**Multi-Firm Collaboration and International Competitive Dynamics**

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## Abstract

We describe the multi-firm collaborative network, a new form of organizing that is emerging in the international business arena. This new type of network organization will enable a group of collaborating firms to pursue a business strategy of continuous innovation, and it will help them to efficiently develop businesses outside their existing industries and country markets. Such an organization will have major implications for international competition, especially in the areas of multi-point competition, co-opetition, and virtual clustering.

## Introduction

A new form of organizing is emerging in the world of international business called the multi-firm collaborative network (Miles *et al.*, 2005). Its core competence is the ability to collaborate among a group of firms in both the creation and application of knowledge. For firms that have, or can develop, the ability to collaborate across organizational, geographical, and cultural boundaries, this new means of organizing will allow them to pursue strategies and to grow in a manner that has heretofore been largely unattainable.

The multi-firm collaborative network has been slow to evolve because there are many barriers that stand in its way, including large institutional, societal, and philosophical challenges. However, in various places around the world, pieces of the overall organizational model for multi-firm collaboration already exist. In those innovative organizational arrangements, some of which we describe below, several of the most troublesome barriers have been overcome. Therefore, we believe that it is only a matter of time before a full-blown multi-firm collaborative network will appear somewhere in the world, and it will serve as both a model and as inspiration for other firms to follow.

In this chapter, we first describe the multi-firm collaborative network and why it is needed – indeed demanded – by the global economy. Our description is based on a fictional organization called OpWin Global Network which contains all of the key ingredients of the new organizational model. We then discuss how this means of conducting international business will affect future competitive dynamics, both for firms inside the network and for their external rivals.

**Innovation, collaboration, and economic development**

Innovation has long been considered the primary determinant of economic development (Schumpeter, 1934). This belief has been recently substantiated by Baumol (2002), whose large empirical study demonstrated that firm and inter-firm ability to innovate explains why capitalist economies have much stronger growth records than other economic systems. However, despite its usefulness for firm and economic development, innovation is not an easy task for the typical firm to perform. Indeed, one survey estimated that CEOs believe their firms utilize only 15-25 percent of their innovation capacity (Käser and Miles, 2002).

Historically, even the most innovative firms have not been able to fully utilize their innovation capacity. Whether one focuses on Hewlett-Packard in the 1950s and 1960s, Xerox in the 1970s, Rubbermaid in the 1980s, or Intel or Cisco Systems today, none of these firms has been able to figure out how to innovate on a consistent and efficient basis. Various organizational arrangements have been tried – cross-functional business teams, internal venture capital processes, creating or acquiring new business units, spinning off new ventures, and forming alliances with or investing in partner firms (e.g., Burgelman and Sayles, 1986; Block and MacMillan, 1993; Miles and Woolridge, 1999) – but the best outcome from all of these approaches appears to be the capability to engage in periodic innovation that is mostly limited to the firm's existing industries. What is needed – and, fortunately, what is becoming increasingly feasible (Chesbrough, 2003) – is an organizational process that will enable innovation to be *continuous* and to occur *outside* a firm's traditional industry boundaries (Miles *et al.*, 2005).

Using the logic of the resource-based view of business strategy (Penrose, 1959; Wernerfelt, 1984; Barney, 1991), many observers today suggest that the most underutilized resource among firms in advanced economies is knowledge. The drive to turn knowledge and other underutilized resources into economic wealth is what pushes managers to experiment with new ways of reconfiguring strategies, structures, and processes in order to make their firms more effective and valuable. We believe that the search for continuous innovation, currently taking place within many firms, will result in the appearance of the multi-firm collaborative network organization.

Collaboration is a process whereby two or more parties work with each other to achieve mutually beneficial outcomes (Emery and Trist, 1965; Appley and Winder, 1977). Collaboration can be directed toward any mutually desired objective: solving a problem, resolving a conflict, creating a new product or business, and so on. The concept of collaboration that we see taking hold in an increasing number of business firms and other types of organizations is collaborative entrepreneurship: the creation of something of economic value based on new, jointly generated ideas or knowledge (Miles *et al.*, 2005).

Collaboration to create and apply knowledge is very sophisticated behavior as it is based on competence, intrinsic motivation, trust, and the sharing of ideas and information. Nevertheless, as with any behavior, collaboration can be taught, learned, and studied, and thus it can eventually diffuse throughout a society to the point where it becomes a truly abundant resource or *meta*-capability (Miles *et al.*, 2005). Collaboration among individuals and groups is widespread in advanced economies, occurring among scientists, scholars, doctors, engineers, and other professionals. Large-scale inter-firm

collaboration, on the other hand, is a fairly recent phenomenon, but its origins can be seen in several real-world examples. For example, beginning in the early 1990s, the small Danish city of Kalundborg has been the site of an evolving, successful program of industrial-municipal collaboration that has been referred to as industrial symbiosis (Jacobsen and Anderberg, 2001). As of 2003, this cross-sector collaboration has created financial returns of over $200 million on an investment of approximately $90 million – an average annual return of over 16 percent. The source of these returns is annual savings from symbiotic exchanges across a network of municipal agencies and private businesses. This alliance offers evidence that a voluntary, self-directed experiment can lead to the growth of an expanding collaborative search for creative value-adding approaches to utilizing resources.

Across the firms and government agencies that make up the U.S. civil construction industry, a collaborative process has emerged that has produced less carefully measured but quite probably larger percentage returns than those of the Kalundborg experiment (Associated General Contractors of America, 1991). Moreover, the growing competence of U.S. construction firms in partnering has increased their ability to engage in new approaches to large construction projects, and partnering has become both a firm and an industry asset. Though limited to a single industry, the investments in collaborative capability being made by civil construction industry agencies, firms, and professional and educational institutions show the way for other organizations that wish to engage in large-scale inter-organizational collaboration.

Neither the Danish industrial-municipal alliance nor the American partnering process in civil construction represents an example of collaboration as a true joint

enterprise. Although both examples involve business situations, neither group of organizations is focused primarily on new products, services, or markets – and certainly not on *continuous* innovation. The firm that perhaps comes closest to practicing continuous innovation through collaboration on a large scale is the Acer Group (Mathews and Snow, 1998; Mathews, 2002). Based in Taiwan, Acer has thousands of employees, operations in forty-four countries, and dealer relationships in more than a hundred countries. With revenues of nearly $5 billion, Acer is the world's fifth-largest personal computer manufacturer, but it is in the process of transforming itself into a complete global information technology company that in recent years has started many successful e-business services.

Acer is a worldwide federation of companies held together by mutual interest and collaboration. Some units of Acer are wholly owned by the firm, while others (mainly marketing and distribution firms) are jointly owned by Acer and local investors. Both types of firms work willingly with the other companies in the federation because all firms have worked hard to become the preferred provider in their particular specialty or market. Acer helps its partner firms in other countries to develop professional management, obtain investment funding, and to become publicly owned if they desire to do so. Acer's collaborative capitalism is steadily increasing in the global economy, particularly in emerging markets. However, while Acer is almost able to be continuously innovative up and down the value chain of the information technology industry, it is still not especially adept at innovating outside of the global IT business.

**OpWin Global Network**

These three examples indicate that inter-firm collaboration to produce continuous innovation on a large scale is practically feasible. Therefore, it requires only a small conceptual leap to imagine and then describe an organization composed of firms from different industries whose collaborative abilities allow them to pursue a joint strategy of continuous innovation. That envisioned organization we call OpWin Global Network (Miles *et al.*, 2005).

OpWin is a dynamic network of 60 member firms and their temporary affiliates. The network is dynamic in that none of its members has a fixed role, and the resources each firm has assembled are often shared in business ventures with other firms, usually but not always within the network. It is also dynamic in that its membership has expanded dramatically since its founding, and the process of adding new members is ongoing.

Each member firm joined OpWin as a profitable independent entity, and it is each firm's responsibility to maintain its ability to support and grow its own resources and to generate significant income for itself and for its network partners. Firms vary in size from less than a hundred staff members to a few thousand, and each firm is expected to serve all of its stakeholders in an exemplary manner, in line with OpWin's stated pledge to set the highest standards of customer satisfaction, human resource management, and natural environment sustainability. Each member firm measures its own (a) net wealth creation, (b) human resource growth and retention (including educational and skill upgrades of staff), and (c) annual customer satisfaction, and members send this

information to OpWin's Central Services Office (which provides educational, training, information technology, and other services to the member firms).

Member firms are expected to create products and services for their own markets and to work with other firms in the network on innovation projects. Within their own markets, firms pursue organic growth through market penetration with existing products or services while attempting to meet the expectation that at least half of their revenues will be generated via continuous innovation. Innovations in a given firm's market come not only from ideas and efforts within the firm but also from the continuous scanning of ideas and innovations from other network firms. Each firm describes product ideas, development projects, and product-service upgrades in OpWin's *Innovation Catalog*, an electronic database accessible only by member firms. Not only do member firms post potential value-generating information in the catalog; they are also expected to proactively contact other firms that might have an interest in their ideas, projects, or new models.

Firms in related markets regularly send design, marketing, and operating staff to OpWin's *Market Exploration Workshops* that are held periodically. Moreover, firms also collaborate across the network on development projects that do not have obvious connections to their own markets. Staff specialists may be invited by another member firm to visit and discuss a listed idea or project, and they may in turn request additional meetings to provide elaboration and possibly joint pursuit of an idea or project. In some instances, a staff member from Firm A may work with firm B on a particular project even though it has been determined not to have relevance in Firm A's usual market. When this occurs, Firm B pays for the staff member's time and effort. Further, if the contributions

from Firm A are later incorporated into a profitable product or service, Firm B is expected to provide an appropriate return for Firm A such as a royalty or one-time payment.

In all cases, firms are expected to engage in joint development efforts and to contribute needed skills and abilities to other firms without strict calculation of costs, benefits, or potential returns. It is the responsibility of the user to recognize contributions and initiate equitable payment, and to make certain that the provider is satisfied with the outcome. On joint projects, it is the market "owner's" responsibility to propose a schedule of returns that is seen as equitable by its project partner(s). Where new or shared markets are served by a jointly designed product or service, the participating parties draw lots in advance to determine which firm will take the lead in proposing market-delivery responsibility and an equitable distribution of returns.

The heavy focus of OpWin firms on continuous innovation often limits their interest in taking an active role in creating wealth via the long-term production of goods or services. In those cases, OpWin firms work with outside partners to produce components or even complete products for OpWin markets. After assuring the market success of a product or service, OpWin firms may license designs to outside partners for their own long-term sales and service. Licensees, too, are required to meet OpWin's customer satisfaction and environmental standards.

To become a member of OpWin, a firm must demonstrate its competence and trustworthiness. This can often be achieved by the successful completion of a single collaborative project. At any point, a firm can apply for membership, which must be voted on by all members after an OpWin review team has assembled a sponsorship

document. Alternatively, a firm may be affiliated with OpWin on a temporary or infrequent basis, typically as a licensee or other type of contractual provider.

In summary, OpWin member firms operate independently in their own markets and in alliances of one sort or another with members of the network to design and take to market a continuous stream of innovative products and services. However, OpWin's alliances differ from other alliances in several important ways. First, OpWin alliances are usually generated by ideas and activities that are viewed as open – available to all member firms, with users responsible for acknowledging the source of the ideas and the contributions of their partners. Also, OpWin alliances are open-ended rather than special-purpose, and rewards are determined after the fact rather than in advance. Lastly, roles, responsibilities, and returns are governed not so much by contracts (though these are widely used) as by norms of equity and collegiality, aided by an agreed-on set of explicit operating protocols (such as user responsibility for provider equity and satisfaction). Overall, OpWin member firms have enjoyed great success to date by working collaboratively with each other to find applications for their ideas and knowledge in markets outside their traditional industries.

**The Multi-Firm Collaborative Network and International Competitive Dynamics**

Up to this point, our characterization of the multi-firm collaborative network has been largely anticipatory. As far as we are aware, no worldwide collaborative network yet approximates the fictional OpWin. However, if the embryonic collaborative networks outlined above – those in Denmark, the U.S. construction industry, and Taiwan's Acer Group – continue to develop and subsequently inspire other similar networks, we believe that one or more fully fledged OpWin-style collaborations are

feasible within the next decade. If this vision of the future does indeed develop, what are the implications for international competition? How will competition change and evolve? More importantly, will firms engaging in OpWin-style collaboration experience a competitive advantage over those that do not?

We believe that the unique dynamics of the multi-firm collaborative network, exemplified by the OpWin group, suggest a number of important implications for international competitive dynamics, specifically in the areas of multi-point competition, co-opetition, and virtual clustering.

**Multi-Point Competition**

Multi-point competition concerns the competitive interactions between firms that compete simultaneously in more than one product-market category (see Ketchen *et al*., 2004 for a review). The study of multi-point competition arose from the recognition that competition within a single market is often influenced by extra-market elements, such as concurrent competition within other markets. Central to multi-point competition is the notion of mutual forbearance, the idea that firms may avoid acting aggressively if they believe that their competitors may retaliate (Golden and Ma, 2003). For example, a firm competing in the same markets as its major rival might cede control of one market in exchange for a reciprocal cessation of control by that rival in a different market.

One implication of the rise of the multi-firm collaborative network is a significant increase in complexity in multi-point competition, for three main reasons: more points of simultaneous competition, increasing transience of competitive rivalries, and a larger range of potential competitors. Currently, multi-point competition is conceptualized as occurring between two or more firms in two or more markets. The rise of multi-firm

collaboration will complicate such linkages. First, there will continue to be multi-point competition between independent firms, similar to current competitive dynamics, or between the non-collaborative components of OpWin-like firms. Also, there will be competition between single stand-alone firms and OpWin collaborations, consisting perhaps of transient alliances among several firms. Third, there may be competition between collaborating partners within OpWin. Finally, and most complex of all, consider two OpWin member firms, A and B, who participate in collaborations X and Y, respectively. As OpWin-member firms are likely to come from related industries, it is possible that firms A and B may be competing with one another in several markets, as well as simultaneously competing with each other, through their respective collaborations, in several different markets. Each of these scenarios potentially increases the complexity of multi-point competition for a single firm.

Multi-point competition also will become more complex because on average competitive rivalries are likely to become more transient. One element that reduces complexity in multi-point competition is the mutual forbearance that often develops between long-term competitors (Gimeno, 1999). We envisage OpWin-like collaborations as short-term, innovation-centered projects, rather than long-term stable alliances. Hence Firm A may face multi-point competition from collaboration I in one period, collaboration J in a second period, and collaboration K in a third period. Such transient relationships will tend to reduce the development of mutual forbearance compared to how it currently works.

Finally, multi-point competition will become more complex because a firm within a given domain will face a larger range of potential competitors. Using the logic above,

we see the multi-firm collaborative network as a source of multiple, short-term, innovation-oriented collaborations within a particular domain, each of which may challenge established industry firms and each reflecting a different competitive dynamic.

There are several specific implications for executives of firms that face more complex multi-point competition. First, executives in independent firms, and in OpWin-like firms alike, will need to broaden their environmental scanning in order to be effective (cf. Elenkov, 1997). As threats are likely to arise with less notice, in myriad fashion, and from a greater variety of sources, it will behoove executives to keep closer tabs on changes, innovations, and opportunities in industries that might become related to their own industry. For example, immediate industry-level concerns (a firm's relevant 4-digit SIC code) will become relatively less important compared to broader industrial concerns (the firm's 2-digit SIC code or even a different industry). OpWin-like collaborations are likely to bring together firms that did not previously operate in the same competitive niche, thus resulting in innovations at the interstices of traditional industry boundaries. Executives will need to focus more of their attention on potential new entrants to the industry (Porter, 1980).

However, at the same time that they attempt to develop more sensitivity to external challenges, executives will need to continue to ensure that their firms' own internal capabilities, particularly in areas related to innovation management, remain efficient (Miles *et al.*, 2005). The rise of OpWin-style collaborations cannot help but heighten competition based on continuous innovation as well as shorten product life-cycles and push the cost-quality frontier further out. Thus, firms wishing to remain competitive will need to become better at both external scanning *and* internal innovation.

Another implication for executives is that as mutual forbearance becomes less pervasive, it will provide less of a competitive "crutch" for firms than it has in the past. As discussed earlier, the reciprocal cessation of control inherent in mutual forbearance often arises when two firms have a long-term competitive relationship in multiple markets (Golden and Ma, 2003). This will become less likely if multi-point competition is coming not from an established single firm, but from a short-term, project-focused collaboration of firms. Thus, if the multi-firm collaborative network becomes a reality, executives facing such competition will need to become better at dealing with simultaneous, concerted multi-market threats.

When the multi-firm collaborative network becomes a marketplace reality, firms that do not participate in such collaborative ventures may be at a significant competitive disadvantage relative to those that do. This should be particularly true for smaller firms and those that operate in turbulent, high-velocity environments (Bourgeois and Eisenhardt, 1988). In such firms, the economies of scope arising from greater access to knowledge will give an edge to those firms able to work collaboratively with their partners (Kogut and Zander, 1992). Furthermore, firms that engage in OpWin-style collaborations will have a number of means of buffering the increased complexity of multi-point competition that are not available to independent firms, such as access to the resources and knowledge of other member firms as well as more opportunities for developing their internal innovation capabilities. These and other implications discussed below are summarized in Table 1.

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**Co-opetition**

The rise of the multi-firm collaborative network will increase the prevalence of co-opetition, which occurs when two or more firms simultaneously engage in cooperation and competition (Gee, 2000). More co-opetition will occur because, clearly, firms will join a collaborative network with the intention of collaborating. However, we foresee that collaborative networks such as OpWin will place limits on the amount of a firm's business that can come from collaborative projects (say, 50 percent). Thus, firms will join OpWin with an existing business, an established set of products, markets, suppliers, customers, and competitors. As firms within OpWin are often linked across adjacent industries, it is reasonable to assume that some of the firms entering OpWin already will be competing with other OpWin member firms. Inevitably, collaborations will develop between competitors, the essence of co-opetition. Moreover, the multi-firm collaborative network also raises the interesting possibility of co-opetition between more than two firms.

Firms that enter OpWin-style alliances are, by their nature, more likely to seek collaborative relationships and less likely to be influenced by their own self-interest. Khanna *et al*. (2000) note that co-opetition is less successful when a partner firm appropriates a disproportionate share of alliance benefits. Such a situation is less likely to occur within the bounds of a multi-firm collaborative network, given its emphasis on mutual gain. Similarly, firms that engage in an OpWin-type alliance tend to be those interested in pursuing innovation-oriented "prospector" strategies (Miles and Snow, 1978). This means that collaborative alliances are likely to focus on new, growing

markets, where a larger number of firms can simultaneously succeed, instead of mature markets which tend to favor defender-type strategies.

A greater prevalence of co-opetition in the future has implications for managerial decision making and behavior. For example, successful firms in a multi-firm collaborative relationship will need to be ambidextrous (O'Reilly and Tushman, 2004). At the same time that a firm tries to protect and grow its existing business, including focusing on how to exploit its current market position, a considerable portion of that firm's resources will be devoted to working collaboratively with other firms towards the objective of continuous innovation, a much more exploratory orientation. Executives in such "co-opetive" situations will need to posses or develop a level of cognitive dexterity that can accommodate the co-existence of competing resource allocation demands.

Also, managers will not only need to understand and reflect in their actions the variety of their firms' internal processes, but they will need to develop a cognitively complex understanding of the multifaceted competitive dynamics within their industry and those industries represented in future collaborations (cf. Calori *et al.*, 1994). Here, executives will need a strong belief in, and commitment to, the value of collaboration. This portends a major shift from the prevailing business philosophy built on maximizing one's self-interest to a philosophy based on communitarian values (Rifkin, 2004).

**Virtual Clustering**

The competitive dynamics literature has examined the concept of regional clustering, whereby a number of similar firms co-locate in one geographic area to obtain the benefits of abundant factor inputs or to increase customer access and collective demand (Porter, 1998). By locating close to factor inputs, such as raw materials or

specialized labor, firms in some clusters benefit from better access and lower costs (e.g. Russo, 2003). Alternatively, another type of regional cluster, used by restaurant chains, shopping centers, and car dealerships, provides firms easier access to customers and helps promote overall demand for the product or service (e.g. Canina *et al.*, 2005). While the first type of benefit might be called input-based agglomeration, the latter could be called demand-based agglomeration. Both types of clustering, however, derive their benefit from geographic co-location.

One of the main benefits of OpWin-like collaborative networks is that member firms can gain innovation-generating benefits without necessarily having to geographically co-locate. Elements of OpWin, such as its Innovation Catalog and the activities of the Central Services Office, facilitate the transfer, integration, and recombination of knowledge, critical processes in the pursuit of continuous innovation (Kogut and Zander, 1992). We call this collective access to knowledge resources "virtual clustering,", as the agglomerative benefits derive primarily from electronic rather than geographic proximity. The emergence of virtual clusters has several probable consequences for competition.

Virtual clustering gives the member firms within a collaborative network considerable latitude in deciding where to locate. Because firms will obtain the benefits of clustering irrespective of their geographic location, they can select their physical location based on factors such as a favorable regulatory environment, location-contingent financial assistance, adjacency to a key component of the supply chain, or a region with desirable lifestyle opportunities. Unlike firms in regional clusters, which benefit from

clustering but are also constrained by it, member firms of a virtual cluster have considerable geographic flexibility.

Virtual clustering will exponentially increase member firms' access to knowledge-based resources, a prime motivator of firm-to-firm alliances (Mowery *et al.*, 1996). Freed of the requirement to use geographically based resources, firms can search worldwide for collaboration partners and can more easily justify short-term, riskier collaborations. While membership in a virtual cluster does not imply access to tangible physical assets to the same degree as intangible knowledge assets, we believe that access to intangible assets is more relevant to a firm pursuing a continuous innovation, cross-industry strategy. Hence, membership in a virtual cluster reduces some of the justification for engaging in long-term stable alliances such as international joint ventures.

**Broad Changes in International Competition**

We have discussed three sets of predictions concerning international competitive dynamics that we believe will accompany the rise of multi-firm collaborative networks. In addition to developments in multi-point competition, co-opetition, and virtual clustering, we believe that the international competitive landscape as a whole will undergo other, broader shifts if multi-firm collaborative networks appear and grow as we expect. For example, there is likely to be an increase in what has been called "hyper-competition" (D'Aveni, 1994). Although we recognize that not every innovation results in Schumpeterian "creative destruction" (Rothaermel, 2000), we believe that pursuing the goal of continuous innovation, the basis for OpWin's formation and growth, will inexorably lead to shortened product life-cycles and therefore greater competitive

pressure on established product lines across many industries. As argued by D'Aveni (1994), sustainable competitive advantage will derive from linking a succession of transitory quasi-monopolies (via continuous innovation) rather than stable Ricardian rents (via a favorable structural position in a particular industry). Recent research indicates that hyper-competition has indeed increased over time (Wiggins and Ruefli, 2005), and we believe that the emergence of the collaborative network organizational form will accelerate hyper-competitive dynamics.

In the future, collaborative networks will compete with other collaborative networks. We argued earlier that the increased prevalence of co-opetition will cause more executives to explore not just competitive, but also collaborative, opportunities in the business environment. As more and more product innovations derive from multi-firm collaborations, the basis of competition will start to shift from its current firm-to-firm locus to a network-to-network basis. Some initial research has begun to identify the implications of a competitive paradigm where a network of firms, rather than a single firm, becomes the unit of analysis (Gimeno, 2004). To date, this research has examined the behavior of a particular industry's major competitors and their networks of suppliers and partners. In tomorrow's business environment, we will need to study how networks composed of collaborating firms compete, both within and across industries

**Conclusion**

We believe that the multi-firm collaborative network is the natural outcome of the ever-increasing need for individual firms to better employ their underutilized knowledge and innovation capacities and thus improve their ability to compete through continuous innovation. Assuming that this new organizational form develops as predicted, it will

have important implications for international competitive dynamics. Specifically, multi-point competition will become more complex, co-opetition will become more prevalent, and firms will increasingly seek the competitive benefits of virtual clustering. More broadly, we believe that the multi-firm collaborative network will increase hyper-competition in the international business environment as well as increase network-to-network competition among firms.

Built on factors such as flexibility, collaboration, and innovation, in contrast to extant organizational axioms of stability, efficiency, and zero-sum competition, the multi-firm collaborative network represents the next logical step in the evolution of organizational forms. If multi-firm collaborative networks do emerge to the degree that we predict, then we expect to see a corresponding evolution in competitive dynamics along the lines that we described above. However, if our prediction concerning the rise, and eventual ubiquity, of network-to-network competition eventuates – that is, where firms are networked both within and across industries – then we may witness a fundamental shift in the nature of international competition that cannot be accurately foreseen.

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**TABLE 1**

**Practical Implications of the Multi-Firm Collaborative Network**

| Multi-Point Competition | Co-Opetition | Virtual Clustering | Overall Implications |
|---|---|---|---|
| Firms will be less able to rely on mutual forbearance reducing the complexity of multi-point competition | Firms will become more effective at simultaneously managing exploration and exploitation | Firms will have access to the benefits of agglomeration without the need to geographically co-locate | Executive focus will shift from firm-to-firm competition towards network-to-network competition |
| Firms participating in multi-firm collaborations may possess a competitive advantage | Executives will show a greater commitment to the value of collaboration | Firms will have greater latitude in deciding where to locate and in seeking collaborative partners | The level of hyper-competition in the business environment will increase |
| Firms will broaden their environmental scanning | Executives will develop a more nuanced understanding of intra-industry and inter-industry competitive dynamics | Firms will be able to pursue shorter, riskier collaborations and partnerships | |