

# The co-existence of different organisational forms

Firms as interpretative systems

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....preliminary work.....work in progress.....comments are very welcome...

## **Abstract**

With the globalisation and the extension of markets a further division of labour has been possible leading to a growing knowledge creation and specialisation in the production. The specialisation has resulted in a dispersion of knowledge and there is a growing need to co-ordinate the knowledge in the production of the final product.

The different organisational forms that co-exist to match the specialisation of the production and to co-ordinate the dispersed knowledge are here explained through the boundaries of the firm within the resource-based approach. The focus will be on the firm as an interpretative system, where the boundaries of the firm are connected to the limitations of cognition and the need for coherence.

The two organisational forms; the specialised firm located in a regional innovation system (RIS) and TNC will be discussed in relation to their different interpretative systems.

Keywords: Firm boundaries, specialisation, interpretative systems, knowledge transfer, absorption.

## **Introduction**

This paper relates to my PH.D program about knowledge transfer in different spatial contexts and the importance of firms in regional innovation systems (RIS) to have access to knowledge to ensure their competitiveness. RIS will be challenged by the growing global competition, new ways to organise production and fast technological change in many industries. The internal organisation of the production and institutional arrangements, often due to proximity, are crucial explanations to the competitive advantages of RIS. Still there is a growing awareness that in order to be able to respond to changes and to stay innovative, RIS have to make links with firms outside the RIS displaying strategic competitive advantages in networks of global firms. The need for firms to get access to external knowledge is also rising as a consequence of a growing dispersion of knowledge due to the division of labour. Still it is becoming increasingly difficult to co-ordinate and adopt knowledge as a result of specialisation.

This paper focuses at why different organisational forms co-exist. The aim is to identify some of the causes to different types of firms, with the purpose to create a platform, from which their different contributions in the production can be identified. The existence of the different organisational forms will be discussed according to the impact on the growing need to co-ordinate knowledge. The primary issues will be the relation between specialisation and interpretative systems and the impact on inter-firm knowledge transfer.

In this way I will approach an answer to: Why firms will face an increasing need for co-ordination and transfer of knowledge. Hereunder which constraints and possibilities that exist for the transfer of knowledge among different firms.

The work of Professor Brian J. Loasby and his concept of interpretative systems will constitute the approach in this paper. Loasby describes firms as organisations that form responses to limits of human cognition. The firm is an interpretative system, which focuses the device of the firm and structures the knowledge and skills within an interpretative frame. The interpretative frame constitutes the cognitive boundaries, which is reinforced by the emergence of locally relevant institutions. The aim of the interpretative system is to arrange and simplify the complex content of knowledge in a firm and affect what its members can learn and accomplish. Within this interpretative system some extent of cohesion, due to the interpretative framework, must exist to structure and rationalise actions due to an ambiguity of knowledge inputs and possibilities available. To obtain cohesion it is important to use compatible patterns of interpretation in the firm to create

an orientation of the firm. Construction of beliefs shall help to take decisions and conduct activities, which are credible within the context of the firm.

The description above is mostly related to the interpretative system and cohesion *within* the firm. To be able to obtain external knowledge created outside the firm, firms often have to operate with several interpretative systems, just as ambiguity within the belief set enhance possibilities for innovations and adaptation of knowledge( Loasby 2000 p:11f)..

Differences between firms is in this work explained by the resources and capabilities<sup>1</sup> of firms, the impact of their environments and interaction with other firms, just as the entrepreneurial role in constitutions of the organisational coherence in interpretative systems are seen as crucial.

### **The constitution of different organisational forms**

The focus of this paper is primary on the already established interpretative systems of the firm and the changes it undergoes as a result of a growing specialisation. Still the constitutions of the evolution of different organisational forms will be introduced briefly to put the interpretative systems into perspective.

Resources and capabilities in the firm are dependent on both internal and external aspects on which the firm is created. Alfred Marshall has described the role of the differences among environments and people, and how people respond differently to the same environment. People act differently, taking different choices and solving similar problems in various ways, even though they are in the same kind of business located in the same area (Marshall 1925). The following aspects are seen as having a crucial impact on the action of men and how this shape their firm:

*“Each man’s actions are influenced by his special opportunities and resources, as well as by his temperament and his associations: but each taking account of his own means will push the investments of capital in his business in each several directions until what appears in his judgement to be the outer limit, or margin, of profitableness is reached” (Marshall 1925 p:355).*

The internal aspect connected to the entrepreneur in the firm can explain these different organisational forms. The initial endowments of the entrepreneur will include specific resources and

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<sup>1</sup> The content of concepts of capabilities, resources and competencies will follow the description taken from Maskell et al 2000 p: 6 inspired by work of Foss and Eriksen . Here capabilities are intangible not trade-able goods related to territorial entities, while resources are trade-able. Competencies are used when talking of the firm only excluding

capabilities, or the possibilities of a person to take advantages of imperfect information. In this way there is an entrepreneurial element in all interpretations in the firm and these interpretations are influenced by the initial endowments of the entrepreneur (Loasby 2000, Spender 1998).

The external aspects of the resources and capabilities in the firm can be related to competitive advantages such as resources localised in the region, being the workforce or natural resources. The external impact of the firm could also stem from the way production and firms are organised within place-specific pathways related to organisational and institutional characteristics, such as norms and rules creating routines. Further more, institutional characteristics can develop constrains and possibilities, which guide the behaviour for localised firm, by limiting the possible choices that the entrepreneur might make. Positive localised capabilities in the present economy are often related to their ability to create knowledge and innovation through low barriers of knowledge exchange (Maskell 1998). These features often exist in certain areas with an agglomeration of specialised firms creating a certain local milieu.

In this way a combination of internal and external aspects creates the conditions for the content and organisation of the firm as they determine the possibilities and choices of the entrepreneur. The actions of the entrepreneurs will follow the principle of substitution (Marshall 1925 p: 355), where the potential successful entrepreneur will seek to increase his profits by modifying his arrangement. The interaction between the entrepreneur and the ever changing environment will give the entrepreneur new possibilities and constrains, which will have an influence on the organisational form of the firm. This heterogeneity among firms entails differences in interpretative systems. These differences in interpretative systems are necessary, because they most respond to the different needs of firms to structure and obtain knowledge and influence what the persons in the firms can learn and accomplish.

Until now the conditions of the existence of different organisational forms have been enlightened as their relation to the interpretative system of the firms. In the next chapter I will discuss what impact the development in the division of labour has on the interpretative system of firms.

### **Division of labour**

In this section the division of labour will be examined, both as a way to be able to possess more knowledge within firms, and as a way to create more knowledge.

In the work of Adam Smith, division of labour is connected to competitive advantages. It is the subdivision of production into simple operations that leads to the division of labour, where one simple operation is the sole employment of one man. This organisation of production leads to perfection of the labour both in terms of the quality and quantity of what he produces (Smith 1776 (1981)). So instead of one man to control the whole production process, specialisation in one operation leads to productivity gains. The division of labour within a firm enhance the ability for the firm, in total, to posses more knowledge. The limitations of individual cognition can be overcome by employing people, each having a pool of knowledge in a subdivision of the production. New requirements will then arise, as a consequence of having different knowledge pools related to the need for cohesion in the firm and the knowledge to become economic useful. A question I will return to.

The division of labour also entails the ability to create more knowledge. This statement is explained by the fact, that, as people is organised only to place their work interests into a minor division of the production, their knowledge base will increase, and by that also the knowledge base of the firm. The increase in the amount of knowledge comes along, as knowledge about a single subdivision will be enlarged. The division of labour will make it possible to extract knowledge about details and related problem solving in depth of an area, instead of relating it to other subdivisions in the firm (Smith 1776 (1981), Loasby 2000).

As the production process is divided in different subdivisions, each worker in control of each division, the knowledge will also be divided. In this way division of labour results in division of knowledge.

The opening of markets because of diminishing trade barriers and enhanced physical infrastructure allows a deepening of the division of labour, because of the enlargements of markets, with enhanced knowledge creation and further specialisation as a result (Maskell 2000).

In the following I primary refer to the division of knowledge as my subject relates to knowledge transfer. The advance of specialising through division of knowledge within the firms can also be found in division of knowledge between the firms.

### **Specialisation and dispersed knowledge**

The logic presented by Adam Smith about how the division of labour strengthens competitive advantages by specialisation, can also be found in the resource-based view of the firm. Here the

competitive advantages of a firm are based on resources *within* the firm and the utilisation of firm-specific combination entailed by the ability of the firm to combine familiar resources in building distinctive and valuable competencies. The argumentation is that the resources and the competencies they develop within the firm influence the boundaries of firms. The firm will specialise in exploiting their resources most efficiently. The most efficient way to use resources is based on knowledge accumulation and development of routines within a specific area. These processes will free resources within the firm making it possible to create and diversify activities using the same base of resources (Penrose 1955, Maskell et al 1998).

The specialisation results in a pervasive dispersed knowledge between firms. The dispersed knowledge not only strengthens the competitive advantages of firms to exploit their resources and capabilities within the firm, but it also rationalises the actions to get access to available knowledge in total. Here the dispersed knowledge among firms can be related to the idea of Freidrich A. von Hayek (Hayek 1945). Hayek argued that it is through decentralisation that problems of rapid adaptation to changes are met.

*“ We cannot expect that this problem will be solved by first communicating all this knowledge to a central board which, after integrating all knowledge, issues its orders. We must solve it by some form of decentralization. But this answers only part of our problem. We need decentralisation because only thus can we ensure that the knowledge of the particular circumstances of time and place will be promptly used” (Hayek 1945 p: 84).*

Another central aspect of the work of Hayek is his argument, that the co-ordination of dispersed knowledge is best taken care of at the market. Here the interaction among the decentralised agent each possessing a limited field of knowledge ensure that relevant information is communicated to all. The price of the goods or service acts as a kind of information centre, where information connected to cost in the different dispersed production sub-unit in the production are gathered (transportation, shortage, quality etc.) (Hayek 1945).

So the more limited the firm makes its sphere of interest or specialise, the more it can rationalise the circumstances in which it makes choices and take decisions, by limiting the area in which it seeks knowledge as a part of the total knowledge available.

As mentioned in the introduction, the purpose of the interpretative system in the firm is to arrange and simplify the complex content of knowledge through cohesion where construction of beliefs

shall help to choose the inputs and possibilities, which are credible within the context of the firm (Loasby 2000). The specialisation of the production changes the activities and the choices and possibilities credible for the firm. This means that there has to be changes in the interpretative system of the firm, and by that a new cognitive coherence. The interpretative system has to relate to the specialised production.

Due to the specialisation the interpretative system will become increasingly narrow and firm specific, because of the need to exclude information and external knowledge due to cognitive limits within the firm and the need for coherence.

### **Co-ordination and knowledge transfer in different interpretative systems**

The more specialised and divided the production becomes the more there is a need for co-ordination between producers of different products.

According to G. B. Richardson co-ordination can take place either through direction, at the market, or through co-operation between firms. Because of the subject of this paper I will only focus on co-ordination through co-operation. Co-ordination through co-operation in complex networks takes place because of the need to co-ordinate complementary but dissimilar activities. The reason for co-operation between firms, when co-ordinating dissimilar but complementary activities, is that it cannot be within the firm as each firm will specialise in few activities, and it cannot be co-ordinated via the market, because the co-ordination demands a matching, both qualitative or quantitative, of individual enterprise plans (Richardson 1972)

As a result, firms will often have to rely on knowledge created and possessed outside the firm, especially if it is highly specialised. In this situation firms have to interact and communicate with other firms to gain fully economic use of its product. Therefore an effective firm need to posses, not only one interpretative system, but a system of interpretative systems (Loasby 2000). Because of this, new problems arise with address to the need of coherence within the firm and cognitive limitations. The firm is put in a situation where there has to be at trade off, whether the firm should hold an interpretative frame which mostly favours the need to implement outside knowledge, or favours development of highly specialised knowledge created within the firm.

The characteristics of the conditions for the sustainable development of the firm has an impact on whether a firm holds an interpretative frame favouring specialised knowledge created within the

firm, or a frame for implementing outside knowledge. If the firm face a situation where success is hard to obtain or to sustain, the will be a risk that the firm will change strategy so often that it will not be possible to develop any competences. On the other hand a firm which finds it easy to find success, will be less interested in exploring new opportunities and seek new knowledge. Here the firm will chose the most convenient strategy; to stick to their known knowledge and references, and by that develop more specialised knowledge. They will tend to exploit rather than explore (March 1995).

But even though knowledge is available and free of charge, it can have high cost to implement it and make use of it in the firm. The problem of cost relates to the assumption that knowledge is dependent on the context in which it is created (Becattini & Rullani 1996). Contextual knowledge is often connected to personal experiences, to interpretation and memory, and essentially remains tacit and informal. To transfer this knowledge outside the context in which it is created, it is required that the tacit knowledge become codified and by that transferable. Four stages are identified in the process of codifying contextual knowledge to make it possible to transfer<sup>2</sup>: “...(a) *socialization* of the contextual knowledge, whereby shared experiences are extended to more people or to more places; (b) *conversion* of contextual knowledge into codified knowledge; (c) *re-assembly* of the codified knowledge by combining many elementary notions into a complex expression; (d) *absorption* of codified knowledge in real operative processes (Becattini & Rullani 1996 p: 163<sup>3</sup>)” The processes of socialisation and conversion are related to the context in which the knowledge is created, whereas the conversion and re-assembly are connected to the codification and transfer of the contextual knowledge. The absorption of the external codified knowledge in the receiving firm has the aim to implement the knowledge into operative processes and restart the process of conducting contextual knowledge.

For firms to be able to absorb external knowledge, some characteristics have to be present. Cohen and Levinthal have described the relation between focussing on structuring internal or external knowledge in relation to the ability of the firm to absorb knowledge from external sources. They define the concept of absorptive capacity as the ability of firms to recognise the value of new external information, assimilate it, and apply it to commercial ends (Cohen and Levinthal 1990):

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<sup>2</sup> In the work of Becattini & Rullani the knowledge creation and transfer are related to industrial district or poles.

*“ With regard to the absorptive capacity of the firm as a whole, there may, however, be trade off in the efficiency of internal communication against the ability of the sub-unit to assimilate and exploit information originating from other sub-units or the environment. This can be seen as trade-off between inward-looking versus outward-looking absorptive capacities. While both of these components are necessary for effective organizational learning, excessive dominance by one or the other will be dysfunctional. If all actors in the organisation share the same specialized language, they will be effective in the communicating with one another, but they may not be able to tap into diverse external knowledge sources (Cohen and Levinthal 1990 p: 133).”*

The success of the absorptive capacity of the firm is mostly a function of the firm’s level of prior related knowledge.

Two features of prior knowledge are important in relation to the absorptive capacity of external knowledge in the firm. Accumulated absorptive knowledge in one period will imply more effective accumulation in the next period in a particular area, as it is easier to apply additional knowledge to already existing knowledge. Prior knowledge can also include possession of related expertise that permit the firm to understand and therefore evaluate the import of intermediate technological advantages. The cumulative absorptive capability affects the ability of the firm to predict more accurately the nature and commercial potential of technological advantages (Cohen and Levinthal 1990).

### **Organisational changes as a result of inter-organisational knowledge transfer and learning**

According to Professor James G. March transfer of knowledge into an organisation is one of several ways that organisations can adapt and change through learning.

What distinguish organisational learning from individual learning is the ecological nature of organisational learning. Each organisation adapts to an environment consisting of other organisations, each of which consist of interacting learning individuals and subgroups. An example of this kind of inter-organisational learning is network linkages among firms. The learning outcomes depend on the number of competitors, their learning rates and their aspirations, the extend to which each competitor learns from the experience of others and the differences among potentials of the activities.

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<sup>3</sup> The four stages have been identified by J. Nonaka.

Much learning that takes place in an organisation is encoded into rules and routines that guide organisational behaviour. In relation to the coherence within the organisation rules exist to structure actions and modifies behaviour. Changes in rules are often associated with changes in external pressure, even though these changes will be conserved by internal processes after the external pressure has gone.

These changes can be both good and bad. Risk of concentrating on wrong strategies because of habits and competence exists, leading to competence trap, or the fact that change in action might suit one organisation good, but not necessary the other. Changes should also be seen in a time perspective, and in this way distinguish between the outcome of short-run and long-run actions. Here it might as well be that changes causing problems in the short run result in improvements in the long-run (March 1995).

### **Summary**

Different organisational forms exist as a result of the need for different firms to create interpretative systems that undertakes the interest for the firm in relation to create, find, co-ordinate and adopt useful and creditable knowledge. The coherence in the firm is limited by the cognitive abilities in firms, where the trade off is to know little about a lot or to know a lot about a limited area. As firms have to respond to the limits of cognition and the need for coherence within the firm different organisational forms co-exist.

The interpretative system is a product of the possibilities and constrains guiding the action of the entrepreneur as a result of a combination of internal and external conditions, following the work of Alfred Marshal. The interpretative system alters, due to growing specialisation, as a result of division of labour. This means that more narrow and firm-specific interpretative frames must be established, to respond to the need of the firms to create specialised knowledge, building communication sets and organisational set-up to support this need. There exist a mis-match between the development of competitive advantages in firms through specialisation on the one hand, and on the other hand the awareness of the need to co-ordinate the dispersed knowledge to bring the specialised knowledge into economic use. In this situation the ability of the firms to adopt external produced knowledge, as one mechanism to co-ordinate knowledge is crucial. This ability depends on the existence of overlapping interpretative frames to implement and make use of external knowledge in an economic rational way. Changes in firms can be established through knowledge

transfer among firms. Through inter-firm knowledge transfer learning can be accomplished, resulting in new rules and routines, changing the behaviour and actions of the firm.

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