philips, A. H., Kruschwitz, N. (2012). What Managers Really Think About Social Business. *MIT Sloan Management Review*, 53(4), 50-60.
- Kohler, T., Matzler, K., Fuller, J., 2009. Avatar-based innovation: using virtual worlds for real world innovation. *Technovation*, 29, 395–407.
- Koza, M. P., & Lewin, A. Y. 2000. Managing partnerships and strategic alliances: Raising the odds of success. *European Management Journal*, 18: 146–151.
- Krippendorff, K. (2004). *Content Analysis: An Introduction to its Methodology*. 2nd ed., Thousand Oaks, CA: Sage.
- Lam, H. K., Yeung, A. C., & Cheng, T. E. (2016). The impact of firms' social media initiatives on operational efficiency and innovativeness. *Journal of Operations Management*, 47, 28-43.
- Larsson, R., Bengtsson, L., Henriksson, K. and Sparks, J. (1998). The Interorganizational Learning Dilemma: Collective Knowledge Development in Strategic Alliances, *Organization Science*, 9(3), 285-305.
- Laursen, K., & Salter, A. (2006). Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms. *Strategic management journal*, 27(2), 131-150.
- Luo, X., Zhang, J. & Duan, W. (2013). Social Media and Firm Equity Value. *Information Systems Research*, 24, 1,146–163.

- Lynn, A. I. (2002). Managing an Alliance is Nothing Like Business as Usual. *Organizational Dynamics*, 31(1), 47-59.
- MacKay, R. B. & Chia, R. (2013). Choice, Chance, And Unintended Consequences In Strategic Change: A Process Understanding Of The Rise And Fall Of Northco Automotive. *Academy of Management Journal*. 56(1), 208–230.
- Marion, T. J., Friar, J. H. & Simpson, T. W. (2013). New Product Development Practices and Early-Stage Firms: Two In-depth Case Studies. *Journal of Product Innovation Management*, 29(4), 639-654.
- McIver, D., Lengnick-Hall, C. A., Lengnick-Hall, M. L., & Ramachandran, I. (2013). Understanding work and knowledge management from a knowledge-in- practice perspective. *Academy of Management Review*, 38(4), 597-620.
- Michaelidou, N., Siamagka, N. T., & Christodoulides, G. (2011). Usage, barriers and measurement of social media marketing: An exploratory investigation of small and medium B2B brands. *Industrial Marketing Management*, 40, 1153-1159.
- Miles, M. B., Huberman, A. M. & Saldana, J. (2013). *Qualitative analysis: A Methods Sourcebook*. Sage.
- Mingers, J. (2002). Can Social Systems Be Autopoietic? Assessing Luhmann's Social Theory. *Sociological Review*, 50(2), 278–99.
- Mingers, J. and Walsham, G. (2010) Towards Ethical Information Systems: The Contribution of Discourse Ethics. *MIS Quarterly*, 34 (4), 833-854.
- Miranda, S. M., Kim, I. & Summers. J. D. (2015). Jamming with Social Media: How Cognitive Structuring of Organizing Vision Facets Affects IT Innovation Diffusion. *Mis Quarterly*, 39(3), 591-614.
- Mount, M. P., and M. G. Martinez. 2014. Social media: A tool for open innovation. *California Management Review* 56 (4): 124–43.
- Pawłowski, S. D., & Robey, D. (2004). Bridging user organizations: Knowledge brokering and the work of information technology professionals. *MIS quarterly*, 645-672.

- Ramsay, M. (2010). Social media etiquette: A guide and checklist to the benefits and perils of social marketing. *Journal of Database Marketing & Customer Strategy Management*, 17(3), 257-261.
- Scott, W.R. (1992) *Organizations: Rational, Natural and Open Systems* Prentice Hall, Englewood Cliffs, N.J.
- Senge, P. M. (1990). *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday Currency.
- Sharif, A. M., Irani, Z., & Lloyd, D. (2007). Information technology and performance management for build-to-order supply chains. *International Journal of Operations & Production Management*, 27(11), 1235-1253.
- Silverman, D. (2000). *Doing qualitative research: a practical handbook*. Sage.
- Smart, P., Bessant, J., & Gupta, A. (2007). Towards technological rules for designing innovation networks: a dynamic capabilities view. *International Journal of Operations & Production Management*, 27(10), 1069-1092.
- Standing, C., & Kiniti, S. (2011). How can wikis be used for innovation? *Technovation*, 31, 287-295.
- Standing, C., Standing, S. Law, F. (2013). The Role of the Lifeworld Concept in Wiki Adoption and Use. *The Design Journal*, 16(4), 486-508.
- Urquhart, C., Lehmann, H., & Myers, M. D. (2010). Putting the 'theory'back into grounded theory: guidelines for grounded theory studies in information systems. *Information systems journal*, 20(4), 357-381.
- Wu, L. (2013). Social network effects on productivity and job security: Evidence from the adoption of a social networking tool. *Information Systems Research*, 24(1), 30-51.
- Wynn, D., Jr., & Williams, C. K. (2012). Principles for conducting critical realist case study research in information systems. *MIS Quarterly*, 36(3), 787-810.
- Yang, B., Watkins; K. E., & Marsick, V. (2004). The construct of the learning organization: dimensions, measurement, and validation. *Human Resource Development Quarterly*, 5, 31-55.

Yin, R. K. (2009). *Case study research: Design and methods (4th ed)*. Thousand Oaks, CA: Sage.

Zack, M. H. (1999). Developing a Knowledge Strategy. *California Management Review*, 41(3), 76-92.