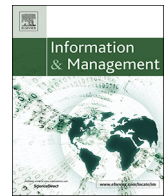




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Using social power and influence to mobilise the supply chain into knowledge sharing: A case in insurance

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ABSTRACT

The paper explores the antecedent effects of social influences arising from buyer power and supplier competition on knowledge sharing behaviours within a horizontal supply chain. A 2-year long empirical study examining web posts from a dedicated social supplier platform (SSN), together with interview and ‘conversational’ data over a similar time period was conducted within insurance claims. The findings show social power and influence play a powerful role in supporting knowledge sharing even in typically competitive supply chains where information and knowledge exchange is usually guarded.

1. Introduction

Organisational and supply chain knowledge and information sharing has always been considered pivotal in supporting market place responsiveness, and ultimately in achieving competitive advantage ([1]Tohidinia and Mosakhani [2]. Operational and supply chain outputs such as improved forecasting and reduced inventory levels [3], enhanced planning and decision-making [4], improved long-term relationships [5,6] and improved customer service [7], are often cited as tangible benefits from data, information and knowledge sharing across organisations and their suppliers. Additionally, a supply chain that supports knowledge sharing practices can lead to even tighter co-ordination among member organisations (Peterson 2002) and improved innovation capability, than a network with less effective knowledge sharing [8]. While many supply chain relationships share formalised data and information through integrated software systems (e.g. CRP, ERP, e-SCM and even e-mail) that enable knowledge exchange on a number of levels [9], collectively such systems present little opportunity for the effective capture of implicit knowledge such as insights, experiences, tips, opinions, ideas etc., [10]. Given the power of implicit and informal knowledge to enhance competitive value [11], it would seem critical that organisations within a supply chain share such knowledge in order to reap the benefits of the collective wisdom of the network. Finding the right mechanisms, however, for sharing such information and knowledge across staff (and across supply chains) has been a key issue for knowledge management research [12], and increasingly in designing knowledge management strategies across

networked organisations [13]. Recent evidence however, shows knowledge-intensive companies are beginning to consider web-based technologies such as ‘social networking’ as community-building platforms. These are mainly implemented ‘behind the firewall’ to facilitate communication and group processes, but also to improve cross functional collaboration and effectively share vital corporate knowledge across a range of business processes and people [7,14]. While the literature points to some early cases of the knowledge (implicit and explicit) transfer potential of social tools in industrial contexts, many of these recent studies [14–18] have employed small sample surveys to assess the role of social media tools for knowledge sharing. Often these empirical studies have demonstrated organisational benefits from implemented social media tools, but only as part of an internal knowledge management strategy e.g. RPC [14]; Siemans [15], CapGemini [16,17] and Vistaprint [18]. Furthermore, many of these studies have not fully accounted for the drivers of use, the forms of use and likely potential of such platforms as a technology to communication, knowledge sharing and information exchange, when extended across organisational boundaries to include supply chain partners. Understanding what factors drive organisational knowledge sharing becomes a critical precursor to knowledge management strategies. Incorporating supply chains into the mix has huge practical implications for managing knowledge across increasingly dispersed supply chain members.

As social media platforms and digital technologies become more commonplace across firms, it would appear particularly timely to explore this technology in relation to knowledge sharing across a supply chain network. However, as digital technologies may present a new set

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of opportunities to manage information and knowledge across supply chain practitioners, they also come with challenges, particularly as lessons learnt and the full potential of using these tools from other research endeavours in the supply chain are limited [7,13,19].

This paper explores an early case adoption of social media technologies for information and knowledge sharing within a UK home insurance claims supply chain. Typically, within any insurance claims scenario, there is a requirement for collaborative input, participation and decisions of many external stakeholders at different stages of the claims process. Much buyer supplier information that is shared in claims, is standardised explicit data distributed through automated and E-Systems, and is usually co-ordinated and controlled by the Principal (the insurer). Such systems typically do not allow for richer information and implicit knowledge gained from insights, experiences and stories, into the claims process easily. A social extranet could allow insurers who depend on complex processes of multiple individuals to exchange knowledge, ideas, and insights, and socially interact in order to potentially deliver a huge set of efficiencies and improvements (e.g. in customer service) and provide opportunities for rethinking core supply chain and internal processes [20]. Supplier's seeking to fulfil service 'claims' contracts might collectively use a social media-based knowledge platform to develop and improve their internal and the external supply chain efficiencies (impacting on claims fulfilment) through sharing information and knowledge on customer service, suggesting and finding solutions to common IT issues, discussing and learning about local regulation, training and quality issues (knowledge assets which do not compromise an organisations competitive advantage by sharing).

Supply chain literature, however, has identified key challenges to increasing knowledge sharing in supplier networks, albeit often from a single dyadic buyer–supplier perspective [21,22]. In particular, the literature highlights the risk of diffusion and capture of a firms' strategic assets. 'Typically, firms will guard their proprietary knowledge and only reluctantly share most information' [23]. Supply chain members are often reluctant to share information with other suppliers, or a buyer because of fear of opportunistic behaviour, i.e. partners exploiting information for self-interest. Companies may, therefore, refrain from sharing information unless prevention of leakage to competitors is guaranteed. In a similar vein, there is a risk that shared information may negatively affect the competitive position and bargaining power of a buyer or supplier in relation to their competitors [24–28].

Insurance claims supply chains face similar challenges in information and knowledge exchange. Typically, the first tier service supply base within 'home claims' is characterised by a weak, pooled type of interdependence between horizontal partners, who compete with one another to offer similar services. The insurer will co-ordinate claims fulfilment amongst a selection of suppliers with both different and similar capabilities. Supplier selection is made from a pool of competing suppliers (it can decide to have a large supply base, a few preferred suppliers or in-source the process), creating a buyer-dominant structure, or 'dominant player power' (Porter 1995). The insurer's power emanates from its control of the claims co-ordinating ability (resource) and direct relationship with the policy holder (Cox et al 2004). Vendors being dependent on this process must therefore bid for contracts, competing against one another in many areas of repair (resource-based theory). In Thompson, [29] terms, the partners make a discrete contribution to the supply chain as a system. Considering these factors, horizontal suppliers seem to represent a low percentage of volume and value in each other's portfolios, and therefore, have little or no influence over one another. Their products and services tend not to be unique, but services provided do fall into high volumes of claims (Cox [30]. Furthermore, vendor relationships (first tier) have little direct connection with one another. Without a direct connection, horizontal partners rarely, if ever, communicate, discuss business, or establish contracts for controlling information-sharing initiatives [9]. Finally, the fear of competitive advantages being lost to rivals means little

knowledge and information is shared across suppliers [30].

Given this set of circumstances, the research underpinning this paper seeks to explore whether social power and influence arising from buyer dominance in the supply chain, can act as an antecedent to facilitating engagement in, or intention to use, digital technologies in disseminating non-proprietary knowledge, inter-organisationally. The paper is structured as follows: the next section introduces background literature on information and knowledge sharing in social media contexts and outlines the analytical framework of the study. Thereafter, the case supply chain is presented including justification of the single case design and details of data collection and analysis. Next, the findings and a discussion of these results are presented. The paper concludes by drawing out managerial implications as well as pointing out limitations and future research opportunities.

2. Background and definitions

2.1. Knowledge sharing

This study follows the view that knowledge is *actionable information* [31]. In an organisational context, knowledge is produced when information is shared [32]. It is humans who interpret information, and depending on their capabilities and competencies, this information can become knowledge that makes (cognitive and behavioural) actions possible. A distinction is often made between tacit and explicit knowledge, with tacit knowledge (constructed by people) being highly personal and hard to formalise, making it difficult to communicate or share. Subjective insights, intuitions and hunches typically fall into this category of knowledge. Explicit knowledge on the other hand is knowledge that has been codified formally using a system of symbols or made tangible as a physical artefact, and can therefore be more easily shared [11,33]. Knowledge sharing is 'the act of making knowledge available to others' ([34], p. 41). It is a voluntary, conscious act between two or more individuals, resulting in joint ownership of knowledge between sender and receiver [34].

2.2. Social media

There has been much debate on what constitutes social media [35]; however, the literature seems to generally agree that social media are represented by a range of emerging tools (e.g. wikis, blogs) and platforms where users are able to share information and importantly collaborate and create networks of communities [36,37]. Given this, it appears that community-driven and information-centric social media tools have tremendous potential for organisations and supply networks to facilitate communities for information and knowledge exchange.

2.3. Social influence, social power and knowledge sharing

Existing social media literature highlights a number of variables frequently employed to study users' attitudes, intentions and actions in relation to social media adoption or engagement, either as antecedents, or moderators to usage and knowledge sharing. These overwhelmingly include social behaviour theories, especially social capital [38], social influence through identity [39], social loafing [40] and to a limited extent, social power, where power has been identified as an individual's influence to engagement in social media [41] or 'reach' as in 'a blogger's capacity to influence as many audiences as possible' [98].

Recent literature shows social influence has largely been examined from a socio-psychological perspective [42], and is often defined according to its effects on group or individual attitudes and intentions towards a certain behaviour [43]. Early cognitive behaviour models considered only a single aspect of social influence, namely subjective norms, reflecting social pressure from significant others to affect behaviour. The social influence underlying these subjective norms reflects the impact of directly felt expectations from other people [43].

Behaviour here is based largely on the need for approval [44], or through descriptive norms (a perception of attitudes and behaviours possessed by significant others), [43]. In the context of technology usage, social influence impacts on a user through the moderating effects of shared beliefs within the social environment [45], i.e. the behaviour of individual group members may be influenced by the role models they encounter within a group. Kelman [39] proposed three potentially overlapping modes of social influence, including compliance (subjective norms), internalisation (group norms) and identification (social identity), in the context of group behaviour. In certain situations, compliance can be particularly influential. For example, in determining a user's initial decision to use a technological platform which may support group activities, because the users have no prior usage experience, they are likely to rely more on prevailing subjective norms to decide whether to try out the new technology. However, once the user has started using the technology, internalisation becomes more prominent in determining continuing usage behaviour. After extended group usage, a sense of social identity may emerge which in turn will affect continuous usage behaviour. Kelman's [39] 'compliance' occurs when an individual perceives that another, wants them to perform a specific behaviour, and that behaviour is rewarded or punished according to compliance. Some research [46] highlights compliance to be highly significant as users with little usage experience with a system, will gain important information for usage decisions from their primary reference groups such as friends, and the influence of expectations from others. Bagozzi and Dholakia [47], however, found group-level influences that drove virtual community participation were not based on compliance (i.e. normative influence of others' expectations), but rather internalisation (i.e. similarity/congruence of one's goals with those of other group members), and identification (i.e. conception of one's self in terms of the group's defining features). This insignificant result for compliance is not surprising because participation in a community can be voluntary, and users can remain anonymous, so most users may not feel the need to comply with others expectations. Dholakia et al., [48] research supports this, with 'identification' and 'internalisation' to be salient social influences of the virtual community on member participation. Earlier research [49] and Kelley [50] have explored ideas of 'normative influence', a type of social influence leading to conformity (conform to be liked and accepted by others).

Whereas 'socio psychological' constructs, such as social influence can provide understanding of the dynamics of interpersonal relationships, and their effects on behaviour, the parallel concept 'power', has largely been ignored within this field of study. This is owing to the difficulties in defining and measuring it, [51], and because power can vary somewhat between partners across different (supply chain) relationships, as well as vary at different times, making specific measures on the balance of power within a relationship difficult. Despite these difficulties, however, it can greatly contribute to our understanding of inter-personal relationship dynamics and their outcomes [51,52].

Early research has sought to show the influence of social power on interpersonal dynamics from a number of viewpoints. French and Raven's [53] defined power as the potential to exert influence on another person. Social influence, in turn, is 'the process through which social power is wielded in interpersonal contexts via the use of different influence strategies and their underlying tactics' [51], resulting in a change in the beliefs, attitudes or behaviour of another person (the target of influence). Recent research has used French and Raven's [53] framework to classify six power sources in supply chain research [54,55] as sources of behavioural influence. These include reward, referent, coercive, legitimate, expert and recently informational power, which can be furthered categorised as non-mediated and mediated power sources. Non-mediated power sources are relational and positive and consist of expert and referent power [56]. Here, the target (recipient) firm decides whether and how it will be influenced by the firm wielding the power [55]. Past studies indicate that both expert and referent power have a positive effect and influence on supply chain

relationships through improved trust and commitment [54,55,57]. Mediated power sources on the other hand include coercive, legal legitimate and reward power. These power sources involve 'influence strategies that the source specifically administers to the target' with an 'intention to bring about some direct action' [56], Lui et al 2015). The application of mediated power is deliberately controlled by the firm exercising the power [55].

Whereas Benton and Maloni [56] argue that mediated power sources such as reward power on relationship outcomes are less influential than non-mediated and coercive-mediated power, the findings from power theory have been mixed, showing positive, neutral or negative results in different studies. While coercive power can influence behaviour in a target firm, it consistently shows a negative effect on behaviour. Legal and legitimate power show a negative or no effect, and reward power shows a positive effect on behaviour in most studies [54–56]. Reward power has also been viewed as a positive incentive to encourage performance improvement where both parties may gain—the rewarding firm gets better results and the receiving firm gets the reward [58]. Ke et al., [58] examined the causal relationship between the different types of social power and the adoption of electronic supply chain management systems (eSCMS) in dyadic conditions of an inter-organisational system. Excluding referent power, all other sources of power had direct effects on the adoption intention of e-SCM systems under the mediation of coercive pressure, normative pressure and trust. Similarly, Oke et al., [59] examined social power around a new product development (NPD) process within a supply chain network-based environment and found reward power plays a significant role in changing behaviour.

Institutional pressures arising from an asymmetric power position also have been examined in the light of information systems usage. A dominant player within a supply chain can proactively exercise its power to shape institutional pressures to serve its own interests [60] and thereby ensure compliance to information sharing within implemented information systems.

Interestingly, much research exploring influences on knowledge sharing intentions, links rewards, incentives, reciprocal and/or reputational benefits to behaviours [61]. Knowledge sharing incentives based in personal gain (payoffs) derive from evolutionary biology and neo-classical economic theories that emphasise the importance of self-interest to biological, genetic [62], and economic advantage and survival (e.g. agency theory). This can be attributable to anticipated monetary rewards, and/or promotions arising from knowledge sharing [97] and reputation building [63]. Traditional agency and neoclassical economic models argue that providing performance-contingent financial incentives induces desired behaviour, including knowledge sharing. Thus, having a belief that sharing knowledge will result in financial and/or professional gain will actually increase knowledge sharing. Similarly, reputation building, measures the degree to which participants believe that knowledge sharing will enhance their reputations [63]. Users to a system who believe knowledge sharing will enhance their reputations should be more willing to share their knowledge, because they perceive that sharing their knowledge will enhance their social position or rank [64]. Behaviour can therefore be externally 'influenced' or encouraged in order to gain an external (or intrinsic) reward (such as an incentive, promotion, reputational or reciprocal benefits or praise) or to avoid something undesirable such as criticism [65].

The literature has highlighted the effects of social power and social influence according to effects on individuals, and group attitudes and intentions to behave in a certain way. It demonstrates that social influence can manifest itself through a process whereby social power is wielded, using different influence strategies [51]. Social influence strategies can therefore produce 'a change in the beliefs, attitudes or behaviour of the target of influence' [51]. In this research we suggest such strategies can take the form of insurer led notifications around supplier performance. Given this, social influence can be measured by

a) the number of these ‘notifications’ on the social supplier platform (SSN), and b) the supplier’s reaction to these notifications. Furthermore, French and Raven [53] theorise that the reaction of the recipient agent is the more useful focus for explaining the phenomena of social influence and power. Therefore, changes in supplier behaviour and attitudes to knowledge sharing (measured by the number of knowledge/information assets posted) are examples of the effects of social influence and power in the supply chain under investigation.

2.4. Gap in the literature

Much social media literature has indicated the importance of individual and group influence on the user in determining, facilitating and promoting acceptance and usage of social media communication, intra-organisationally [66,67]. However, limited empirical research has been conducted on the inter-organisational effects of social influence and power within a social media environment [42]. Where research has occurred, a mixture of results in the adoption and usage behaviour of social media systems for information and knowledge sharing has resulted [68]. Given the impact of knowledge sharing on supply chain performance, and its increasing attention and importance in recent years [69], with buyers and suppliers requiring ongoing knowledge exchange to mutually enhance their competitiveness [70], it would appear timely to gain a deeper understanding of and explore key antecedents to such behaviours.

This paper therefore explores information and knowledge sharing behaviour within a social media platform amongst a pool of weakly connected service suppliers to a principal insurer over a 2-year period. The paper builds on earlier research [7] by exploring ‘loose’ constructs of social power and influence identified in conversations with suppliers after a year of platform usage. These constructs, are now explored in detail within the web conversations and interviews with a significantly larger sample of participants, over an extended period of time. Indeed, in Grant’s early research (2016), while social influence and power were not explored as such, conversations with users suggest these key constructs are a useful starting point to focus and bind the research, with the view that they will change as our understanding develops in this extended study. These social influence and social power constructs include group-level influences on a users’ goals [47]; identification with a group’s defining features [47]; compliance (Kelman 1979) and ‘reward power’ [55,56].

A contribution of this research is to provide new and useful insights into antecedents (social influence and social power) to knowledge sharing behaviours in supply chains, as well as provide insights into types of social influence and social power driving knowledge sharing across network users. As such, the exploratory study seeks to contribute to the literature in the area of organisational social media usage, social power theory and supply chain behaviour theory by empirically identifying inter-organisational usage behaviour and the different sources of social power and social influence driving knowledge sharing from the experiences of users.

In meeting our research objectives, the following question was posed.

How does, and what types of ‘social power and social influence’ drive inter-organisational users’ behaviours to share knowledge across a social media platform?

3. Methodology

In order to address the research question, a case study approach was adopted [71]. While the study was exploratory in nature, it was useful to focus and bind the research using general themes or constructs of social power and social influence [72], with the expectation that these constructs may change as data from web-based conversations and interviews were iteratively collected and analysed. As constructs of social power and social influence ‘*subsume a mountain of particulars*’, containing

many discrete events and behaviours’ [72], a focused case study approach was deemed appropriate. This would allow us to capture important contextual information, which could offer clues and insights into understanding the constructs as antecedents to knowledge sharing, with minimal control of the observed behaviours [71,73,74]. At the same time, the case approach forces the inductive researcher to be selective, and assists in ‘deciding what information should be collected and analysed, at least at the outset’ [72]. As Wolcott [75] put it, ‘it is impossible to embark upon research without some idea of what one is looking for, and foolish not to make that quest explicit’ (pg. 157). The case study approach also provides depth of understanding of the phenomenon under study as it enables collecting rich data from multiple firms within the supply chain [76]. It allows the capture of multiple perspectives and views on the antecedents driving information and knowledge exchange, through the medium of web-based conversations and interviews. Indeed, web- and interview-based data and analysis at the network level provided some understanding of the interconnections between firms and the drivers to knowledge sharing across users. The unit of analysis was defined as social power and social influence. These constructs are used in relation to their role in facilitating knowledge sharing in the delivery of a physical service.

3.1. Case selection

The case was considered ‘critical’ [71] and selected on the basis that it was likely to ‘yield the most information and have the greatest impact on the development of knowledge’ [77], p. 236), in understanding social and power influences on knowledge sharing, using a social media platform. The global insurer had worked over a period of time to find routes to information and knowledge sharing across the home claims insurance in an attempt to create a more sustainable customer centric supply chain. Given these systematic efforts to improve information and knowledge sharing in the supply chain, it could be argued that if it is not going to happen here, it will not happen anywhere [77] pg. 236. In the light of this, the choice of this critical case should permit logical generalisation and maximum application of information to other cases [77]. Furthermore, the area of home claims insurance was selected (by the insurer) as being ‘the most advanced in terms of supplier’s likely willingness to share information and knowledge across areas of insurance’, and therefore, most likely to yield meaningful data. This means the impact of social influence and power on knowledge sharing behaviours is most likely to be visible within this critical group. The insurer was keen that any lessons learnt from the research in the home claims area could be applied to other areas of insurance.

3.2. Profile of participants

The claims supply chain case incorporated weakly interconnected dyadic relationships between the principal (insurer) and many first tier service suppliers. The insurer was the largest participant in the trial, with 55 senior and middle management personnel mainly from procurement and sourcing taking part. The participating ‘principal’ was a general insurance company operating in the United Kingdom, employing approximately 19,000 employees across a number of cities, including approximately 800 plus home workers making up around 15% of the UK workforce. The management structure within the company for home claims insurance consisted of a head of field operations, senior sourcing managers, supply chain relationship managers, supplier relationship management principals, sourcing analysts and sourcing specialists. On the supply side, customer claims would typically be serviced by small and medium sized enterprises (SMEs) across the UK. Vendor participants included 110 suppliers offering services in: alternative accommodation, drainage providers, loss assessors, furniture replacement, engineering and surveying consultants, claims management/handling services, locksmiths, glazing, security services, floor repair, restoration and inspection, subsidence and goods replacements

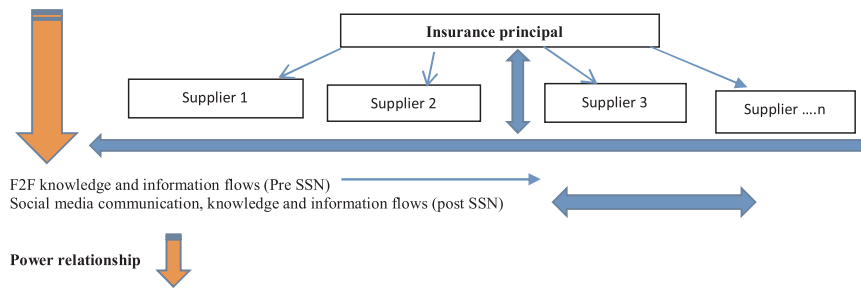


Fig. 1. Horizontal suppliers to home insurance claims (typical power and information claims flows pre and post SSN).
F2F knowledge and information flows (Pre SSN) Social media communication, knowledge and information flows (post SSN).
Power relationship.

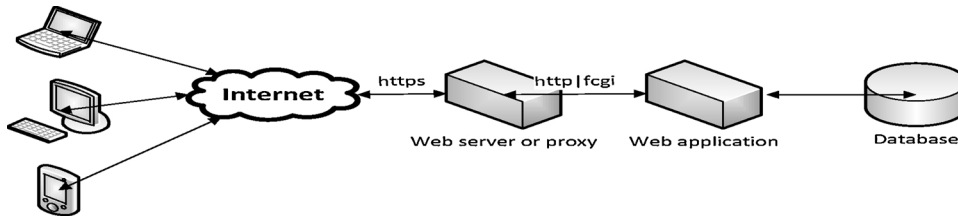


Fig. 2. High-level system architecture of the SSN platform [7].

suppliers. Participants included senior executives and managers, company directors, chief executives, managing directors, operations directors, one chief operating officer and heads of operations. Many of the vendors had worked on the same claims fulfilment teams and knew each other well. In general, while the Insurer's relationships with suppliers to the network were described as 'preferred', they were not identified as being 'long term or durable'. Suppliers in the main did not provide unique products or services, and it was possible for the insurer to switch to other partners, as switching costs were low. The above characteristics indicate a weak, pooled type of interdependence between horizontal partners, and conform to Porter's buyer power perspective which demonstrates buyer power is High/Strong in relation to suppliers [78], (Fig. 1).

Typically, within this supply chain, claims information and knowledge has flowed from principal to supplier as shown in Fig. 1. However, the insurer's developing culture to promote supply chain teamwork and the sharing of knowledge amongst its preferred suppliers (and employees), includes a strategy which encourages increasing social interaction among its home insurance supply base and sourcing and procurement teams.

4. Data collection

In order to explore the effects of social influence and power on knowledge sharing, data were collected using semi structured interviews, web-based communication (posts) and conversational data at workshops and secondments.

4.1. Web-based data

To understand meaning from the communication taking place as well as the likely drivers to knowledge sharing across the social platform, it was necessary to tap into an entire home claims supply chain that has undertaken to trial a customised social media platform as a knowledge sharing facility. From the outset, the SSN platform was designed to capture 'the collective wisdom of the supply chain', and become an 'omniscient' tool (Muller 2007), aiming to network supply chain vendors and the insurer across geographical and organisational boundaries. Its usability is simple and intuitive, the result of users and stakeholder's requirements in the consultation phase of the research. Currently users participate on a purely voluntary basis, although to strengthen the knowledge sharing culture, active participation in the

'supply chain community' could be an integral part of working processes and business-targeted agreements by participants. The platform consisted of a message and blogging facility. Data were collected directly from the SSN and included more than 3000 posts over a 2-year period.

The SSN is a browser-based platform, designed for the exchange of business-related knowledge, experiences, insights, advice and best practices and which revolves around the concept of multiple posts (streams), to which users can be added on a case by case basis. The high level system architecture of the platform is depicted in Fig. 2 and is that of a typical Ajax web application – web client (browser) - web server – data base. For technical and security reasons, the web server application was deployed behind a reverse proxy or as a FastCGI process. The database server is a separate, standalone server such as MySQL, PostgreSQL, MSSQL or an in process database like SQLite. For relatively light load (< 1000 users, < 50,000 requests/day), SQLite is adequate, and simplifies deployment.

The SSN platform was hosted on the insurer's servers and launched on 22nd May 2014, after a period of marketing. The main network consisted of 215 users after 24 months, with an expectation of growth as vendors from other areas of insurance joined. The insurer was instrumental in facilitating the field trial of the SSN platform through their vendor base in home insurance services.

An aim of this research was to explore how social power and social influence drive knowledge sharing intentions and behaviours of users on an interactive social platform. Given this, we selected content analysis as a suitable technique, as it enabled us to explore meanings, underlying physical messages, and identify the intentions of an individual, or group, as well as describe attitudinal and behavioural responses to communications [79]. Content analysis has been defined as a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding [80]. Holsti [81] offers a broader definition as, 'any technique for making inferences by objectively and systematically identifying specified characteristics of messages' (p. 14). Qualitative content analysis goes beyond merely counting words or extracting objective content from texts, to examine meanings, themes and patterns that may be manifest or latent in a particular text. It allows the researcher to understand social reality in a subjective but scientific manner [82]. As such it is particularly useful in order to reveal people's information-related behaviours and thoughts within the supply chain as they engage in web-based conversations and activity, and present their reasons for social

media usage. Furthermore, content analysis enables researchers to sift through large volumes of data with relative ease in a systematic fashion [83]. It also allows inferences to be made which can then be corroborated using other methods of data collection. In this study, we do so by supplementing web-based data with interviews from 30 platform users to corroborate our findings (Krippendorff)[80].

Carrying out content analyses, however, requires the researcher to be mindful of a number of potential biases that may arise in the process. For example, synonyms in text data may be used for stylistic reasons throughout a document and may lead the researchers to underestimate the importance of a concept [84]. Also, each word may not represent a category equally well. As there are no well-developed weighting procedures for this method, using word counts requires the researcher to be cognizant of this limitation. Finally, in performing word frequency counts, the researcher needs to be aware that some words may have multiple meanings. Given these potential biases, the researchers adopted the following rule: to use word frequency counts to identify words of potential interest, and then to use a Key Word in Context (KWIC) search to test for the consistency of usage of words. Software such as NVivo 11 allows the researcher to pull up the sentence in which that word was used so that he or she can see the word in context. This procedure strengthens the validity of the inferences that are being made from the data.

5. Web data analysis

5.1. Content and genre categories

Since the platform launch in May 2014 until April 2016, the data set included over 3500 references around a subject from a total of over 3000 posts. The data set was imported to the qualitative analysis software NVivo for text coding and analysis after 24 months of platform usage.

The coding process involved classifying data according to genre and content. Prior to undertaking coding, however, coding units were established. This was carried out by defining units according to their physical natural borders [80]. For instance, web conversations are a series of interactive paragraphs of texts between users. Each user's response or post would represent a unit. An emergent coding approach was then adopted, whereby categories were established following an initial independent review of the web conversations. In order to ensure reliability, a set of explicit coding scheme instructions were developed by two coders. These instructions allowed a third coder to be trained until reliability requirements were met. The steps in the analysis process included initially devising a set of features that formed a checklist. The researchers then compared notes and reconciled any differences that showed up on their initial checklists. Subsequently, the researchers used the consolidated checklist to independently apply coding. In addition, a set of coding training sessions were set up between the two main coders and typically involved several practice coding sessions to establish good initial reliability in a pilot test. Changes to the checklists and instructions were made during the pilot test, if instructions were deemed unclear.

The researchers set about devising categories according to the following rule: 'A category is a group of words with similar meaning or connotations' [84], p. 37, and must be 'mutually exclusive and exhaustive' [83], p. 20. Mutually exclusive categories exist when no unit falls between two data points, and each unit is represented by only one data point. The requirement of exhaustive categories is met when the data language represents all recording units without exception. In following this, any deviations or overlaps in categories were discussed by two researchers and conflicts were resolved by either adding a new category, splitting an existing one or merging two categories, or re-coding previously coded posts. For genres classification, an intention-orientated genre scheme was devised [7] to classify data according to whether it represented 'Shared insights, past experiences, ideas, stories,

advice, opinions' (Category 5); Posts containing factual information on a particular process, survey, schemes, initiative, feedback, results of a survey that have been involved with, case study, report and URLs (Category 4); Updates and notifications (Category 3); Questions', directed knowledge/info seeking (Category 2) and posts whereby the author posted something about him/her-self, including what he/she was doing in work (expertise) or self-introduction(Category 1).

As part of the coding process, the researchers also devised a scheme, underpinned by the intention-oriented schedule, to reflect degrees of 'tacitness' and explicitness within posts (tacit knowledge versus explicit knowledge (and information)). The scheme 5 > 1 > 2 > 4 > 3 was designed to highlight degrees of 'implicitness' within genres along a knowledge spectrum. Genre 5 included a wide range of examples of tacit knowledge, including experiences, insights, knows how, tips, opinions, stories and hunches [11,33]. These examples were mostly found in discussions between users. This genre was placed at one end of the tacit-explicit knowledge spectrum. Genre 1, the 'self' category, was also deemed to include tacit knowledge in the form of know who. This came next on the spectrum, as it was limited to 'know who' only. The 'information rich' genres 3 and 4, included knowledge and information that were more explicit and concrete in nature. Genre 4 was considered to contain explicit knowledge (e.g. processes, schemes and feedback), whereas Genre 3 representing notifications and alerts, and was considered to be 'information heavy' and was placed at the other end of the spectrum. Questions (Genre 2) could elicit both an explicit or implicit response, and were placed between the more tacit and explicit categories.

Coding this data into the relevant genres, involved a systematic process of cross-checking the coding strategies to be used, followed by an interrogation of the data. Two researchers were involved in independently coding the posts, with a third researcher coding every seventh line. In all but six posts, there was substantial agreement across the interpretation of the data. The third coder was employed to independently code 'problematic' posts, of which there were six. In three out of the six cases, one of the researchers' original interpretations had shifted when they revisited the posts, to concur with the other two researchers. In the remaining three posts, no clear agreement was reached. All three coders were then involved in a discussion around splitting posts (coding units) into individual sentences which could be categorised to better fit the genres. In the event of no agreement after splitting coding units, a fourth independent experienced researcher would be employed to cast an eye over the remaining problematic posts, and provide their interpretation. Finally, if the disagreement over 'tacitness' was not resolved by a fourth coder, the final three posts would be removed from the data set entirely. Agreement over 'tacitness' was only reached after a fourth coder was employed in two of the cases. One post was removed from the analysis.

Similarly, within content categories, there was some disagreement over posts relating to some themes, in particular disagreement over the 'supplier process categories'. Following a similar strategy to the process above, all three researchers agreed to split the category to include 'Supplier Processes-Services', 'Supplier initiatives, process and schemes' and a third claims-specific processes category. The new categories allowed the data to better fit, according to whether it was a claims-specific, general supply chain or a supplier initiative process.

Following the categorisation of web content, and a process of cross-referencing with the researcher categories, 18 single 'themed' categories emerged and a 19th category was generated as miscellaneous. This included posts that didn't fit into any defined category. While most posts were coded as single instances of a content category, several messages contained more than one category. All posts over the 2-year period were included in the content categorisation.

A reliability subsample was used given the vast quantity of data that was generated. The subsample made up approximately 25% of the total data gathered [85]. For the reliability subsample to accurately reflect the full sample, the researchers purposively included certain variables

(e.g. expectations, internal processes, training and insurer goals), for which the incidence in conversations was low, and therefore, a reliability subsample was unlikely to include any. This ensures the occurrence of key characteristics in the reliability check, which otherwise may result in a misleading 100% agreement between coders who may uniformly code the absence of these units. Both coders received the same units to code, but worked independently not to influence the other.

The Kappa coefficient was used to measure coding agreement between the two raters who coded and rated the messages. If the level of reliability was not deemed acceptable, then the previous steps were repeated, until reliability was established. Initially, the Kappa statistic was computed to be substantial at 0.62. A combination of better defining the categories and repetition of the former steps was carried out until inter-rater reliability reached above 0.8 on Cohen's Kappa scale (final reliability). [86] pg. 91 indicates a widely accepted rule of thumb' of correlation coefficients exceeding .75–.80 to indicate high reliability.

In order to cross-validate the results from content analysis, a group of suppliers and insurance staff were consulted separately about the findings from the data and the inferences made. The extent that the results were aligned between both groups is an indication that the findings are meaningful and valid. In addition, validation by incorporating multiple sources of data, web data, informal workshop discussions and interviews, lends credibility to the findings [87]. Rival explanations were actively considered and brought up for discussion at workshops, and in all but two cases, respondents argued these rival explanations were possible but not likely. The findings from the interviews (discussed below) were shown to produce converging conclusions.

Following the processes outlined above, Table 1 was constructed. It shows the majority of threads relate to conversations built around 19 themes, which include both direct work and indirect work-related topics. Direct work topics included weather (in the context of home insurance), and 'the customer journey' as most popular topics of conversation in year 1. Non work related topics included fundraising, social media, politics and technology.

The data within Table 1 show how 'content' on the platform has evolved over a 2-year period. The fall in posts around the topic of 'social media networking' in year 2, reflects a growing maturity in the use and understanding of social media technologies across users. This is

understandable given the platform has been a key topic of conversation in the early days since launch. The other largest fall in weather-related content has arisen as this subject now takes place within a dedicated 'operations and supply chain' group, rather than through the main network. The significant rise in posts around the themes of 'Customer Journey stories' and 'Customer feedback' 'Supplier initiatives, Processes and Schemes, supplier awards and NPS tables reflects the increasing interest in key operational and strategic business objectives of the insurer.

'Social' as a theme has also experienced a rise over the 2 years. Non-work-related social chat had risen over time as users became more familiar with the platform and one another, and were more willing to communicate more readily with each other. While this does not suggest direct exchange of knowledge across users, it can be argued that 'social chat' can promote successful exchange of information and knowledge as social capital develops. Indeed, research has shown that social networking can enable effective communication necessary for the exchange of knowledge, [88], or the development of cognitive social capital [89]. A shared background can emerge that makes the world intelligible and can provide the foundation for all other knowledge work to happen [88], as well as a shared context to understand and interpret correctly other people's questions, problems, requests for ideas and others' input [16]. Social networking platforms can also enable coordination and alignment of immediate shared work and tasks across staff, providing a project manager role [16] and create unstructured storage space, where information (e.g. reports, files, video's, etc.), can be accessed by a tagging and search function [16].

Miscellaneous posts have fallen to zero as conversations have become more targeted in year 2.

5.2. Sample subset

In addition to identifying themes and topics dominating the conversations over the 2 year period (Table 1), it was important to closely analyse the meaning of the conversations, and therefore, gain an understanding of the influences being exerted on users. This was carried out using 'Key word in Context' (KWIC) analysis. KWIC [90] is a data analysis method that reveals how respondents use words in context by comparing words that appear before and after 'key words.' This type of analysis identifies how one uses the word(s) in context, through the detection of formulaic expressions and repeated word patterns, which

Table 1

Broad Content categories and frequency over 2 years over the main network with % changes.

Content	Frequency across users (%)		Change in number of posts	Percentage Change
	Year 1	Year 2		
Themes				
Social Media Networking/SSN platform	16.70%	1.20%	-99.92	-13.15%
Weather	14%	1.02%	-81.93	-10.78%
Technology/software	10%	1.50%	-42.25	-5.56%
Fundraising	8.10%	4.25%	34.07	4.48%
Customer Journey stories and Customer feedback correspondence	7.90%	19.70%	383.21	50.42%
Supplier initiatives, Processes and Schemes	7.30%	21.30%	423.77	55.76%
Supplier Processes-Services	7.03%	2.66%	6.42	0.84%
Wider Industry issues: e.g. Regulation	6.40%	1.60%	-12.64	-1.66%
Claims Processes	4.45%	4.90%	76.43	10.06%
Supplier Awards	4.49%	11.52%	225.08	29.62%
The insurer and their internal Processes	3.42%	4.28%	70.31	9.25%
Education and Customer service/insurance Training	2.81%	1.09%	3.17	0.42%
Politics	1%	0%	-6.84	-0.90%
Insurer goals, including KPI's	0%	2.60%	56.98	7.50%
Supplier profiles (generated by the insurer)	0%	2.61%	58.50	7.70%
NPS league tables	2%	11.19%	235.06	30.93%
Supply chain articles (non-insurance-based)	0%	1.60%	36.00	4.74%
Social	1%	6.99%	151.20	19.89%
Miscellaneous	3.50%	0%	-26.60	-3.50%
	100%	100%	1490.00	196.05%
Total posts	759	2302		

some qualitative researchers refer to as an analysis of the culture of the use of the word [90]. Often with data that seem uninteresting, KWIC can help identify underlying connections that the participant was implying through her/his correspondence or speech, and thus test the consistency of what is meant in conversations.

Given the large number of threaded and single posts in the 24 months since platform launch, and the difficulties in analysing this vast data set, a 6-month sample across the 24 month of use was considered sufficiently large to gain a deeper understanding of meaning, intentions and behaviours within the user group. Additionally, as the authors wanted to understand the context associated with key words, it was felt that running the entire corpus through a computer programme, could underestimate the salience of key words and fail to indicate their true meaning.

A sample was randomly generated using excel and consisted of both single posts and threads. Whilst time consuming, random sampling has a key advantage of removing researcher bias, and should result in representative samples [91]. Random sampling resulted in a total of 503 posted messages. In the first instance, posts were categorised into broad themes, (many of these themes were easy to identify after the initial content analysis exercise carried out in Table 1). The researchers, however, agreed to merge the smaller theme of ‘insurer expectations/strategy/goals’ and ‘internal processes of the insurer’ theme, (in Table 1) into one broad theme entitled ‘the Insurer’s strategic and operational processes’. The original smaller category ‘internal processes’ generated only seven posts in the sample, and fitted well within the larger theme of ‘insurer strategy/operations strategy’. Another theme (supply chain articles), identified in the initial categorisation of the data, did not produce any posts in the sample. Themes were also categorised according to whether they represented work or non-work posts, and sub divided into insurer- and supplier-led posts.

All 503 posts were scrutinised in all their contexts, by the same two researchers to identify common/recurring or key words. To perform a KWIC analysis, the researchers read through the data and identified words that were used either frequently throughout the data set (i.e. a posteriori) or in an unusual manner. Keywords and key phrases are depicted in Table 2. Adjectives and verbs appearing frequently either before or after a keyword included ‘delivering’ ‘centricity’, working towards, helping us, providing and solving etc. enabled the researchers to refine the meaning of the sentences. Similarly, words such as ‘a’, ‘of’, ‘in’, ‘to’, ‘the’ etc. which preceded or followed key words or phrases, allowed the researchers to see consistency in meaning of sentences, as was the case with high-frequency keywords such as ‘a’ professional (person), or ‘the’ professional (service), ‘customer’ and ‘performance’. Some of the keywords have been used in the identification of themes in Table 1, through their frequency of appearance in coding units, and therefore, are closely linked to themes and categories identified in an earlier stage of the analysis. In particular, the prominence of the phrase ‘delivering customer service’ and the key words ‘customer’, ‘service’ appeared with the highest levels of frequency across the themes of ‘Insurer’s service strategy, supplier awards and Net promoter scores, thus suggesting occurrences greater than chance [90].

As before, a consolidated coding checklist was devised to support the analysis. The original two researchers reconciled any differences in the consistency of the meaning of the posts. A third coder was used to randomly code this material using KWIC (every fifth line was coded for context), as well as to seek to resolve any disagreements across the two main coders. For some coding units, context was relatively straightforward as the insurer used a specific format to announce ‘awards’ and ‘NPS’ winners within league tables. In other units, this proved more difficult and generated disagreement about the overall meaning of a post. This was particularly the case when key words such as ‘performance’, ‘experience’ and ‘customer’ appeared repeatedly across a number of themes but in different contexts. In these cases, (seven in total), posts were discussed and re-visited by all three researchers until agreement over meaning was achieved. In general, disagreements

between the first two coders were easily resolved by the third coder, with little need to engage an additional coder to the process.

The data were then coded into one of three overarching themes, with two themes reflecting work-related posts, and a third theme for non-work-related posts. This is depicted in Table 2, where material concerning ‘supplier performance’ (themes 1 and 2) accounted for more than 70% of the posts on the site, and just over 25% of material related to ‘social chat’ (theme 3).

Table 2 shows that in the 2 years of running the SSN platform, almost 40% of communication was related to supplier performance, from a vendor’s perspective. These supplier posts demonstrated capabilities and resources through positive reports of customer feedback, good news customer stories and supply chain schemes and initiatives. Customer journey stories and customer feedback made up more than 20% of all these conversations, and often encompassed examples of actual ‘feedback’ emphasising customer satisfaction from speed and quality of service. Sharing evidence-based posts, showcasing actual ‘customer service achievements, or case studies demonstrating proactive customer/process-based schemes and initiatives, could be interpreted as a form of ‘influence marketing’ of one’s current capabilities and resources.

Insurer-led posts typically emphasised delight at vendor achievements through NPS scores, meeting/or exceeding key performance targets, setting new benchmarks in customer service and positive changes in the supply chain through innovation (‘Supplier awards’ theme). Within the ‘customer service expectations and strategy’ category in theme 2, the frequent use of ‘our’ before keywords such as vision, cause, strategy, needs and operations can be interpreted as reinforcing the company goals, targets and vision across its dependent partners. While the language suggests the supplier is made aware of these goals, it simultaneously implies a degree of leadership (and dominance/influence) in the direction of supply chain performance.

Both insurers’ and suppliers’ posts (themes 1 and 2) which highlighted improvements to the customer experience were motivational or supportive in nature. This can be seen through the keywords and phrases (your support; your commitment; first class work; well done! grateful; unparalleled; excellence; appreciate; acknowledge, is testimony of).

A third theme (non-work) entitled ‘other’ included ‘good natured’, friendly, posts around team-based social and non-work-based activities. Just over a quarter of all conversations in the sample, fell into this theme. The split between work and non-work posts, confirms the platform is primarily used for work-related activity. However non-work posts demonstrate that social aspects across users remain strong. Previous research [88,89] has demonstrated the value of this type of interactive communication in the work environment. This can be through building relationships and teamwork (through holidays, joint fundraising activities and work events), encouraging empathy with others and enhancing openness, which can lead to knowledge sharing through building social capital [38].

In addition to understanding the overall sentiment and inferences of the posts through KWIC, it was also important to explore how the platform was evolving and what (if any) role, modes of engagement played in influencing knowledge sharing within the network. Therefore, a third stage of analysis was conducted, which involved exploring the changes within the different genres across users over a 2-year period. The data are depicted in Table 3.

The table reveals main changes to the mode of engagement occurred in ‘notifications’, which experienced explosive growth by approximately 80% in year 2. In contrast, while discussions (opinions, viewpoints, attitudes stories etc.) were the most popular mode of engagement on the platform in year 1, their growth was less significant at approximately 35% in year 2. Factual information posts, experienced high growth at just over 61%. Posts on ‘Self’ were the only genre that fell.

Table 2
Key content themes, with context (6-month random sample).

Key coded units resulting in 503 posts.	Counts	Frequency	Keywords/phrases
THEME1: Supplier initiatives and Schemes (Vendors-initiated posts)	70	13.91%	Solution, processes, supply chain; Change, improvements; performance; mitigation, design, customer focused, provide
Claims fulfilment processes/performance	18	3.57%	Performance, lead time, process, teams, claims, customer
Customer Journey stories and Customer Feedback	105	20.87%	Customer Obsession, satisfaction, support, strong, professional, Journey, I; prompt response, experience, thank you, grateful, concise, reliable, first class work, unparalleled, excellence, mitigate disaster, deliver, we, reputation.
Total		38.35%	
THEME 2: Supplier performance (insurer-initiated posts)			
Supplier Awards (insurer-generated): Included monthly awards to recognise key achievements aligned to their '2020 strategy' under the headings related to Customer Obsession, Our People, Simplify and Focus	62	12.32%	Congratulations (!); winner (!); rewards, accolade; obsession, focus, People, Simplify, Achievement; well done, strategy; willingness, consistent (with), obsession, excellent, improvements, fantastic, quality, (a) reflection (of), appreciate; customer service; acknowledge; well deserved, aligned; better understanding, key, drive; customer experience; proactivity; teams; importance (of); (our) view. (our) strategy, (our)Vision, (our) needs, commitment (to), '2020 strategy', common cause, (our) objectives; Operations, expectations, goals, helping, processes, customer service; demonstrates (our).
Insurer's Customer Service expectations/strategy/goals/processes: The Insurer customer service strategy (part of '2020 strategy')	49	9.74%	Ability, welcome, keen, Focus, customer obsession; Top, measure, strategy, improvements, service, customer; delighted (to)(by), like (to); announce, monthly, scores, movement, Performance; we.
Supplier profiles	4	0.79%	Forecast, weather, surge, notices, alerts.
NPS league tables	45	8.95%	Age UK, social, Event, invited, holiday, fundraising, activity, everyone.
KPI's Customer service and claims efficiency orientated. Customer service claims KPI's (attempted contact with customer; initial visit, works completed invoicing, etc.) customer claim experience, high level of quality in customer service KPI's, consistent performance, meeting customer's needs, customer obsession, improving customer journey) Efficiency KPI's: Non claims lead time management, cost management, change of process or system enhancements that remove waste out of process, reduce touch points or remove bad demand.	10	1.98%	Lead time (reduction); Efficiency; performance, experience; service; waste Cost (reduction) waste; management.
Work (other) surge, weather	7	1.39%	
Total		35.17%	
THEME 3: Other (all users) ('social', 'fundraising', social media etc.)	130	25.84%	

Table 3
Changes in Genres over 2 years.

Genres	Year 1 (posts)	Year 2 (posts)	% change
Discussions (5) K	30% 228	21.9% 492.7	Up 34.8%
Notifications (3) I	17.8% 135.3	33% 742.5	Up 79.9%
Factual information (4) I; K	23% 174.8	28.6 643.5	Up 61.6%
Questions (2) I/K	26.9% 204.4	18.7% 420.75	Up 28.46%
Self (1) K	2.1% 16	0.1% 2.25	Down 1.81%
Total Posts	759	2302	

K: Knowledge (Explicit or Implicit); I: Information.

5.3. Social influence and social power

In this research, we have suggested social power and influence can be measured by

- (i) influence strategies- this could include the number of

performance notifications/award notifications and

(ii) the number of reaction(s) of the recipient agents to these strategies [53].

In order to gauge the degree of social influence and power as measured by notifications and reactions across users over a 2-year period, it was necessary to generate a matrix bringing together the key 'content' themes (Table 2) arising from KWIC, against modes of engagement (Table 3). The resulting matrix is depicted in Table 4.

5.4. Genre 3- Notifications

Table 4 reveals 37.69% (331 out of 878 posts) of notifications over a 2-year period were insurer-initiated around supplier awards or NPS achievement. The remaining 62.31% of notifications were split between 13 other content themes in Table 1. Of these themes, 'politics' was the only subject that did not appear as a notification. This suggests over a third of notifications were based around just two indicators of supplier

Table 4
Genres and key (context) theme matrix.

Genres total posts and percentage of total posts over 2 yrs.	Demonstrating Customer service excellence: supplier (reply/comment to insurer notification) (ii)	Demonstrating Supplier supply chain initiatives: Supplier (reply/comment to insurer notification) (ii)	Highlighting Supplier Awards performance in 4 areas: Insurer-led Post (i)	Highlighting NPS performance: Insurer-led post (i)
Discussion 721 posts	174 posts	124 posts	66 posts	76 posts
Notifications 878 posts	–	–	172 posts	159 posts
Factual 818 posts	299 posts	311 posts	–	–
Questions: 625 posts	39 posts	110 posts	61 posts	37 posts

performance, and specifically around customer centricity. It is therefore suggested, insurer-led notifications are used as a strategy to bring to the attention of suppliers the importance of customer service performance to the claims supply chain, and in so doing notifications seeks to influence current or future attitudes and behaviour in delivering customer focus. Supplier responses and replies (reaction) to these notifications resulted on average in three replies per notification, either as a ‘factual’ post or as a ‘discussion’ post. Table 4 shows reaction posts totalled 908 posts to 331 notifications, suggesting award/NPS push notifications are effective in producing a significant reaction in the vendor: an indicator of social influence [53]. In this research, the predominant reaction to insurer notifications came from suppliers, although there is a proportion of ‘self-promotion’ posts arising from other vendors who are proactively posting information about their capabilities.

5.5. Genre 4- Factual

The predominant meaning behind supplier replies (from KWIC analysis) portrays a positive commitment to customer service delivery, and affirms an aspiration towards the insurer’s goals of customer service excellence (keywords and terms used include: ‘is testimony to’, ‘to support’, ‘our conviction to’, ‘working towards your vision’ etc.), thus suggesting that suppliers are influenced by performance expectations of the insurer. Similarly, out of the 818 ‘factual’ posts, the majority (610 posts) were supplier replies, and demonstrated a context of ‘working towards enhancing the customer journey’ and ‘developing supplier initiatives around improving the customer experience’. Many of these posts would include evidential material in the form of positive policy holder feedback, to support the sentiment of the posts. The large number of posts which highlight ‘a positive customer claims experience’ suggests suppliers will counter insurer expectations (communicated through notifications) with positive examples of ability and performance.

5.6. Genre 5- Discussions

Within the discussion genre (encompassing attitudes, intentions and views), the conversation also predominately focused on performance around customer service (NPS and customer journey). Supplier discussion posts totalled 298 (or approximately 40%) and centred on stories, viewpoints, past experiences, insights etc., around customer service and innovation in the supply chain. This suggests users are in the main focus on discussing customer centric topics. The data in Table 4 also show that 61% (440 posts out of a total of 721) of all users’ discussions were dominated by topics around supplier performance either in customer service, or core insurer goals (4 key areas of focus) or supplier innovations in processes or schemes. Furthermore, this mode of engagement (discussions) contained posts demonstrating knowledge sharing intentions. As such, it could be argued that discussions around these topics can be *motivational*. The meaning behind a post (i.e. was the post demonstrating intention, or an attitude or an actual implementation) was obtained from KWIC analysis of coding units, allowing the researchers to ascertain whether a post suggested actual action (e.g. ‘we

have implemented a ...’), intention or a viewpoint e.g. ‘this is something we clearly need to adopt’. Attitudes were relatively easy to recognise and code, as they often began with ‘I think’, or ‘our view is’ or ‘can anyone offer a view on...’

5.7. Genre 2- questions

also featured highly in the area of supplier performance, in particular questions relating to supplier initiatives were particularly high, suggesting the supply chain is keen to gain advice on and learn new processes, practices and improve performance.

5.8. Genre 1

produced insufficient data around these key themes, and was excluded from the analysis.

As the ability to generate higher levels of customer satisfaction is regarded as an important differentiator by many insurers today, the conclusions reached from KWIC analysis appear logical, given ‘customer centricity’ is a key element of many insurer’s key business strategies (Ellinger et al 2012). However, in order to ensure this analysis was valid, our conclusions were presented and validated at secondment meetings and workshops with key insurance staff and suppliers in the second year of the trial.

5.9. Interviews

In addition to web-based data, semi-structured interviews were also employed in the research design. The use of multiple data collection sources was used to provide a more ‘convincing and accurate’ case study [71]. The goal of the interviews was multiple: to gain a deeper understanding of influence strategies and social power and their effects on the SSN from the perspective of the users. In addition, we wanted to gain a better understanding of current knowledge sharing and future knowledge sharing intentions, and changing attitudes around knowledge sharing in a relatively competitive environment. By asking specific questions around themes such as ‘supply chain structure’ and ‘supply chain relationships within the platform, we were better able to assess who and what drivers were having an influence on supplier’s knowledge sharing behaviour, attitudes and the evolving network.

Whilst interviews can be time consuming and require some level of training or practice, they provide valuable information from the context of the participant’s experiences, and enable the researcher to explore attitudes, behaviours and generate rich data. In particular, we chose this approach because the contextual and relational aspects of the users in the supply chain were seen as significant to understand their perceptions. A further advantage was it allowed the use of pre-determined questions providing some degree of uniformity [77]. A randomly selected sample of 37 suppliers from the platform was invited to participate in the interviews. Seven users declined the invitation to participate. Participants included senior supply chain managers, operations directors, company and managing directors and CEO’s of a range of service companies including locksmiths, restoration and inspection,

drainage, renovation, claims management etc. The main selection criterion for interviewing participants was an ongoing engagement with the SSN platform for at least a year.

An interview schedule was designed with key questions, and grouped thematically to be used for reference and as prompts if necessary. Themes included: Claims Supply Chain Structure; Supply chain relationships in claims and the SSN platform and content shared; useful types of information: content and category; social Influences; perceptions of the insurer's goals and views on information sharing across an insurance claim supply chain.

Questions were piloted with a small number of suppliers and researchers for content and clarity. Participants were invited to participate at a time and location of their choosing. The interviews were run in the second year of the platform trial (Feb-March 2016) and were conducted by one researcher. Interviews took approximately 1 h in total. All interviews were transcribed verbatim, before being loaded into NVivo 11 for coding and analysis. Short follow-up telephone interviews with most of the participants were carried out as data were gathered and coded in an interactive process [72], allowing us to compare with earlier interviews and explore new material as it was revealed.

5.10. Analysis

The analysis adopted a two-stage coding process. The first stage involved open coding. Once the data from the interviews were read through several times, tentative labels for chunks of data that summarise what was happening, based on the meaning that emerged from the data, were created. Early themes that emerged connected the nature of the relationships in the supply chain, with the type of knowledge and information sharing behaviours and attitudes that were occurring. An emergent theme was later defined as 'influence marketing' (for insurer benefit), another was 'competitive positioning' (with rivals in mind). Once categories across all the interview material were established, pattern coding was applied in order to identify relationships among the open codes. An example of common threads or recurring phrases amongst participants was the perception of 'recognition of achievement', praise and tribute around the insurer interests'. These recurring threads were corroborated with web-based data to strengthen reliability. As common threads emerged across the interviews, they were compared with early transcribed interviews. An iterative approach was adopted, where insights from earlier interviews were visited in remaining interviews to receive additional comments, in order to either confirm or contest the recurring thread [72]. The final stages of the analysis involved discussion, confirmation and reflection with interviewees. To ensure validity and confirmation of the findings, a presentation highlighting the results was presented at a supplier workshop hosted by the insurer in May 2016.

6. Findings

The case study findings indicate how social power and social influence can drive a user's behaviour to share information and knowledge on a social media platform, inter-organisationally. Pre-SSN, the claims supply chain adopted relatively closed attitudes and behaviours to knowledge sharing. With the launch of the interactive platform, however, users have become increasingly motivated to share material. This motivation has arisen from two linked effects. Underpinning these effects are two types of power. One type arises from the prospect of rewards, the second from competitive behaviours.

6.1. First effect

Social power and influence can be exerted through the perception of an expectation from a significant or dominant other [43]. The first effect on knowledge sharing behaviour can be seen through the insurer's expectations around supplier performance, in particular around the

delivery of customer service in the claims process. A 'reward power' theme and web data in particular, show a large volume of insurer posts are focused around highlighting and rewarding supplier performance (Table 4). The prominent use of notifications which 'deliberately' highlight, single out and publicly reward performance achievers in key areas of customer service excellence and supply chain initiative (Tables 3 and 4), is likely to focus the minds of suppliers around the importance the insurer assigns to performance. The continuous use of awards, and praise notifications can effectively communicate and reinforce the insurer's 'wants' and expectations around supply chain performance. They also highlight the (potential and actual) benefits that can be achieved from excelling.

'Push' notifications are perfect for announcing awards, praise and promotion as they can link suppliers directly to a feature (e.g. a supply chain or customer service initiative). They are great for re-engaging inactive users and bringing them back to the network [92]. The potential for digital interventions to affect positive behaviour change has been demonstrated in a number of health domains [93]. Prompts such as emails, and push notifications, have shown promise for motivating behavioural change [94] and evoking repeated intervention use [95], particularly when prompts contain feedback, theoretically-informed content or behaviour change techniques [92].

Within the SSN, push or 'award notifications' were personalised to the award winner, by highlighting the users' first name, company name and achievements. Examples of insurer-led notifications took the following format.

'Winner: Company Z with consistent performance against KPIs. A consistently high level of quality and customer service maintained. Minimal adverse feedback from customers, claims teams or Company W on Company Z's jobs. If any issues do arise, Company Z have acted on this feedback openly, quickly and efficiently. Very highly thought of by our buildings validation team. Willingness to adapt and assist us [the insurer] is demonstrated at all times – occasions where they have been used to resolve major complaints not involving them initially, and each time they have resolved the issues quickly, efficiently and with minimum fuss. They have adapted to an increased allocation – 30% to 50% - with no adverse impact on performance, KPIs or customer. In all interactions with Company Z, they have demonstrated a refreshing openness, honesty and willingness to work for and with us [the insurer] to service our needs and our customer's needs to the highest standard'.

Often such a notification would be followed by promise of 'a Trophy and a certificate' that the supplier can 'keep to display your office, at your desk or in your reception area'. Recognition of your achievement will be shared both on the 'ABC UK Supply Chain Network' site and across ABC's internal networks that reach all employees at all levels within ABC'. Senior supply chain manager (Insurer).

In addition, award winners were photographed and these were uploaded on to the platform for supply chain-wide dissemination. The emphasis on displaying awards across the network and use of words such as 'Winner!' gets the supply base to understand the value of excelling in key performance areas such as customer service.

Push notifications are not only useful for directing a group of suppliers to a particular feature (news), message, issue or concern (e.g. around performance), they can also encourage suppliers to focus their attention entirely on the insurer's call to action. As one supplier suggested 'This new system functionality acts as a communication tool for the trade network, it flags delays in order to notify customers or quickly make alternative arrangements, it provides instant information for instant authorisations increasing first time fix opportunities and dramatically speeds up payment processes'. 'All in all it simplifies the claim journey creating an efficient process that benefits the customer journey greatly'. 'This is contributing to a large reduction in complaints and an ever improving Net Promoter Score'.

Notifications can additionally, effectively elicit a response, or provoke a reaction from their audience [95]. This can be seen in the rise of 'promotional' supplier posts (from year 1–2, Table 1). The supplier's

reaction (taking the form of either a reply or discussion comment to an insurer-led notification) often resulted in a post, blatantly showcasing capabilities and resources that are aligned to the insurer goals. This suggests suppliers were motivated by notifications, showing they could meet and/or go beyond the insurer's 'wants' and expectations of customer service and supply chain innovation performance. Indeed, the findings indicate a fifth of all supplier posts (the majority occurring in year 2) were promotional in nature, with many suppliers hoping to secure future contractual arrangements with the insurer. Interview data confirm that in the main, suppliers concurred with the insurer's vision and drive towards meeting key performance areas. As one supply chain manager suggested, *'I am a firm believer that all the people in your business need to "buy in" to the insurer's vision to ensure the customer journey is as good as can be'*. Whereas insurer-led notifications also included information relating to events, status updates, weather alerts, etc., a key function (approximately 40%, Table 4) was to focus the network on performance-related information (winners of awards, praise and promotion). For example, every month the insurer would nominate a supplier for an award based on one of its four key categories relating to its '2020 strategy'. These awards recognised key achievements aligned to their corporate '2020 strategy' under the headings Customer Obsession, People, Simplify and Focus. All categories except the Focus category were directly linked to customer service, either through customer service KPI's, simplifying claims processes (the customer journey), recognising an individual for outstanding customer service, or stand out achievements (People). The 'Focus' award recognised 'increased supplier performance', 'identification and delivery of financial saving opportunities' and 'fraud identification'

Finally, web data in Tables 1 and 2 highlight the significant evolution in the type of content and mode of engagement during the 2-year trial period of the SSN. In the second year, two major changes happened. First, suppliers moved from 'discussion' (genre 5), to 'factual information posts' (genre 4), and insurers increased their notification activity (genre 3). Second, the spread of topics on the platform, moved away from 'non work' orientated topics (technology, social media, politics, education etc.) to a wider range of 'work related topics (NPS, supply chain articles, insurer goals and KPI's). These changes highlight an evolving information and knowledge sharing platform, with a growing emphasis on 'performance' and in particular customer-centric performance, over non-work chat. These changes also suggest a reduction in posts containing tacit knowledge, to one where more explicit knowledge and information are increasingly being shared. Pre-SSN interviews revealed that NPS and performance league tables were not easily disseminated across the supply chain, with suppliers receiving this information in newsletters, and ad-hoc supplier workshops. The introduction of the SSN has not only changed the way the insurer disseminates performance information to its supply chain, but also the way it uses the network to direct its influence.

6.2. Second effect

The findings from Tables 3 and 4, reveal both the volume of supplier posts depicting 'knowledge/information assets', and attitudes and intentions around knowledge sharing, grew over the life span of the network. However, interview themes suggest this was not only due to the perceived insurer performance expectations alone, but also resulted from a perception by individual suppliers that the actions of other suppliers (i.e. posting feedback, engaging in discussions, demonstrating initiatives) was a sensible strategy to adopt. This would suggest users (suppliers) both identify with group behaviour (posting self-promotional material) and are being influenced by the group to mimic posts (proactively or reactively). The evidence from interviews further confirms that competitive pressures from rivals have encouraged mimicking behaviour. This is both in terms of the type of content posted (promotional), as well as in the degree of engagement with the SSN platform. As such suppliers perceived that in order to remain visible to

the insurer, and the competition, mimicking posts was a sensible tactic to adopt. This is logical given the competitive environment of claims servicing. The steep rises in 'self-promotional' posts by suppliers in year 2 (Table 1) are confirmed in interviews as arising from the influence of others who showcase their achievements through the SSN. Some suppliers commented that *'vendors are jumping on the marketing bandwagon'*, and *'the platform is becoming a marketing tool for suppliers to demonstrate their capabilities both to competing suppliers as well as to the insurer'*.

A related theme that emerged from interviews suggests a growing frustration in the changing role of the platform, from one where *'more useful information could be exchanged'* to one where the platform was increasingly used as a *'route to competitive positioning'* and where *'far too much supplier promotion was posted'*. Over the 2-year trial, a 'culture' of self-promotion appeared to have developed whereby competing suppliers were caught up, but at the same time, were aware of the rise in mimicking behaviour at the expense of 'other information/knowledge' being posted. Group influences, leading to increasing levels of self-promotional material, highlight an environment where suppliers identify with what rivals/others are doing as a sensible strategy to follow. This makes sense in the competitive environment of claims servicing, as it leaves little room for the insurer to perceive vendors differently when selecting claims teams. This is largely confirmed in interviews with suppliers, as one remarked *'it's all about 80% showing the insurer they are good at what they do, and 20% showing their competitors that they are really good at what they do'*.

6.3. Insurer motives

Given the highly competitive, low margin and consumer-centric nature of the home insurance industry, it seems likely that the insurer's motive for pushing regular 'performance based content' was primarily to generate improvements (through competition) across the supply network in customer service. Indeed, an aspect of insurer power and influence is exhibited both in its ability to control content on 'customer centric supplier performance' through the platform, as well as in producing a reaction in suppliers to that content, by generating knowledge assets. This is confirmed in interviews, where the suppliers' perception of the increasing use of 'performance achievement content' communicating *'who is top of the NPS table'* and *'who is meeting customer obsession targets'* was viewed as intentionally used to generate competitiveness across rivals in the network, *'as vendors sought to outdo each other in areas of performance'*. Responses from many suppliers, who were interviewed, mirrored this sentiment. One supplier summed it up as *'I think NPS league tables does encourage competitiveness and drive behaviour in that it shows you are passionate ...yes there is a certain amount of competitiveness, but it's also useful to see what your rivals have done ... the platform provides the opportunity to see what their capabilities are and see what they are all doing. We didn't have this before'*.

The conclusions from the findings in Table 2 (showing the frequency of concepts and key sentiments within overarching themes), suggest the insurer and vendors while both focused on performance, have distinctly different emphases in posting content, indicating different motivators to use social media tools. Suppliers were primarily focused on promoting themselves, in an attempt to influence the principal's supply chain managers who have sway or power over continued contracting with them, as well as to 'psychologically influence' other vendors offering similar services (in a show of one-upmanship). The Insurer's focus was on driving performance through reinforcing customer service objectives and highlighting their customer service expectations.

Finally, whereas all interaction on the platform was friendly in nature, for the theme 'Social', words and concepts relating to 'Social events' were counted, with relatively few occurrences at just more than 7.8% frequency, suggesting less of a focus on using the platform for social purposes, and a greater emphasis of use on sharing information knowledge that directly underpins a user's agenda.

7. Discussion and conclusions

This paper explored social power and influence as antecedents to knowledge sharing across a social media platform within the inter-organisational context of an insurance home claims supply chain.

7.1. Social power and influence: Insurer ‘expectations’ and the power of rewards

In line with findings of previous research [69,58], this paper has identified social power as a key driver to knowledge sharing within a supply chain. The exercise of social power and influence, primarily directed through a strategy of focused award notifications and key performance indicators, allows the insurer to impose on the dependent vendor, an expectation of ‘rewards’ if alignment to performance in key areas is achieved (reward power). These rewards can include anticipatory future contractual arrangements, supplier selection for claims fulfilment teams and improved reputation. Specifically, these findings highlight close parallels with Wang and Lin’s [43], and French and Raven’s [53] research showing the power of directly felt expectations by a dominant agent through strategies which highlight performance achievements and rewards in order to influence and motivate changes in behaviour, and attitude around knowledge/information sharing as well as in supply chain performance. Reward power stems from a ‘targets’ perception that an ‘influence’ agent has the ability to provide him/her with tangible /or intangible wants, if the target adopts certain attitudes, beliefs or behaviours. The base of this power is associated with positive reinforcement (as in announcements of praise, congratulations and achievements). Rewards have also been used as a positive incentive to encourage an individual’s information and knowledge sharing behaviours, and reflect similarities with agency and neo classical economic models of performance contingent incentives [97]. While reward announcements can positively impact the individual vendor seeking, for example, anticipatory reputational gains, it can also affect supply chain process improvement where both the supplier and insurer gain [56]. The insurer may achieve better results in key areas such as customer service, as other members of the network gain access to focused workable practices (knowledge assets). Furthermore, overall, push notifications highlighting performance-based rewards and achievements potentially have the effect of encouraging and generating greater levels of competition amongst the supply chain, eager to be part of the improved system. Reward power can demonstrate positive effects on the many network players to the supply chain, consistent with prior literature [54,55,56]

7.2. Social influence: the power of competition

A second element driving information and knowledge sharing behaviours arose from ‘competitive capabilities showcasing’ within the supplier base itself, as rival service suppliers competed to influence each other and their buyer. Over time, some categories of knowledge assets (supply chain initiatives, best practice cases and examples from policy holder feedback) became increasingly commonplace, suggesting some degree of internalisation and identification with group norms and behaviours (to showcase capabilities) was occurring, in line with Bagozzi and Dholakia’s [47] findings. It is suggested that users (suppliers) were conforming to group norms by exhibiting/mimicking similar knowledge assets (positive policy holder feedback etc.) in an attempt to influence both insurer and competitors [46]. It is also suggested that the ‘social’ nature of many posts (content and tone) indicates growing familiarity and connectedness across users, which can assist in building a shared context [88], and ultimately impact on the level of resistance to reveal details around work-related issues, as well as enabling group connectedness. This is an area that requires further investigation outside of this paper.

These findings suggest social power and influence generated by both

competitive group norms in the supplier base and individualistic elements triggered by the prospects of rewards, support knowledge sharing behaviours across a network. Given this, the economic as well as social/power environment within which the users operate will play a key role in the level of engagement and knowledge sharing within a social system. This is one of the first studies that have identified the effects of social influence on knowledge sharing behaviours across a network of rival and non-rival supply chain members. In contrast to existing supply literature, knowledge sharing rarely takes place outside the confines of the dyadic buyer supplier relationships [23], or within an environment of trust, co-operation and strategic dependency (Powell 1996). However, in the absence of many of these conditions, the effects of social influence generated by group norms and behaviours, and social power through rewards, can be seen to play a role in supporting supply chain (horizontal) members to engage in knowledge sharing.

In contrast to existing empirical case studies of companies that have adopted social media technologies [14,15], this study also highlights the differences in the types of knowledge and information genres that are being used inter-organisationally. Suppliers were less inclined to post notifications and more inclined to present ‘positive’ organisational contributions through discussions, stories and factual information direct from customers. The buyer in contrast majored on notifications and alerts to push out strong operational and strategic performance expectations. The distinct modes for communication and knowledge sharing by players with asymmetric dependencies, suggest the platform will evolve to meet specific needs, goals, or requirements based on individual needs. The overall effect however has been to enhance the competitive environment, improving ‘customer focus’ throughout the network and inadvertently, enhancing the sustainability of the supply chain.

Finally, the two-year trial has produced findings which demonstrate development of a social network through changes in content, and genres of posts over an extended period. The SSN having been set up as a voluntary, social networking platform, for all types of informal information and knowledge to be exchanged, has evolved into a facility where ‘suppliers are competing to be heard’ as new users have joined, and the conversation is predominately focused around the objectives of customer service provision. The genres of communication that have significantly increased over time include notifications (predominately buyer led) and supplier responses highlighting processes, scheme, initiatives, feedback and case studies with no or little expectation of a reply. This is in stark contrast to year 1, where communication and knowledge sharing across users mainly took the form of discussions, and included more ‘implicit knowledge’. This suggests the SSN is moving away from a social facility which allows users to share valuable knowledge assets and build social capital over time, to one where users are more focused on getting a more explicit and specific informational and self-interested message across.

7.3. Implications

The importance of understanding drivers to knowledge sharing across organisations and increasingly across supply networks cannot be understated. Managers can only develop knowledge management strategies if they understand the precursors of knowledge sharing. However, promoting knowledge sharing remains a key challenge to managers, especially across supply partners. Sharing information and knowledge voluntarily could be a risky strategy for a dependent player, as the potential for abusing that knowledge may eventually end up eroding its competitive advantage. In a supply chain context, group influences (developed over time) as well as powerful reward incentives appear to generate knowledge sharing behaviour. A dominant player’s social power and influence over a network can be exercised by publicly disseminating (and rewarding/and punishing those who are aligned/nonaligned to) core strategies and objectives that it seeks to pursue. Such a player can generate ‘expectations’ of performance and

achievement, which can be tied to rewards. From a managerial perspective, the dominant player can effectively use a social media platform as a broadcast facility (not previously available) to push, motivate, reward and encourage competition within its vendor base through the medium of chat, in key areas of strategy.

Following on from this, the use of social media networks in this way can motivate supply chain members to share non-confidential or proprietary information and knowledge such as broad initiatives, solutions to common problems, useful advice and tips together with suggestions for supply chain-wide improvements, for the benefit of the entire network. Furthermore, the platform if used in this way, encourages competition amongst rivals and their ability to improve and learn, and encourages greater levels of communication and openness (without compromising critical knowledge). On the downside, the growing frustration of suppliers regarding the way the platform was increasingly being used (self-promotion posts), suggests that the potential of such a platform as a knowledge sharing facility can be limited, if knowledge rather than information is not encouraged. Given the voluntary nature of engagement with such platforms, this could have implications for its long-term use as a knowledge sharing facility, or for continued engagement by users.

7.4. Limitations and future research

While there are many influences to knowledge sharing across social media networks, this research has focused on social power and social influence as antecedents. Furthermore, the study has not examined the extent or strength of social influence on supply chain members, or the degree and strength of reward power on supplier behaviour compared to that from social influence alone. This is an area where more research is needed. A further limitation of the research includes the greater exploration into ‘social chat’ and its contribution to knowledge sharing behaviours in the study.

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