ORGANIZATIONAL FORMS: KNOWLEDGE, MOTIVATIONAL AND POWER DYNAMICS

Ayşe Saime DÖNER*

Abstract

There are various forms of organizations acting as platforms for economic activities. While the existing theoretical studies in economics analyze organizations in relation to "the firm" and mostly focus on distinguishing between firms and markets, they don't propose the sufficient variety that can explain the observed organizational forms. This paper attempts to re-conceptualize the organizational forms in business by studying the necessary coordination mechanisms related to knowledge and motivational dynamics of intra-organizational relationships. Acknowledging also the role of power distribution among the actors, organizational forms are specified as different combinations of these mechanisms. Business organizations are essentially loci for interactions between economic actors during economic activities. In view of the fact that today knowledge is the critical resource in the production of all goods and services, economic activities are mainly viewed as knowledge activities i.e. sharing, integrating and creating knowledge. Since these activities need to be regulated for efficiency, interacting actors should coordinate their actions with each other. More precisely, they need to adjust their collaboration degree according to the needs of knowledge activities given the characteristics of actors –absorption capacity– and the characteristics of "transacted" knowledge –codifiability, observability, teachability, complexity, systemic dependency, and newness–. Another dimension to consider is the fact that the economic actors involved in these interactions may behave in an opportunistic way and have potentially conflicting interests which would hinder the performance of their collective activities. If the actors have intrinsically aligned interests, they are already motivated to coordinate their productive efforts without questioning the intentions of the others. In this case the control mechanisms are fairly informal, and the interactions occur on equal ground. However, if the individual interests are conflicting, actors need some coordination mechanisms to solve these conflicts and to continue on with their interactions. Finally, the process of reaching agreement gives rise to power plays. As a result of power distribution, the institutions are put in place in order to extrinsically align actors' interests. Hence, interactions during knowledge activities occur both in a technical division of labor referring to knowledge governance and in a social division of labor related to management of social conflicts and rivalries. Thus, coordination mechanisms in a business organization have to take into consideration the knowledge, motivational and power dynamics. In this sense, we attempt to define organizational forms based on these three dimensions.

* Yrd. Doç. Dr., Beykent Üniversitesi İİBF Uluslararası Lojistik ve Taşımacılık Bölümü, aysecagli@beykent.edu.tr

***Key Words**: Organizational Form, Knowledge-Eased Economy, Cognitive Coordination, Motivational Coordination, Power Distribution.*

JEL codes: D21, L22, L24

ORGANİZASYON FORMLARI: BİLGİ, MOTİVASYON VE GÜÇ DİNAMİKLERİ

Özet

Ekonomik faaliyetler farklı organizasyon formları dahilinde yürütülmektedir. Sanayi ekonomisi literatüründe varolan teorik çalışmalar, bu organizasyonları çoğunlukla "firma" ile ilişkilendirerek ve firma-piyasa ayrımına odaklanarak incelerken, gözlemlenen organizasyon formlarının çeşitliliğini açıklayan tek bir çerçeve sunmamaktadır. Bu çalışma, organizasyon içindeki farklı dinamiklerin yarattığı koordinasyon gerekliliklerini öne çıkararak gözlemlenen bu çeşitliliğe kavramsal bir çerçeve sunma amacındadır. Organizasyon içi dinamiklere dair üç boyut incelenmektedir: (1) bilgi yaratımı ve transferi, (2) birimler arası çıkar çatışmaları, ve (3) birimler arası güç dağılımı. Günümüzde bilgi, ekonomik faaliyetlerde kullanılan kaynakların en önemlisi olarak kabul edilmektedir. Dolayısıyla ekonomik faaliyetler de temelinde bilgi faaliyetleri olarak ele alınmalıdır. Farklı ekonomik birimlerin kontrolünde olan bilgilerin paylaşımını, transferini ve yeni bilgilerin yaratımını içeren bilgi faaliyetleri etkinlik açısından düzenlenmelidir. Aktörler bu faaliyetler sırasında şekillenen ortak çalışmalarını, hem kendi özelliklerine göre –dışardan gelen bilgiyi emme kapasiteleri- hem de paylaşılan bilginin özelliklerine göre –kodlanmışlık, gözlemlenebilirlik, öğretilebilirlik, karmaşıklık, sisteme bağımlılık ve yenilik- eşgüdümlemelidir. Bu çalışmada, bilgiye dayalı ekonomi literatürü takip edilerek, bilgi yaratımı ve transferinin koordinasyonu, ortaya çıkan organizasyon formunun birinci ve en önemli bileşeni olarak ele alınmaktadır. Ancak bilişsel düzeydeki bu koordinasyon tek başına yeterli değildir. Zira ortak bir bilgi faaliyetinde çalışan ekonomik aktörler fırsatçı davranabilir ya da çıkar çatışması içerisine girebilirler. Eğer aktörlerin çıkarları kendiliğinden birbirleriyle çatışmıyorsa, bu aktörler birbirlerinin niyetlerini sorgulamadan ekonomik faaliyetler içindeki görevlerini eşgüdümlemeye hazır olurlar. Bu durumda ilişkilerin koordinasyonu güven esaslı gayri resmi kontrol mekanizmalarıyla sağlanabilir. Öte yandan, çıkarların çatışması durumunda, aktörler ekonomik faaliyetler içindeki görevlerini yerine getirmeden önce kendi haklarını korumak isteyeceklerdir. Bu da, ortak çalışmaya başlamadan önce bir anlaşmaya varmalarını ve aralarındaki ilişkileri resmî kural ve kanunlarla düzenlemelerini gerektirmektedir. Sonuç olarak, ekonomik faaliyetler sırasında ortaya çıkan organizasyonların şekillenmesinde, resmi ya da gayri resmi kurumlarla ekonomik aktörlerin çıkarlarının korunmasına yönelik koordinasyon mekanizmaları ikinci bir bileşen olarak karşımıza çıkmaktadır. En son bileşen de ekonomik birimler arası güç dağılımıyla ilişkilidir. Her ne zaman iki ya da daha fazla taraf arasında sözleşme ihtiyacı ortaya çıkarsa, güç oyunları da kendini gösterecektir. Her aktör kendi çıkarlarını koruyacak şekilde anlaşmayı düzenlemek isteyeceğinden, aktörler arasındaki güç dağılımı, ortaya çıkan koordinasyon mekanizmasının şekillenmesinde önemli bir rol oynamaktadır. Özetlenecek olursa,

temelinde bilgi faaliyetleri olan bütün ekonomik faaliyetler üç boyutlu bir dinamik çerçevesinde sürdürülmektedir ve buna bağlı olarak ortaya çıkan organizasyonların formları da bu üçlü dinamiğe uygun olarak ortaya çıkmaktadır. Bu çalışmada da, farklı organizasyon formları, bu dinamiklerin gerektirdiği koordinasyon mekanizmalarının farklı bileşimleri olarak önerilmektedir.

Anahtar Kelimeler: *Organizasyon Formları, Bilgiye Dayalı Ekonomi, Bilişsel Koordinasyon, Motivasyonların Koordinasyonu, Güç Dağılımı.*

Introduction

Economic system hosts various forms of organization: markets, firms, subcontracting agreements, strategic alliances, communities of practice, epistemic communities, etc. These organizational forms act as platforms for producing and exchanging goods and services between economic units of various sizes –individuals, groups of individuals or groups of groups–. The existing theoretical studies in economics analyze organizations in relation to "the firm" and "the boundaries of the firm" within "the theories of the firm" (Coase, 1937; Alchian-Demsetz, 1972; Williamson, 1975; Jensen-Meckling, 1976; Grossman-Hart, 1986; Foss, 1993, 1996; Kogut-Zander, 1996; Hart-Holmstrom, 2010; Aghion-Holden, 2011). While they are mostly focused on distinguishing between firms and markets, they don't propose the sufficient variety that can explain the observed organizational forms. Furthermore, the term "firm" remains ambiguous in terms of organizational forms inasmuch as it may indicate a hierarchical form (as in vertically integrated Chandlerian firm) as well as a cooperative form (as in joint-ventures or consortiums) (Grandori, 2001). Avoiding the use of given structural alternatives, this paper aims to study "boundaries of business organizations".

In view of the fact that today knowledge is the critical resource in the production of all goods and services (Teece, 1981; Nonaka, 1994; Grant, 1996; Cohendet et al., 2006), economic activities are mainly viewed as knowledge activities i.e. sharing, integrating and creating knowledge. Interactions appear among economic actors when they want to exchange their complementary resources with each other or put them into a common use in order to generate new resources or goods and services. Since these interactions need to be regulated for efficiency, these actors should coordinate their actions with each other. Another dimension to consider is the fact that the economic actors involved in these interactions may behave in an opportunistic way and have potentially conflicting interests which would hinder the performance of their collective activities (Foss, 1996). If the actors have intrinsically aligned interests, they are already motivated to coordinate their productive efforts without questioning the intentions of the others. In this case the control mechanisms are fairly informal, and the interactions occur on equal ground. However, if the individual interests are conflicting, actors need some coordination mechanisms to solve these conflicts and to continue on with their interactions (Ouchi, 1979; Dekker, 2004; Vlaar et al., 2007; Foss et al., 2010). The process of reaching agreement gives rise to power plays. As a result of power distribution, the

institutions are put in place in order to extrinsically align actors' interests. Hence, interactions during knowledge activities occur both in a technical division of labor referring to knowledge governance and in a social division of labor related to management of social conflicts and rivalries, as pointed out by (Poitou, 1991). Thus, coordination mechanisms in a business organization have to take into consideration the knowledge dynamics on the one hand and motivational dynamics on the other.

Following mainly behavioral and evolutionary theories of organizations (March-Simon, 1958; Cyert-March, 1963; Nelson-Winter, 1982; Poitou, 1991; Dosi-Marengo, 2007), this paper studies coordination mechanisms as common building blocks of all organizations. In order to define the relevant coordination mechanisms, organizational routines are considered a starting point. Routines are described as "regular and predictable behavioral patterns" (Nelson-Winter, 1982: 14). These behavioral patterns correspond in fact to coordination mechanisms. They may characterize production techniques, procedures, decision rules or policies. Studies exploring organizational routines underline two dimensions: cognitive and motivational (Cohendet-Llerena, 2003; Becker et al., 2005). While cognitive dimension of routines are required for problem solving within knowledge activities, motivational dimension refers to alignment of individuals' interests. Routines as "truces" are supposed to ensure some balance between the participants' interests. (Becker, 2004) argues in this line that implicit truces may exist between those giving and those executing orders as long as these orders are within the "zone of indifference" (Barnard, 1938). Establishing a zone of indifference means also reaching a compromise, which refers to the definition of organizations as coalitions of varying interests (Cyert-March, 1963). While routines are balancing individuals' varying interests, they provide to some extent a stable power distribution in organizations (Becker et al., 2005). Thus, routines as coordination mechanisms consider also power plays between the participants. Essentially, power plays are closely related to the motivational dimension of economic behaviors. When interests are intrinsically aligned within the organization, there is no reason for power struggles to exist. In such an organization, the power distribution will be horizontal. However, in case of conflicting interests, power struggles may appear while establishing the relevant extrinsic motivation system. So, power distribution must also be viewed as an important feature dictating the forms of business organizations.

This paper proposes to re-conceptualize the organizational forms in business by putting forward the necessary coordination mechanisms related to the cognitive and motivational dimensions of intra-organizational relationships. Acknowledging also the role of power distribution among the actors, organizational forms appear as different combinations of these mechanisms. In this sense, cognitive coordination mechanisms are discussed in Section 2. Then, motivational coordination mechanisms and power distribution within the organizations are examined respectively in Sections 3 and 4. Combining the insights gained within these sections, the paper attempts to propose taxonomy of organizational forms in Section 5. The paper concludes with a summary.

1. COORDINATING KNOWLEDGE GENERATION AND TRANSFER

Following the knowledge-based approaches, the need to produce (and not the need to align interests) is viewed in this paper as the principal reason leading to the emergence of business organizations. Actors interact in order to share, integrate or exchange their resources with the intention of achieving a specific outcome. During these interactions, coordination mechanisms are needed for synchronizing the efforts of these actors holding complementary assets. Assuming sufficiently aligned interests between actors (Nelson-Winter, 1982; Dosi-Marengo, 2007), the foremost purpose of coordination mechanisms appears as easing the knowledge transfer and integration between the actors (Foss-Mahoney, 2010).

Knowledge activities involving several actors require interactions of varying level of intensity. The intensity of interactions may be characterized by the physical proximity between actors, as well as the duration and the breadth of these interactions. Cognitive coordination mechanisms are defined as practices and instruments that maintain the interaction levels as required by the knowledge activities. These levels may vary on a continuum from tight to loose. Tight interactions refer to situations where actors collaborate in proximity, over a long period and by sharing a wide range of assets. Loose interactions indicate relationships between actors working at distance, by short encounters and with as few as possible assets to share. Here, we will show the relevant interaction levels for knowledge activities considering mainly two sets of factors. These factors are the actors' absorptive capacity (Cohen-Levinthal, 1990; Nooteboom, 2000; Nooteboom et al., 2007) and the characteristics of the knowledge assets to transfer or to integrate (Winter, 1987; Zander-Kogut, 1995; Grandori, 2001; Birkinshaw et al., 2002; Contractor-Ra, 2002).

Absorptive capacity is described as the ability to evaluate, to access and to assimilate outside knowledge (Cohen-Levinthal, 1990). This capacity depends closely on the prior knowledge held by the actors. The latter generate and accumulate knowledge and capabilities through learning processes (learning-by-doing, learning-by-using, learning-by-interacting). Given the varying duration and intensity of learning processes, actors develop different levels of absorptive capacity. Furthermore, in view of the fact that every actor specializes in specific activities, their absorptive capacity may differ depending upon the knowledge to absorb. Thus, actors do not have the same level of absorptive capacity for all the knowledge they want to access to. They need to put extra effort when the relevant outside knowledge is not covered by their own knowledge base. Proximity and long term contacts with the holder of the relevant knowledge are thus necessary. In this case, the relationships are characterized by tight interactions. Otherwise, if the recipient actors' knowledge base provides the necessary prior knowledge to understand, evaluate and assimilate the outside knowledge, relationships with the holder of the knowledge are less tight.

Another way of looking at the absorptive capacity of actors, especially in a situation involving a two-way knowledge transfer, is analyzing the cognitive distance between them (Nooteboom, 2000). The cognitive distance is described as the difference in cognitive functions of different actors. Simply put, cognitive function refers

to absorptive capacity. As Nooteboom (2000) indicates, bridging cognitive distance between two actors can be done by communication which can yield overlapping between absorptive capacities of these actors. So, the higher the cognitive distance is, the more these actors need communicating frequently and in proximity. If the cognitive distance is weak, the actors can understand each other easily, which indicates that they don't need tight interactions, the transfer may occur through in-distance communication means.

Furthermore, for a given cognitive distance between actors, the knowledge transfer may necessitate different levels of interaction depending on the characteristics of the relevant knowledge. The easier the knowledge transfer between two actors, the looser the interactions are between them. Here, we analyze contributions of different scholars in order to identify the dimensions of knowledge assets in terms of the ease of their transfer. The first taxonomy is suggested by Winter (1987) who identifies four dimensions of knowledge assets: (1) tacit / articulate; (2) observable in use / not observable; (3) complex / simple; (4) dependent (element in a system) / independent. Following Winter taxonomy, Zander- Kogut (1995) propose five constructs by which to characterize knowledge assets: (1) codifiability; (2) teachability; (3) complexity; (4) system dependence; (5) product observability. The first characteristic in both of the taxonomies refers to the basic distinction between tacit vs. codified knowledge. This distinction derives mainly from the difference between knowing and communicating. As (Polanyi, 1958) suggests, "we know more than we can tell". Hereof, Grandori (2001) considers "tacitness" as a component of a wider epistemic problem: the epistemic complexity. She describes the epistemic complexity as "the difficulty of observing phenomena and diagnosing cause-effect relations" and "the difficulty in constructing valid and reliable knowledge" (ibid:392). In this sense, "observability" and "teachability" can also be regarded as aspects of this epistemic problem. Moreover, Grandori (2001) defines another component of knowledge-complexity: the computational complexity referring to the number of elements and symbols making up the relevant knowledge. This characteristic corresponds in fact to the "complexity" dimension in Winter and Zander-Kogut taxonomies. Indeed, Zander-Kogut, (1995:82) define complexity as "the number of distinctive skills, or competencies, embraced by an entity or activity". Furthermore, as a fifth dimension in our list, "system dependence" refers to the extent to which the relevant knowledge is a function of a system or context. The more the knowledge is system dependent, the more the transfer of the knowledge in question requires the transfer of other components of the system in which the latter is embedded.

Finally, Simonin (1999) introduces the notion of "knowledge ambiguity" based on some of the aforementioned characteristics of knowledge and some other. More precisely, knowledge ambiguity is affected by tacitness, specificity, partner protectiveness, cultural distance, and organizational distance between actors. Here, "specificity" refers to Transaction Cost Economics' asset specificity notion (Williamson, 1975). Indeed, specificity may hinder knowledge transfer, especially when the relevant knowledge is acquired through learning by doing or learning by using,

and remains "sticky" to the locus of knowledge generation (Von Hippel, 1994). While "partner protectiveness" doesn't appear as a purely cognitive feature, but rather as a motivational issue, "cultural distance" and "organizational distance" relate to "cognitive distance" between actors.

Table 1. Cognitive coordination level based on the characteristics of knowledge and of actors

Necessary level of interaction		
Loose		Tight
Characteristics of the actors		
High	Absorptive Capacity	Low
Low	Cultural Distance	High
Low	Organizational Distance	High
Low	Cognitive Distance	High
Characteristics of the knowledge to be transferred and/or integrated		
Articulate-Explicit	Codifiability	Tacit-Not Codifiable
Observable	Observability	Not observable
Teachable	Teachability	Not teachable
Simple	(Computational) Complexity	Complwex
Independent	System dependence	Dependent
Generic	Specificity	Specific
Unambiguous	Ambiguity	Ambiguous

Table 1 summarizes factors related to the characteristics of the actors, and those related solely to the knowledge to be transferred and / or integrated. Depending on these factors, knowledge activities require interactions of varying level of intensity between participants. The cognitive coordination mechanisms refer to the practices and instruments which maintain the necessary level of interaction. While tight interactions are ensured by collaboration in proximity over a long period with the share of wide range of assets, loose interactions can be easily secured between actors working at distance, by short encounters and with as few as possible assets to share.

Cognitive coordination refers only to a single dimension of organization dynamics. However, the actors involved in knowledge activities cannot be characterized only by their knowledge bases or absorptive capacities. They are also human beings with ambitions, motivations, and interests, thus more than intelligent machines. Motivational facet of organizational dynamics is analyzed in the following Section with regards to conflicts of interest between these actors.

2.COORDINATING MOTIVATIONS AND INTERESTS

Depending upon the characteristics of the actors and the knowledge to be transferred and/or to be integrated, the relationships are characterized by tight or loose

interactions. However, nature and level of their motivation regarding these activities may differ. Indeed, actors may be intrinsically motivated to work together, if this activity satisfies directly their needs (Osterloh-Frey, 2000). Otherwise, they may need to be extrinsically motivated by indirect means like monetary compensation. Hence, interactions between collaborating actors need to be regulated depending on the nature of their motivation. In this regard, right incentive systems and interest alignment mechanisms would help actors to concentrate their efforts on value creating activities instead of on conflicts of interests. These mechanisms refer basically to institutions which determine "the rules of the game" (North, 1990). These "rules" as institutional structures are governance and control mechanisms and may also contribute to trust building between interacting actors (Bachmann-Inkpen, 2011). Institutions have different degrees of formality depending on the modes of interest alignment.

In case of intrinsically aligned interests, the relationships can be regulated by social control, reputation and shared norms. Economic actors are intrinsically motivated to act in compliance with these informal control mechanisms, as long as their personal interests don't push them to do otherwise (Ouchi, 1979; Dekker, 2004; Vlaar et al., 2007; Foss et al., 2010). However, if interests are not intrinsically aligned, confrontation of individual interests may cause conflicts. So, these interests have to be extrinsically aligned. In other words, they need to reach agreement and meet in a "zone of indifference" (Barnard, 1938; Simon, 1947) protected by control mechanisms. The more the conflicts are serious, the more the actors need to assure each other by formal mechanisms. This agreement bears upon the actors' behaviors during the value creating activities, which also covers the issues about repartitioning the work and the outcomes. They need to put in place some formal control mechanisms that consist of contractual obligations and that help them maintaining the agreement.

The governance and control mechanisms regulating the relationships refer to the notion of "institution" in the sense of North (1990). Institutions are described as "rules of the game" that constrain and shape human interactions. They can be informal –as in social control, shared norms and codes of behavior – or formal – such as written rules, contracts etc. –. As implementing formal institutions demand time and deliberate effort of actors, the latter would avoid as long as possible to create and put in place formal institutions. On the other hand, informal institutions emerge throughout prior experiences, and they are readily used in human interactions. So, we suggest that unless the formal institutions are absolutely necessary for the performance of knowledge activities like in case of conflicting interests, informal institutions would be preferred as the main governance and control mechanisms. Indeed, informal mechanisms such as shared norms and formal control mechanisms such as written contracts are considered substitutes up to a certain degree. Both mechanisms reduce uncertainty and increase predictability of actors' future behaviors (Das-Teng, 2001; Inkpen-Currall, 2004; Vlaar et al., 2007).

3. POWER DISTRIBUTION

Actors interacting to achieve a specific outcome may have different motivations and potentially conflicting interests. When implementation of formal institutions becomes unavoidable, an important question appears: "whose interests are to be served, and who is to control and initiate organizational activities" (Pfeffer-Salancik, 1977:19). In other words, the rules, or more generally the institutions, which are used to align interests, express also power relations (Favereau, 1994). When implementing formal institutions that define and control actors' behaviors, power struggles are natural outcome of this process. In the end, the formal institutions are set as a result of the negotiation processes. Degree of power exerted by each actor turns out to be important during these processes. That's why we are particularly interested in factors influencing actors' power.

Power is described as the capacity of influencing the actions of others (French-Raven, 1959). Power is also the ability of an actor to take or not take actions that are desired by others (Salancik-Pfeffer, 1977). Thus, power is always exerted in two ways: power and counter-power. The point of equilibrium determines the final distribution of power in an organization. The literature on power distinguishes mainly two categories of sources: personal and structural (French-Raven, 1959; Salancik-Pfeffer, 1977; Ibarra, 1993). Personal sources refer to expertise and knowledge bases of the actors, whereas structural sources refer to the position of actors within the group. Concerning the latter, (Ibarra, 1993) distinguishes furthermore formal and informal structural sources. More precisely, formal structural sources relate to the hierarchical power based on "authority of sanctions" (Simon, 1947), and informal structural sources refer to the notion of network centrality, which assures a high degree of access to and control over resources within the network, and thus, provides a strategic position to actors (March-Simon, 1958). Similarly, Burt (2000) develops the term "social capital" to explain the advantages of actors who are well connected within networks.

Formal power can be found within an official top-down relationships system, i.e. a hierarchy. We suggest here that, in a general sense, formal structural sources of power can be related to the size of actors, i.e. their financial capacity or the number of people working under their command. On the other hand, informal structural sources are not necessarily related to the position of the actors within a hierarchy. They refer rather to the number of people that actors can reach no matter of these people's positioning within the society. As for the personal sources, they are closely linked to the ambiguity of actors' knowledge bases. In other words, the more difficult to transfer the relevant expertise, the higher is the power obtained from personal sources.

In sum, power exerted by an actor may be composed of different degrees of different sources. An actor may have a superior formal power over other actors. But other actors from lower status may exert counter-power based on their specific expertise. A power balance is restored as a result of these power plays and formal institutions are put in place in order to maintain this balance.

4.A NEW TAXONOMY OF ORGANIZATIONAL FORMS

Organizational forms can be seen as combinations of coordination mechanisms which are implemented to support economic activities. Cognitive coordination mechanisms are considered with regard to whether the knowledge activities (transfer, integration) require loose or tight interactions between actors. Here, cognitive coordination level is the primary dimension used to differentiate organizational forms. However it doesn't allow us to distinguish clearly all possible organizational forms. For instance, the communities of practice, market-based forms or traditional subcontracting are all characterized by loose interactions during knowledge activities, whereas the governance and control mechanisms are considerably different for these three organizational forms. Therefore motivational and power dynamics have to be taken into account in order to differentiate these forms of organization. Power struggles appear to have important implications only if formal institutions are to be put in place. The formal institutions concretize, in a way, the power distribution for a certain amount of time. Hereof, the difference between communities of practice and market-based organizational forms becomes clearer. Interactions in communities of practice –or more generally in all knowledge communities (Cohendet et al., 2006) – are coordinated by informally shared norms and values. The market-based relations are, on the other hand, more precisely defined by explicit rules. While both of these forms refer to loose interactions, the symmetrical power distribution becomes visible with implementation of formal institutions in case of market-based relations.

The taxonomy of organizational forms proposed here takes into account collaboration level between actors, formality level of institutions and power distribution (Table 2). It starts by distinguishing between organizations with loose and tight interactions. This distinction is made in Section 2 accordingly to the cognitive distance between actors and the characteristics of knowledge to be transferred, shared or integrated. Then another distinction is defined in relation to the formality level of institutions which regulate and control the economic actors' behaviors. As discussed in Section 3, the more incompatible are the actors' interests, the more formal institutions are employed within organizations. Finally more formal institutions are put in place, more visible the power distribution within organizations becomes, as presented in Section 4.

Table 2. A new taxonomy of organizational forms

<table>
<tr><td colspan="3"></td><td colspan="2">Cognitive coordination</td></tr>
<tr><td colspan="3"></td><td>Loose collaboration</td><td>Tight collaboration</td></tr>
<tr><td rowspan="3">Motivational coordination</td><td rowspan="2">Informal institutions</td><td rowspan="2">Power distribution insignificant</td><td>Communities of practices</td><td>Epistemic communities</td></tr>
<tr><td colspan="2">“Knowledge communities”</td></tr>
<tr><td rowspan="2">Formal institutions</td><td>Symmetrical power distribution</td><td>Market-based relations</td><td>Strategic alliances, Joint-venture</td></tr>
<tr><td>Asymmetrical power distribution</td><td>Traditional subcontracting</td><td>Hierarchy-based relations</td></tr>
</table>

In case of loose collaboration, organizational form to be adopted depends on the nature of alignment of interests and the power plays between the actors. Hence, we may observe traditional subcontracting, market-based relations or communities of practice. In fact, we may consider all of these forms as subcategories of communities of practice, but here we use the term “communities of practice” to emphasize the informal dynamics of inter-actors relationships.

If interests are intrinsically aligned, no formal institutions are necessary in order to govern and control the activities. So, as the interactions are rather coordinated by social control (reputation, norms…), the power distribution appears insignificant. In fact, the power distribution appears rather symmetrical between the constituent members of organizations. This particular combination of coordination mechanisms indicates “communities of practice” which are defined by a common interest in specific tasks, activities, or practices (Brown-Duguid, 1991). In such organizations, actors are qualified with more or less similar skills and knowledge bases. Thus, the cognitive distance is very weak, which allows these actors to interact by loose connections.

When individual interests are not intrinsically aligned, actors need to reach agreement and to assure themselves that they are not going to act at each other’s expenses. Thus, as formal institutions are to be put in place, power distribution becomes important. If while reaching agreement, actors exert same amounts of power to each other, the final balance indicates symmetrical power distribution. We may consider market transactions as an example of such case. More explicit examples would be “off-the-shelf” exchanges or patenting and licensing systems. On the other hand, if one of the actors exerts more power than others, this actor is then in the position of influencing the actions of the others. He/she can define explicitly the tasks to be fulfilled by them. Traditional subcontracting agreements are examples of this kind of interactions. This type of agreement is characterized by one-way transfer of explicit knowledge from the prime contractor to the subcontractor. The former passes to the latter only the specifications regarding the characteristics of a product –size, geometry, materials…– and also manufacturing

details. Here, transferred knowledge is thus explicit and independent. As the prime contractor is both the original holder of this knowledge and the commanding actor, he/she can exert power based on both his/her expertise and formal positioning vis-à-vis the subcontractor.

When knowledge activities require close interactions, we may observe epistemic communities, joint-ventures, strategic alliances, consortiums or hierarchical firm-like organizations. If collaborating actors have intrinsically aligned interests, they coordinate their activities and relationships by shared norms and principles. We may find this type of interactions within epistemic communities. (Cowan et al., 2000:234) define epistemic communities as "small working groups, comprise knowledge-creating agents who are engaged on a mutually recognized subset of questions, and who (at the very least) accept some commonly understood procedural authority as essential to the success of their collective activities". The procedural authority mentioned by authors refers actually to shared norms and principles that regulate the relationships. In these communities, actors deal mainly with innovative activities requiring heterogeneous resources. As Nooteboom (2000) points out; in order to introduce the most radical innovations, there should be some cognitive distance between the actors, which would in return require tight interactions.

In case of conflicts of interests, if one actor stands out as more "powerful" than others, the interactions tend to be hierarchically coordinated. Hiring a highly qualified person or acquiring a successfully innovative SME are examples of hierarchy-based relations. If the power is more or less symmetrically distributed, the rules and regulations reflect also this power distribution. For example, within joint-ventures or strategic alliances, levels of actors' participation may differ, which is reflected by the equity levels of participants. These organizational forms are examples of long-term agreements that recognize contributions of each actor to the economic activity.

Conclusion

This paper presents an attempt to reconstruct from zero an enriched version of "structural alternatives" of organizations without restricting ourselves to given "structural alternatives", i.e. firm, market, and hybrid forms. More precisely, different hybrid forms are described as different combinations of coordination mechanisms. In this attempt, the main goal is to describe the organizational dynamics in a realistic way. In order to do that, this paper tries to bridge the two antagonist perspectives: incentive-view and problem-solving view (Dosi-Marengo, 2007), by putting the first stone on the problem-solving coast.

Considering coordination mechanisms as common building blocks of all organizations, this study starts by defining different facets of the coordination mechanisms put in place during economic activities. In this regard, cognitive and motivational dimensions of intra-organizational relationships are highlighted with the intention to discuss the necessary coordination mechanisms for efficient collective activities. While cognitive dynamics dictate whether the interactions should be loose or tight, motivational dynamics refer to the formality level of institutions and

power distribution between the interacting actors.

The organizational forms reviewed here represent only a few examples of real life organizations. Other examples can always be found accordingly to different combinations of cognitive and political coordination mechanisms. It is also important to keep in mind that while building the Table 2, only the extremities are considered. Yet, coordination mechanisms vary along a continuum between extremities. In fact, as Coriat-Dosi, (1998:111) point out; we can identify "a lot of different organizational arrangements on an ideal continuum between the Prussian army and a university department full of crazy scientists". This paper attempts to determine the important breaking points on this continuum and to propose a new conception of organizational forms.

References

AGHION, Philippe, and Richard HOLDEN. Incomplete Contracts and the Theory of the Firm: What Have We Learned over the Past 25 Years? The Journal of Economic Perspectives 25 (2): 181–197, 2011.

ALCHIAN, Armen A., and Harold DEMSETZ. Production, Information Costs, and Economic Organization. The American Economic Review 62 (5): 777–795. 1972.

BACHMANN, Reinhard, and Andrew C. INKPEN. Understanding Institutional-Based Trust Building Processes in Inter-Organizational Relationships. Organization Studies 32 (2): 281–301. 2011.

BARNARD, Chester Irving. The Functions of the Executive. Cambridge, MA: Harvard University Press. 1938.

BECKER, Markus C. 2004. Organizational Routines: A Review of the Literature. Industrial and Corporate Change 13 (4): 643–678.

BECKER, Markus C., Nathalie Lazaric, Richard R. Nelson, and Sidney G. Winter. Applying Organizational Routines in Understanding Organizational Change. Industrial and Corporate Change 14 (5): 775–791. 2005.

BIRKINSHAW, Julian, Robert NOBEL, and Jonas RIDDERSTRAALE.. Knowledge as a Contingency Variable: Do the Characteristics of Knowledge Predict Organization Structure? Organization Science 13 (3): 274–289. 2002

BROWN, John Seely, and Paul DUGUID. Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation. Organization Science 2 (1): 40–57. 1991.

BURT, Ronald S. The Network Structure of Social Capital. Research in Organizational Behavior 22: 345–423. 2000.

COASE, Ronald H. The Nature of the Firm. Economica 4 (16): 386–405. 1937.

COHENDET, Patrick, Olivier DUPOUËT, and Frédéric CREPLET. La Gestion Des Connaissances: Firmes et Commmunautés de Savoir. Paris: Editions Economica. 2006.

COHENDET, Patrick, and Patrick LLERENA. Routines and Incentives: The Role of Communities in the Firm. Industrial and Corporate Change 12 (2): 271–297. 2003.

COHEN, Wesley M., and Daniel A. LEVINTHAL. Absorptive Capacity: A New Perspective on Learning and Innovation. Administrative Science Quarterly 35 (1): 128–152. 1990.

CONTRACTOR, Farok J., and Wonchan RA. How Knowledge Attributes Influence Alliance Governance Choices: A Theory Development Note. Journal of International Management 8 (1): 11–27. 2002.

CORIAT, Benjamin, and Giovanni DOSI. Learning How to Govern and Learning How to Solve Problems: On the Co-Evolution of Competences, Conflicts and Organizational Routines. In The Dynamic Firm: The Role of Technology, Strategy, Organization and Regions, edited by Alfred Dupont Chandler, Peter Hagstrom, and Örjan Solvell, 103–133. New York: Oxford University Press. 1998.

COWAN, Robin, Paul A. DAVID, and Dominique FORAY. The Explicit Economics of Knowledge Codification and Tacitness. Industrial and Corporate Change 9 (2): 211–253. 2000.

CYERT, Richard M., and James G. MARCH. A Behavioral Theory of the Firm. Vol. 2. Englewood Cliffs, NJ: Prentice Hall. 1963.

DAS, Tushar Kanti, and Bing-Sheng TENG. Trust, Control, and Risk in Strategic Alliances: An Integrated Framework. Organization Studies 22 (2): 251–283. 2001.

DEKKER, Henri C. Control of Inter-Organizational Relationships: Evidence on Appropriation Concerns and Coordination Requirements. Accounting, Organizations and Society 29 (1): 27–49. 2004.

DOSI, Giovanni, and Luigi MARENGO. Perspective—On the Evolutionary and Behavioral Theories of Organizations: A Tentative Roadmap. Organization Science 18 (3): 491–502. 2007.

FAVEREAU, Olivier. Trois Thèses de Jean-Daniel Reynaud Sur L'économie Des Règles. In Variations Autour de La Régulation Sociale. Hommage À Jean-Daniel Reynaud, 173–182. Paris: Presses de l'Ecole Normale Supérieure. 1994.

FOSS, Nicolai J. Theories of the Firm: Contractual and Competence Perspectives. Journal of Evolutionary Economics 3 (2): 127–144. 1993.

FOSS, Nicolai J. More Critical Comments on Knowledge-Based Theories of the Firm. Organization Science 7 (5): 519–523. 1996.

FOSS, Nicolai J., Kenneth HUSTED, and Snejina MICHAILOVA. Governing Knowledge Sharing in Organizations: Levels of Analysis, Governance Mechanisms, and Research Directions. Journal of Management Studies 47 (3): 455–482. 2010.

FOSS, Nicolai J., and Joseph T. MAHONEY. Exploring Knowledge Governance. International Journal of Strategic Change Management 2 (2): 93–101. 2010.

FRENCH, John R. P., and Bertram RAVEN. The Bases of Social Power. In Studies in Social Power, edited by Dorwin Cartwright, 150–167. Ann Arbor: University of Michigan Press. 1959.

GRANDORI, Anna. Neither Hierarchy nor Identity: Knowledge-Governance Mechanisms and the Theory of the Firm. Journal of Management and Governance 5 (3-4): 381–399. 2001.

GRANT, Robert M. Toward a Knowledge-Based Theory of the Firm. Strategic Management

Journal 17 (S2): 109–122. 1996.

GROSSMAN, Sanford J., and Oliver D. HART. The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration. The Journal of Political Economy 94 (4): 691–719. 1986.

HART, Oliver, and Bengt HOLMSTROM. A Theory of Firm Scope. The Quarterly Journal of Economics 125 (2): 483–513. 2010.

IBARRA, Herminia. Network Centrality, Power, and Innovation Involvement: Determinants of Technical and Administrative Roles. Academy of Management Journal 36 (3): 471–501. 1993.

INKPEN, Andrew C., and Steven C. CURRALL. The Coevolution of Trust, Control, and Learning in Joint Ventures. Organization Science 15 (5): 586–599. 2004.

JENSEN, Michael C., and William H. MECKLING. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. Journal of Financial Economics 3 (4): 305–360. 1976.

KOGUT, Bruce, and Udo ZANDER. What Firms Do? Coordination, Identity, and Learning. Organization Science 7 (5): 502–518. 1996.

MARCH, James G., and Herbert Alexander Simon. Organizations. New York: Wiley. 1958.

NELSON, R. R., and S. G. WINTER. An Evolutionary Theory of Economic Change. Cambridge, MA: Harvard University Press. 1982.

NONAKA, Ikujiro. A Dynamic Theory of Organizational Knowledge Creation. Organization Science 5 (1): 14–37. 1994.

NOOTEBOOM, Bart. Learning by Interaction: Absorptive Capacity, Cognitive Distance and Governance. Journal of Management and Governance 4 (1-2): 69–92. 2000.

NOOTEBOOM, Bart, Wim Van HAVERBEKE, Geert DUYSTERS, Victor GILSING, and Ad Van DEN OORD. Optimal Cognitive Distance and Absorptive Capacity. Research Policy 36 (7): 1016–1034. 2007.

NORTH, Douglas C. Institutions, Institutional Change and Economic Performance. Cambridge, England: Cambridge University Press. 1990.

OSTERLOH, Margit, and Bruno S. FREY. Motivation, Knowledge Transfer, and Organizational Forms. Organization Science 11 (5): 538–550. 2000.

OUCHI, William G. A Conceptual Framework for the Design of Organizational Control Mechanisms. Management Science 25 (9): 833–848. 1979.

PFEFFER, Jeffrey, and Gerald R. SALANCIK. Organization Design: The Case for a Coalitional Model of Organizations. Organizational Dynamics 6 (2): 15–29. 1977.

POITOU, Jean-Pierre. Sciences Cognitives et Forces Productives. La Pensée, no. 282: 55–67. 1991.

POLANYI, Michael. Personal Knowledge: Towards a Post-Critical Philosophy. London: Routledge & Kegan Paul Ltd. 1958.

SALANCIK, G. R., and J. PFEFFER. Who Gets Power–and How They Hold on to It: A Strategic-Contingency Model of Power. Organizational Dynamics 5 (3): 2–21. 1977.

SIMON, Herbert A. Administrative Behavior: A Study of Decision-Making Processes in Administrative Organizations. New York: Free Press. 1947.

SIMONIN, Bernard L. Ambiguity and the Process of Knowledge Transfer in Strategic Alliances. Strategic Management Journal 20 (7): 595–623. 1999.

TEECE, David J. The Market for Know-How and the Efficient International Transfer of Technology. The Annals of the American Academy of Political and Social Science 458 (1): 81–96. 1981.

VLAAR, Paul WL, Frans AJ Van DEN BOSCH, and Henk W. VOLBERDA. On the Evolution of Trust, Distrust, and Formal Coordination and Control in Interorganizational Relationships toward an Integrative Framework. Group & Organization Management 32 (4): 407–428. 2007.

VON HIPPEL, Eric. 'Sticky Information' and the Locus of Problem Solving: Implications for Innovation. Management Science 40 (4): 429–439. 1994.

WILLIAMSON, Oliver E. Markets and Hierarchies: Analysis and Antitrust Implications. New York: Free Press. 1975.

WINTER, Sidney G.. Knowledge and Competence as Strategic Assets. In The Competitive Challenge Strategies for Industrial Innovation and Renewal, 159–184. Cambridge, MA: Ballinger Publishing Company. 1987

ZANDER, Udo, and Bruce KOGUT. Knowledge and the Speed of the Transfer and Imitation of Organizational Capabilities: An Empirical Test. Organization Science 6 (1): 76–92. 1995.