

# **A Synergy- and Value-based view of economic organization**

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## **Abstract**

In this paper we propose a synergy- and value-based view of economic organization. We argue that the decision on the governance mode for an activity must account for both the benefits generated by the activity as well as the costs caused by it. Moreover we argue that these costs and benefits of one activity do not exclusively depend on the governance mode of one single activity but on the whole bundle of activities a firm accomplishes and the governance modes used for this purposes. We review the fundamental concepts of the approach – activity bundles, value, and synergy – and show the difference to existing approaches by an numerical example. Possible applications, limitations, and opportunities for future research are discussed briefly.

## **Abstract**

In this paper we propose a synergy- and value-based view of economic organization. We argue that the decision on the governance mode for an activity must account for both the benefits generated by the activity as well as the costs caused by it. Moreover we argue that these costs and benefits of one activity do not exclusively depend on the governance mode of one single activity but on the whole bundle of activities a firm accomplishes and the governance modes used for this purposes. We review the fundamental concepts of the approach – activity bundles, value, and synergy – and show the difference to existing approaches by an numerical example. Possible applications, limitations, and opportunities for future research are discussed briefly.

## **1 Introduction**

In our opinion the choice of a governance mode for an activity – i.e. the organization of economic activity – has to consider on the one hand the costs caused by an activity as well as the benefits it generates – this difference of benefits and costs is what we refer to as the value of an activity for a firm – on the other hand these costs and benefits of one single activity do not exclusively depend on the governance mode of this activity but rather on the whole bundle of activities a firm performs and on the governance modes used to organize these activities – we refer to this interdependencies as synergistic respectively non-synergistic interdependencies between activities. In suggesting a synergy- and value-based view of economic organization we therefore have two objectives.

The first objective of this paper is to emphasize the importance of both the benefits created as well as the costs caused by an activity organized by a specific governance mode for the choice of the appropriate governance mode for this activity. In contrast to the synergy- and value-based view other approaches neglect the influence of the governance mode either on the benefits of an activity or on its costs (Phelan and Lewin, 2000). Transaction cost economics (TCE) for example holds production costs constant across different governance modes which denies the existence of rents and makes the choice of the governance mode for an activity exclusively depending on the transaction costs, on the other hand the resource based view (RBV) is silent

concerning the influence of the governance mode on the rent-generation potential of a bundle of activities, or the costs of using different governance modes.

With this objective we continue a recent stream in the research on the theory of the firm. After a long period of competition between TCE and the RBV in explaining the existence and boundaries of the firm first approaches that attempt to combine and integrate aspects from both perspectives emerged only recently (Madhok and Tallman, 1998; Madhok, 2000; 2002; Phelan and Lewin, 2000; Foss and Foss, 2004). According to the unanimous argument of these approaches both the RBV and TCE have their justification as they investigate different but equally important aspects of the same phenomenon.

The second objective is to explicitly model the interdependencies – may they be synergistic or non-synergistic – within the bundle of activities a firm organizes by various governance modes. As Williamson (1999: 1096) states bundles of transactions, capabilities, or resources are important aspects in most theories of the firm:

‘The firm ... is a bundle of related resources (from the resource-based perspective), a bundle of routines (from the evolutionary perspective), and a bundle of transactions/contracts (from the transaction cost economics perspective).’

However not only the number of transactions, capabilities, or resources is important, but also the synergistic – i.e. benefit increasing and/or cost reducing effects – or non-synergistic – i.e. benefit reducing and/or cost increasing effects – interdependencies between them, which in turn depend on the governance mode used to organize them. We would like to give some theoretical and empirical examples of such interdependencies between activities and depending on their governance modes. This list of course is far from being complete, but only demonstrates that research in various strands of the theory of the firm recognized the importance of interdependencies between activities and their governance modes.

Coase (1937) was not only the first who realized the importance of transaction costs for the existence and the boundaries of the firm, but he was also the first who stated that transaction costs increase super-additively with the number of transactions organized within a firm due to decreasing return to managerial effort.

Richardson (1972) and Jarillo (1988) argue that firms can improve the overall value of the bundle of activities they perform by specializing on their core activities for which they possess the appropriate capabilities and resources and which are the basis of their competitive advantage. Other than their core activities which are nevertheless necessary can be subcontracted to closely tied network partners. In doing so firms can focus on their core activities and further-develop them due to economics of specialization and learning, which increases the rent-generation potential of these activities while reducing the transaction costs for other activities due to the close interfirm relations with its network partners.

Porter (1996) argues that strategic fit between different activities of a firm create competitive advantage and superior profitability.

‘One activity’s cost, for example, is lowered because of the way other activities are performed. Similarly, one activity’s value to customers can be enhanced by a company’s other activities.’ (Porter, 1996: 70)

The organizational and dynamic capabilities approach argue that there are differences between governance modes in their ability to effectively exploit the rent generation potential of certain activities

‘[W]hat is distinctive about firms is that they are domains for organizing activity in a nonmarket-like fashion. Accordingly, as we discuss what is distinctive about firms, we stress competences/capabilities which are ways of organizing and getting things done which cannot be accomplished merely by using the price system to coordinate activity. The very essence of most capabilities/competences is that they cannot be readily assembled through markets.’ (Teece, Pisano and Shuen, 1997: 517)

‘[T]he decision to conduct an activity within the firm is based not just on cost minimization considerations but also takes into consideration that the firm has certain unique capabilities which enables it to create and realize value from doing so. This may not occur in alternative governance modes because of value erosion due to inadequate capabilities.’ (Madhok, 1996: 581)

Dyer (1997) investigates the coexistence of high investment specificity and low transaction costs in auto-producer-supplier networks – a paradox according to TCE as with investment specificity the risk of opportunistic behavior of the partner increases and therefore transaction costs should be relatively high. He observed that one of the reasons for this ‘paradox’ are economies of scale and scope on the side of the supplier. Due to the low number of suppliers per producer an auto-producer buys more of the same parts and more different parts from one supplier than in networks with more suppliers. Transaction costs per unit diminish with the volume a auto-producer buys from its suppliers as information costs are spread on a larger quantity of units. That more components are bought from one supplier lowers bargaining costs as there are more options to correct transaction inequities. Transaction costs therefore increase sub-additively with the number of activities organized by interfirm collaboration. On the other hand there also exist economies of scale and scope for internalization if the activities a firm performs share the same resources. In this case per unit production costs diminish and therefore the rents created by an activity increase.

As we can see from the examples above interdependencies between activities and the governance modes used to organize them can have various cost and benefit increasing and decreasing effects. The synergy- and value-based approach explicitly takes into account these interdependencies in choosing activity bundles and governance modes for these activity bundles simultaneously to maximize the overall value.

The remainder of this chapter is structured as follows. Section two reviews the fundamentals of the synergy- and value-based view of economic organization, which are activity bundles, value and synergy. In section three these concepts are applied in an illustrative numerical example to show how our approach differs from existing approaches, proposes some applications and the limitations of the presented approach. Section four proposes interesting avenues of future research and concludes.

## **2 Fundamentals of the Synergy- and Value-based View**

In this section we briefly review the basic concepts of the synergy- and value-based view of economic organization, which are activity bundles, value and synergy.

## 2.1 Activity bundles

We focus on activities – which also can be conceived as transactions according to TCE – rather than on resources or capabilities of these, on their own, cannot create benefits for a firm but only the use of resources or capabilities – i.e. the execution of activities that use resources or capabilities. Of course the resources and capabilities of a firm can be input factors for more than one activity as well as a certain activity may require more than just one resource or capability.

In defining activity bundles as the unit of analysis we adopt the analytic framework of Jarillo (1988) who perceives firms as '*collections of activities*'. We decompose the whole value chain of a firm (Porter, 1985) into its different activities that are to some extent independent although interrelated. While Jarillo uses these atomistic activities as the unit of analysis and determines the governance mode for each of these activities separately according to TCE – i.e. chooses for each activity the transaction cost minimizing governance mode – in our analysis we will focus on activity bundles – i.e. all possible combinations of these atomistic activities in all possible governance modes. These activity bundles build the unit of analysis of the synergy- and value-based view of economic organization.

## 2.1 Value

As mentioned above attempts to integrate TCE and the RBV (Madhok and Tallman, 1998; Madhok, 2000; 2002; Phelan and Lewin, 2000; Foss and Foss, 2004) exist only for a short period of time. The inspiration of these approaches is the idea that a combination of both theories results in a more robust and sophisticated theory of the firm TCE or the RBV could provide on its own. Indeed TCE and the RBV are rather complements than substitutes in explaining the existence and the boundaries of the firm as they focus on different aspects of the same phenomenon. While TCE focuses on a efficient – transaction cost minimizing – exploitation of existing rent potential, the objective of the RBV is to explore new rent potentials (Windsperger, 2002; Foss and Foss, 2004). The most convincing and operational integration of TCE and the RBV is Madhok and Tallman's (1998) value approach:

$$v|gm = r|gm - tc|gm$$

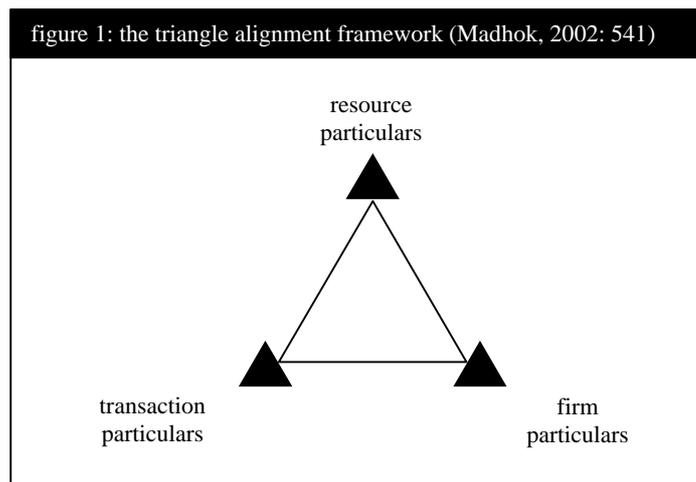
The value  $v$  an activity generates is according to this approach the difference between the rent  $r$  generated and the transaction cost  $tc$  caused by the activity if it is organized by the governance

mode  $gm$ . The rent generated by an activity is the difference between the return to the activity and the costs to perform it (either the production costs or the market price). Transaction costs on the other hand are the costs of the used governance mode. This approach accounts for the importance of rents (as emphasized by the RBV) as well as transaction costs (as emphasized by TCE) for the choice of governance mode, and that a governance mode to be efficient not just has to maximize rents or minimize transaction costs but rather maximize the value generated by the activity. Furthermore the value approach considers that transaction costs and rents differ in different modes of governance.

In its original form the value approach just analyses one activity, interdependencies with other activities are therefore neglected. To avoid this shortfall one simply has to calculate rents and transaction costs and hence the resulting value not just for one single activity but for bundles  $b$  of activities:

$$v(b) = r(b)|gm(b) - tc(b)|gm(b)$$

By extending the focus from single activities to activity bundles of firms – which of course differ among firms – we arrive at the triangular alignment framework proposed by Madhok (2002). From the observation that different firms use different modes of governance to organize the same activities Madhok claims that a truly strategic theory of the firm must consider and triangular align resource particulars, transaction particulars, and firm particulars in the choice of a governance mode – as illustrated in figure 1.



The synergy- and value-based view of economic organization can be conceived as such a ‘truly’ strategic theory of the firm. In addition to transaction costs and rents of an activity as indicators

of transaction and resource particulars, firm particulars are modeled as different activity bundles performed by different firms. As different firms perform different activity bundles there will be different synergistic or non-synergistic interdependencies between a specific activity and the other activities of the firm which in turn can have the effect that *'different firms organize similar transactions in different ways'* (Madhok, 2002: 541).

### 2.3 Synergy

Milgrom and Roberts (1995) already used the concept of supermodularity from optimization and games to formalize the concept of synergy and to investigate the fit of a firm's strategy, structure and managerial processes. In this paper we will use the weaker concept of superadditivity to formalize synergy as it is sufficient for our purpose. Synergy between two activities exists whenever the value generated if these activities are performed together exceeds the sum of the values they can generate if performed separately.

$$v(A \cup B) > v(A) + v(B)$$

The same holds for more than two activities as well. In this case synergy exists for a bundle of activities whenever the value of the complete bundle exceeds the sum of all single activities or subsets of activity bundles.

$$\begin{aligned} v(A \cup B \cup C) &> v(A) + v(B) + v(C) \\ &> v(A \cup B) + v(C) \\ &> v(A) + v(B \cup C) \\ &> v(A \cup C) + v(B) \end{aligned}$$

Superadditivity represents the very essence of the concept of synergy as the value of the whole exceeds the sum of values of its parts. In case of non-synergistic effects the inequality holds in the opposite direction (subadditivity), and if there are no interdependencies between the activities there is equality between the two terms (additivity), which indicates that there are no differences in the value creation potential between governing the activities together or each of them separately.

## 3 The Synergy- and Value-based View of Economic Organization

The synergy- and value-based view of economic organization – as mentioned above – considers the costs caused by an activity as well as the benefits it generates dependent on the whole bundle of activities a firm performs and on the governance modes used to organize this bundle of

activities in determining the value of a bundle of activities. The choice of the activities a firm performs and the governance modes used to organize these activities has to maximize the total value generated by that bundle. To illustrate this approach we use a numerical example in the next subsection. Applications and limitations of the approach follow.

### 3.1 A Numerical Example

Assume for simplicity a firm as to decide whether or not to perform the two activities  $A$  and  $B$ , or only one of them – and if only one, then which one and which not. These could be for example the production of a product and the related research and development activities. To organize these activities different modes of governance  $gm$  are available. These are market  $m$ , firm  $f$ , and interfirm collaboration  $c$ . In case of market as governance mode the production of the good could be subcontracted or research activities could be bought from external institutions through patents or mission oriented research. In the case of firm the activities are internalized and organized within the firm and in the case of interfirm collaboration the activity is performed collaboratively by two distinct firms (e.g. by forming a joint venture or a network). Suppose the evaluation of possible rents and transaction costs caused by different combinations of activities and governance modes resulted in the values illustrated in table 1<sup>1</sup>.

We chose the numbers for the rents and transaction costs of the different activity bundles and governance modes to demonstrate the difference between the presented synergy- and value-based approach and other existing approaches on the choice of governance mode – as for example TCE and RBV. Of course by choosing arbitrary numbers almost anything can be demonstrated, and for different numbers the results may be the same as in other approaches, and therefore no additional value rationalizes the extensive task to determine the values for all possible combinations of activities and governance modes. This however will only hold for the – rather unrealistic – case that there are no interdependencies between the activities and therefore strict additivity of the costs and benefits of the activities exists. Moreover as stated in the introduction there are many possible interdependencies between activities, and what we want to show is that the synergy- and value-based view provides a more sophisticated and holistic approach to economic organization, different from and superior to the existing approaches, which consider either only transaction costs or only rents for only one activity.

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<sup>1</sup> Note that combinations where none activity is performed or only one or both activities are organized by market transaction –  $\{\}$ ,  $\{A|m\}$ ,  $\{B|m\}$ , and  $\{A|m, B|m\}$  – are impossible for a firm, as in this cases the firm performs no activity and therefore not exists.

table 1: A Numerical Example			
bundle $b$ , i.e. activities $\in \{A,B\}$ in specific governance modes $gm$ $\in \{m,f,c\}$	rent $r(\cdot)$	transaction costs $tc(\cdot)$	value $v(\cdot) = r(\cdot) - tc(\cdot)$
{ }	-	-	-
{A m}	-	-	-
{B m}	-	-	-
{A f}	2.5	1.5	1
{B f}	2	1	1
{A c}	3.5	2	1.5
{B c}	4.5	2.5	2
{A m , B m}	-	-	-
{A m , B f}	6	4	2
{A m , B c}	7.5	5	2.5
{A f , B m}	6.5	5	1.5
{A f , B f}	7	4	3
{A f , B c}	7	4.5	2.5
{A c , B m}	6.5	4	2.5
{A c , B f}	6.5	4.5	2
{A c , B c}	5.5	3.5	2

From the numerical example three mentionable aspects can be derived. First of all different theories of the firm come – as they focus on different relevant measures – to different decision concerning the appropriate governance mode for a single activity. In the example above firm would be chosen to govern the activities A and B according to TCE as in this governance mode transaction costs are minimal, the RBV and the original value approach opt for interfirm collaboration as this is the rent respectively value maximizing alternative.

Furthermore we can see that what is appropriate regarding only one single activity need not be appropriate for bundles of activities due to synergistic and non-synergistic interdependencies between the activities that cause sub- or super-additivity between the costs and benefits of activities and therefore make the value of the whole differ from the value of its parts. For example transaction costs are minimized when the bundle of A and B is organized via collaborative rela-

tionships although for the separate resources firm was the best governance mode according to TCE.

At last the most important aspect mentionable regarding the example is that for different firms – i.e. firms that organize one activity in different ways – different governance modes are appropriate for the organization of the other resource.

$$\begin{array}{lcl} v(A|f \cup B|c) & > & v(A|f \cup B|m) \\ v(A|c \cup B|c) & < & v(A|c \cup B|m) \end{array}$$

If a firm organizes activity A within the firm, for this firm some kind of interfirm collaboration is better than market transaction for activity B as this governance mode generates the higher value for the whole bundle of activities. For an other firm that organizes activity A by interfirm collaboration the situation is directly opposed.

The synergy- and value-based view of economic organization therefore shows the characteristic that the optimal governance mode depends not only on resource and transaction but also on firm particulars. This is modeled by firms that perform different bundles of activities respectively the same bundle by different governance modes. As mentioned above this characteristic is stipulated to be essential for a strategic theory of a firm (Madok, 2002).

The analytical power of the synergy- and value-based view is demonstrated in the last two examples, TCE and RBV do not support such analysis and therefore neglect possible synergistic or non-synergistic interdependencies between activities and the different governance modes used to organize these activities.

### 3.2 Applications

Though the synergy- and value-based view of economic organization is a prescriptive approach – firms should chose activity bundles and governance modes in a way that maximizes the overall value generated by the bundle of activities – one also can apply it to describe the economic phenomenon of adjustments in economic organization and the creation of interfirm collaborations, which emphasizes the relevance of the concepts of activity bundles, value and synergy for economic actors.

Holmström and Roberts (1998) ask for the reason of increasing numbers of adjustments in economic organization that appear in form of mergers, acquisitions and outsourcing-activities

‘The worldwide volume of corporate mergers and acquisitions exceeded \$ 1.6 trillion in 1997. It is hard to imagine that so much time, effort and investment banker’s fees would be spent on adjusting firm boundaries unless there was some underlying economic gain. Indeed, the exceptional levels of merger and acquisition over the past two decades are a strong indication that economically significant forces do determine organizational boundaries.’

The synergy- and value-based view of economic organization proposed in this paper suggests that the objective to maximize the value of the activity bundles a firm performs is the force behind these adjustments of the boundaries of firms. If one conceives the firm as a bundle of activities then innovations in form of the exploration of new activities and/or new ways to organize existing bundles of activities or simply a more precise and accurate evaluation of the costs and benefits of activities, or their interdependencies may offer opportunities to increase the value generated by a bundle of activities in alternating the bundle itself or the modes of governance used to organize them.

Furthermore we argue that the synergy- and value-based approach can explain the growing importance of interfirm collaboration as a mode of governance for activities. Firms can improve the overall value of the bundle of activities they perform by specializing on their core activities for which they possess the appropriate capabilities and resources, and which are the basis of their competitive advantage, and subcontract other necessary activities, they are not so good in to closely tied network partners (Jarillo, 1988; Richardson, 1972). In doing so firms can specialize on their core activities and further-develop them due to economics of specialization and learning, which increases the rent-generation potential of these activities, while reducing the transaction costs for other activities due to the close interfirm relations with its network partners. The value of an activity bundle organized in such a way can exceed the value of an activity bundle where all activities are internalized if the additional rents generated by the core activities exceed the additional transaction costs of the subcontracted activities (Jarillo, 1988). Such an analysis and disintegration strategy is not considered in TCE which chooses the governance mode for an activity that minimizes the transaction costs instead of the holistic value of a ‘collection of activities’.

### **3.3 Limitations**

The existence of transaction costs and rents is only possible in a world of bounded rational economic actors. This bounded rationality of course impedes a correct measurement of costs and benefits of activities, therefore the value of activities will be misperceived, too. Moreover bounded rational economic actors might neglect to take all possible activities and all governance modes for these activities into consideration. However the synergy- and value-based view of economic organization offers an approach to make holistic and rational decisions on the governance modes for activities depending on their evaluation of costs and benefits for the activities and governance modes they perceive.

## **4 Future Research and Conclusion**

In addition to the application mentioned above there are two further directions of necessary future research that we assume to advance the synergy- and value-based view of economic organization.

First of all we assume that environmental circumstances and time influence the choice of governance mode and therefore should be integrated into the approach. Barney (1986) suggests that factor market competition affects factor prices and therefore the rent generation potential of firms, while transaction costs will be high in market environments characterized by uncertainty and dynamic. Time is a second important influence factor. The real option approach for example not only considers recent rent generation but also future rent generation potential of activities, Dierickx and Cool (1989) state that the accumulation over time within the firm is the only way to achieve some valuable resources like reputation for loyalty or quality, moreover Madhok (2000) proposes that transaction costs are necessary payments for learning and relationship building in order to accomplish an activity, and therefore can be conceived as investments in future rent yielding resources.

The second avenue of necessary future research besides these extensions of the approach is clearly the facilitation of the evaluation of the value generated by activity bundles. This evaluation represents the strategic conditions a firm is confronted with, and the better this representation is the better will be the decisions derived from it. Obviously rules of thumb and heuristics are necessary to facilitate the evaluation of possible costs, rents and therefore values generated by different activity bundles in different governance modes. Such rules exist in all theories of

the firm and have to be reviewed and consistently edited to support economic actors in their choice of governance mode.

In this paper we suggested a synergy- and value-based view of economic organization. This approach considers the costs caused by an activity as well as the benefits it generates dependent on the whole bundle of activities a firm performs and on the governance modes used to organize this bundle of activities in determining the value of a bundle of activities. The choice of the activities a firm performs and the governance modes used to organize these activities has to maximize the total value generated by the bundle. We demonstrated the analytical superiority of the synergy- and value-based view compared to TCE and RBV that neglect possible synergistic or non-synergistic interdependencies between activity bundles and the governance modes used to organize these activities by a numerical example.

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