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That's why it matters: How knowing creates value

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Abstract

This article develops our understanding of how knowing creates value. It contributes to the interactionist perspectives on knowledge in three particular ways: first, it recognizes that knowledge is only valuable when it is *enacted*, i.e. know-how-in-action (KHIA). Second, it develops a typology of value creating options, i.e. *clones*, *talent rich*, *resource rich* and *synergists*, which represent multiple options that we can enact. These value creating types are sensitive to the socio-systemic and personal nature of knowing. Finally, it addresses the power dynamics within each value creating option. This lens re-introduces the individual power dynamics which impact on future value-creating processes.

Keywords

embedded resources, interactionist perspectives, know-how-in-action, knowing, power, value-creation

Introduction

This article develops our understanding of how knowing creates value. It contributes to the interactionist perspectives on knowing by developing a framework of multiple options which people can invoke, or enact, when creating value. It also remains focused on the socio-systemic and personal qualities of knowing (Cunliffe, 2008; Ringberg and Reihlen, 2008; Schneider, 2007; Spender, 1994; Strati, 2007), thereby resisting the objectification and codification of knowledge which is so prominent in contemporary knowledge management literature. In particular it acknowledges that, in order to create value, know-how-in-action (KHIA) needs to interact with artefacts such as material cultures, organizational procedures and team-processes (Cunliffe, 2008; Empson, 2001; Strati, 2007). Research on the interaction between knowledge and other resources (i.e. the interactionist perspectives) emphasizes the importance of context and the need to build on existing knowledge to generate new knowledge (Smith et al., 2005). These perspectives generally regard knowledge (as a resource) and knowing (as action) as mutually constitutive (Hicks et al., 2009; Orlikowski, 2002). This is a useful first step.

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The interactionist perspective remains vague in one key area; it acknowledges the importance of other artefacts in the expression of knowing (Gherhardi, 2000) but it is less clear on 'how knowing creates value'. Theoretically we currently know that, for example, as a skilled management consultant I need to combine my analytical and client management skills with organizational processes and team relationships; but the literature is less clear about how the interaction between my knowing (skilled performance) and artefacts (the processes and relationships) will generate value. This requires us to develop a theoretical framework which explains the value-generating properties of knowing.

The article does so in three particular ways: first, it recognizes that knowledge is only valuable when it is *enacted*, i.e. know-how-in-action (KHIA) which is defined as a routine in practice which consists of specific actions, by specific people, in specific places and times. That is to say, a 'static' knowledge resource must be manifested through activity at a point in time (Antonacopoulou and Tsoukas, 2002; Butler, 1995; Clark, 1985; Woolgar, 1988) if it is to create value (Spender, 1996). Second, it is mindful of the importance of the inter-relationships between knowledge and its context. In particular, it develops a theoretical framework which identifies four types of value creation (*clones*, *talent rich*, *resource rich* and *synergists*) representing multiple options which people can invoke, or enact, when creating value. Finally, it considers the power dynamics within each value creating type. This lens re-introduces the individual power dynamics which impact on future value-creation processes.

The interactionist perspectives on knowledge and knowing

The account of the various perspectives on knowledge has been well documented (Alvesson, 2001; Cunliffe, 2008; Hargadon and Fanelli, 2002; Schneider, 2007; Spender, 1994; Strati, 2007; Tsoukas, 1996) and highlight that the process by which knowledge generates valuable outcomes is often overlooked. That is to say, if we are to understand how knowledge generates value, we need to re-contextualize our current debates (Schneider, 2007) to take into account the interaction between knowing and other resources. Take, for example, the know-how involved in designing an advertising campaign, which will need to interact with material artefacts such as organizational procedures, team relationships and, importantly, the organization's brand for the purpose of generating value. In order to consider this dynamic interaction the article presents a brief overview of the main characteristics of the various approaches which explain how knowledge generates value in organizations, indicating that the main contribution of this article is to the interactionist perspectives on knowing, through its identification of a framework of multiple options which are invoked/enacted to generate value.

A dominant theoretical framework on the nature of knowledge as an asset (Fincham and Roslender, 2004) and its value-generating properties, is the knowledge-based view of the firm (Grant, 1996) which argues that organizational resources that are simultaneously valuable, rare, inimitable and non-substitutable (Barney, 1991) generate value which is held by the organization (Peteraf, 1993), rather than the individuals who personally enact their knowledge. This framework takes a macro or production-factor perspective (Schneider, 2007) of a resource which is often personal and political. It is also mainly functionalist in its approach and it tends to emphasize the codification and capturing of knowledge (Haas and Hansen, 2007; Hansen et al., 2000). Hence the dominant unit of analysis is the organization, i.e. how unique and valuable resources can be managed within the organization to generate rent advantages. There is some overlap between the knowledge-based view of the firm and the Cook and Brown's (1999) epistemology of possession which has so powerfully dominated much of the development in human capital accounting (Fincham and Roslender, 2004) and knowledge management (Davenport and Prusak,

1998; Nonaka et al., 1998, 2008). This framework does, helpfully, acknowledge the importance of know-how, as opposed to knowledge, as a valuable organizational resource but tends to emphasize the functional nature of these resources which generate value, i.e. they are functionalist in their approach. We need to be mindful that the *enactment* of know-how in a particular time-frame and in a particular context, which is so important, is often overlooked. As scholars we are urged to remember that although the major objective of knowledge management's theoretical and practical arm is to contribute to the development of exceptional strategy (Schneider, 2007: 615), we need to develop a clearer view of the properties of knowledge which could generate such advantages.

As an alternative to the strategy and macro-perspectives is the notion of knowledge as the epistemology of practice, or knowing. In this approach, situated learning theory, which includes situated action (Vygotsky, 1978) and distributed cognition (Brown and Duguid, 1991; Lave and Wenger, 1991; Weick and Roberts, 1993), encapsulates the notion that knowing is a socially situated activity whereby knowledge is applied and, thereby, created during practice (Hicks et al., 2009: 292). This concept of knowing was first vividly described by Polanyi (1967) in his seminal text *The Tacit Dimension* wherein he depicts the phenomenal structure of knowing as the process of 'attending from one point to another in the act of tacit knowing'. The development of 'knowing' as opposed to knowledge has been well documented (Cook and Seely Brown, 1999; Nonaka et al., 2008; Schneider, 2007; Spender, 1994). The focus of analysis within this discourse remains at the individual and relational levels. That is, we are urged to be cognizant of 'how and where' individuals and groups of individuals, such as communities of practice (Wenger, 2000), enact knowledge, as depicted through their know-how. These perspectives also refreshingly remind us of the power and political dimensions which are involved in the display of knowing. That is, an actor engages in writing, consulting, conferring or designing within a political context influenced through relationships (Cunliffe, 2008).

It is also the enactment of knowing, or the logic of practice (Czarniawska, 2001; Hicks et al., 2009), which is contextbased, tacit and linguistically sensitive, that provides a platform for the re-description of knowledge. That is to say, that as we enact knowledge it is simultaneously re-described and re-positioned. In this view, knowledge is an emergent property of a system and it has systemic-sociological qualities (Ringberg and Reihlen, 2008; Schneider, 2007). This is a very helpful perspective on what knowledge is and it places knowledge within its relational context. What is less clear from these perspectives is how it generates value.

In summary, current theoretical frameworks do not sufficiently explain how knowing creates value because of their specific epistemological positions, i.e. the knowledge-based view of the firm (1) takes a functionalist perspective on knowing; (2) is focused at the organizational level of analysis; (3) tends to argue for a managerialist and codification approach to knowledge, whereas the interactionist perspectives do not (1) explain the processes by which knowing generates value, nor do they (2) identify types or modes of value creation. From a theoretically and practically useful viewpoint, then, we need to understand how knowing creates value. This article develops this understanding by moving beyond many of the purely resource-driven accounts of knowledge which tend to regard knowledge as a stock (Smith et al., 2005) to appreciating knowledgeable action (Orlikowski, 2002) and re-description which focus upon the individual and inter-relational aspects of knowledge enactment. In order to develop this theory we need to acknowledge that, ultimately, knowing is only a means to generating value, it is not of value in isolation. If this is so, how do we begin to understand how knowing creates value?

Toward value creation: defining know-how-in-action

In order to create value, know-how per se is unlikely to be sufficient. It can only create value if it is enacted at a particular point in time which ultimately confers a value advantage. This source of

advantage is know-how-in-action (KHIA), which I define as a routine in practice which consists of specific actions, by specific people, in specific places and times. That is to say, a static knowledge resource must be manifested through activity at a point in time (Antonacopoulou and Tsoukas, 2002; Butler, 1995; Clark, 1985; Woolgar, 1988) if it is to create value (Spender, 1996). In the example of an accountant, with several years' experience of dealing with complex tax problems in multinational companies, the accounting knowledge is not in question but unless the partnership is able to attract multinational clients, this knowledge cannot generate value. And, should they secure such a client, the knowledge can only create value if it is actuated in some way, for example by providing advice which is valued and appreciated by that client. Know-how therefore needs to be frequently rehearsed, through action, in order to maintain skilled performance. This example also illustrates the synergies operating between the know-how and other embedded resources. Value is created through the interactions between accounting know-how, a senior partner's relationship with a major client, information about the client organization's tax history, the firm's reputation and an efficient proposal writing system. It is important to note here that the reputation and the proposal systems alone could also not *generate* value. They 'hold' value, but this value needs to be realized through action. Likewise, the knowledge of the tax accountant in its static form could not *generate* value; it had to be *enacted* (know-how-in-action) and *interacted* with the embedded resources.

Value creation is therefore the outcome of *activity*, and hence the focus with respect to knowledge should not be on knowledge as a static resource, or indeed on know-how alone, but on know-how-in-action (KHIA). Thus we shift the focus from knowing about things to the doing of activities which, importantly, is timesensitive. That is, given the focus on the interaction between knowing and other artefacts we have to take a time-sensitive view. This can be viewed as taking a time-slice through a series of interactions in, for example, a team meeting. I am not interested in the resources that work together over an abstract period of time, such as a project lifecycle, but the focus needs to be in each of the sets of interactions in one time frame. This is the first step to understanding how knowing generates value. Next I ask: what are the different ways in which KHIA can generate value? This description will enable us to unpick the interplay between KHIA and other artefacts and will develop a framework of multiple options that people can invoke to create value.

Variations in know-how-in-action

As my interest is know-how-in-action I am concerned with the various ways in which know-how can be enacted. Any value-creating activity is likely to involve some variation in the way the activity is performed. This variation derives primarily but not exclusively from the actors involved in the activity, for example some will enact their know-how more effectively than others. The same individual will act differently through time if learning takes place, and there may be other action-based variations caused by changes to the context and the individual, e.g. their mood, etc. Some of these enactments may create more value than others. The better performing sales person will behave in ways different from his or her colleagues. Given the pressure to retain what is valuable organizations may be motivated to systematize the routines or to codify the nature of these valuable variations. Indeed, this is the dominant focus in much of the knowledge management discourse. Know-how, will however, seldom, if ever, be captured and codified because of, for example, the infinite interpretations of the context within which know-how is enacted, the power relationships, and the variations in ability and expertise. Therefore the capturing of the routine in action potentially presents three categories of problems: the routine cannot be captured due to its deep-seated tacit nature, the routine politically will not be captured and the routine will always be subject to interpretation and once enacted it will lead to variance in the performance of the routine. The variability of KHIA is therefore captured by the level of the *skilled enactment* at a particular point in

time and I argue that some contexts will enable more skilled performance than others, hence they can be characterized by exceptional KHiA. We need to understand which resources create a context that enables exceptional value generation. This requires us to define these resources and to be clear how they interact with knowing (KHiA). This is the second step toward identifying the multiple options that we can enact to create value.

Toward valuecreating: defining the embedded artefacts

As discussed earlier, value creation needs to be understood within a framework that appreciates the inter-relationship between knowing and other artefacts. It is important to clarify our definition of artefacts. When we consider an artefact such as 'brand advantage' we are typically referring to material outputs that are socially constructed and exist in the minds and relationships between actors, such as customers, which have resulted from skilled performances in the past. For example, exceptional performance of actors in a particular time frame, say (T₁), will build material resources such as reputational capital in another time period (T₂). In this sense the resource that was once deeply embodied becomes an embedded artefact (Bowman and Swart, 2007). Why do I consider these artefacts as *embedded*? First, I regard an artefact, such as a brand-name, as existing at a collective level. Second, I acknowledge that matters such as brand-names can only create value in a context within which they are embedded. For example, if you have never heard of Coca-Cola then the brand may have little value. Finally, I regard these artefacts as embedded because they result from relational interactions (knowledge themselves) and they form a web/backdrop within which know-how is enacted. A client-relationship management process, as a management genre (Levina and Orlikowski, 2009), develops from groups of people interacting in a certain way and these actions become more formalized and embedded in the organization. That is, they become an embedded artefact.

Each resource, be that KHiA or embedded artefacts, can be exceptional or equivalent within a given context, such as an industry (Smith et al., 2005). Exceptional resources have *valuable variations* within a given context, for example a group of sculptors in a geographical region or a constellation of magic circle law firms. These variations enable the generation of relatively more value within that given context. Where resources are *equivalent* we do not imply that they are identical across contexts, rather that whatever variations exist they are not *valuable* variations, i.e. they do not contribute to differential value. In the accounting firm example, the equivalent embedded artefacts might be generic client engagement procedures, which would be commonly found in competing firms. Equivalent KHiA could be the contract-drafting skills enacted by junior staff, which may include variations between organizations and variations over time, but these variations are not a source of additional future value for the organizations. Conversely, exceptional KHiA could be an especially knowledgeable tax specialist deriving an ingenious solution, embedded routines that deliver enhanced client experiences, or client relationships that provide reassurance and enhance trust. These resources may well be more valuable in combination where synergies result from them working in tandem. Exceptional embedded artefacts could be a powerful brand, exceptional client relationships, project management processes, etc. These resources can result from deliberate, intended efforts to create more value but they can also derive from more emergent processes (Mintzberg and Waters, 1985).

It is the way in which we enact/invoke the various types of KHiA in combination with the embedded artefacts that will create value (i.e. value-creating types). What is important to remember, is that each set of interactions forms a social process which is naturally enmeshed with power dynamics. We therefore need to understand how these power dynamics will impact on value creation.

Value creation and power

According to the interactionist perspectives, value is generated when we enact KHiA in combination with embedded artefacts. How then do we define value? This is an important building-block in our theoretical advancement as it will inform our understanding of the ways in which knowing generates value. Value is more than purely profit or revenues, or, to use the resource-based view of the firm, it is something more than rents generated. I acknowledge that it is socially constructed, i.e. a group of people would need to value an outcome for it to be thought of as valuable. For example, clients need to value consulting advice; theatre-goers need to value a ballet production. Value is therefore a collective sense of mutual appreciation. But it is also more than this, particularly when we address the nature of knowing, and, in an organizational context, its management (Schneider, 2007). Valuable outcomes would enable organizations or people to do something in the future. For example, valuable client relationships may secure a future stream of work, or talented solicitors may identify future market opportunities which place the organization at an advantage relative to its competitors, or a carefully designed MBA programme (which may have mutual appreciation) will enable a business school to attract increasing numbers of students. It is the *future potential of value* which is important to us and which also comes sharply into focus when we take a closer look at the power dynamics in the various KHiA-artefact configurations. We define value as outcomes which are mutually appreciated and which have an ability to create future opportunities.

The very perspective of future value-creating opportunities places the notion of value within the context of power, given that the various actors that participate in value creation would want to retain a sense of ownership over their 'knowledge' and the value generated from this. I am interested in how power relationships are negotiated in action and in relation to perceived resource ownership in a given context and therefore consider this from a bargaining viewpoint (Berger et al., 1992; Blyer and Coff, 2003; Coff, 1999; Levina and Orlikowski, 2009). These power relationships are well documented in the literature on the management of knowledge workers (Alvesson, 2001; Swart, 2007) wherein individuals bargain for their rights to maintain a claim on future value generated by requesting, for example, high salaries, shares and particular employment conditions. The organization on the other hand may want to claim ownership of these values by arguing that value would not have been generated without its brand-image. This may put the organization in a position where it invests in future embedded resources, such as improved procedures, or indeed, the owners of an organization may claim future financial value generated. These bargaining relationships have a direct impact on the ability to capture the value generated. The various value-creating options, according to the specific resource combinations, therefore hold implications for these bargaining relationships. Many artefacts, which can be categorized as managerial genres, such as software, processes and brands will be controlled at the collective level, e.g. by the organization, whilst rich skilful routines will be perceived to be individually created, enacted and controlled. In the case of KHiA, issues of ownership and control are complex and ambiguous (Bowman and Swart, 2007; Coff, 1999) which therefore requires an examination of how embedded artefacts and know-how-in-action will interact to create value.

Discussion

In this section I provide a detailed description of how knowing creates value. I identify four value-creating types (clones, talent rich, resource rich and synergists) which represent multiple options which people can invoke when creating value (see Figure 1). In each value creating type I highlight some examples of the situations that individuals and organizations enact in order to pay

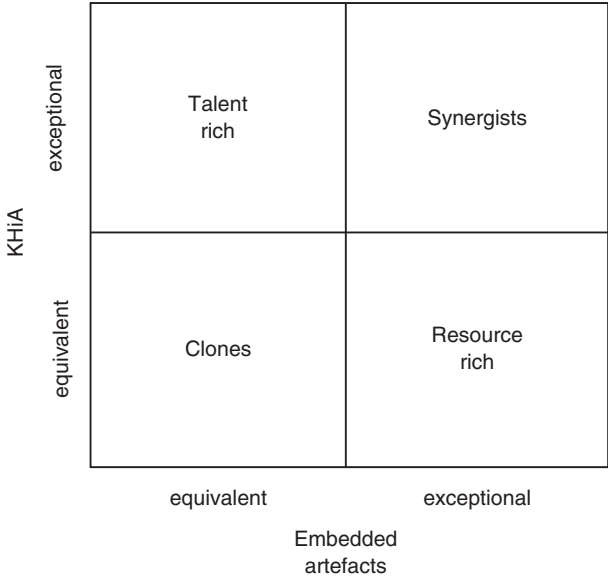


Figure 1. The value-creating types

attention to the power dynamics. This allows my analysis of how knowing creates value to be *interactionist* and *politically appreciative*.

Clones

In this context, we enact equivalent KHIA in combination with equivalent embedded resources. If we were to look across a particular setting, for example organizations in one industry, their KHIA could be similar or perhaps standardized, for example the drafting of legal documentation for merger and acquisition contracts would be similar across law firms. I do recognize that the way in which each individual acts will vary (each personality may differ) but these variations do not confer any relative value advantages. Similarly, their embedded artefacts would be effectively equivalent in their contributions to value creation. It is possible that these artefacts might be actually *identical* to other contexts, especially if they have been standardized, e.g. procedures for processing medical negligence claims. Firms may also have shared assumptions about how this industry operates, i.e. there is a strong industry recipe (Spender, 1996). Thus the knowledge resources are likely to be common across most firms in the industry (Zander and Kogut, 1995). They would probably deliver common outputs from well-understood and standardized routines. Consider a management consultancy delivering standard, off-the-shelf solutions to specific clients, such as financial services firms. The key requirements for this firm would be to employ skilled consultants who can be trained to apply the firm’s templates and procedures to a particular client set (Haas and Hansen, 2007) at a particular point in time. Firms within a particular industry tend to develop similar routines and practices which are industry or occupation specific, rather than firm specific (Zucker et al., 2001). The KHIA amongst a group of law firms which offer employment law services may converge to the norm—here the explicit knowledge in the form of precedents is standard across firms. However, the way in which these precedents are applied and how clients’ cases are

approached (tacit routines) become similar as lawyers move between firms and as clients come to expect certain standards. The cross-boundary working pressures therefore develop industry-level tacit routines which would provide industry average performance. This is an advantage in itself because it helps to ensure survival and a particular market position but it does not represent a position of comparative advantage. Likewise, a group of skilled painters using a similar oil-painting technique, practising their skill together and who have access to the same network of client relationships may produce similar quality paintings, i.e. in these situations the individual painter does not have a relative value advantage. That is, organizations and individuals will be average performers relative to their context.

If we consider the power dynamics in this interaction-type then we need to take into account the fact that equivalent or relatively less value is generated. It might be the case here that the proportions of value captured by suppliers of KHiA and other artefacts are equivalent within a given context. Consider the circumstances of professional and creative industries where issues of internal casual ambiguity, weak perceptions of bargaining power, and the fact that long-term contracts struck at T_1 reflect perceptions of power and dependence at T_1 , not the subsequent circumstances at T_4 these can all result in some organizations in this configuration outperforming others in terms of valuegeneration. The power dynamics which focus on capturing future value would in this case be determined by wider institutional contexts, i.e. standard wages. This is the outcome of equivalent know-how interacting with equivalent embedded artefacts, i.e. neither of the actors has a particularly strong bargaining position which could provide some long-term stability to both individuals, for example the group of painters and/or organizations, e.g. law firms.

Resource rich

In resource-rich value-creating situations contextually equivalent KHiA is enacted together with embedded artefacts that are exceptional to generate above average value. Take a group of sculptors in Africa whose craft is wood-sculpting. If one group of sculptors has access to supplier networks from which they can source higher quality wood, such as poplar, which does not crack with carving, they will generate contextually superior wood carvings which will incur a relative advantage, i.e. selling at higher prices. Similarly, organizations can generate unique and valuable artefacts (Barney, 1986, 1991) such as a desirable brand. A mobile phone call centre with a relatively strong brand relies on undifferentiated KHiA resources such as callcentre operators who merely enact/read a script. Whether these resources remain unique will be determined both by the efforts of other organizations in the same contextual space and efforts by the focal organization to sustain these advantages through continuous improvements, e.g. through enhancing organizational capabilities. In this interaction-type organizations may invest heavily in developing exceptional processes and systems that improve efficiency and/or effectiveness. The managerial challenges here stem from the codified quality of the resources. If these resources can be understood and implemented across the firm, they can probably just as easily be implemented by another organization. We must assume that there are other required resources that prevent firms from replicating the entire business model. It is the how these resources are enacted and combine, i.e. their configuration, which is difficult to replicate, even though the specific resources may be explicit and codified.

The power-relationships in this value-creating type are interesting wherein owners of the exceptional resources, such as the wood providers in the case of the sculptors above or the organizations that are perceived to be powerful given their brand will seek to maximize their future value. The question is, however, how far to push this notion of power given that these owners/organizations will be aware that, even though their know-how resources are equivalent, they cannot create value

without the KHiA resources. That is, the wood needs to be transformed into a carving and the powerful brand needs to be enacted as a product or service. This too will be in the mind of the individual owners of know-how. Once again the context will have an impact on how power games are played by the various actors. However, careful analysis of strong brand organizations, e.g. Virgin, Nike, Coca-Cola, seems to suggest that the organizations often retain an upper hand in the bargaining position, thereby 'locking' individual know-how into embedded organizational processes over a long period of time. This increases the advantage to the firm, i.e. strengthens the embedded resources, and it does so without the organization having to pay extraordinary costs for the value which it is generating. However, given my argument that these organizations are likely to generate more value, individual bargaining or collective actions may lead to employees being relatively well rewarded. The individual KHiA enacted at a particular point in time may only contribute to value creation which is equivalent to that of an organization in the previous (equivalent) type, but the individual owners of know-how may well be able to capture relatively more value, as the internal environment may be relatively more beneficent. These firms may absorb captured value in the form of organizational slack. A benign resource environment may lead to the tolerance of underperforming individuals and the paying of above market wages, both evidence of unproductive slack. However, these relatively exceptional revenues could be productively absorbed in future orientated activities like R&D, training and by encouraging innovation through creative processes such as skunk works, think tanks and experimentation.

Talent rich

This value-creating type is characterized by exceptional KHiA and contextually equivalent artefacts. Take the example of law firms providing employment law services where statutory procedures (artefacts) are equivalent and held constant, for example the tribunal procedures are identical across all employment law practices. Differential value will only be created when exceptional talent, such as client relationship skills or additional human resource know-how, is combined with the equivalent artefacts. It is important to note that not all employment law practices will be able to attract exceptional legal know-how and the firms which have access to exceptional KHiA will be in future advantageous positions. Likewise organizations develop exceptional KHiA through either deliberate or emergent development processes. KHiA advantages may contain tacit elements that could be barriers to imitability (Dierickx and Cool, 1989), which would enable advantaged firms to sustain their talent rich status. Exceptional KHiA may be transferable to other organizations, i.e. the skilled performers may be able to move to another firm and function effectively. However, these resources are more likely to be valuable in a particular context, i.e. an organization or industry. This would make it very difficult for competing organizations to replicate the entire value system in another context. Socially complex processes may not only be difficult for competitors to comprehend, they may also be difficult for managers inside the firm to understand (Szulanski, 1996). If the firm possesses unique and valuable tacit knowledge resources the managerial challenges here would stem from the tacit quality of these resources. Tacitness poses problems of replicability; the organization may become dependent on a few tacitly skilled individuals who may sense this dependence and seek to bargain on the basis of the value that they perceive to create (Swart, 2007).

KHiA is likely to be context specific and would have been developed through experience within a given context. For example, account executives in a small advertising agency may have a unique way in which they contract with clients and in the wider supporting and market research services that they offer. The firm may not have exceptional embedded artefacts due to its particular brand,

which may not be that wellknown. Here the advantage is generated from valuable and unique KHiA which varies from that in other advertising agencies. This means that the individual account executives in the development of their skills would have had to sacrifice some firm mobility by acquiring firm specific rather than more generic occupational knowledge and skills.

This has interesting implications for the power-base of the individuals who perceive that they own their know-how-in-action and therefore regard themselves as valuable. However, given that their know-how is both *time specific*, i.e. they represent clients in a particular context at a specific point in time, and *context specific*, i.e. it emerges from the interaction between their unique skills and the processes in the organization, they are more tied into the context, e.g. the organization, and therefore less likely to move to other firms. Although the individual becomes even more valuable to the organization and therefore might be seen to be in a strong bargaining position (Coff, 1999), there would be a shared realization that the individual 'lawyer' would be less likely to take up alternative employment with a competitor (given the firm-specificity of KHiA). This may enhance the perceived bargaining power of other actors such as the firm. However, even where the management did have some insight into the nature of these valuable differences they may be unable to replicate these or substitute for them. The value generated through the differentiated products and services may be captured by those employees performing the particularly critical value-creating KHiA. The possibility in this case is that both managers and performers of these valuable activities comprehend their critical contribution to the value-creating process. In these circumstances there is likely to be an informed negotiation which may result in the employees capturing significant value. Alternatively, where the employees are unaware of their criticality, given the ability to judge future value generated (Coff, 2009), the organization may be in a stronger bargaining position. Having said this, the most likely outcome within this value creating type is that the individual owners of KHiA which have developed unique and exceptional resources are likely to be in the *most* powerful position.

Synergists

In this particularly advantageous value-creating type exceptional KHiA is combined with contextually excellent artefacts. Take, for example, an experienced heart-surgeon who can work with a world-class supporting team of nurses; she will perform relatively better than her peer group of surgeons, i.e. save more lives. Similarly, professional services firms rely on skilled professional staff, such as rain-makers, track record and knowledge retrieval systems to deliver exceptional client value. All of these resources work together to contribute to value creation; there is a high degree of internal and external casual ambiguity (Bowman and Swart, 2007). The surgeon interacts with the exceptional skilled team which has established exceptional operating procedures over time to deliver exceptional results. However, a less-skilled surgeon who has access to the same embedded artefacts may not have the same results. Similarly, creative organizations which enact situations near chaos (Osborn and Hagedoorn, 1997) deploy KHiA which cannot be codified. Agencies which can codify their creative briefing processes deliver more accurately to client requests, operate more efficiently and improve client retention. These explicit knowledge resources are rare within the industry and provide organizations with a value-generation advantage which may be sustained until such time as competing organizations develop sets of exceptional resource configurations. Alternatively, these processes advantages may co-exist with other, inimitable resource advantages like reputation, and rival firms are unable to replicate these configurations.

The power dynamics in this value-creating type will be influenced by the degree to which the exceptional embedded artefacts are perceived to be significant in the value-creating process. For

example, if a car manufacturer perceives its brand to be the most powerful contributor to value creation it probably will not attribute sales success to the differentiated performance of the sales force. Alternatively, where resource interactions are complex and interactive, the ambiguity created provides fertile ground for interpretation amongst stakeholders (Coff, 1999). Organizations that generally tend to be characterized by this configuration would be, for example, strategy consultancy firms which develop solutions based on client-specific problems. The approach would be to hire highly experienced human capital and to develop a strong culture practice, i.e. the consultancy approach. Here the KHiA is contextual and co-constructed, thereby enabling the firm to generate above average revenues. The dominant knowledge management approach here would be to develop firm-specific know-how and embedded resources which result from idiosyncratic learning processes (Barney, 1991; Bowman and Swart, 2007; Crossan et al., 1999). The bargaining positions of individuals may be weakened given the exceptional resources which they use at a given point in time within the specific organizational context. For example, an investment banker in one of the newly emerging big four firms may know that they would not be able to perform as skilfully, or generate as much value, if they were operating as a sole practitioner. Hence, the power of the brand would have a direct impact on how this actor perceives his/her bargaining position. The perception of power and ownership of KHiA and embedded resources in each value-generating type therefore impacts directly on the outcome of the value-creation process. The further theoretical and practical implications of both the power dynamics and the value-creating typology are considered next.

Implications and conclusions

The article contributes to theory in three specific ways. First, it develops the interactionist perspectives on knowing (Cunliffe, 2008; Schneider, 2007; Spender, 1994; Strati, 2007), by explaining exactly how knowing creates value. This develops the notions of purpose (value creation) in the knowledge debate. Second, it presents a detailed view of how knowing and embedded artefacts interact to create value. Here I clearly define what I mean by variations and value. The juxtaposition of equivalent and exceptional KHiA and embedded artefacts identifies four value-creating types that people can invoke to generate value. Third, the identification of the value-creating types enables us to address the notion of power dynamics from a bargaining position perspective. I appreciate that this is a complex approach but acknowledge that, if we are to understand how knowledge generates value, in practical and theoretical terms, we need to include a perspective on both value and power in our advancement. Without an understanding of interaction and value creation in relation to power, our debates on knowledge would be a static set of scripts without a view of the value that actors generate, the outcome of the games they play and the future potential stage upon which they delight.

These developments hold several implications for research. First, we could begin to unpick the knowing-based value creation processes over time, which may, for example, vary according to the relative growth stage of the organization. In the contexts where there are time-dependent and path-dependent value-creation processes, mature organizations may be able to develop exceptional KHiA and may also be able to negotiate powerful positions relative to their stakeholders, which in turn would maximize their value retention capability. Alternatively, new entrants in a market may be able to benefit from accessing recently developed and efficient embedded artefacts from equipment providers and, coupled with equivalent KHiA, they may be able to outperform incumbent organizations coping with less efficient legacy systems. Core rigidities (Leonard-Barton, 1992) may develop in longer-lived firms which may counteract any value-generating advantages.

Second, the framework put forward here can be extended to understand cross-boundary working. The case examples which we used were illustrative of organizations and individuals within a given context. I am, however, mindful of the fact that value creation often takes place across boundaries. An exploration of knowledge and embedded resources at the network level, and value creation and capture within networked processes (Tsoukas, 1996), would enable further theory development as well as guidance for managerial practice in networks. Within this context the value-creating typology which I present could also inform future research on shifting positions of power (Levina and Orlikowski, 2009) which are influenced by the managed perception of power. The emphasis here would be on understanding, in the context of resource interactions, which methods various actors use to create perceived ownership over and control of valuable resources. Finally, the interactionist perspectives can be built upon to understand and develop the co-evolution of dynamic capabilities. That is, as one capability within an organization or an industry develops over time it is likely to interact with different types of embedded resources at different phases of maturity, each with its own set of power dynamics. This development will speak directly to the dynamic capability literature.

The value-creating typology put forward here has a number of practical and managerial implications. First, the value-creating typology can be applied to managerial learning as a diagnostic device to understand an organization's position relative to competitors. This positioning is more likely to be achieved through discussion and debate between experienced and informed managers, rather than it being the outcome of objective analysis. The diagnostic process can then be extended to provoke debate around various strategy options that might be pursued. It might also be useful for managers to think about future industry scenarios. These could be constructed around views about likely trends in technology, changing customer needs, knowledge diffusion amongst competitors, disruptions from new entrants, etc. Different broad strategic trajectories could be considered in the light of these scenarios. In this context we would see the value as being generated through dialogue and insight derived from identifying, categorizing and taking informed action upon the various resource interactions.

Second, these value-creating types represent multiple options which can be enacted to generate value, i.e. individuals and organizations will not occupy only one type at any one particular point in time. As individuals we may act as synergists in some situations whereas in others we may adopt talent-rich interactions. This in itself represents a contribution to the literature in so far as it does not advocate a position of *either* operating in one value creating type *or* another, which is so often supported by the personalization or codification approaches (Hansen et al., 2000). The value-creating typology therefore addresses this weakness in the literature by adopting a multiplicity viewpoint (Haas and Hansen, 2007). The diagnostic process can therefore be used to determine which interactions, or situations, are located in which quadrant. This can serve as a risk management tool. Say, as a uniquely trained sculptor, I may pay a high price to have access to supplier networks that provide exceptional wood for carvings that I sell at a high price (synergists) but, as an average painter, I may also chose to produce some paintings using local networks similar to other painters in the area (clones). I will be enacting more than one matrix position. The typology therefore presents multiple options people can invoke to generate value. Third, the value-creating types are dynamically situated across time, i.e., situations shift across space and time. Take the example of the mobile phone call centre whose competitors may develop a stronger brand over a period of time. This will shift the firm from a position of 'resource rich' to 'clones'. Individuals and firms could use the matrix to plan for and understand future scenarios and value creating contexts.

To conclude, the article contributes directly to the interactionist perspectives by illustrating how knowing creates value. It advances theory by including a fine-grained analysis of the interaction between knowing, artefacts and power. In particular it develops a typology of value creating options (clones, resource rich, talent rich and synergists) which represent multiple options which people can invoke, or enact, when creating value.

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