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COLLABORATION BETWEEN HOUSEBUILDING FIRMS AND SUPPLIERS FOR THE IMPLEMENTATION OF INNOVATION STRATEGIES: A STRATEGY-AS-PRACTICE APPROACH

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Establishing long-term relationships, collaborating and making decisions with suppliers has become a major requisite for firms’ competitiveness and for implementing innovation. In a relatively unbounded context, such as the construction industry, innovation takes place across a network of loosely coupled organisations. Thus, cooperation and efficient communication must transcend organisational boundaries in order for successful innovation to occur. This paper adopts a strategy-as-practice (S-A-P) approach to understand how innovation “strategizing” takes place between firms and suppliers and how power relations influence its implementation. This is used to examine how social practices, such as strategic meetings and workshops, bring about the coproduction of innovations between firms. The paper sets out a novel theoretical approach comprising targeted ethnographic observations and in-depth interviews. These are used as a framework for identifying how innovation takes place by analysing how collaborative innovation between the firms and their suppliers is executed, and in particular how power is distributed between and across those actors. It is argued that this approach offers a novel theoretical contribution towards understanding of how innovation takes place across inter-organisational boundaries and the collaborative mechanisms that might support it.

Keywords: collaboration, housebuilding, innovation, strategy-as-practice, power

INTRODUCTION

The construction sector is a large and complex area of the UK economy, contributing to £103 billion in economic output in 2014, and comprising a wide range of products, services and technologies (BIS 2013; Rhodes 2015). Innovation in the industry is not always profit-driven, but it is influenced by a panoply of “institutional contingencies”, such as national policies, government regulations, construction standards, market and financial conditions and the public opinion for the environment (Dale 2007; Lizarralde \textit{et al.}, 2015). Hence firms need to find ways to adapt their procedures and technologies according to these external pressures. This process might not be easily implemented due to the high number of firms and actors involved in construction projects, and the low levels of innovation and flexibility to change.

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Construction firms rarely innovate in isolation, but in collaboration with other firms, customers or suppliers, and in cooperation with innovation partners such as universities (Hauser 2010). This is a challenging as the sector is also characterised by high levels of sub-contracting, self-employment and a proliferation of many small and micro businesses (BIS 2013). As such, firms must harness the innovative capabilities of numerous actors and firms, many of which might be loosely coupled to the production effort. Such loose couplings could potentially foster novel solutions because of the involvement of many actors from different contexts, but at the same time may prevent innovation diffusion because of the structure of construction projects (e.g. difficulties in promoting learning, decentralisation, and short-term relationships). Hence loose couplings seem to favour short-term productivity and hamper innovation (Dubois and Gadde 2002). This complexity might go some way to explaining why the industry is often seen as slow to innovate (Goodier and Gibb 2007). Other reasons include client scepticism, a risk adverse culture, unproven durability of innovative solutions, uncertainty about demand, and the negative views of consumers (Jaillon and Poon 2008; Lovell and Smith 2010).

From this backdrop, it is clear that the construction industry represents a problematic arena for innovation. It is therefore necessary to develop a deeper understanding of how innovation may occur within the organisation and the supply chain. The focus here is on the housebuilding sector, which has long been regarded as one of the slowest areas of the industry to innovate (Winch, 1998; Ball 1999; Barlow 1999). Winch (1998), for example, has called for more case studies to be made around innovation in the sector, which is still characterised by low levels of innovation (Ozorhon et al., 2014). However relatively little research is being conducted in this area and thus new perspectives on the topics should be developed. In particular, there is a gap in literature concerning the distribution of power between actors during an innovation process. The aim of this paper is to understand how power is distributed between the firm and the suppliers throughout an innovation process. The focus of analysis would be on a micro-level of analysis by using an ethnographic and strategy-as-practice (S-A-P) approach during specific strategic episodes where innovation takes place. This is used to illuminate the ways in which strategies for innovation are formulated and what kind of role suppliers, who are outside the firm but still within the supply chain, have in such decisions.

By adopting a S-A-P perspective it is possible to focus on the actors’ activities and behaviours in a particular setting, allowing the research to reveal more about the micro-dynamics of interaction that are often overlooked in accounts of innovation processes. The main purpose of this research is presenting a novel methodological approach by combining S-A-P and targeted ethnographies in different case studies of UK construction firms as a way of analysing the housebuilding sector and, in particular, to understand innovation in practice-based activities. Targeted ethnographies would help to focus on the different specialist groups which are usually involved in construction projects (Tutt, Pink, Dainty, and Gibb 2013) and would also represent a novel approach to understand how actors’ interactions and practices occur during an innovation process. The paper also aims to outline previous relevant research in the construction sector focusing on collaborative innovation and power relationships, to explore the potential of S-A-P theory to reveal the ways in which power shapes innovation outcomes within the sector and to build upon this to develop a research approach to studying innovation practices at this level.
Construction Innovation

Why more innovation research is needed in construction

Implementing innovation is undoubtedly a means to improve performance, but it is also challenging due to the fragmentation of the construction industry. Most research on the innovation process has focused on the firm level, whereas the project-level has been little considered. This is because of the difficulties of following and controlling all the activities executed by the actors involved in construction projects (Dulaimi et al., 2002; Blayse and Manley 2004). Nonetheless, the construction (and housebuilding) industry relies heavily on co-developing innovation with the other participants in the projects (e.g. designers, sub-contractors, clients, suppliers) and mainly innovates at the project level (NESTA 2007). Moreover, there is a lack of research concerning inter-organisational innovation which also emphasises the importance of network relationships. The case study by Ozorhon et al., (2014) emphasises the importance of integration between project participants to facilitate knowledge sharing and the adoption of innovation. For example, the establishment of partnering agreements with suppliers enables the innovation to flow. Given this, the next section will address the importance of inter-organisational activities, such as collaboration within the supply chain.

Collaboration and networks

Within the construction industry, success comes from effective inter-organisational management and collaboration. An extensive literature emphasises how innovations success is created by investing and sharing resources, knowledge, and risks, and developing open communication with suppliers. Sharing knowledge is traditionally seen as a source of power in the supply chain and it therefore needs trust to be shared and, by doing so, innovation is built through a learning process (Soosay et al., 2008; Frankel et al., 2002). Within the built environment, issues on innovation adoption and diffusion involve the presence of different actors and interests. For example, science and technology studies (STS) have highlighted the role of networks, actors and the concept of "unbounded innovation", whereas institutional scholars have shifted the focus on "collective action" (Whyte and Sexton 2011). In particular, the role of networks has been developed in construction literature, such as through Winch's (1998) model of innovation diffusion which depicts the importance of the "superstructure" (clients, and professional institutions) in encouraging the diffusion of innovation by putting pressure on the supply chain partners. Larsen (2015), through a social network analysis (SNA), also emphasises the importance of actors in diffusing innovation within an "outward-looking network". The presence of many actors within a project raises questions on how power is distributed and used.

The role of power

The involvement of many actors within a single project raises the issue of power relations. This has been acknowledged in literature concerning buyer-seller relationship and power-dependency. The first author to discuss about the importance this relationship was Porter (1980) in his five force model. More recent studies argue that power comes from a combination of interrelated factors: who holds power is influenced by the organisational context, individual characteristics of buyers and sellers, and relational interactions (Meehan and Wright 2012). Cox argues that only businesses in possess of value and power over the other actors (e.g. customers, suppliers, competitors) are successful and therefore conflicts of interests arise in vertical participants in the supply chains. He thus affirms the importance of practitioners knowing the power structures in their supply chains in order to
understand how to strategically manage them. This perspective clashes with the lean thinking approach which emphasises the importance of integrated supply chains and power interdependence (Cox 1999). This asymmetric power/dependence relationship emphasised by Cox is however largely associated with unproductive relationships in literature, even though an asymmetrical distribution of power in reality seems inevitable due to the different characteristics of the firm and suppliers (Caniëls and Gelderman 2007; Nyaga et al., 2013). Analysing the role of power becomes important when innovation has to be adopted, because it enables researchers to understand how collaborative activities and decisions are made. Moreover, assessing whether suppliers have enough power to make strategic decisions may open new innovative initiatives for the firm, or lead to conflicts.

Theories on strategy-as-practice and the role of power and discourse
Within S-A-P literature, the interest in strategy as discourse has recently increased, but its role in relation to power remains underdeveloped (Hardy and Thomas 2014). Foucault (1980) discusses the conceptualisation of power and discourse, in which power circulates and it is not centralised, but it is "deployed and exercised through a net-like organization", in which power relations pervade all levels of social existence. He also argues that power is "productive" and thus creates knowledge and discourse. Knights and Morgan (1990) also recognise a relation between discourse and power and argue that “the discourse and practice of strategy is distinctively a mechanism of power”. Finally, Foucault does not focus on the general strategies of power, but focuses on the "micro-physics of power", which look at the localised mechanism of power circulation. Hardy and Thomas (2014), drawing on Foucault's theory, found that discourse shapes strategy in ways that are not dependent only on the senior managers, but also on multiple local practices over which senior strategists have little control. This also indicates that one discursive element of strategy can be weakened through resistance, while another can be strengthened. Such findings highlight the importance power in shaping praxis and knowledge as a way to develop innovation strategies within a group of actors.

The origins of S-A-P literature can be traced to the study of strategy in various organisational contexts, which began to establish a stable identity at the beginning of 2000s (Vaara and Whittington 2012). There are economic, theoretical and empirical factors which explain the diffusion of this perspective. First of all, the increasing pace of change of the economic environment has led to a shift of strategy making from a well-defined and stable system of decision making into a more continuous process (Eisenhardt and Brown 1999) based on everyday practices and involving many members inside an organisation. Secondly, at the theoretical level, the resource-based view (RBV) failed to empirically consider types of activities, and micro-activities, such as managerial activities, and their contribution to gain competitive advantage. As S-A-P is more focused on actors and praxis, it could give more emphasis to these activities than a RBV perspective on strategy. Moreover, other theories, such as dynamic capabilities drawing on evolutionary theory, and institutional theory also failed to highlight, respectively, the roots of dynamic capabilities, and the nature of negotiations among actors to create and change institutions (Gavetti 2005; Johnson et al., 2007). Thirdly, empirical research on corporate structure relies too much on large-scale cross-sectional studies. Since structures are in continuous flux, it is necessary to have a better understanding of the activities involved in creating and implementing them (Johnson et al., 2007).
S-A-P scholars argue that strategy is something that “people do”, rather than something that “organisations have” (Jarzabkowski et al., 2007). Strategy is thereby analysed as it evolves and as it is made by individuals. This perspective can have various benefits: it is possible to assess how strategies are shaped by different actors, and it helps to get insights into macro- and micro-level concerns in the strategic field. This “activity-based view” of micro-phenomena has to be understood in its social context: S-A-P concerns “what people do in relation to strategy and how it is influenced by and influences their organizational and institutional context” (Johnson et al., 2007; Jarzabkowski et al., 2007). The S-A-P approach is characterised by plurality of actors (called “practitioners”) who are always reliant on the wider context of institutionalised and organisational practices. These kinds of practices include, for example, strategic planning, tools and techniques for strategic analysis, agenda-driven behaviour in meetings or boards, etc. Beyond those practices people engage with, practices can also relate to what people actually do for strategizing. These last practices can be referred to as “praxis”, which is the “concrete, unfolding activity as it takes place” and it is guided by practices (Whittington 2006). For all these reasons, S-A-P, and also theories of power assume a key role in analysing the interplays between external actors’ praxis (e.g. suppliers) and internal actors’ praxis (e.g. the housebuilding firm) in constructing, for example, an innovation strategy workshop.

S-A-P scholars can use a wide range of theoretical perspectives which comprise of different strands of practice theory (Suddaby et al., 2013). In S-A-P literature there has been an increasing number of researches focusing on the linguistic nature of strategizing and the ways in which language shapes strategy. S-A-P has been linked to studies which examine different forms of interactions and discourse. It highlights that strategists make use of discourse through narrative, rhetoric, and metaphor, or through discursive activities such as justifying, legitimating and naturalising (Vaara and Tienari 2002; Hardy and Thomas 2014). S-A-P research should be supported both by traditional research methods (e.g. structured interviews and questionnaires), both by documentary analysis with ethnographic observation (Rasche and Chia 2009). The next section will try to understand how all the themes discussed in this section can be analysed and applied to this specific research.

**Discussion: Towards a method for understanding the micro-dynamics of interaction underpinning inter-firm innovation strategy**

Winch’s (1998) model of innovation highlights the mediation role of the system integrator (e.g. a contractor) who can guide and manage the implementation process of a specific innovation. According to the concept of relative boundedness (Harty 2008), it may happen that innovation’s effects lie within the control of such implementer (relatively bounded), or it may extend beyond such sphere of influence (unbounded). The second scenario is what usually happens in a construction project where numerous firms and actors work together. In this context, the characteristics of an innovation are transformed and shaped in practice by different actors who are likely to have different requirements. It is therefore difficult but essential to build efficient collaboration and communication which should travel across organisational boundaries (Harty 2005; Harty 2008). In this context, issues of power relations again pervade inter-organisational activities, such as specific "strategic episodes".

Within the S-A-P literature, the concept of “strategic episodes” has been developed as a framework to analyse meetings. The term episodes refer to the characteristic of events of being formed by a beginning and a pre-defined end which becomes the
reference point for all the other activities within the meetings. Beginning and ending thus refers to two points of temporary structural change (Hendry and Seidl 2003). Some authors argue that strategic episodes are more or less ritualised. Participants distance themselves from daily activities and engage, temporarily, in this privileged environment where a sort of “liturgy” is carried out and a collective engagement and emotional commitment is created. Strategy workshops are usually useful to motivate and emphasise the understanding of the strategy. However, they need to be followed by an implementation plan and good communication throughout the organisation in order to obtain tangible outcomes (Johnson et al., 2010). The observation and analysis of meetings and workshops allows researchers to understand the real day-to-day challenges of interaction between different actors. Indeed relationship dynamics may appear different in these settings than they are depicted by the firm's managers.

The reason to adopt an S-A-P perspective to analyse those episodes lies in the fact that, being a practice-based approach, it emphasises the daily routines within a project and gives importance to the strategy discourse as a way of creating knowledge such that power relations can be analysed by looking at language and activities. These micro-practices may represent the response of actors to an innovation and may characterise collaborative activities towards strategic decisions. According to co-production research which emphasises the importance of engaging industry and research, Green and Harty (2008) found that there are some areas which are considered central in the industrial context, such as the need for better collaboration across the supply chain, particularly when considering innovation. Such affirmation lies in the fact that the networks within a supply chain are sources of innovation and knowledge.

**Proposed research approach**

The proposed methodology for this research is based on case studies of large-medium housebuilding firms in the UK. In order to understand how those firms and suppliers collaborate and implement innovations, it is also important to examine the types of interactions and the role of suppliers in shaping the firm’s strategy for innovation. It is proposed to use a qualitative research design comprising participant and non-participant observations, interviews, informal conversations with actors on the field of study, audio- and video-recording, and taking photos. The use of targeted ethnographies represents a method of data collection which requires short periods of fieldwork (e.g. weeks or months), even though it is a "data intensive" process (Knoblauch 2005:16) in which a lot of different techniques should be used. In particular, the support of audio- and video-recording of activities helps to extend the ethnography beyond the actual encounter (Pink and Morgan 2013). It is thereby possible to collect and analyse lots of data without being present for long periods on field.

The process of collecting data will take place during specific strategic episodes, such as formal meetings between the firm and its suppliers and workshops. Participation during meetings will mostly comprise of observing the normal execution of the meetings with a particular attention to the types of interactions and activities and the type of language and discourse used to shape innovation strategies. Targeted ethnographies during workshops or training days can be useful to observe how suppliers and the firm may react to an innovation (e.g. a new technology or a new building process). Workshops with suppliers would probably give the chance for suppliers of being presented with potential innovation strategies involving the supply chain. However, they may also be able to discuss with the firm about new products.
Collaboration and innovation strategies

(e.g. materials, technologies) to be adopted by the organisation and thereby influence future strategic decisions. The point to consider and try to understand is whether suppliers really have such power to influence the firm’s strategy concerning innovation. Moreover, these observed activities and interactions may differ from the interviews with the firm and suppliers, and may give a more detailed and real representation of suppliers-firm relationship. Being an external observer may also represent an opportunity to interpret actors' praxis and organisations’ practices in a different and novel way compared to the actors directly involved. In this sense, even collaborative innovation and power asymmetries may be observed through this approach. For example, the process of making decisions on technical aspects of the project may become a learning process for both of the actors and lead to the development of innovative strategies. Nonetheless, in-depth interviews would still be important as a framework to understand how the firm is organised and how the relationships with the suppliers are managed, and to obtain a subjective and deeper perspective of the members in terms of their opinions concerning supply chain relationships, organisational culture, and approach to innovation.

Looking at the distribution of power in making day-to-day strategic and technical decisions, the specific duties, the behaviour and interactions in particular settings would lead to the development of a framework to research innovation strategizing. Indeed the project tries to explain that innovation strategies are the result of micro-dynamics of different actors throughout different strategic episodes (e.g. meetings and workshops). An ethnographic approach is therefore the most appropriate method of data collection, since it allows to be present where action occurs and strategies are discussed. Indeed, in a study by Hartmann, ethnography, which includes observations and informal talks, served as a way to reveal micro-cultural aspects which were embedded in everyday practices within the project team. Such approach enabled the researcher to understand collaborative relationships between two construction parties as a process of learning which involved the project team and the researcher (Hartmann 2013). In such an illusory "win-win" situation, power asymmetries may play an important role in shifting the innovation process from one actor to another (e.g. from the firm to the suppliers). Such approach, which applies S-A-P and power theory, may offer contributions both to construction innovation and S-A-P literature itself.

CONCLUSIONS

The aim of this paper is to understand how power influence suppliers-firm interactions when implementing innovation strategies. Using S-A-P approach will shift the research focus on the micro-activities during formal meeting and workshops, key arenas where collaborative inter-firm innovation takes place. Moreover, the combination of this approach with targeted ethnographies in specific settings will provide a fresh perspective on how collaborative innovation is developed and implemented through collaborative praxis. The research will respond to gaps in literature concerning power through an S-A-P lens, and innovation in housebuilding through a focus on micro-dynamics and ethnography. The results of the research will shed light on the collaborative relationships and activities within the supply chain, and will explain how power is distributed and innovation strategy is managed in contexts, where different actors' perspectives are present. In particular, understanding power will help to highlight the role of suppliers in communicating with the firm and in responding to innovation. It is hoped that such approach might help to shed new light on inter-firm innovation strategies within the UK housebuilding sector.
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