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The knowledge-creating theory revisited: knowledge creation as a synthesizing process

Ikujiro Nonaka[1,2,3] and Ryoko Toyama[4]

[1]*The Graduate School of International Corporate Strategy, Hitotsubashi University, Japan;* [2]*Institute of Management, Innovation and Organization, UC Berkeley, USA;* [3]*Center for Knowledge and Innovation Research, Helsinki School of Economics, Finland;* [4]*Japan Advanced Institute of Science and Technology, Graduate School of Knowledge Science, Tatsunokuchi, Ishikawa, Japan*

Correspondence:
Ryoko Toyama, Japan Advanced Institute of Science & Technology, Graduate School of Knowledge Science, Tatsunokuchi, Ishikawa 932-1292 Japan.
Tel: +81-761-1722
E-mail: rtoyama@jasist.ac.jp

Abstract
This paper is a part of our attempt to build a new knowledge-based theory of the firm and organization to explain the dynamic process of knowledge creation and utilization. For this, we revisit the theory of knowledge creation through the SECI process and ba, and try to advance them further by incorporating the dialectic thinking. In this paper, knowledge creation is conceptualized as a dialectical process, in which various contradictions are synthesized through dynamic interactions among individuals, the organization, and the environment. With the view of a firm as a dialectic being, and strategy and organization should be re-examined as the synthesizing and self-transcending *process* instead of a logical analysis of structure or action. An organization is not an information-processing machine that is composed of small tasks to carry out a given task, but an organic configuration of ba. Ba, which is conceptualized as a shared context in motion, can transcend time, space, and organization boundaries to create knowledge.
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Today, knowledge and the capability to create and utilize knowledge are considered to be the most important source of a firm's sustainable competitive advantage (Nonaka, 1990, 1991, 1994; Nelson, 1991; Leonard-Barton, 1992, 1995; Quinn, 1992; Drucker, 1993; Nonaka & Takeuchi, 1995; Grant, 1996; Sveiby, 1997). However, it seems that we are still far from understanding the process in which an organization creates and utilizes knowledge. We need a new knowledge-based theory that differs 'in some fundamental way' (Spender & Grant, 1996, p 8) from the existing economics and organizational theory.

Part of such difficulties in establishing a new theory is that management scholars and practitioners often fail to understand the essence of the knowledge-creating process. We conceptualize knowledge creation as a dialectical process, in which various contradictions are synthesized through dynamic interactions among individuals, the organization, and the environment (Nonaka & Toyama, 2002). Knowledge is created in the spiral that goes through seemingly antithetical concepts such as order and chaos, micro and macro, part and whole, mind and body, tacit and explicit, self and other, deduction and induction, and creativity and efficiency. We argue that the key to understanding the knowledge-creating process is dialectic thinking and acting, which transcends and synthesizes such contradictions. Synthesis is not compromise. Rather, it is the integration of opposing aspects through a dynamic process of dialogue and practice.

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We also need to understand that knowledge creation is a transcending process through which entities (individuals, groups, organizations, etc) transcend the boundary of the old into a new self by acquiring new knowledge. In the process, new conceptual artifacts and structures for interaction are created, which provide possibilities as well as constrain the entities in consequent knowledge-creation cycles. Thus, the entities coexist with the environment because they are subject to environmental influence as much as the environment is influenced by the entities. This conceptualization of the interdependent connection between the entities and structure is similar to the Structuration theory (Giddens, 1984). The existing theories that deal with a static status of an organization at one point of time cannot deal with such a dynamic process.

This paper is a part of our attempt to build a new knowledge-based theory of the firm and organization to explain the dynamic process of knowledge creation and utilization. For this, we revisit the theory of knowledge creation through the SECI process (Nonaka, 1991; Nonaka & Takeuchi, 1995) and Ba (Nonaka *et al.*, 2000a), and try to advance them further by incorporating the dialectic thinking such as Hegel, and Bhaskar (1993), Eastern philosophy, and the Structuration theory (Giddens, 1984). We acknowledge the ontological differences between Structuration theory and critical realism and utilize the Giddensian view mainly to explain the interrelation between the agents and the context, and critical realism as a methodology to explain the interaction between tacit and explicit knowledge or between the invisible and visible. The basic argument is that knowledge creation is a synthesizing process through which an organization interacts with individuals and the environment to transcend emerging contradictions that the organization faces. This interconnection between agents and the structure makes the knowledge process to occur as a dynamic and inter-linked interaction from an individual-to-societal level.

Organization as information-processing machine vs knowledge-creating entity

The traditional organization theory is based on the view of an organization as an information-processing machine that takes and processes information from the environment to solve a problem and adapts to the environment based on a given goal. Because of the bounded rationality of human beings, an organization is necessary to deal with a complex reality. Reality is cut into pieces of information that are small and simple enough for one person to process. Then the information is processed and reassembled by the organizational members so that the organization as a whole deals with the complex reality in the end. This can be easily understood with the example of car manufacturing. A car manufacturing process is broken down into various simple tasks, and each worker is assigned one task so that even an unskilled worker can easily accomplish it. A worker does not need to understand what others are doing, and what his/her task means to the entire car manufacturing processes. The issue for the organization, therefore, is how the entire process can be divided into small tasks or modules and how they can be coordinated so that a car can be built in the end.

This is a static and passive view of the organization and it fails to capture the dynamic process through which the organization interacts with the organizational members and the environment. Instead of merely solving problems, organizations create and define problems, develop and apply knowledge to solve the problems, and then further develop new knowledge through the action of problem solving. The organization and individuals grow through such process. The organization is not merely an information-processing machine, but an entity that creates knowledge through action and interaction (Nonaka *et al.*, 2000b). In the process, the binding interdependence between the agents and environment offers possibilities and also initiates limits, which determine the boundaries for the knowledge creation. Further, in addition to structural interaction, dialectic knowledge creation occurs as the actors embrace their environment and synthesize tacit and explicit knowledge in social space.

Knowledge is not just a part of the reality. It is a reality viewed from a certain angle. The same reality can be viewed differently depending on from which angle (context) one sees it. In knowledge creation, one cannot be free from one's own context. Social, cultural, and historical contexts are important for individuals (Vygotsky, 1986) because such contexts give the basis for one to interpret information to create meanings. That is why limited environmental interaction and externalization of personal knowledge can lead to ontological ills and fallacies, because the whole complexity of given phenomenon may remain undiscovered. Hence, in knowledge creation, one tries to see the entire picture of reality by interacting with those who see the reality from other angles, that is, sharing their contexts. In the case of car manufacturing, the continuous process innovation that typically occurs at Toyota requires workers to view and understand their task as a part of the entire car manufacturing process, and share their knowledge about their task to make improvements on the process. It is important here to understand how the interactions among the parts (individuals, work groups, etc.) are dynamically linked to form a continuously evolving whole, which, in turn, impacts the environment where the car manufacturing takes place.

Since individuals have different goals and contexts, contradictions are inevitable among individuals and the organization to which they belong. Traditional organization theories try to solve such contradictions through the design of organizational structure, incentive systems, routines, or organizational culture. However, if we view an organization as a knowledge-creating entity, we can see such contradictions as necessities to create knowledge instead of obstacles to overcome. Knowledge is created

through the synthesis of contradictions, instead of finding an optimal balance between contradictions.

Knowledge creation and the role of strategy

With this view of organization as an entity that creates knowledge continuously, we also need to re-examine the role of strategy, which is to solve the contradictions between the organization and the environment. Typically represented by the SWOT framework by Andrews (1971), the role of strategy is to adapt the organization to the threats and opportunities in the environment with the given strengths and weaknesses of the organization. Such a framework is later refined into two mainstream researches of strategy–the positioning school and the resource-based view. The positioning school mainly focuses on the environment in which the organization operates (Porter, 1980). An organization needs to choose the environment in which it can build and sustain competitive advantages. The environment can be viewed as a moving target to which the companies are desperately trying to modify their operations. Hence, the positioning school tends to stress the analysis of the environment and ignore the internal process of the organization.

The resource-based view of a firm, on the other hand, does look inside of firms, in terms of the resources it owns. According to this view, a firm is a collection of resources, and those with superior resources will earn rents (Penrose, 1959; Teece, 1980, 1982; Wernerfelt, 1984; Conner, 1991; Mahoney and Pandian, 1992). However, empirical and theoretical research on the resource-based view of the firm so far has been mainly focused on how firms keep their unique resources and resulting competitive advantages through such conditions as imperfect imitability, imperfect substitutability, and limited mobility of resources (Wernerfelt, 1984; Barney, 1986, 1991; Dierickx & Cool, 1989; Amit & Schoemaker, 1993; Peteraf, 1993). Although it deals with the dynamic capability of the firm (Teece *et al*., 1990), the resource-based view of the firm fails to explain the dynamism in which the firm continuously builds such resources through the interactions with the environment. There is very little theoretical understanding on how a firm accumulates such resources (Levinthal & Myatt, 1994), except for the recent conceptualization of dynamic capabilities as a set of specific and identifiable processes such as product development, strategic decision-making, and alliancing (Eisenhardt & Martin, 2000).

We argue that knowledge is created through the synthesis of the contradictions between the organization's internal resources and the environment. Thus, strategy in a dialectic company can be conceptualized as a combination of internal resources as well as environmental adjustment. Hence, we need a new theory that focuses on such interactions. The following section explains how knowledge is created through the interaction between tacit and explicit knowledge, and the organization and the environment.

Knowledge creation as a synthesizing process

How can we synthesize the environment and internal resources? To answer that question, we visit the Structuration theory by Giddens (1984). Structuration means studying the ways in which social systems are produced and reproduced in social interaction. Structuration theory views humans as role-taking and norm-fulfilling beings who act according to their images of what reality is, and treats all institutions and social practices as structures. On the one hand, the environment influences agents, and on the other hand, the agents are continuously recreating their environment through social interaction. Hence, social structure does not exist independently outside of human agency. Rather, structure and humans are two ways of considering social action and they interplay in defining and reproducing each other.

Knowledge is created through such interactions between human agency and social structures. Our actions and interactions with the environment create and enlarge knowledge through the conversion process of tacit and explicit knowledge as shown in Figure 1 (Nonaka, 1990, 1991, 1994; Nonaka & Takeuchi, 1995). Giddens argues that we enact our actions with two main levels of consciousness: practical consciousness and discursive consciousness in our daily lives. While the discursive consciousness gives us our rationalizations for actions and refers to more conscious and therefore more explicitly theoretical knowing, practical consciousness refers to the level of our lives that we do not really think about or theorize. In that sense, we can say that tacit knowledge is produced by our practical consciousness and explicit knowledge is produced by our discursive consciousness.

Whereas these two levels of consciousness act harmoniously in the Structuration theory, we claim that tacit and explicit knowledge act dialectically because of the inherent contrast between the routine and theory or tacit and explicit knowledge. Critical realism explains these differences between the domains of real and the domains of actual and empirical (Bhaskar, 1978). Whereas the domain of real is the domain in which generative mechanisms reside, the domains of actual and empirical contain observed and experienced events. Owing to the inability to move to the domain of real, science is often spatio-temporally restricted and subject to ontological fallacies.

Knowledge creation starts with *Socialization,* which is the process of converting new tacit knowledge through shared experiences in day-to-day social interaction. Since tacit knowledge is difficult to formalize and often time- and space-specific, tacit knowledge can be acquired only through shared direct experience, such as spending time together or living in the same environment, typically a traditional apprenticeship where apprentices learn the tacit knowledge needed in their craft through hands-on experiences. One can share the tacit knowledge of customers, suppliers, and even competitors by empathizing

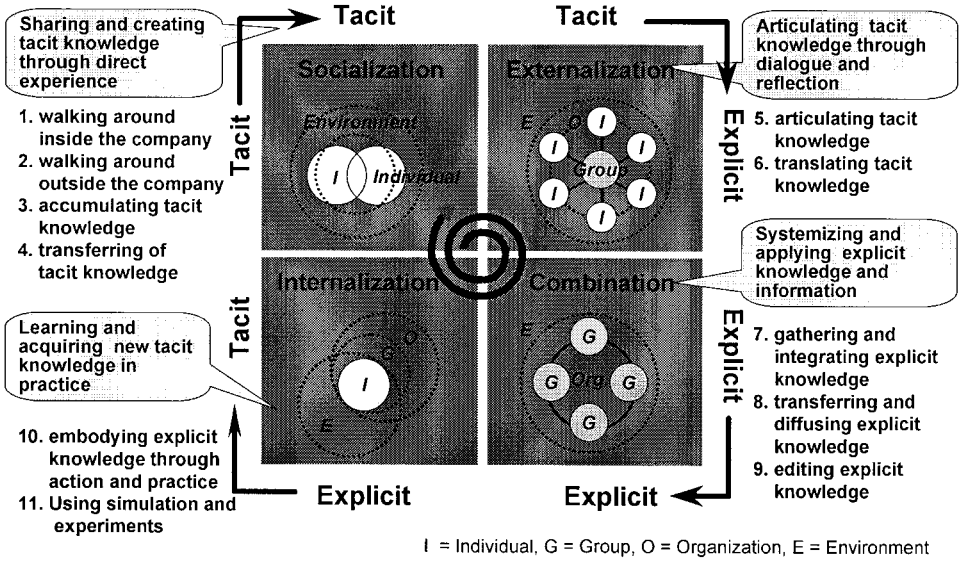

Figure 1 SECI model of knowledge creation.

with them through shared experience. Thus, routines are part of tacit knowledge because they are developed in close interaction over time.

In the socialization process, the phenomenological method of seeing things as they are is effective. By 'indwelling' or 'living in' the world, individuals accumulate and share tacit knowledge about the world that surrounds them. For example, one can accumulate the tacit knowledge about customers through his/her own experience as a customer. Here, individuals embrace contradictions rather than confront them. This enables actors to absorb knowledge in their social environment through action and perception. Hence, the dichotomy between the environment and the organization can be synthesized in the socialization process as members of the organization accumulate and share the tacit knowledge of the environment through their practical consciousness.

Such tacit knowledge is articulated into explicit knowledge through the process of *Externalization*. Tacit knowledge is made explicit so that it can be shared by others to become the basis of new knowledge such as concepts, images, and written documents. During the externalization stage, individuals use their discursive consciousness and try to rationalize and articulate the world that surrounds them. Here, dialogue is an effective method to articulate one's tacit knowledge and share the articulated knowledge with others. Through dialogues among individuals, contradictions between one's tacit knowledge and the structure, or contradictions among tacit knowledge of individuals are made explicit and synthesized. To make a hidden concept or mechanism explicit out of accumulated tacit knowledge, abduction or retroduction is effective rather than induction or deduction. The sequential use of metaphor, analogy, and model is a basic method in abduction (Lawson, 1998). In addition to the movement from hidden to the surface, these methods enable actors to create linkages between the surface and deeper domains of social reality. It is crucial here to understand that actors seek to detach themselves from routines by active exposure to a context that enables them to see the inherent contradiction. This property is in contrast with the Structuration theory where the two levels of consciousness coexist in harmony and agents find ontological security in routines (cf Giddens, 1984, p. xxiii).

Explicit knowledge is collected from inside or outside the organization and then combined, edited, or processed to form more complex and systematic explicit knowledge through the *Combination* process. The new explicit knowledge is then disseminated among the members of the organization. Creative use of computerized communication networks and large-scale databases can facilitate this mode of knowledge conversion. The combination mode of knowledge conversion can also include the 'breakdown' of concepts. Breaking down a concept, such as a corporate vision, into operationalized business or product concepts also creates systemic, explicit knowledge. Here, contradictions are solved through logic rather than synthesized. Rationalism is an effective method to combine, edit, and break down explicit knowledge.

Explicit knowledge created and shared throughout an organization is then converted into tacit knowledge by individuals through the *Internalization* process. This stage can be understood as praxis, where knowledge is applied and used in practical situations and becomes the base for new routines. Thus, explicit knowledge, such as product concepts or manufacturing procedures, has to be actualized through action, practice, and reflection so that it can really become knowledge of one's own. For example, training programs can help trainees to understand an

organization and themselves. By reading documents or manuals about their jobs and the organization, and by reflecting upon them, trainees can internalize the explicit knowledge written in such documents to enrich their tacit knowledge base. Explicit knowledge can also be embodied through simulations or experiments. Pragmatism of learning-by-doing is an effective method to test, modify, and embody explicit knowledge as one's own tacit knowledge. Internalized knowledge affects the human agency and the structure, as it changes the action of human agency and how it views the structure. The synthesis of individuals and the environment occurs at this level as well.

It is important to note that the movement through the four modes of knowledge conversion forms a *spiral,* not a circle. In the spiral of knowledge creation, the interaction between tacit and explicit knowledge is amplified through the four modes of knowledge conversion. The spiral becomes larger in scale as it moves up the ontological levels. Knowledge created through the SECI process can trigger a new spiral of knowledge creation, expanding horizontally and vertically as it moves through communities of interaction that transcend sectional, departmental, divisional, and even organizational boundaries. Knowledge can be transferred beyond organizational boundaries, and knowledge from different organizations interacts to create new knowledge (Badaracco, 1991; Wikstrom & Normann, 1994; Nonaka & Takeuchi, 1995; Inkpen, 1996). Through dynamic interaction among individuals, knowledge created by the organization can trigger the mobilization of knowledge held by outside constituents such as consumers, affiliated companies, universities, or distributors. For example, an innovative new manufacturing process may bring about changes in the suppliers' manufacturing process, which in turn triggers a new round of product and process innovation at the organization. Another example is the articulation of tacit knowledge possessed by customers that they themselves have not been able to articulate. A product works as the trigger to elicit tacit knowledge when customers give meaning to the product by purchasing, adapting, using, or not purchasing it. It can also trigger the changes of customers in terms of their worldview and eventually reconstruct the environment. Their actions are then reflected in the innovative process of the organization and start a new spiral of knowledge creation. Organizational knowledge creation is a never-ending process that upgrades itself continuously.

As has been noted, knowledge creation is a self-transcending process, in which one reaches out beyond the boundaries of one's own existence (Jantsch, 1980). In socialization, self-transcendence is fundamental because tacit knowledge can only be shared through direct experiences, which go beyond individuals. For example, in the socialization process people empathize with their colleagues and customers, which diminishes barriers between individuals. Basically, frequent physical interaction and perception help agents to create shared mental presentations and routines. In externalization, an individual transcends the inner and outer boundaries of the self by committing to the group and becoming one with it. Here, the sum of the individuals' intentions and ideas fuse and become integrated with the group's mental world. This stage is integral because the externalization of knowledge often helps people to see that the same phenomenon can be viewed in many different and contrasting ways. In combination, new knowledge generated through externalization transcends the group to be combined. In internalization, individuals reflect upon themselves by putting themselves in the context of newly acquired knowledge and the environment where the knowledge should be utilized. This again requires self-transcendence.

Ba: knowledge-creating place

Knowledge needs a physical context to be created. As stated previously, knowledge is context-specific, as it depends on particular time and space (Hayek, 1945). Knowledge does not just exist in one's cognition. Rather, it is created in situated action (Suchman, 1987). In this paper, the conceptualization of ba is extended to cover the interdependent interaction between agents and structures. Thus, ba is a continuously created generative mechanism that explains the potentialities and tendencies that either hinder or stimulate knowledge creative activities.

Therefore, the knowledge-creating process is necessarily context-specific in terms of time, space, and relationship with others. Knowledge cannot be created in vacuum, and needs a place where information is given meaning through interpretation to become knowledge. The importance of place in human cognition and action has been discussed by many philosophers. Plato called a place for a genesis of existence as Chora. Aristotles called a place for a thing to physically exist as Topos. Heidegger called a place for human existence as Ort. To include the concepts of such places but to be specific to knowledge creation, we introduce the concept of 'ba' (which roughly means 'place'). Building on the concept that was originally proposed by the Japanese philosopher Kitaro Nishida (1921, 1970), we define ba as a shared context in motion, in which knowledge is shared, created, and utilized. Ba provides the energy, quality, and places to perform the individual knowledge conversions and to move along the knowledge spiral. In other words, ba is a phenomenological time and space where knowledge, as 'a stream of meaning' emerges (Bohm, 1996). New knowledge is created out of existing knowledge through the change of meanings and contexts.

Although it is easier to consider ba as a physical space such as a meeting room, ba should be understood as a multiple interacting mechanism explaining tendencies for *interactions* that occur at a specific time and space. Ba can emerge in individuals, working groups, project teams, informal circles, temporary meetings, virtual space such as e-mail groups, and at the front-line contact with

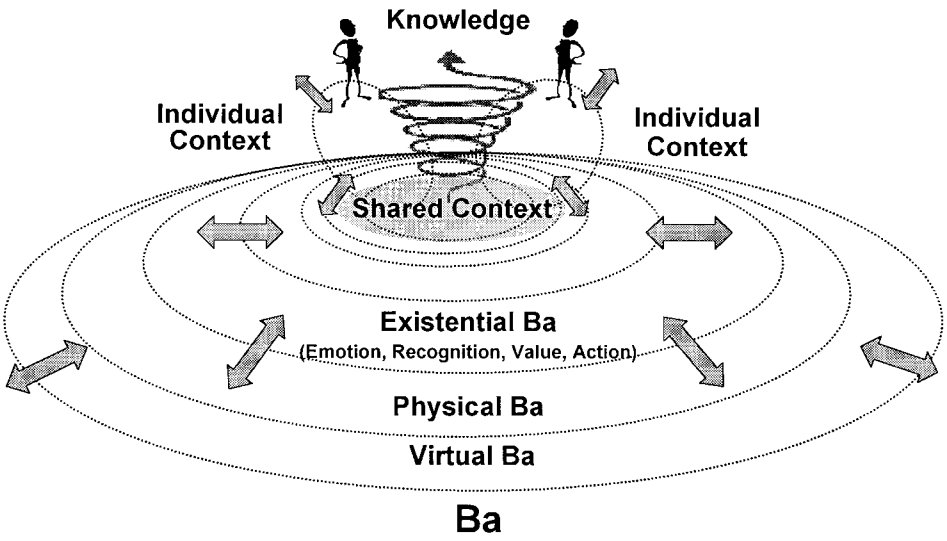

Figure 2 Conceptual representation of ba.

the customer. Ba is an existential place where participants share their contexts and create new meanings through interactions. Participants of ba bring in their own contexts, and through interactions with others and the environment, the contexts of ba, participants, and the environment change (see Figure 2).

Ba is a *way* of organizing that is based on the meaning it creates, rather than a form of organization such as hierarchy or network. A firm can be viewed as an organic configuration of various ba, where people interact with each other and the environment based on the knowledge they have and the meaning they create. When we see a firm as an organic configuration of ba instead of an organizational structure, we can see what kind of knowledge should and can be created, who are the 'right people' with embedded knowledge, and what kind of interactions are needed among them to create knowledge without being restricted by the existing organization structure.

Although the concept of ba seemingly has some similarities to the concept of 'communities of practice' (Lave & Wenger, 1991; Wenger, 1998), there are important differences. While a community of practice is a place where the members learn knowledge that is embedded in the community, ba is a place where new knowledge is created. While a community of practice has an identity and its boundary is firmly set by the task, culture, and history of the community, the boundary of ba is fluid and can be changed quickly, as it is set by the participants. While the membership of a community of practice is fairly stable, and it takes time for a new participant to learn about the community to become a full participant, the membership of ba is not fixed; participants come and go. Ba is created, functions, and disappears according to need. Whereas members of a community of practice belong to the community, participants of ba relate to the ba. Ba has a 'here and now' quality as does an emerging relationship, and is constantly moving as the contexts of participants and/or the membership of ba change. While learning occurs in any community of practice, ba needs energy to become an active ba where knowledge is created.

Then, what brings such energy to make an active ba? It is contradictions and dialectic thinking and acting to synthesize such contradictions that produces a good ba. By definition, ba involves various contradictions. Ba requires multiple contexts, and yet, a shared context is necessary for a ba to exist. A good ba needs participants of ba with multi-viewpoints so that they can bring in various contexts, and a shared context among them has to be fostered. For that, ba needs to be a self-organizing place with its own intention, direction, or mission.

Ba sets a boundary for interactions among individuals, and yet the boundary is open. As there are endless possibilities to one's own contexts, a certain boundary is required for a meaningful shared context to emerge. It should be protected from the contexts outside so that it can grow its own context. Yet, ba is still an open place where participants with their own contexts can come and go, so that ba as shared context can continuously evolve. For a ba to create and maintain energy, the boundary of ba should be kept permeable, so that it can protect the ba from outside influence and let necessary contexts in at the same time.

Ba lets participants share time and space, and yet it transcends time and space. In knowledge creation, especially in socialization and externalization, it is important for participants to share time and space through direct experience. A close physical interaction is important in sharing the context and forming a common language among participants. However, because ba can exist in a mental or virtual place as well as a physical place, it does not have to be bound to a certain space and time. While tacit knowledge has a 'here and now' quality, when it is

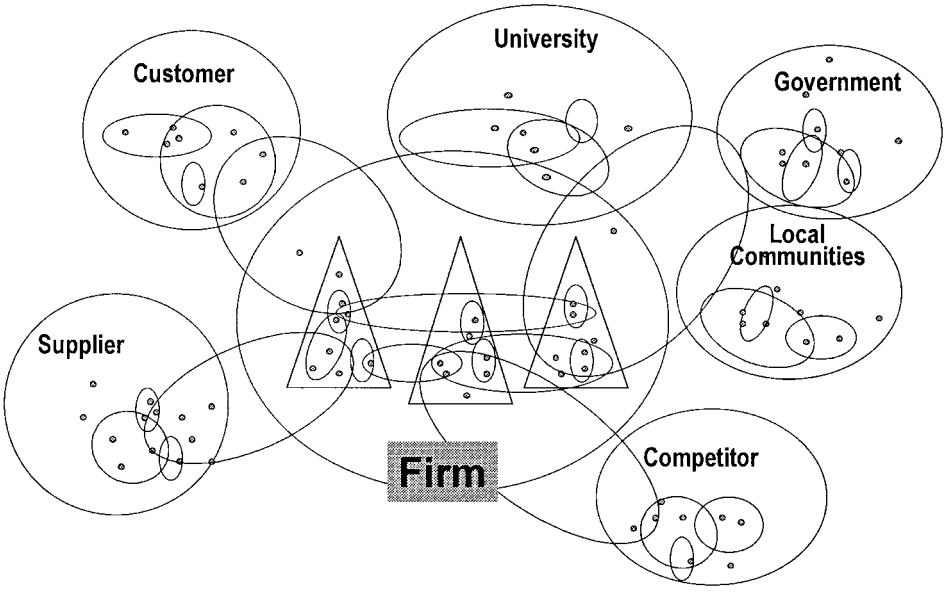

Figure 3 Organisation as organic configuration of ba.

externalized into explicit knowledge through interaction at ba, it now can be transferred beyond a particular time and space. In that sense, ba synthesizes the sensing of the past, the present, and the future.

Ba also lets participants have the viewpoints of both insider and outsider at the same time. By providing a shared context in motion, ba sets binding conditions for the participants by limiting the way in which the participants view the world as insiders of the world. And yet it provides participants with higher viewpoints than their own to look at things from outside. Basically, good ba enables actors to detach themselves from day-to day routines, externalize their personal knowledge, and to view a given phenomenon from various points simultaneously. In short, ba enables a dialectic process among the actors.

One way to achieve synthesis in ba is to have dialectical dialogues among participants who bring in various viewpoints based on various backgrounds. Dialectical dialogue is content-based. It does not separate the content from the form as Logic does. Questions such as 'what is the essence of this thing/event?' or 'why do we do this?' let participants of ba see things and themselves from the viewpoints that are rooted deep in their own beliefs and values, and from others' viewpoints at the same time. As Buber (1923) says, dialogue is a way of being. At ba, participants reflect upon their own views and share them to achieve trans-subjectivity. To do so, the roles of the first person, the second person, and the third person are important. It does not mean that only three persons are in the team. It means that there are three different roles to be played. The first person plays the role of an innovator. S/he is the one who senses the new reality first. The second person plays the role of a coach. S/he attains inter-subjectivity by interacting with the first person and brings in his/her own viewpoint. The third person plays the role of activist by seeing the first and the second person from a higher viewpoint (Varela & Shear, 1999), S/he attains trans-subjectivity and makes the new reality understandable and tangible for other people. Another important role of the third person is cocooning to protect the team from outside influence so that the first and the second person can keep their own viewpoints.

Such dialogues are not limited within a boundary of one ba. Ba is connected to each other to form a greater ba to form a firm as an organic configuration of ba eventually. Hence, dialectical interactions occur among various ba as well. The open structure and linkages among various ba create tendencies for actors to interact in a certain way, which may reveal themselves in outcomes, but because they may act in conjunction with other tendencies, their impact on the SECI process is not normative. The tendency of causal powers to impact social phenomena creates variations in knowledge creation activities from organization to organization.

We also need to reconsider what exactly is a boundary of a firm. Ba is not limited to the frame of a single organization but can be created across the organizational boundary. Ba can be built as a joint venture with a supplier, an alliance with a competitor, or an interactive relationship with customers, universities, local communities, or the government (see Figure 3). Organizational members transcend the boundary by participating in ba, and further transcend the boundary of ba, when ba is connected to other ba.

In such a case, the legal boundary of a firm is not as important as how it synthesizes various ba, both inside and outside the organization. Some ba need to be built within the company because they will co-create the

knowledge that will give the firm a competitive advantage. Especially important for a company is a ba that gives the company the capability to synthesize. Knowledge creation is a dynamic human process, and managers and workers grow in such a process. Managers become leaders and grow their capability to synthesize various ba through their experience of participating in ba.

Conclusion

In this paper, we revisited the knowledge creation theory, which was conceptualized as a dialectic process where new boundaries are created through the dynamic interaction between the agents as well as between agents and structure. As a consequence, the dialectic process is driven by the dualistic nature between the agents and structure as well as between tacit and explicit knowledge. Whereas the two types of knowledge coexist on the continuum within one person, they have separate nature and interact with each other. Human agency and structure are two ways to consider action, and the separation of the two types of knowledge gives a basis for continuous interaction between tacit and explicit knowledge. The main line of thought in this paper is that a firm is a dialectic being that synthesizes various contradictions through SECI and ba, and strategy and organization should be re-examined from such an integrated viewpoint instead of logical analysis of structure or action. An organization is not a collection of small tasks to carry out a given task, but an organic configuration of ba to create knowledge.

The SECI process helps to understand that tacit and explicit knowledge act dialectically because of the inherent contrast between routines and theory. This is because the externalization of experiences in a different context creates contrasts between internal and external knowledge. As the new boundaries for interaction are subject to further contradictions, the knowledge creation process can be conceptualized as a never-ending spiral. Viewing a firm as a dialectical being means that we need to look into the process of its knowledge-creating activities, not just the outcomes. In the knowledge creation process, dialectics is a method of thinking and acting. It is a way/process to approach a reality to find a truth in it. The absolute truth may never be found. It may never exist. However, dialectic tries to approach the elusive 'absolute truth' through the process of examining and denying the series of 'relative truth.' It is this process that is important, rather than whether one can reach the absolute truth or not.

The context for dialectic knowledge creation is ba, which can be conceptualized as a shared context in motion. The space for knowledge creation evolves as the actors interact with each other and creates tendencies for interaction patterns through time and space. Ba is also subject to the environmental influence because it has loose and permeable boundaries. Owing to these properties, a firm can be viewed as an organic configuration of various ba, where people interact with each other and the environment based on the knowledge they have and the meaning they create. Since ba is not limited to organizational boundaries, it can exist with external parties such as suppliers, universities and so on.

The conceptualization of knowledge creation as a dialectic process is a move away from the static theories, which treat companies as information-processing machines. The proposed framework helps further to re-examine the two mainstream researches of strategy – the positioning school and the resource-based view. The dynamic interaction among the agents as well as the companies and environment enables the dialectic strategy to synthesize components from the both mainstream strategic schools. In other words, company competitiveness depends on its internal resources as well as its market positioning. We would like to close this paper by stating that this paper is one of the first attempts to incorporate dialectic views from critical realism and the Structuration theory to the knowledge creation theory, and much remains to be done in developing the dialectic model of knowledge creation and its impact on company strategy.

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