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Towards Unravelling Power Dynamics in Information Systems Research: A systematic literature review through the lens of activity theory

Full research paper

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Abstract

This paper addresses the gap in the literature regarding power dynamics in Information Systems (IS) literature by conducting a review of relevant research. It examines power relationships and contradictions embedded in organisational activity systems, using activity theory as a theoretical lens. By synthesising the findings of 55 papers published in the senior scholars' list of IS journals, the paper provides insights into the reciprocal impact of power contradictions in activity systems and how different elements of an activity system influence power relationships. The study aims to shed light on the influence of IS/IT artefacts on power dynamics, thus aiding the design of interventions addressing stakeholders' concerns and facilitating the successful adoption of IT artefacts. It further proposes a fresh perspective on activity theory for systems reliant on IS/IT artefacts. This work contributes to the broader understanding of power dynamics in IS, providing a basis for future research in the field.

Keywords Power, Activity Theory, Power Conflict, Contradiction.

1 Introduction

The investigation of power relationships and dynamics has long been a focal point in organisational research. The literature reflects a wide range of distinct streams of power relations that have captured scholarly attention (Lightfoot & Wisniewski, 2014). Despite diverse and sometimes conflicting perspectives about the notion of power (Braynion, 2004), it is almost agreed that power over one party refers to getting them to do something they would not do otherwise by another party (Dahl, 1957). As the notion and its definition imply, it has been widely studied in organisational studies in contexts such as leadership (Harari, 1997), performance (Bachman et al., 1966), and organisational behaviour (Deetz, 2003).

Along with advancements in the research into organisational aspects of Information Systems (IS) and Information Technology (IT), since the 1980s, the influence of IS/IT artefacts has been a topic of interest in power studies as well (Markus, 1983). The emergence of these artefacts was associated with a potential to challenge the balance of power between stakeholders, leading to resistance and conflict (Hekkala et al., 2022). Hence, the study of power relations in IS research has formed a critical research domain and helped scholars and practitioners to better understand the dynamics of IS projects, identify potential sources of conflict and resistance, and design interventions that address the concerns of stakeholders or help them critically analyse the consequences of adopting IS.

Previous studies have focused on both the sources and forms of power and the changes in power that emerge due to the advent of IS/IT artifacts. However, the literature has been criticised for having a single and negative perspective on power (Dhillon et al., 2011), and there are calls for further theorisation by IS scholars to capture power conflicts resulting from the emergence of new technologies (Simeonova et al., 2022). As the first step towards further theorising power in IS literature, we have decided to synthesise the available literature results in a systematic literature review.

As a theoretical lens to guide the literature analysis, we referred to activity theory. Power is recognised as a phenomenon deeply structured with the potential to explain events and activities (Simeonova et al., 2018). Therefore, considering the capability of activity theory for “locating technology within activity systems and theorising change through contradictions and congruencies within those” (Allen et al., 2013, p. 835), it has been suggested as an appropriate theoretical lens for discussing power dynamics of IS development. Using this theoretical perspective, this study aims to provide an understanding of power relations in IS, including the reciprocal impact of power contradictions in the activity systems and the various elements of an activity system impacting power relationships. By synthesising prior research findings, we aim to provide valuable insights that can lay the groundwork for further exploration of power relationships disrupted due to IS development. We believe this analysis can also be a first step towards better articulation of various dimensions of an activity system that largely focuses on IS/IT artefacts. Moreover, we seek to inform the creation of interventions that cater to stakeholders’ concerns and facilitate the successful adoption and implementation of IT artifacts. In this context, we seek to address the following research question:

How are power relationships and contradictions embedded in organisational activity systems according to the Information Systems literature?

The contributions of this study are twofold. First, we provide a review of the literature on power relations in IS, including the sources and forms of power. Through this analysis of the literature, we highlight the importance of understanding power relations in IS projects and the changes that IS/IT artefacts can bring about. By providing a deeper understanding of power relations in IS, our study can inform the design of interventions that address the concerns of stakeholders and facilitate the successful adoption and implementation of IT artifacts. Beyond that, and by utilising the lens of activity theory, we elaborate on the appropriateness of this perspective in the study of power in IS discipline and propose a new perspective on this theory that can be used for activity systems that are heavily relied on IS/IT artefacts.

The rest of this paper is organised as follows. In the next section, we provide a brief overview of the concept of power and the theoretical lens used in this study. In the following section, we present our methodology, including our search strategy and selection criteria. We then present the findings on the nexus of power and IS. We conclude the paper by discussing the contributions of our study and identifying avenues for future research.

2 Theoretical Background

2.1. Forms of Power

Within the realm of power literature, two primary forms of power are recognised: episodic power and systemic power (Hekkala et al., 2022). Episodic power refers to the discrete actions taken by an individual or entity with self-interest, aimed at influencing other actors, systems, or technologies to act in a way that benefits the first party (Simeonova et al., 2018). This form of power is also referred to as power over, where certain actors can compel others to do things they wouldn't otherwise do. The distribution of episodic power is uneven, both within and across organisations, depending on personal relationships or the relative position of the actor in relation to others (Hekkala et al., 2022). Episodic power is often exercised through means such as authority, legitimacy, control, coercion, and resource dependency.

Systemic power, on the other hand, is embedded within social and cultural systems that arise from interconnected relationships and operates through regular, ongoing practices that benefit specific groups, even if those groups do not necessarily establish or maintain those practices (Hekkala et al., 2022). This form of power is also referred to as *power to* and *power with*, focusing on the capacity, ability, and empowerment of actors to act differently, both as individuals within a group and as a collective entity (Simeonova et al., 2018). Consequently, systemic power can be identified in situations where the behaviours, beliefs, or opportunities of actors change in response to modifications in the rules (whether formal or informal) of meaning and membership or shifts in disciplinary and production technologies.

The IS discipline often describes power using a single structuralist viewpoint that tends to adopt a negative perception of power (Simeonova et al., 2022). However, in recent years there have been changes in the perspective of IS scholars towards the effects of IT artefacts and projects on power relations. For instance, Rowlands and Kautz (2022) use an interpretive approach to investigate the power dynamism between developers and clients within a system development method. Additionally, some researchers have argued that power conflicts do not necessarily lead to negative consequences, but power dynamics can facilitate the implementation of IS projects and artifacts (Rowlands & Kautz, 2022; Silva & Backhouse, 2003; Simeonova et al., 2022). Ultimately, with the emergence of new IT artefacts like platforms and artificial intelligence, the IS discipline should explore power relations from various angles and employ a wider range of theories. This is the reason why recent research has incorporated and expanded less commonly used approaches like activity theory to examine and comprehend power dynamics (Simeonova et al., 2022).

2.2. Activity Theory

Having its roots in a research school known as Russian cultural psychology, activity theory looks at human subjects residing in social environments. Therefore, it considers that “humans engage in goal-oriented actions that do not necessarily directly contribute to the attainment of the object of activity, mediated by tools” (Allen et al., 2011, p. 780). The theory has been expanded to cover a broader concept of activity system by including additional elements of the community, the division of labour and rules (Engeström, 1987). Table 1 identifies the components of activity theory and their implications for studying power. Within and between activity systems, the triggers of change are contradictions that can be considered indicators of (critical) conflicts, dilemmas and double binds (Engeström & Sannino, 2011) that oppose the overall motive or aim of the system (Allen et al., 2013).

Early research has demonstrated that the development of IS is an extremely political procedure (Keen, 1981) in which power dynamics is a key factor, and the resulting direction of development is influenced by political factors (Kling & Iacono, 1984). Other studies have addressed power concerns such as centralisation and decentralisation (King, 1983; Leavitt & Whisler, 1958), the social process of power being unaffected by IT (Fleming & Spicer, 2014), power reinforced by IT (Leavitt & Whisler, 1958), or the joint emergence of power and IT (Jasperson et al., 2002).

Element of the Activity theory	Definition	Implication in the study of power
Subject	The human performing a set of collective actions.	-
Object	The problem situation, focus or thing that the subject is working to transform in order to achieve a desired outcome.	Power can influence the activity motives that shape the object in an activity system.
Tools	Physical artefacts and signs (language, memory, skills, etc.) that mediate the activities performed by a subject to achieve the object of activity.	Power is incorporated and observed within the tools used to mediate work activity—as inscribed in their design.
Rules and Norms	Guidelines or prescriptions that regulate behaviour and interactions within an activity system	Power is embedded in the rules that govern the activity system.
Community	The human subject is social in nature and performs the activity in a social context known as the community.	Power is situated in the activity community.
Division of labour	The distribution and organisation of tasks and roles among individuals within an activity system.	Power stems from hierarchical relations and is ascribed to the position people hold

Table 1. The Elements of Activity Theory adopted from Allen et al. (2011) and Simeonova et al. (2018)

Previous research viewed IS as merely reflecting power structures (Webster, 1995). However, in current research on information systems, power relationships are primarily seen as challenges to be dealt with during implementation. Examples of strategies to manage power imbalances include aligning the power of stakeholders (Dhillon, Caldeira, & Wenger, 2011), institutionalising power through policies (Deng, Joshi, & Galliers, 2016), mediating power imbalances through knowledge exchange (Pozzebon & Pinsonneault, 2005, 2012), or using unilateral governance approaches (Xiao, Xie, & Hu, 2013). Some studies also consider IS implementation as a continuous struggle for power without a final resolution (Azad & Faraj, 2011; Doolin, 2004). The above literature indicates the nature of power relationships disrupted as a result of IS/IT artefacts being embedded within the activity systems in organisations. As a result, activity theory has been widely used to explore the generation of power relationships (Kelly, 2018) or differentiating various forms of power (Simeonova et al., 2018).

3 Method

In this study, we followed the systematic literature review (SLR) procedure recommended by Okoli (2015). Initially, we identified the purpose and goals of the study. As previously discussed, the role of power relations in the adoption, implementation, and survival of IT artifacts is significant, and there is a need for a comprehensive examination of the literature on this subject. Our aim was to address this gap by investigating this concept in papers published in leading IS journals.

In the next step, we formulated the research question and engaged in in-depth discussions regarding it. Subsequently, we developed a study plan that outlined the scope of the review and the search procedure and string. To gain a better understanding of the research on power relations in top-tier outlets, we chose to investigate the Senior Scholars List of IS Premier Journals. Following the research protocol and aligning with the research question, we searched the two key terms of *power* and *conflict* in the titles, keywords, and abstracts of articles.

In the third step, we established the inclusion and exclusion criteria for selecting our final pool of papers. In this phase, we included papers that specifically addressed power relations or conflicts arising from implementing or using IS/IT artefacts. The selection process required articles to be relevant to the changes brought about during the development or use of IS/IT or the conflicts that arose as a result of their

implementation. Studies in which power was a peripheral topic of discussion or not related to an IS intervention were excluded. For example, some papers used the term power in the sense of strengthening or to indicate the strength of something unrelated to our study.

In our initial search, we found a total of 870 papers. Out of these, 151 papers were selected in the initial round based on reviewing titles. Subsequently, by examining the abstracts, 101 papers were selected for further examination. After a thorough study of all 101 papers, we identified 53 papers that were relevant for addressing the research question. Additionally, we conducted forward and backward referencing, which led to the inclusion of 2 more papers, bringing the total number of reviewed papers to 55. To organise and analyse the extracted details from research papers, we utilised NVIVO12 to code and store the necessary information. We used a deductive approach based on the selected theory and linked the main excerpts retrieved from the literature to various components of activity theory. Subsequently, we examined this from a macro perspective, investigating the discrepancies between various components as outlined in the theory.

4 Findings

Power Conflicts and Contradictions in an Activity System

As explained before, contradictions are defined in the activity theory as any event in which different elements or aspects of the system pull in opposing directions and hinder the overall aim of the system. Considering this definition, we argue that power conflicts can be considered as contradictions within activity systems. The related IS literature also confirms that power conflicts, for example, can decrease the quality of communication, deter the sharing of information, and diminish a company's overall competitiveness (Feng et al., 2021).

Whilst power relations have predominantly been explored as a negative phenomenon in the IS discipline (Simeonova et al., 2022), some studies have also focused on its positive aspects. For example, Silva and Fulk (2012) introduced three distinct types of power, including the facilitative type. They contended that facilitative power entails a constructive perspective on power, viewing organisations and collective actions as outcomes of power dynamics. Similarly, Simeonova et al. (2022) categorised power into two types of *power as control* and *power as facilitation*. They argued that power as facilitation refers to the use of IS to diminish communication barriers between hierarchical levels and eliminate status differences and power imbalances. In this study, we argue that even the facilitation perspective on power conflict does not necessarily mean that it can be considered as a contradiction. This can be potentially justified by various perspectives on objects or the overall aim of the system (for example, the main goal for employees may be to keep their job while the goal for managers is more efficiency improvement).

Looking at the literature, we found instantiations of both primary (within a component of activity) and secondary (between different components of activity) conflicts resulting from power conflicts. As an example of primary conflict, the literature highlighted the resistance of those with less power and their desire to overcome the power disadvantage (Hekkala et al., 2022). On the other hand, the literature has focused on the power conflicts between or stemmed from other components, which can be considered as the secondary form of conflict. As an example of secondary conflict within the literature, previous studies have studied the way new IS/IT can the organisation (division of labour) of an activity and how these dynamics can create power conflicts (Feng et al., 2021). Below we outline how various components of activity systems is mentioned in the literature to impact power.

Subjects

As a form of primary contradiction, the literature has focused on how humans (subjects) may have conflicting perspectives about IS. Silva and Fulk (2012) have discussed workers' perspective (domination) versus managers' perspective (control) in implementing ERP systems, where managers interpret the system as a necessary tool to monitor and control while the workers see it as an instrument of changing their working practices and controlling their behaviour. In another research, the perspective of physicians about IS is discussed as a means of tighter control and less professional autonomy limiting their power (Boonstra et al., 2008). Physicians may resist using the new IT-based medical system because they interpret the new system as being more about gaining financial benefits for the hospital rather than genuinely improving their clinical practice (Doolin, 2004).

In some cases of IS implementation, powerful subjects attempt to modify aspects of the artefact to reaffirm their dominance over those with less power. For example, according to Sayer (1998), middle managers sought to leverage their formal position in the organisational hierarchy to resist the transformative effects of re-engineering and redefine the technology to reclaim their power. On the other hand, some subjects or groups support the development and adoption of IS because it can enhance their power position in the organisation (Cavaye & Christiansen, 1996). All these instances of interaction between subjects, IS/IT artefacts and other components of activity systems suggest that power relations play an integral part in the adoption, implementation, or utilisation of IS, and the power dynamism and its effects on human beings or groups should be considered in these projects. The literature has also focused on the interrelationships between subjects and their goal as explained below.

Objects

There are several examples in the literature where power relationships have constituted or altered the overall motive that formed an activity system or maintained the performance of the system. For example, the literature has mentioned both aspects of exercising power over workers by using IS. While IS has allowed companies to increasingly monitor labour (Umer, 2021), it has also enabled workers to leverage social media to form electronic unions and engage in industrial actions against their employers (Tarafdar et al., 2023).

The literature has reported cases in which the exercise of power has led to the transformation of goals in an activity system. For example, Kumar et al. (2022) examined the resistance of doctors against implementing healthcare information technology (HIT) as a conservative strategy to preserve their higher social status, which could potentially be challenged by the HIT. Hurni et al. (2022) reported that assertion of power by platform owners in some cases led to resistance by users and their withdrawal from the platform altogether (Hurni et al., 2022). Furthermore, users, in some cases, displayed interference or hypercriticism as a response to the exercise of power by more influential parties. For example, low-status units might criticize the implementation of IS projects by high-status business units (BU) because they perceive the BU as exerting power over them (Brooks et al., 2022). The next section describes tools as a medium of power transition between all elements.

Tools

Considering the nature of IS research and its focus on technology, it is expected to see tools as the most prevalent component in our analysis of the literature. In our review, we found various instantiations of IS/IT tools and artefacts in disturbing power relationships and the creation of new ones. The first type of IT discussed in the literature is *online communities* that enable power structures to arise within them. An example is online health communities, where certain members establish themselves as authorities by utilising professional jargon related to medical conditions or treatments, which grants them a dominant position within the group. Some members emphasised their expertise by adopting usernames such as “science mom” to convey a scientific approach (Hur et al., 2019). This also demonstrates a change in power dynamics within the relationships between caregivers and healthcare providers, as caregivers shift their reliance from medical professionals to the collective knowledge of the online community (Hur et al., 2019).

In the IS literature, the effectiveness of digital technology as a non-institutional means of exchange has been recognised, as it can alter the power dynamics in a social movement. Therefore, the second type of IS/IT artefact highlighted in the literature is *social media*. As an empowering tool, social media provides a means for users (including marginalised groups) to connect and form a collective base of power, enabling them to take coordinated action in advocating for change. It also makes framing (assigning meaning to and interpreting relevant events) more accessible to grassroots activists who lack the financial resources or institutional affiliations of Social Movement Organisations (SMOs) or the charisma of a leader (Leong et al., 2019; Tim et al., 2018). Social media has created a chance for leaderless social unrest and protests (Tarafdar & Kajal Ray, 2021) and provides a more affordable platform for members of a community to express their views. What sets social media apart is the range of actions it enables through its features, which include liking, sharing, commenting, posting, writing notes, creating events, and creating page/group functions. When these processes occur in a shared space, they strengthen the people’s inherent power, resulting in a mechanism for activating power (Leong et al., 2019).

Another form of tool that may result in power conflicts are *organisational tools* introduced to facilitate the internal processes in an organisation. In almost all cases of technological change, a period of conflict and upheaval occurs until stakeholders acclimate to the new status quo. Over time, as the technological transition recedes into the past and the associated psychological crisis diminishes, conflicts will naturally diminish as well. However, by that point, the organisation will have undergone significant changes in its goals, beliefs, behaviours, and values. The future appearance of the organisation largely depends on how business management addresses the present challenges it faces (Smith & McKeen, 1992). It is important to note that all conflicts introduced as a result of a new organisational tool are not power conflicts. However, the literature has reported several cases of power conflict between IS professionals and users of these systems (Silva & Backhouse, 2003).

For example, the introduction of HITs presented a challenge to physicians, as it required them to demonstrate their expertise in practice, potentially undermining their emotional capital (which they used for reaffirming their symbolic status and the associated social standing). Consequently, health professionals' resistance to HIT can be seen as a strategy to preserve their historically established elevated social status (Boonstra et al., 2008; Kumar et al., 2022). As another example, ERP users may resist using the system because it alters the way they were accustomed to performing their job (Silva & Fulk, 2012).

Finally, new disruptive technologies are frequently mentioned in the literature as a tool that can impact power relationships at the time of market entrance. In particular, big data (Zuboff, 2015) and Blockchain (Lacity, 2022), as technologies that emerged for organisational applications after 2015, are frequently mentioned in this period of time. Blockchain, for example, is mentioned to facilitate the decentralisation of power over the Internet through privacy-enhancing technologies. The smart contract feature enabled by Blockchain technology can potentially reduce the importance of bureaucratic rules in society, as it enables a change towards governance mechanisms based on algorithms. This technology also has the potential to create a subtle shift of power from experienced business leaders and legislators to groups with technological expertise who formulate and develop smart contracts (Renwick & Gleasure, 2021).

Rules

The literature also explores various cases of power assertion or disruption through policies, procedures, and rules embedded in IS/IT artefacts. The literature, for example, highlights that platform owners can change the balance of power through their policies. This is demonstrated by eBay's decision to implement a policy that prohibits the removal of feedback, resulting in a reduction of power for low-quality sellers seeking retaliation against customers who have provided negative feedback (Shun et al., 2014). Another example of a more long-term policy embedded using IT/IS artefacts is empowering women and changing traditional gender roles through the advent of technology. Previous research has also investigated the tensions in rural communities that can be developed as a result of this (Oreglia & Srinivasan, 2016). In these cases, usually, power-holders are not interested in implementing the tool, while those who are interested in the implementation might lack the adequate power to do so (Boonstra et al., 2008).

Community

As explained before, the communities formed by IT tools can form new power structures or alter the current power relationships. As an example, the emergence of platforms created new power relations between platform owners and platform users. Hurni et al. (2022) have studied software platform ecosystems and explained the power paradox between self-determination and proactivity and related conflicts between owners and complementors. The study concludes that the platform creates a ground for both parties to assert their power over the other party. Other platforms have been used to organise, give voice to, and empower communities of crowds who would not have enough power to make a change in the market ecosystem otherwise.

In particular, social media has been highlighted as a platform that can bring the power of virtual communities to the forefront, allowing them to take on the role of catalysts for their own sustainable progress (Tim et al., 2018). Expanding and growing the online presence of a message or brand (also known as digital scaling) has significantly increased the power and influence of social movement organisations through growth in membership numbers (Jarvenpaa & Selander, 2023). Greenpeace, for example, utilised the combined strength of online communities to effectively influence twelve prominent brands into embracing more environmentally responsible approaches. Notably, their Kit Kat initiative united hundreds

of thousands of people in an online community over social media to express their concerns. This community lead to Nestlé halting their deforestation activities (Tim et al., 2018).

Contrary to the above point, and on a different level, the development of proprietary technologies has led to the emergence of big tech companies, which are new players in market economies with high economic, social, and political power. The literature has, for example, highlighted the multifaceted power of big five tech companies (Alphabet, Apple, Meta, Amazon and Microsoft) and elaborates on the complexity of regulating such power (Lindman et al., 2022).

Division of Labour

How different people in an activity system divide and do their tasks to accomplish the system's goal can also impact or get impacted by IS/IT-related power conflicts. The IS literature, for example, has highlighted the impact of a power imbalance on the failure of technology projects (Chipidza & Leidner, 2019). For instance, the change in the power balance in ERP implementation projects has been mentioned as an obstacle to the project's success (Silva & Fulk, 2012). In another case of Electronic Patient File systems, those who possessed great enthusiasm for the system were unable to enforce it because of the lack of power, whereas those who showed little interest had the power to hinder its implementation (Boonstra et al., 2008). Also, the literature has considered the implementation of strategic information systems to be resisted by old-timers because of the emergence of new powerful, skilled workers (Silva & Hirschheim, 2007).

Another possible impact of IS/IT artefacts is creating systematic power for related positions. In general, those who possess the privilege to monitor the work of others within any information system hold control over others (Ignatiadis & Nandhakumar, 2007). Positions related to the development and operation of IT/IS tools may also hold a structural power. As an example, the Chief Information Officer (CIO) is investigated to enable a company to adapt and learn again when facing market instability (Feng et al., 2021). In some cases, this systematic power may be contrary to or different from the organisational hierarchy. For example, developers may consider IS development as unequal and often describe their relationship with the client as subservient, portraying themselves in a cooperative but submissive manner (Rowlands & Kautz, 2022). These tools can also shift the power relationships between groups. The literature has mentioned several cases in which IS department is becoming more powerful (Smith & McKeen, 1992), or groups and individuals attempt to keep their vested interests (Hekkala et al., 2022).

5 Discussion

Using information technology artefacts can result in the redistribution of power structure during the implementation of these tools (Kumar et al., 2022). As explained before, the advent of IS/IT artefacts has empowered both platform owners (Shun et al., 2014) and users in different cases (Ofe & Sandberg, 2023). These paradoxes necessitate further investigation of the role of IS/IT artefacts in creating power tensions.

5.1 Power contradictions and tools-centred activity systems

Our analysis of the IS literature confirms the role of information and IT/IS artefacts in creating new sources of power (Cavaye & Christiansen, 1996; Nakayama, 2000). These tools are changing the conventional settings, which are based on hierarchical command-and-control structures that are used to exercise power over parties like customers (Li & Ku, 2018), members of the society (Tim et al., 2018), and platform users (Hurni et al., 2022). On the other hand, the structural power that IS/IT artefacts can bring to individuals (Silva & Hirschheim, 2007) and firms (Fast et al., 2023) put these tools in the centre of any power relationship discussed in the related literature.

Considering our findings in the literature, we recommend a new structure for “IS/IT intensive activity systems” in which the IS/IT tools are at the centre of all contradictions resulting in a power conflict in an organisation. The majority of conflicts found in the IS literature relate to or are identified through an IT/IS tool. Therefore, we suggested a transformation of activity systems in which IT/IS tools play a significant role in creating contradictions such as power conflict. Figure 1 shows this transformation from conventional activity systems to IS/IT-centred activity systems. As can be seen in the figure, the majority of transactions in these activity systems are performed through the IS/IT artefact. The transformed scheme, however, accounts for non-digital transactions that may exist but not be reported by considering dashed arrows.

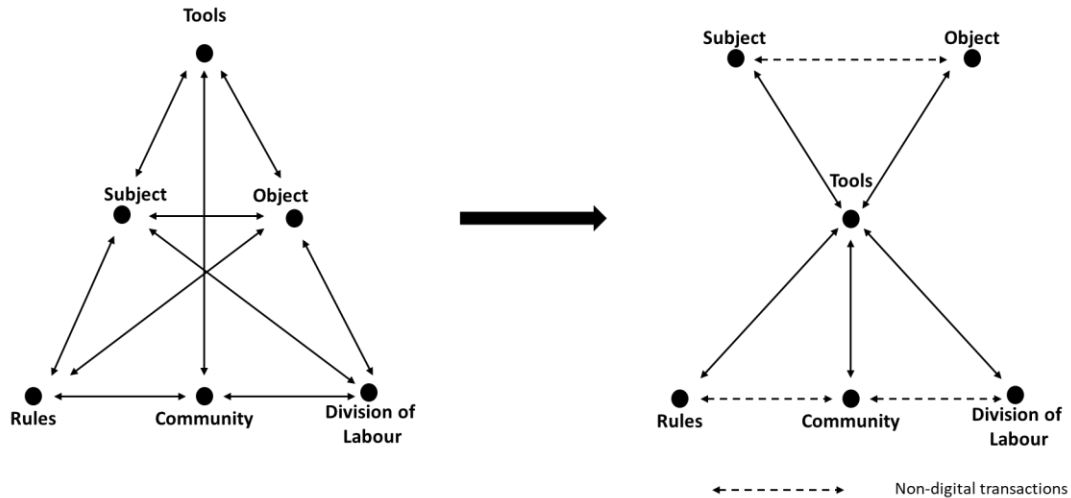


Figure 1 Suggested transformation of activity systems to tools-centred activity systems

We believe there is a good potential in this transformed scheme for activity systems to present the power conflicts in the IS/IT-centred activity systems in the form of activity contradictions. Therefore, we call for reidentifying primary and secondary contradictions in these activity systems to include IS/IT tools as a necessary component. In other words, we propose that primary contradictions can occur within an activity component but are mediated by IT/IS artefacts. In the same way, a secondary contradiction can be between two different components but through these tools. Figure 2 shows these proposed forms of contradictions.

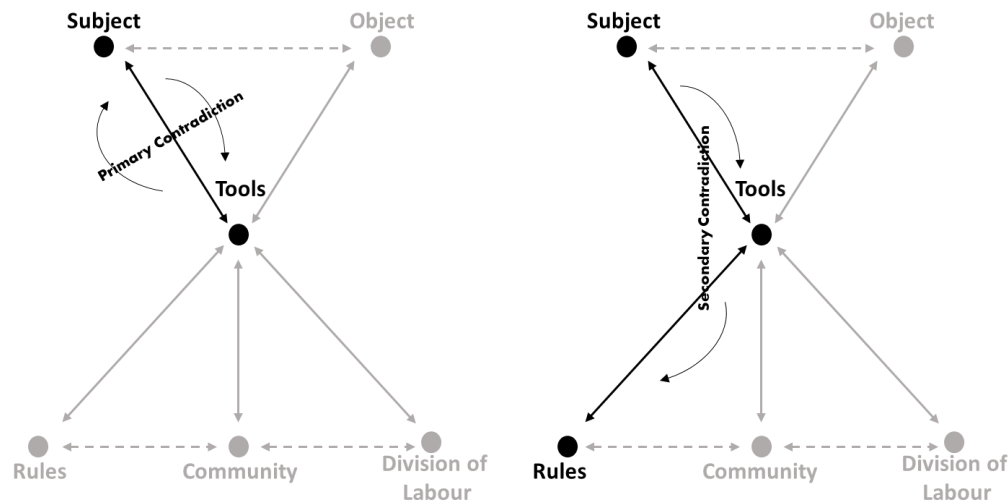


Figure 2 Transformed primary and secondary contradictions in IS/IT-centred activity

As an example of this transformed primary contradiction, Sayer (1998) investigated the power conflict between middle managers and employees resulting from implementing business process re-engineering leading to the denial of the system and hindering the overall aim of the organisation. This power conflict is aligned with the definition of and can be considered as an example of contradictions in activity theory. The contradiction is between subjects who perform actions to achieve the aim of the system (and can be considered as a primary contradiction as a result) but is triggered and mediated by IS/IT artefacts. In this case, middle managers changing the system deliberately aligns with Engeström (2001) findings, indicating that as contradictions intensify within an activity, certain individuals or groups may start to diverge from the established norms of the activity. This may sometimes result in an intentional collective endeavour to change the system. As another example, Oreglia and Srinivasan (2016) reported power conflicts between various rural communities when IS/IT artefacts empowered women socially and economically.

On the other hand, there are multiple examples of tools centred secondary contradictions in the power literature where a power conflict between subjects and other components of activity systems is reported as a result of or through an IS/IT artefact. Leong et al. (2019) reported how social media (as a tool) empowers activists (subjects) to challenge available policies (rules) in several cases. As another example, Coelho et al. (2022) investigate a similar impact of e-participations systems (tools) to empower subjects in challenging the power of governments in policy making (rules). Also, retaining tools, such as big data, have been studied to create power for subjects over the business community (Zuboff, 2015).

5.2 Internalisation and externalisation of power

At a different level, activity theory also considers the two processes of internalisation and externalisation through which social and cultural aspects become part of the cognition and action in a system and influence the external world (Allen et al., 2011). A similar impact can be considered in the IS/IT-centred activity systems when the current subtle and invisible power relationships are internalised in a tool during the development of the artefact (Hardy, 1985). The same tool can be used to establish legitimacy and justification for specific actions or act as a source of power in the external world (Rowlands & Kautz, 2022; Silva & Backhouse, 2003).

The process of internalisation and externalisation can also be extended to behavioural or structural viewpoints about power. In contrast, a behavioural perspective considers power something that can be observed through actions or behaviours and is internal to social entities and tools. On the other hand, the structural perspective considers power to be embedded within social structures and systems. While the majority of the IS literature focuses on either of these perspectives, this study (by referring to activity theory) argues that these perspectives should be seen as complementary rather than mutually exclusive approaches to studying power. The analysis suggests that behaviour and structure interact and influence each other in the exercise of power to accomplish desired goals. This suggestion is aligned with the consequential relationship between internalisation and externalisation suggested in developmental psychology (Vygotskie, 1978). In the study of power, individual-level behavioural power tactics can leverage macro-structural sources of power, such as grants and affiliations with other units. Conversely, a structural position can both impede and facilitate the exercise of power (Cendon & Jarvenpaa, 2001).

5.3 The zero-sum game of power

IS projects carry a significant risk in achieving win-win outcomes for resolving conflicts, as the diverse project members have different perspectives and aims and are primarily driven by their individual or organisational interests rather than the project's interests as a whole. Furthermore, creating fair rules for project governance can be complex, making conflicts a zero-sum game. Such rules are challenging to establish and require new project members to quickly establish common ground for successful collaboration (Hekkala et al., 2022).

Traditional understandings of power assume that it is a tangible attribute that can be owned and exerted over others in a deterministic way. Power is often perceived as a force that denies, represses, or coerces. Such a zero-sum notion of power infers that changes in power within an organisation are the direct outcome of shifts in the distribution of resources, such as information, which grant power to those who possess them. This conventional concept of power can be observed in the early research on information systems within organisations and remains the prevailing viewpoint in this field. The limitation of this approach lies in its failure to acknowledge that power is inherently relational. In other words, power is not something one possesses but rather a potential for action that resides within social relationships. It only exists when it is put into practice and exercised. This relational understanding of power is proposed by Foucault, according to which power operates within the social body itself rather than being imposed from above (Foucault, 1982). This notion and perspective become evident in IS literature through various forms of knowledge, practices, and technologies that influence and impact the behaviour of others (Doolin, 2004). Therefore, there are cases in the literature that highlight the exercise of power by one party does not “necessarily reduce the power of other players, the secret of their success was the fact that the results of their exercise of power empowered other units and the organisation” (Cendon & Jarvenpaa, 2001, p. 133).

5.4 Implications for research

In this study, we attempted to provide insight into activity systems that rely on IS/IT tools as a central component mediating the attainment of goals in an activity through these tools. To explain this notion, we

reviewed the literature on power contradictions in the IS literature and assessed these contradictions through the lens of activity theory. Considering the scope of our literature analysis (the IS literature) and the nature of power conflicts (as a contradiction that usually hinders the progress of goal attainment in an activity system) helped us to better highlight the role of these tools as a source of conflict and come up with a proposal to a revised definition of primary and secondary contradictions in what we named 'IS/IT centred activity systems'.

We call for extending this proposed framework in areas of social and organisational contradiction other than power conflicts. As an example, future research may consider studying the role of collaborative systems in IS/IT-centred activity systems. Additionally, we used isolated activities as the level of analysis in our systemization of the literature. Future research may consider the network of activities and reciprocal relationships between power conflicts in various activities. Beyond that, future work can also focus on the evolution of activities and the role of power conflicts in these evolutions (perhaps using a longitudinal approach).

With respect to our study on power conflicts in the IS literature, we call for future studies to expand the study of emerging technologies. Although the current body of research has focused on technologies such as blockchain and their impact on the decentralisation of power (Lacity, 2022; Renwick & Gleasure, 2021) or algorithmic control of platforms over users (Kokshagina et al. 2022; Tarafdar et al. 2023), there is a vast opportunity to extend these studies. In particular, with the expansion of AI in the form of autonomous generative technology and its potential to act as an agent, future research may reconsider the border between the tools and subjects in activity systems and the potential implications on power relationships and conflicts.

5.5 Implications for practice

With the advent and increased use of digital technologies, organisations must recognise the pivotal role of IS/IT tools in shaping power dynamics. The traditional hierarchical power structures may no longer suffice in a world where IS/IT tools often mediate most organisational activities. By adopting an IS/IT-centred activity system, organisations can more effectively identify and manage power contradictions. Practitioners can use the findings to identify, and thereby manage contradictions before they escalate. By making IS/IT tools the focal point, organisations can devise strategies that specifically address power imbalances that arise due to these artefacts.

Practitioners should also consider the ethical implications and societal impact when designing or implementing new systems. They can use IS/IT tools not just as instruments of control but also as enablers that can empower individuals and communities. As IS/IT tools have the potential to empower or disempower various societal segments, there is a need for policies that enforce ethical considerations in the design and implementation of such tools.

6 References

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