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Virtual Organization as a Source of Competitive Advantage: A Framework from the Resource-Based View

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Abstract

A framework is developed for viewing the centralization issues of organizations to consider to what degree a virtual organization may help a firm obtain competitive advantage. Utilizing the concepts of flexibility and synergy, the framework can serve as a guide for practitioners to help determine what degree of synergy and flexibility a given organizational form would bring and what its suggested category of competitive advantage would be. Implications and suggestions for future research are also discussed.

Introduction

Over the last decade, the realization of new strategies and new ways for organizing firms to compete in the fast-paced information age has rocked management literature. One such methodology receiving a great deal of attention in the literature is virtual organization. Understanding the characteristics and reasons for virtual organizational forms is essential today where faster product cycle times and shorter product life cycles demand faster and more efficient production times. As Christie and Levary (1998, p. 7) explained:

Organizations today must constantly adapt to the ever-changing, fiercely competitive business environment not only to be successful but also to survive. There is a host of external and internal forces that make constant change almost a necessity. Rapid changes in customers' tastes and needs, incredible advancements in technology, phenomenal growth in the internationalization of businesses, volatile capital markets, varying employee attitudes, and changing customer demographics are all part of the fluid scenario.

As further noted by Christie and Levary (1998), there appears to be a cry across the business world for alternative strategies for organizing firms to maximize performance, and the virtual organizational form is one of them. Many different facets of virtual organizations have been posited. Perspectives ranging from degrees of centralization and the balance between innovation and risk (Choi, 1997) to blue sky views of what could be (e.g., Chesbrough & Teece, 1996) are abundant in the literature.

Despite the plethora of literature on virtual organization, few attempts have been made to build a comprehensive or exhaustive framework to examine virtualness. In this paper we establish the theoretical groundwork and the framework for organizing in a virtual form. Specifically we present a resource based view (RBV) framework that explains four different organizational forms in the context of degrees of centralization and to provide suggestions as to the mix of flexibility and synergy provided by each form. This framework is then superimposed on Choi's framework for categories of competitive advantage to suggest the levels of competitive advantage achieved by each form.

Virtuality: The Virtual Organization Defined

Just as the literature is rich with articles on virtual organizations (Chesbrough & Teece, 1996; Choi, 1997; Christie & Levary, 1998; Evans & Wurster, 1999; Goldman, 1998; Kim, 1998; Magretta, 1998; Mowshowitz, 1999; Palmer & Speier, 1997; Venkatraman & Henderson, 1998; Wigand, 1997), there, too, exists an abundance of definitions for virtual organizations and a variety of terms (e.g., virtual form, virtual organizing, virtual organization, etc.) for those definitions. Even in this paper, we put a twist on the term, referring to the characteristic of virtual organization as "virtuality." Thus before we can effectively tackle this topic, it is essential that we provide a clear understanding of the terminology as it is used in this paper.

Much of the literature refers to the modern approach to organizational strategy as a "virtual organization." We argue that it is not an organization, but rather it is a strategy for organizing the elements of the value chain or a characteristic of an organizational approach. A clear distinction between virtual organizations and strategic alliances is lacking. The terminology can be confusing and misleading if not operationalized and if clear distinctions are not drawn between differing forms. For example, many cases cited in the literature are referred to as illustrations of virtual organization, however, we argue they are merely strategic alliances or joint ventures. In Palmer and Speier's (1997) work on developing a virtual organization typology, they cite Ford and Nissan's cooperative arrangement to develop a new minivan and call it a virtual organization. We argue that their example is nothing more than a joint venture or strategic alliance. So what's the difference? In the following section, we

will attempt to explain and make a clear distinction between the virtual organizational form and the strategic alliance.

Virtual Organization vs. Strategic Alliance

It is our belief that a virtual organizational form is more complex and involved than a strategic alliance and can be simplistically described as outsourcing to the extreme. Table 1 illustrates the distinction we contend exists between a virtual organization and a strategic alliance. We argue that a strategic alliance is narrower in scope than a virtual organization, focusing on such tasks as a specific product release or research and development project, and involves fewer players than a virtual organization. A strategic alliance focuses strictly on operational issues such as product development.

A virtual organization, we argue, involves a larger number of players and encompasses a wider section of the value chain. We argue that a virtual organization typically includes non-operational, functional aspects of the organization that have been outsourced such as human resources, marketing or legal services.

The life cycle characteristic is the most difficult for distinguishing between the strategic alliance and virtual organization. Both organization forms are technically considered to be temporary. However, a strategic alliance can become so successful and involved that the arrangement becomes relatively permanent. A virtual organization is more often temporary as it typically disbands after the project or task at hand is complete, but it may last longer if a series of similar tasks are strung together.

Table 1. General Characteristics

GENERAL CHARACTERISTICS		
CHARACTERISTIC	STRATEGIC ALLIANCE	VIRTUAL ORGANIZATION
<i>Number of Players</i>	few, typically 1 to 2	Many
<i>Life Cycle</i>	usually temporary; but can sometime last for many years	temporary; designed to accomplish a specific task and disband
<i>Scope</i>	narrow; operations focused	includes broader section of value chain; includes non-operational elements such as HR, marketing, and legal

Virtual Organizations

To illustrate the general characteristics of a virtual organization, it is necessary to review some of the definitions already explored in the literature and from that create a clear and concise definition for the context of this paper. Venkatraman and Henderson (1998) defined virtualness as "the ability of the organization to consistently obtain and coordinate critical competencies through its design of value-adding business processes and governing mechanisms" that involve both external and

internal resources. They contend that the purpose of seeking virtualness is to "deliver differential, superior value in the marketplace." From this it is plausible to conclude that the race to experiment with virtual forms and other cooperative arrangements are specific attempts to obtain competitive advantage.

In an even less focused discussion of virtual organization, Chutchian-Ferranti (1999) gives three very different views of the virtual corporation. She first defines a virtual corporation as "any group of skilled people" who get together to form a company to meet a specific goal, with each team member performing a different and specific function. What makes them virtual? They are all separated by physical boundaries. The individuals function as an organization through their communication via electronic means such as e-mail, faxes, or videoconferencing. Similar to the first group, the second is the "group of partnering companies or people that specialize in particular functions." They come together to perform a specific function or task. The final example presented by Chutchian-Ferranti is a traditional, large company that chooses to outsource some of their critical operations in an attempt to control costs allowing them to concentrate on their core competencies and thus obtain increased profitability. Although each of the views of virtual organization presented by Chutchian-Ferranti pose some very interesting questions, the third definition is more in keeping with the point of view of this paper as we will discuss further in this section.

Christie and Levary (1998) define a virtual organization as a "temporary network or loose coalition of manufacturing and administrative services that comes together for a specific business purpose." Once the purpose has been met, they explain, the arrangement disassembles. Several very distinctive characteristics are evident in their descriptions of virtual organizations. Virtual organizations are "extremely focused, goal driven, and powered by time-based competition."

Despite the many different technical definitions and points of view for a virtual organization, there are many common characteristics evident in the literature, many of which we will include in our assumptions about virtual organization. Virtual organization makes use of technology as the central form of communication and coordination. As we previously eluded to, virtual organization is particularly useful to meet the needs of rapid change. This paper suggests that there is an inherent element of flexibility and synergy present in a virtual organization.

A virtual organization, as presented in this paper, is most closely related to the Christie & Levary (1998) definition. Thus a virtual organization is a "temporary network or loose coalition of manufacturing and administrative services that comes together for a specific business purpose" (Christie & Levary, 1998, p. 8).

Using a Resource Based Perspective

Because virtuality relies so heavily on IT infrastructures and, more recently, web-based technologies to function, it is useful and logical to examine some of the uses of the resource-based view in IT research. It is from the perspective of the resource-based theory that we develop the framework presented in this paper.

The resource-based approach is a means by which to examine and explain many phenomena in organizations (Amit & Schoemaker, 1993; Collis & Montgomery, 1995; Grant, 1991). In this approach, organizations are viewed as a broad set of resources that when comprised of the appropriate characteristics and when used properly can lead a firm to success (Barney, 1991; Ives, 1999; Lado & Zhang, 1998; Wernerfelt, 1984). The consideration of the resource based view has been inherent in strategy research since its inception (Wernerfelt, 1984). In the context of the resource-based view, many researchers contend that an organization is a collection of resources and capabilities that are difficult to replicate (Conner, 1991; Lado & Zhang, 1998; Rumelt, 1984). It is this lack of imitability that allows a firm's bundle of resources to contribute to the organization's unique characteristics and thus provide sustainable economic rents (Amit & Schoemaker, 1993). Researchers also agree that differences in size distribution and competitiveness of companies manifest from the company's ability to effectively and uniquely utilize these resources to create and implement value-enhancing strategies (Amit & Schoemaker, 1993; Barney, 1991; Lado & Zhang, 1998; Peteraf, 1993; Rumelt, 1984).

Numerous examples of the use of the resource-based theory in research to explain phenomena in organizations are prevalent in the information technology, strategy and organizational theory literature (e.g., Barney, J.B., 1991; Choi, 1997; Collis & Montgomery, 1995; Lado & Zhang, 1998; Mata, et al., 1995; Wernerfelt, 1984). Lado & Zhang (1998, p. 489) used resource-based theory as they proposed a "resource-based model to explain how expert systems generate sustained competitive advantage for a firm." They examined expert systems to determine to what degree they fulfilled the conditions of value, rareness, imperfect imitability and nonsubstitutability that lead to a sustainable competitive advantage. They developed "an integrative model that explicitly links expert systems to strategic issues (Lado & Zhang, 1998)."

Choi (1997) also used a resource-based view to classify IT investment and investment strategy. He examined the classification of competitive advantage by treating IT as a resource that has multidimensional and interdependent characteristics. He determined that the most salient independent characteristics for his model were complementarity and immobility. Complementarity refers to the integration or interaction of IT with other organizational resources, while immobility is the

difficulty a competitor will have in imitating IT resources. Choi used the resource-based view to posit that these elements are the underlying characteristics of the resources of a firm that can be used to develop information technology strategies and determine what a firm will invest in information technology.

Also from the resource-based view, Mata et al. (1995) asserted that the only permanent source of competitive advantage was the superior management of all facets of information technology (i.e., IT resources). Even as early as the 1970s, IT resource management was a significant issue to researchers. In the MIS framework developed by Gorry & Morton (1971) they contend that management of the resources is key, as is differentiating among tasks and strategic goals of various elements of the systems.

In his work discussing the resource-based view, Wernerfelt (1984) defined resources as any factor, or attribute, of a firm that could be considered a strength or a weakness. Based on his broad perspective of resource-based theory, we contend that different organizational forms contain different degrees of certain factors that are critical to the success of the firm. In the following section we propose two salient factors of success for firms in an organizational context.

The Framework

Using the resource-based view, we identified the characteristics of a virtual form of organization that are key resources. Resources, we argue, when combined, significantly contribute to a firm's competitive advantage. It has long been posited that both flexibility and synergy contribute to competitive advantage, thus each quadrant of the framework represents a specific mix of synergy and flexibility. The organizational form that fits each mix is indicated in Figure 1. Before one can fully understand the framework developed in this paper, it is essential to clearly define flexibility and synergy as they are used in the context of the framework.

Wigand (1997) defines flexibility in the context of the structure and purpose of virtual organizations. He contends that "flexibility can be described as an organization's ability to adapt to a dynamic and rapidly changing environment." (p. 424) Flexibility is essential in today's organization. Christie and Levary (1998, p. 11) explain it quite clearly: "The organization that cannot cope with constant change will not survive..." Thus, flexibility is a significant resource that is essential for all successful firms.

Figure 1. Synergy-Flexibility Framework

		<i>Flexibility</i>	
		Low	High
<i>Synergy</i>	High	Strategic Alliance	Virtual Organizational Form
	Low	Fully Centralized	Divisional Structure

Synergy, on the other hand, is simply "the concept that the combination of two or more different businesses, activities, or processes will create an overall value that is greater than the sum of the individual parts" (Argenti, 1994). Vizjak (1994) suggests that synergy can realize its potential through "interrelationships between business units with high product or market affinities."

Looking at the framework, it's clear that it is a logical step to categorize different organizational forms according to their different degrees of synergy and flexibility. We recognize that there are other forms that could be discussed and could be plotted at different locations on the chart. However, we feel that the four include herein are the most logical forms to consider because they most clearly represent the mixes of flexibility and synergy.

As illustrated in Figure 1, we contend that the highest level of flexibility and synergy can be achieved with a virtual organizational form. At the other end of the spectrum, a purely centralized, hierarchical method of organization will yield a low level of synergy as well as low flexibility. In between the two extremes lies a more traditional, but decentralized divisional structure displaying high flexibility from the decentralization, but a low level of synergy. Also, in between extremes is the strategic alliance that will allow high levels of synergy, but is limited by its lesser degree of flexibility. Exhibiting the highest levels of flexibility and synergy is the virtual organizational form.

Centralized Form

The literature is clear in suggesting that centralized, hierarchical organizations are often rigid, smothered in bureaucracy (March & Simon, 1958; Mintzberg, 1993), and thus lack flexibility and synergy. Thus, the centralized organization falls in the bottom left quadrant of the chart since it exhibits the lowest levels of flexibility and synergy.

Divisional Form

In the bottom right quadrant at the intersection of high flexibility and low synergy lies the divisional form. The divisional form allows for a certain degree of flexibility because the level of corporate decentralization allows the individual firms to achieve a greater level of flexibility. However the level of synergy is relatively low since the different divisions are in a more competitive, almost adversarial, relationship. Typically the divisions are geographically disbursed as well, making synergistic relationships through the sharing of common resources very difficult.

Strategic Alliance

The strategic alliance fits the mix of high synergy, but low flexibility, falling in the top left quadrant of the framework. It has long been recognized that many firms have looked to the strategic alliance to achieve synergy and often as an alternative to mergers and acquisitions (Gari, 1999). Strategic alliances are "frequently the most efficient and effective means for achieving immediate access to the capital, talent, distribution channels, or manufacturing capabilities essential for maintaining market leadership." The risks are less, the synergy is greater and there is a moderate level of flexibility in such a relationship.

Virtual Organization

The framework suggests that the organizational form that exhibits the highest degree of flexibility and synergy is the virtual organization. The plausibility of these characteristics is quite clear. Wigand (1997) explains "that flexibility is the main goal when forming a virtual organization." Virtual organizations are, it is suggested, capable of adapting to incredibly dynamic environments. Thus, the degree of flexibility in the virtual organizational form is very high.

Synergy in a virtual organization is an inherent characteristic of the structure. Christie and Levary (1998, p. 8) suggest that "the virtual organization is a system whereby organizations end up with more capabilities and power than they inherently possess... [and they] offer advantages such as profitability and efficient use of time." Thus it is plausible to contend that virtual organizations experience high degrees of synergy.

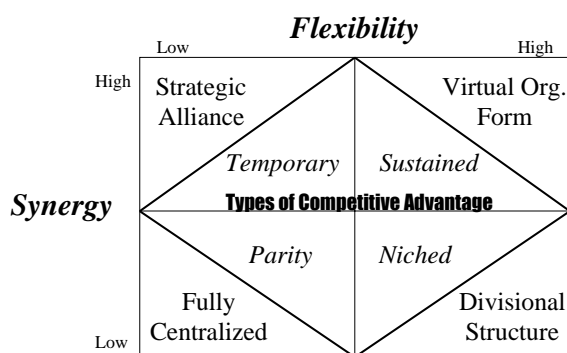
Taking this framework a step further into something more useful, we can relate this concept to the work of Choi (1997) and his categories of competitive advantage. Choi uses the resource-based view, treating information technology as a "resource that has multidimensional and interdependent characteristics" (p. 33). He examines what he call two basic characteristics of IT resources: complementarity and immobility. Then, he then suggests

a classification of competitive advantage for four different mixes of complementarity and immobility.

In Figure 2, Choi's categories of competitive advantage are combined with our framework of organizational forms. If Choi's framework is superimposed on the one we present in this paper, we can logically suggest that Choi's classifications of competitive advantage also hold true with respect to our organizational forms.

Thus, the virtual organizational form -- the most flexible and synergistic organizational form -- we argue, is also the form or strategy that provides a sustained competitive advantage. This is in keeping with the opinion of many researchers such as Chesbrough and Teece (1996) who assert that a virtual organization "will be more responsive and more likely to attain global competitive advantage."

Figure 2. Synergy-Flexibility Framework of Competitive Advantage



Implications & Suggestions for Future Research

Despite all the discussion about virtual organizational forms, they are not without its limitations and skeptics who doubt its long-term usefulness. Chesbrough and Teece (1996) contend that virtual company failures are as prevalent, if not more, than the successes that make the headlines. Like other cooperative arrangements such as strategic alliances and joint ventures, there are competitive risks involved. The relationship between participating companies can become strained or compromised if company information or secrets are exchanged either by necessity or by accident. Christie and Levary (1998) point out that other limitations lie in human resources. They contend that it takes a special breed of person, employee or manager, to function productively in a virtual organizational form.

We argue that although these are real and legitimate threats and plausible limitations, virtual organizational forms have a significant advantage in today's environment of rapid changes, short product life cycles, and high level

of competitiveness. These very thoughts could provide the basis of future research. The human resources issues just mentioned here could provide a rich area of study for potential research as could the questions surrounding the compromise of critical and strategic company information. Are the benefits derived from a virtual organization worth the potential risks? There are many rich areas of virtual organizations just waiting to be explored.

Conclusion

This paper has attempted to develop a framework for viewing the centralization issues of organizations to consider to what degree a virtual organization may help a firm obtain competitive advantage. Hopefully this framework can serve as a guide for practitioners to help them determine what degree of synergy and flexibility, as well as a competitive advantage, a given organizational form would bring.

Our framework is only meant to serve as a guide and provide a starting point to stimulate suggestions for future research. Determining a methodology to test the framework would yield significant contributions to the study of virtual organization as well as the factors of synergy and flexibility. Research needs to continue in this area. As the information age progresses and product life cycles continue to shorten at frightening rates and consumer demand continues to explode, flexibility is going to continue to be a driving force in successful organizations. And as firms continue to search for ways to drive costs down, synergistic relationships will become increasingly more important. Thus, as our framework suggests, the virtual form may become the viable and salient solution for organizations in the years to come.

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