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An Integrated Approach for Firm Boundaries Problem

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***Abstract*—Successful firms determine vertical boundaries of their organizations by ensuring alignment among their firm structure, competitive strategies and external environment. How to configure vertical boundaries of an organization is a very complex problem and deciding the best approach to configuring the vertical boundaries of an organization is a central concern of strategic management theory. Current literature is mainly leaded by Transaction Costs Economics and focus primarily on advantages of internalizing an activity within firm boundaries. No single theory can explain stand-alone how to structure vertical boundaries of a firm although many researches have been conducted. More effort should be devoted to integrate theories to achieve a more complete and useful theoretical foundation for managerial decision making. An integrated model including leading perspectives and contextual attributes of firms should be developed to better understand how the vertical boundaries of a firm are configured. As the number of researches on integrated approaches is limited and mainly based on sum up of factors. Purpose of this study is to develop an integrated conceptual model by developing shared factors for Transaction Costs, Resource-Based View, Real Options and Neoclassical Economy theories.**

***Keywords*—Firm boundaries, transaction costs economics, resource-based view, real options, neoclassical economy**

I. Firm Boundaries

Successful firms consider the coherence between firm structure, competitive strategies and external environment when they configure their organization [9]. One of the strategic issues that need to be questioned is that internalization of specific-use productive assets [10, 18]. Vertical boundaries of an organization are very significant factor for success especially in high-technology industries [4, 5, 19]. Firms confront the risk of becoming clumsy and loosing strategic focus when they internalize activities that may lock them into a value chain of assets that may be strategically ineffective in the future. On the other hand, when they do not internalize right activities, they confront the risk of losing competitive advantage [10].

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Strategy academicians deal with the organization and performance of firms in a detailed way. Despite decades of research on theories of the firm, academicians still struggle with the basic question of how firms determine their boundaries [3]. Beginning with Adam Smith, efforts to explain the vertical boundaries have examined the relative advantages of alternative production arrangements and exchange methodologies [18]. In these studies, dilemma between internalizing and externalizing activities within firm structure was examined [8, 15]. Great progress about understanding the firm vertical boundaries and which factors impact these boundaries has been recorded in recent years [3, 14, 18]. The issue of what firms' vertical boundaires should be is still matter of debate due to being multi-dimensional and complex subject [3, 18].

Consequently, we have reached following results about vertical firm boundaries;

- Firm boundaries are very significant in the success of firms [4, 5, 19].
- Firms boundaries evolve over time [14].
- Firms that do business in same industry may take different decisions about firm boundaries [14].
- What firm boundaries should be is very complex and multidimensional issue [18].
- What firm boundaries should be is still debated issue [3, 14, 18].

II. Literature Review

Studies about firm boundaries began with the "The Nature of the Firm" article that was published by Coase (1937). Coase (1937) has firstly observed that firms executives determine their firms boundaries with efficiency approach by comparing advantages of sourcing decisions.

According to neoclassical economy theory firms' vertical boundary decisions are determined by technological factors such as economics of scale or scope [12]. Neoclassical economics focus on the production function and its associated costs as the driver for a firms' vertical boundaries decision. The greater the scale or scope economics of the firm, the less the marginal cost of the production of a particular good, since producing this good in concert with usual internal or external sourcing decision reduces the firms' total cost [3].

There are two leading approaches (economics and resource-based view) about studies that observe the factors for vertical boundaries decision as internal or external [14]. Economics and resource based view differs from each other and in some cases they may provide contradictory vertical boundary results for a specific case [6].

Economics approach has evolved under the influence of transaction costs theory that support "strategic commitment" and real option theory that promote "strategic flexibility" [18]. According to transaction costs theory [16] assets that will cause suppliers to show opportunistic behavior in the future should be internalized in firm structure in order to minimize cost of production. While transaction costs theory only deal with cost of production, issues of new product development and success of products in the market is considered as part of real options theory [18]. According to real options theory that supports flexibility approach of strategic theory, internalizing flexible assets in firm structure or outsourcing will be the strategies that increase economic value [18].

The resource-based view of the firm provides one means to analyze the effect of firm-level capabilities on vertical boundaries decisions [12]. Although transaction costs theory describes effect of internalizing an activity, it is silent on the relative influence of firm-specific capabilities. Resource-based view suggests that a firm that owns valuable and difficult-to-imitate capabilities will be more likely to integrate than its competitors. Capability level differs between firms due to long period of learning competences and obtaining them by a path-dependent leaning process [20]. Production experience provides learning opportunities that improves a firm's production capabilities; as a result, it is likely to enhance the likelihood that a firm will choose internalization along a given technological trajectory [12].

III. Integration of Theories

Even though transaction costs theory approaches were supported in the first years of researches, later research has shown that transaction costs theory is not completely valid in high-tech industries [10]. While transaction costs theory experts initially thought that firms' resources and competences have very little effect in determining the firms' boundaries, anymore they accepted that without considering the resources and capabilities firms cannot determine firms boundaries [14]. However, requirement for integrating different theories to understand what determine firms' boundaries has begun to adopt in recent years [14, 18].

Integrating different theories in order to decide effectively about firm boundaries is of great importance. However, although there are many studies dealing with economy, organizational theory and such, there is a little "integrated model" bringing together few different theories [18];

- Each theory explains certain part, but don't explain whole problem [18].
- None of the theories alone are enough to understand concept of firm boundaries [3].
- Current literature was influenced mainly by transaction costs theory and has focused on the advantages of internalizing activities within firm boundaries [12].
- Real options theory increases the applicability of resource-based view, determines the source that may be needed in the future and reveals a systematic approach to skills development [18].

IV. Moderation of Firm Boundaries

Theories related to vertical firm boundaries should not be seen as alternatives of each other [3]. Factors considered by each theory related to firms boundaries and how vertical boundary decision effects firm performance differs by the assumptions of theories [6]. In some studies in the literature have identified that firm attributes play significant role in determining firm boundaries independent from uncertainty and asset specifity [12]. Firm boundaries could also be affected by industry structure, environmental uncertainty, firm specific resources and capabilities, firm management structure, assets that firm have invested and such [6].

There is very few studies about analyzing how firm boundaries, which are determined in the scope of transaction costs theory, are affected in case of different attributes that firms have [12]. In many studies in the literature have showed that transaction costs approach is considered in supplier selection and how firms face with dilemma about internalizing resources and competencies [1, 7, 11, 13].

In the recent studies, in the literature [2, 21] has been identified that, firms boundaries are not only depended on the transaction own characteristic is also depend on strategic targets, current competencies and management style.

The issues about economy of scales, bonus systems, coordination, loss of confidential information and transaction costs should be considered and selection should be made when deciding about whether an activity will be internalized in firm structure or not. Without considering how these issues effect vertical integration, it is impossible to understand how vertical integration differs between industries, how vertical integration of firms differs within same industry and how vertical integration of different activities differs in the same firm. Therefore, it could be said that vertical integration degree is function of industry, firm and transaction attributes [14].

V. Proposed Moderation Model for Firm Boundaries

The basic dilemma for a firm related to vertical boundaries is giving decision about to internalize an asset. Although each theory has different perspectives, all of them handle assets in a different way. Thus we propose a model taking asset as its core and integrating other factors determined by each theory. Each factor has a moderation effect on asset specifity over its effect on vertical boundaries decision. For instance, as the internal uncertainty level increases, the tendency of internalization of an asset increases.

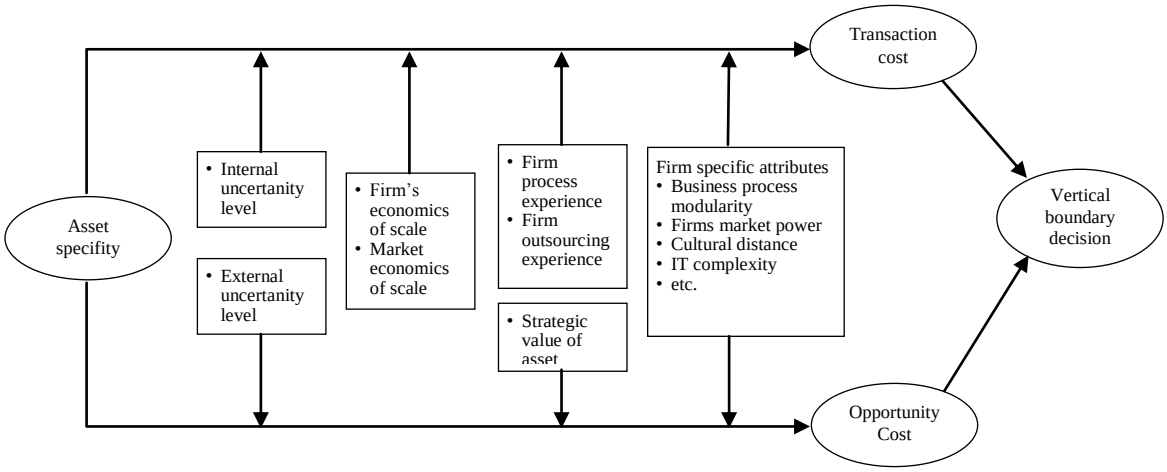

Figure 1. Conceptual Model for Firm Boundaries Decision

We have identified some studies about integration of theories [12, 14, 17, 18]. The most common methodology for integrating theories is to sum up the effects of each factor independently via a regression model. The proposed model integrates these factors by taking into consideration of their moderation effect on asset specifity.

Transaction costs and real options that are fundamental theories of economics approach were taken as basis for developed conceptual model in Figure 1. Firm boundaries decisions could be defined with key elements of theories as asset specifity and uncertainty variables when there is no company specific attribute. Asset specifity is the extent to which specialized investments are needed to support an exchange [16], and this specialization causes a significant difference between the value of an asset designed for a specific task and the second most valuable task [12].

At first, physical factors as machines, equipment and facilities were seen as assets, later on non-physical factors as brand, human capital, corporate culture were begun to seen as resources of competitive advantage and included in asset concept [17].

When considered from strategic management framework, firms confront different kinds of uncertainties about configuration of value chain [18]. There is no clear definition about uncertainty. Uncertainty could be classified in two parts as external like demand uncertainty, economical fluctuations, technology future uncertainty [3], and internal uncertainty including opportunistic behavior risks [12], measurement difficulty, and performance uncertainty [3].

Internal uncertainty is the extent to which it is difficult to assess performance [16]. When performance ambiguity is present, the firm cannot easily discern what level of performance it is getting, and this leads to firms are likely to increasingly internalize activities [3].

External uncertainty is the extent to which it is difficult to accurately predict future states of the world [16].

Transaction costs are not only one caused from opportunistic behavior of suppliers. It is the sum of production cost and opportunistic behavior costs, where a firm may choose not to externalize a specific asset where the supplier has scale of economics [18].

Firms may continue to produce some products in case they have production experience gained in a path dependent way. This may cause to internalize an activity, although it is not specific to company [12]. Similarly, if the firm has a great outsourcing experience, it may choose not to internalize a specific asset by taking into consideration their capabilities over handling conflicts with suppliers.

If the asset is valuable according to strategies of the company and may provide some strategic advantages in future, firm may choose to internalize it and it decreases the opportunity cost level.

As mentioned, firm specific attributes like market power, IT complexity, business process modularity, etc have effect on configuring vertical boundaries of companies. For instance, firms having high market power do not integrate sales channels intensively although they may face with opportunistic behavior of their suppliers. Their market power prevents supplier to behave in an opportunistic way [21].

VI. Conclusion

We proposed an integrated model for vertical firm boundaries problem in order to enable assessment of each factor under a single framework. This would provide a common language among academicians to determine factors affecting vertical boundaries decision. By the way, instead of putting effort on selecting the most appropriate theory for a specific case, our model demonstrates how it works collectively.

Finally, our model could be tested by empirical analyses and extended by integrating other theories related to vertical boundaries decision.

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