

Professional Service Constellations: How Strategies and Capabilities Influence Collaborative Stability and Change

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Abstract

Constellations—alliances among multiple firms—are used to perform complex, customized work in professional service. We examine two tensions inherent in multi-party collaborative work: managing hybrid systems, which are composed of individual and group tasks and outcomes, and aligning partners' logics of action. These two tensions provide firms the strategic choice with emphasizing individual or collective advantage. When constellation members pursue an individualist strategy, they employ an entrepreneurial logic. Constellations are a vehicle for honing their firm-distinctive expertise and enhancing their own opportunities. Given these firms' need for exposure to new learning and new markets from different partners and clients, the stability of the constellation is not of primary importance. This strategy promotes membership shifts in constellations and requires governance mechanisms for coordinating interactions among relative strangers. When constellation members pursue a collectivist strategy, they focus on their mutual benefits and employ a relational logic. Given these firms' need for intensifying relations with partners and clients, constellation members restrict interactions to certain select partners and clients and intensify their interactions. This strategy promotes stability in constellation membership and allows governance mechanisms specific to partners to develop. Due to positive feedback, these strategies develop certain capabilities and create specific relational patterns, which reinforce prior choices.

(Multi-partner Strategic Alliances; Resource-based View; Professional Services; Organizational Change)

for clients. Examples of professional services using constellations include investment banking (Eccles and Crane 1988; Podolny 1993, 1994), management consulting (Aharoni 1997), design engineering firms (Aharoni 1993, Sabbagh 1996), global media services (Parisotto 1997), and architecture (Abbott 1988). In these industries, complex tasks require integrating many different specialists to complete a service, while customization demands in-depth knowledge not only of client needs and preferences but also of partners work styles. Thus, capabilities and strategies are enacted not only by the firm but also coordinated and aligned with partnering firms. Since work in any one constellation rarely utilizes a professional service firm's entire resources and rarely comprises all of its opportunities and revenues, a firm must constantly navigate the tension between pursuing individual or collective advantage among multiple constellation partners. These tensions and how constellation members resolve them are important for understanding the processes by which different constellations arise and the forces that generate change and stability within these constellations. Yet as Powell and Smith-Doerr (1994, p. 393) conclude from their extensive review on interfirm networks, "little is actually known about network processes."

Although research has examined the mechanisms and processes by which firms coordinate their efforts (Dyer 1996; Jones et al. 1997; Larson 1992; Powell 1990; Ring and Van de Ven 1992, 1994; Uzzi 1997), most of this research focuses on how firms achieve stable constellations. As Hennart et al. (1998) point out, in the research on alliances few scholars seem to recognize that exits from strategic alliances are an important strategic variable. We agree and examine how the stability of a constellation is itself a strategic variable in that some firms

Constellations¹—alliances with multiple partners (Gomes-Casseres 1994)—are used extensively in professional services to provide highly complex and customized services that involve a great deal of uncertainty and risk

opt for working within relatively closed, stable constellations while others deliberately work in more open, fluid constellations. This strategic choice, we suggest, is a means by which firms manage the tensions inherent in complex multi-firm work and which result in different kinds of constellations.

We organize the paper and contribute to the literature in the following ways. First, we define constellations, a term that has been used primarily as a metaphor, and identify how professional service constellations illuminate two tensions inherent in multi-party collaborative work: managing hybrid systems and aligning partners' logics of action. Second, we identify the organizational capabilities needed for competitive advantage in professional services and describe how these relate to the way in which the fundamental tensions are surfaced and negotiated by constellation partners. Third, we describe firms' strategic choices for managing these tensions and delineate how these choices create distinct constellations with different rates of change and stability, scopes of activity, and governance mechanisms. Thus, we provide important groundwork for empirically testing differences between types of constellations. Finally, we offer concluding remarks and directions for future research.

Background: Professional Services and Constellations

Professional Services: Definitions and Dynamic Tensions

Professional services involve "exclusive occupational groups that apply somewhat abstract knowledge to particular cases" (Abbott 1988, p. 8). Professional service providers are hired for their expertise and skills enabling them to produce an outcome that clients either use or sell. For example, architects design and oversee the construction of a building that can be rented, sold, or occupied by the client, and investment firms create bonds and other financial instruments to tap capital streams for clients. In essence, clients purchase from professional service providers their "capacity to produce" a desired outcome (Aharoni 1993; Winch and Schneider 1993, p. 923).

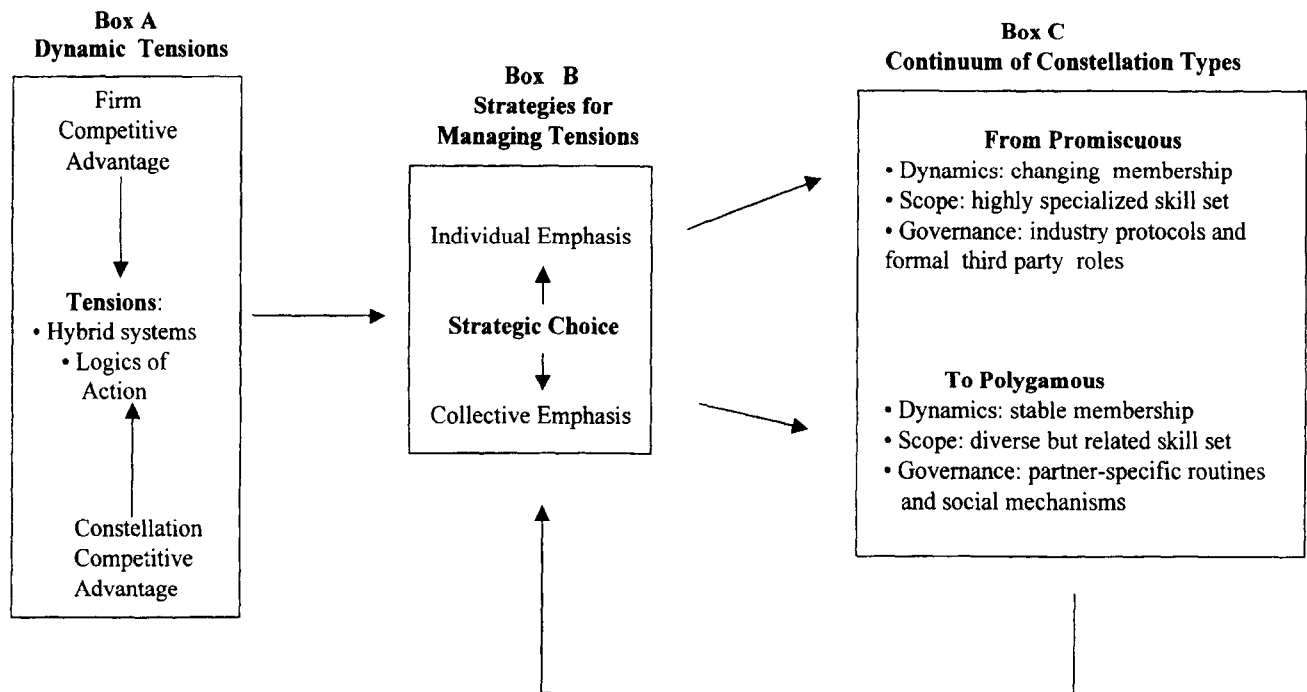
Professional service firms that engage in solving customized, complex problems for their clientele illuminate two dynamic tensions inherent in pursuing firm and constellation competitive advantage (see Box A of Figure 1). The primary source of tension is due to the "hybrid systems" of professional service constellations which have both individual and group tasks and outcomes producing highly discrepant incentives, messages, and structures for

members (Wageman 1995). Tasks in professional services involve individual expertise and group interdependence among professional service firms (PSFs) for joint problem solving. Outcomes are individual (e.g., status and revenues) and collective (e.g., client service success or failure). Since PSFs engage simultaneously in different constellations for complex projects as well as in individual work for simpler tasks, these collective and individual projects compete for a PSF's time, energy, and skills.

This creates tension for firms and generates the potential for moral hazard among partners (Alchian and Woodward 1988). Moral hazard may result from a partner's unwillingness to provide needed resources and capabilities (Madhok and Tallman 1998) or from a partner pursuing self-interest while promoting an image of collective concern, essentially engaging in "self interest seeking with guile" (Williamson 1985). Moral hazard is similar to Larsson et al.'s (1998) notion of low transparency (lack of openness) in interactions. PSFs in constellations must not only prioritize and align their individual and collective projects to coordinate efforts, but also mitigate moral hazard among partners.

Another source of tension stems from matching and integrating "logics of action"—implicit beliefs about means-end relationships in exchanges (Bacharach et al. 1996)—into constellation-wide understandings for delivering unique solutions for complex problems. Logics of action include expectations about how parties should interact, the pace with which work should be completed, how much risk, creativity, and uncertainty are desirable in projects, whether the primary goal is revenues or prestige, and whether members should engage in future work together or with new partners. Ariño and de la Torre's (1998) rich description of the Hexacare-NAMCO joint venture show how partners dissolved their collaboration based on increasingly incongruent logics of action. For example, they had different assessments of the equity and efficiency of actions taken for desired goals and divergent interpretations of "their respective obligations." To avoid these problems requires fleshing out partners' implicit logics of action and choosing partners with congruent logics of action.

A key challenge in choosing constellation partners is adverse selection. Adverse selection results from choosing partners based on inaccurate or incomplete information (Alchian and Woodward 1988). It is caused by a lack of overlap in partners' specialized knowledge domains (Balakrishnan and Koza 1993, Fladmoe-Lindquist and Van Dyne 1993) and by the difficulty of disentangling who made which creative contributions in solving complex service problems. In professional services, partners have strong incentives to misrepresent their capabilities,

Figure 1 Model of Collaborative Stability and Change in Professional Service Constellations

strategies, and prior contributions because experience is critical to gaining work opportunities and enhancing professional status. Constellations that are affected by adverse selection either must compensate for partners' lack of ability or suffer a diminished quality in their service development and delivery. Thus PSFs in constellations must correctly identify and assemble collaborative partners who possess the requisite skills and congruent logics of action necessary for inherently uncertain and complex tasks.

These dynamic tensions, due to the hybrid systems (Wageman 1995) of professional services and the need for matching logics of action (Bacharach et al. 1996) in complex, uncertain tasks, are constantly navigated and negotiated by PSFs due to complex, project-based work of service constellations. These tensions are handled by firms in different ways depending on a PSF's strategic goals. Thus, we expect to see a continuum of constellations for providing unique, complex services. In the following section, we define constellations and describe two types of constellations at the end points of this continuum.

Constellations: Definition, Types, and Challenges

Those who use the term "constellation" typically have not explicitly defined it (e.g., Hedlund 1994, Normann and Ramirez 1993), though Gomes-Casseres (1996, p. 3) comes closest by suggesting that constellations are alliances among groups of firms. Thus, an explicit definition

of the term is needed if the constellation is to move beyond a useful metaphor for formulating managerial prescriptions to a construct amenable to empirical research. We define constellations as **a group of firms that interact directly and reciprocally to coordinate their efforts for a complex service or product during a finite period of time, which may last from several weeks to several years.**

Constellations may be thought of as interfirm project teams formed from specialists whose combined expertise extends beyond the boundaries of one particular firm or even one profession. For example, an investment banking deal may involve, at a minimum, the expertise of several investment banks, research analysts, and traders (Eccles and Crane 1988). The involvement of many parties is needed because the expertise to create customized solutions is widely dispersed and resides within the set of interorganizational relationships (Powell and Brantley 1992). For these complex services, the client's need is equivalent to a "project" with some definite beginning and ending point such as building a plant, litigating a complaint, or creating a stock offering. Because professional service constellations exist to complete a project, this goal is an organizing principle around which members are "draped" (Kadushin 1976).

Constellations are a solution for creating complex tasks under intense time pressure in environments with high uncertainty that inhibits integration of required resources

(Jones et al. 1997). Many professional services such as law, architecture, and medicine are now experiencing both intense competition internally from excess capacity and externally with others vying to perform traditional services, such as subcontractors performing more routine architectural and engineering services. In addition, clients and others who pay for professional services have placed intense time pressures on professional service providers to perform their complex services in less time with fewer resources for less money. For example, in the building industry the average time for constructing a complex building has gone from three years to 18 months.² This saves the client money not only by reducing financing costs, especially when a new building may cost anywhere from \$40 to \$150 million dollars, but also increases revenues by permitting the building to start generating revenues sooner (as in leasing the space or being open for business).

Distinct constellations result from different strategies used to handle this uncertainty and to manage these two tensions. These constellations may be highly exclusive and stable over time, involving relatively fewer firms that work together repeatedly, or highly inclusive and evanescent, involving a large number of firms that work together only rarely. For convenience, we refer to firms at the stable, exclusive end of the spectrum as *polygamous*,³ and refer to firms at the changing, inclusive end as *promiscuous*. Polygamous and promiscuous constellations bear a striking structural resemblance to Sedaitis' (1998) characterization of spin-off and start-up companies in Russia. Spin-offs handle environmental turbulence by using a relational logic with close-knit members continuing relations from one context to the next whereas start-ups handle this turbulence by using an entrepreneurial logic of forging new ties and moving into new markets.

Polygamous constellations employ a strategy of members diversifying their skill sets while intensifying and restricting their relationships. This type of constellation provides a range of related services with the same constellation members. Polygamous constellations appear to be more prevalent in manufacturing sectors where establishing technical standards and gaining economies of scale are critical (see Gomes-Casseres 1996). The need for economies of scale provides the opportunity for repeated interactions allowing relationship specific routines and processes to evolve (Dyer 1996). This approach is exemplified by Japanese *keiretsu*, comprised of both service and manufacturing firms, where exclusivity creates distinct, nonoverlapping clusters of firms (Gerlach 1992).

In contrast, promiscuous constellations employ a strategy of diversifying their relationships while restricting, or specializing, their skill sets. This type of constellation

provides a narrow set of highly specialized services, most often with different partners. Since a constellation created to meet the complex needs of one client does not prohibit aligning with different partners to meet the complex needs of another client, firms who are in high demand and high regard may be involved in multiple bids with different partners for the same project. These firms simultaneously compete against and cooperate with their constellation partners. For example in the building industry, architects may align with a contractor in the morning for one project and then compete in different constellations in the afternoon for another project. This approach has been widely used in film for 30 years (Faulkner 1987, Jones 1993) and the United States fashion industry (Uzzi 1997). Promiscuity, where firms participate in many constellations with different combinations of people, results in a large number of weak ties that knit the industry together into a single diffuse group, rather than mutually exclusive cliques.

Constellations, whether polygamous or promiscuous, provide several challenges that their member PSFs must collectively manage. First, there must be some mechanism for integrating diverse specialists and transferring tacit knowledge among parties to create a seamless service experience for clients. The constellation's ability to deliver an integrated solution can provide a competitive advantage for them vis-à-vis other sets of professional service firms (Lipparini and Sobrero 1994). Second, constellation members need some means for safeguarding exchanges, resolving conflicts, and ensuring equity among parties in an effort to forestall moral hazard and adverse selection. Without these safeguards and dispute resolution mechanisms, firms may end up in protracted conflicts undermining their collaborative efforts. Third, constellation members must choose partners with similar strategies, logics of action, and priorities to deliver superior services. Otherwise, interactions among parties will generate friction and misunderstandings.

Next, we present our model identifying the tensions that arise in collaborative endeavors due to the hybrid nature of constellations and misaligned logics of action, the strategic choices for handling these tensions, and the constellations that result from these choices.

Professional Service Constellations: Strategies and Mechanisms for Managing Tensions

Our model of constellations focuses on how different constellations provide distinct means for managing the tensions generated by hybrid task and reward systems (Wageman 1995) and potentially diverse logics of action among professional service providers (see Figure 1). Hybrid systems generate tension because each PSF, in order

to survive, must sharpen its capabilities and ensure its individual competitive advantage over rival firms. However, firms must also collaborate intensely to provide complex, unique services and achieve competitive advantage over rival constellations. Thus, PSFs must decide whether to emphasize individual or collective advantage. In addition, collaborative partners must also find means for surfacing and aligning their various partners logics of action (see Box A in Figure 1).

Firms choose different strategies for negotiating these tensions. These strategies range from firms' viewing constellations primarily as a vehicle for enhancing individual skills and opportunities to firms viewing constellations as their identity. The former strategy leads firms to emphasize individual advantage and actively seek new partners to work with, while the latter strategy leads firms to emphasize collective advantage and develop intensive relationships with a limited set of partners (see Box B of Figure 1). Polygamous and promiscuous constellations reflect these distinct strategies and have different scopes of activities, dynamics, and governance mechanisms with which they navigate these tensions (see Box C in Figure 1).

We develop our logic and model more thoroughly below. We identify the specific organizational capabilities PSFs need to gain competitive advantage and how these become the stage on which tensions are played out.

Firm Capabilities: Context for Individual Advantage and Collective Tension

To successfully develop and deliver complex services better than rival firms, professional service firms must possess superior organizational capabilities. The resource-based view provides a useful perspective for identifying these capabilities and examining how they are sources of advantage in professional services (Ring 1996). In the resource-based view of strategy, the most enduring sources of competitive advantage derive from capabilities: a set of differentiated skills, complex routines, and complementary assets, which are difficult to imitate and replicate (Barney 1991, Collis 1994, Teece et al. 1997). In Table 1 we identify these skills, routines, and complementary assets of professional services. Skills consist of firm members' expertise used to solve client's problems. Complex routines may be within the firm, allowing PSFs to execute their expertise, and between clients and professional service providers as they develop routines for working together, enhancing their ability to meet one another's needs and preferences. Complementary assets in professional services consist primarily of relational assets of status and structural holes, which provide important sources of social capital for PSFs.

The development and possession of these capabilities are the context in which tensions of hybrid systems and potentially divergent logics of action inherent in constellations are worked out. Because hybrid systems are comprised of both individual and collective elements, they allow PSFs to emphasize their capabilities either for individual or collective advantage. Capabilities reflect partners' logics of action (e.g., expectations about their means for achieving outcomes and their interactions), which are tacit and if divergent generate tensions among collaborative partners.

Firm Distinctive Expertise. Distinctive expertise consists of firm members' technical knowledge (e.g., codified professional routines and tacit understandings gained through experience) and creative skills. Measures of distinctive expertise are a firm's depth of experience in an area (e.g., number and quality of healthcare facilities built). A PSF's distinctive expertise may emphasize functionality, delivery, or creativity and this emphasis identifies its strategy and market niche (Winch and Schneider 1993). For example, architectural projects may be judged on the day-to-day usability of the building, the conformance to program, budget and legal requirements, and aesthetic considerations. Pursuing such niches is important given the fragmented nature of most professional service markets where there are few standard products and few customers that account for a significant portion of an overall market. Without distinctive expertise, a firm cannot pursue and sustain such niches. Thus, distinctive expertise is central to firm competitive advantage.

Distinctive expertise generates advantages but also highlights the tensions of hybrid systems and aligning logics of action inherent in professional service constellations. With hybrid systems, PSFs may cultivate their distinctive expertise at the group's expense. For example, change orders by architects' hone their design experience by allowing experimentation and seeing the outcomes of various decisions implemented; however, they also require excessive mutual adjustment by partners. Alternatively, PSFs may emphasize their group relations to avoid conflict and inhibit the development of unique, creative solutions in the process. Logics of action may be difficult to uncover and align because distinctive expertise reflects the values, desires, and motives of PSFs' partners (Greenwood et al. 1990, Maister 1993, Winch and Schneider 1993). This may lead partnering firms to enact very different strategies. For example, differences over what constituted quality (e.g., technical or client skills) and how work was done (e.g., conforming to traditional relationships or acting as entrepreneurs) created tensions between professionals in a merger between accounting

Table 1 Firm Capabilities, Individual Advantage, and Collective Tension

Capabilities	Firm Capabilities and Advantage	Collective Tension	
		Logics of Action	Hybrid Systems
Skills	Distinctive expertise: Professionals' technical knowledge and creative skills Competitive Advantage: Fill distinctive niche Focus on core competencies	Divergent values & practices in executing expertise Inability to coordinate tacit knowledge & understandings	Sharpen firm expertise at group's expense creating excessive mutual adjustment for partners Avoid partner conflicts which dampen creative solutions
Routines	Client relations: co-specialized understandings and emotional bonds between PSF and client Competitive Advantage: Enhance repeat business Generate business referrals	Divergent understandings of client needs and preferences	Competitive moves among constellation members to win relations or avoid blame Collusion among partners at client's expense
Relational Assets	Status: rank in social grouping based on prestige, economic or political power Competitive Advantage: Enhance perceived effectiveness Access to clients, partners, and projects Buffer from competitive pressures Structural holes absence of direct relation between two actors filled by a third actor. Competitive Advantage: Exploit client relations, expertise and status	Status Different understandings of status and how they guide interactions Divergent status outcomes (prestige versus money) Structural holes Individual emphasis inhibits identifying and aligning partners logics of action	Status Focus on enhancing individual at group's expense Maintain status similarity which may inhibit exposure to new ideas and techniques Structural holes Emphasize individual autonomy rather than coordinated action

firms (Greenwood et al. 1990). Additionally, as circumstances change, partners may find that prior alignment shifts to misalignment. For example, a significant reduction in time available for tasks may elicit profound differences in the priority for more creative versus more programmatic solutions. Since creative solutions take longer and invoke greater uncertainty and risk, they may be seen as unfeasible by some partners but as a necessity by others. In this way, differing logics of action makes it potentially more difficult for firms to coordinate their specialized efforts.

PSFs may navigate these tensions by choosing partners whose expertise compliments and extends their own and who challenge their assumptions and solutions. This enhances their ability to hone their expertise and the

likelihood of producing a high quality service, enabling the PSF to move on to more challenging projects and higher status clients. Partners may navigate these tensions by emphasizing their relations and withholding innovative or provocative solutions in their specific area of expertise since it may cause more adjustment from partners or engender conflict over service goals and timing. These strategic choices create distinct constellations and require different means for coordinating their efforts.

Client Relationships. A second source of competitive advantage is client relationships: the bonds and specialized knowledge that develop from the intense, reciprocal, and repeated interaction between client and providers during the creation and delivery of a professional service (Bowen and Jones 1986, Fladmoe-Lindquist and Van

Dyne 1993, Larsson and Bowen 1989). These client-specific, tacit routines can be measured by the degree to which services are customized and when the costs of switching to alternative providers are high (Pisano 1989, Siehl et al. 1992, Williamson 1985). These relationships create both repeat business and new business from clients' positive referrals. They are critical to competitive advantage because the cost of independently generating new customers can be greater than retaining existing customers (Maister 1993).

Client relationships showcase the tensions between individual and collective advantage in hybrid systems and misaligned logics of action. Typically clients that contract for complex, customized services are large with diverse needs. Such clients provide attractive opportunities for future business for constellation members, particularly those that develop especially close relationships with the client. These perceived opportunities set up potentially collusive or competitive dynamics among constellation members. Collusion may occur when members jointly act in their own rather than the client's best interest. Competition may occur when members jockey for superior client relationships or to avoid client wrath when problems arise in these uncertain, complex projects.

The John Hancock Tower building in Boston illustrates these tensions. Over 25% of the original windows shattered and eventually all 10,346 windows had to be replaced, costing John Hancock Insurance 7.7 million dollars. Initially, the constellation's principal firms—contractor, architect, structural engineer, and glass manufacturer—collaborated to identify and, hopefully, solve the problem. However, when no cause for the problem was forthcoming, Hancock Insurance, the client, sued the principal firms and their bond providers for “fraudulently concealing the reasons why the glass panes shattered” and poor workmanship in their respective specialties (*Boston Globe*, September 16, 1975, p. 1). This precipitated suits and counter-suits among these principal firms as they blamed one another for the fiasco to minimize damage to client relations and their reputations. The architectural firm sued the glass manufacturer for failing to disclose that the glass panes had failed in other projects. The glass manufacturer sued the architectural firm for poor design. The contractor was sued for poor installation and the structural engineer for an inadequate support wall. This fiasco negatively affected client relations and firm reputations for all constellation principles as the problem, suits, and counter-suits made the news in the *Boston Globe* and *New York Times* from 1973 to 1979.

PSFs may navigate these tensions by developing strong individual relations with a client and seeking new partners who will not interfere with or disrupt these relations.

Alternatively, constellation members may emphasize their collective relations with clients and resolve client problems jointly. In this way, they establish and reinforce their collective identity and enhance working as a group with the client. Which of these strategies PSFs choose and how they enact them has a tremendous influence on what types of constellations are formed and how PSFs coordinate their activities.

Status. Status is one's hierarchical rank within some social grouping based on prestige or economic or political power, and status positions involve behavioral expectations that guide interactions (Benoit-Smullyan 1944, Geschwender 1967). Indicators of status⁴ include affiliation with high status partners (Podolny 1994) or recognition from high status peers, such as Merit Awards in architecture or NIH grants in medicine. In professional services, status enhances perceived effectiveness by clients (Miner et al. 1994), buffers firms from price competition (Podolny 1993), and determines partner selection in a variety of industries such as investment banking (Podolny 1993, 1994), the securities market (Baker 1984), and the film industry (Faulkner 1987). Consequently, PSFs are highly motivated to secure status and communicate it to clients and constellation partners.

Status issues showcase the tensions inherent in constellations. Since status competitions can identify only a small percentage of talented personnel, but yield highly coveted rewards to those few who win them, they highlight the choices and dilemmas of hybrid task and reward systems. This situation provides incentives for firms to pursue individual status at the expense of constellation needs. Alternatively, PSFs may focus on maintaining status similarity among constellation members to reduce friction caused by status inequalities. This may engender static social processes and inhibit learning and innovation as parties interact with partners who are like themselves. Status expectations may also generate divergent logics of action because partners have different understandings of whether prestige, economic or political power constitute status and which status outcome—income or prestige—firms should pursue in their joint action. Since status guides exchanges, differing logics create friction in constellation dynamics: who leads projects, who shows deference to whom, and whose suggestions are given weight.

PSFs may navigate these tensions in a variety of ways. Firms may seek out and defer to constellation partners with higher status, gaining status enhancement through affiliation rather than status competitions. Firms may also agree to invest in firm-specific processes and communication for resolving their differences and aligning their expertise to enhance the probability of improved status for all parties through the creation and delivery of stellar

services. Additionally, parties may seek new partners who have more congruent status expectations and outcomes (e.g., prestige, revenues, or political influence) to reduce the potential for conflict in service development and delivery. The development of status and how status differences are aligned and resolved are strategic choices firms make. These decisions influence the types of constellations in which firms participate and how often partners interact with one another.

Structural Holes. The term “structural hole” refers to the absence of a direct connection between a pair of actors that can be exploited by a third actor that is connected to the other two. Structural holes enhance competitive advantage through greater information and control benefits (Burt 1992). Information benefits in professional services are gained by having clients in unrelated fields because PSFs can learn different technologies and practices improving their capabilities. For example, IDEO, an engineering design firm, served different clients across diverse markets enabling them to see a “wide range of technologies” which enhanced their creative problem solving for clients because they were able to serve as a “broker, or a bridge, transferring information between previously unconnected sources of technical knowledge” (Sutton and Hargadon 1996, p. 695). Control benefits are gained when clients and partners do not communicate with each other. PSFs can tailor contracts and relationships to maximum advantage without danger that a particularly favorable deal given to one powerful client will have to be given to all clients. Clients can also be induced to bid against each other for the PSF’s services. The PSF can promote this by selectively passing information—possibly distorted—from one client to another, such as the other’s willingness and ability to pay more.

We use the network theory of structural holes (Burt 1992)⁵ to tie distinctive expertise, client relations, and status together in a dynamic way and show how the ability to exploit structural holes rests on these three other sources of firm competitive advantage. First, without distinctive expertise, a PSF cannot enter a given competitive arena. Second, without a strong relationship between the PSF and the client, the client can switch more easily to a new service provider. The strong relationship also means that the PSF knows enough about the client to play them off another client effectively and without alienating them. Third, without high status, clients will not compete for the PSF’s services because they cannot justify a high price to their stakeholders. When these three sources of competitive advantage exist simultaneously, firms can capitalize on structural holes to gain competitive advantage.

Structural holes clearly emphasize individual autonomy and advantage by playing partners and clients against one another. This may not always be a viable strategy and may heighten tensions between individual and collective advantage inherent in hybrid systems. It is somewhat likely in complex projects with intensive collaboration among multiple clients and partners, that parties will decipher one partner playing clients and partners off of one another, especially if there are repeated interactions. If partners do discover this, it may damage client and partner relations. Playing partners off one another and leaking distorted information also undermines the ability to surface and align logics of action around client relations, expertise, and status, inhibiting partners’ coordination.

PSFs may navigate these tensions and retain their structural holes by seeking out new partners so they rarely work with the same partners, reducing the likelihood that partners talk to one another and decipher their deceptive behavior. Alternatively, PSFs may collapse structural holes by restricting work relations to a small set of partners who work together repeatedly. This forfeits the benefits of structural holes but facilitates identifying logics of action and inducing a “logic of embeddedness” which enhances resource and information sharing among parties (Uzzi 1997). Repeated work relations among a small set of partners also shifts the emphasis from individual to collective advantage by aligning future incentives and rewards. These strategic choices have a profound influence on constellation dynamics and governance.

Next, we examine how these strategic choices emphasizing individual or collective advantage can shape constellation dynamics, influence the scope of activities pursued, and require different governance mechanisms for coordinating and safeguarding exchanges among constellation members.

Strategic Choices: The Influence of Individual and Collective Strategies

PSFs must decide whether to emphasize and pursue individual or group elements of a constellation’s hybrid system. When constellation members pursue an individual strategy, they employ an entrepreneurial logic viewing constellations as a vehicle for fine-tuning their firm’s distinctive expertise and enhancing their own opportunities. Thus, they seek to learn new techniques and methods from partners and clients. Khanna (1998) describes how an emphasis on “private” benefits enhances learning from one’s partners and also collapses alliances by introducing competitive dynamics of “learning races” into these relations. Given these firms’ need for exposure to new learning and new markets from different partners and clients, the stability of the constellation is not of primary

importance. Thus, an individual, entrepreneurial strategy promotes membership shifts in constellations and when all parties engage in such action, promiscuous constellations result.

When constellation members pursue a collective strategy, they focus on their mutual benefits (Khanna 1998) and employ a relational logic or logic of embeddedness (Uzzi 1997). Thus, they view constellations as a means for creating future opportunities through engendering reciprocity, deepening partner specific knowledge, and expanding their scope of services. Given these firms' need for collective learning and opportunities, constellation members restrict interactions to certain select partners and expand the intensity of their interactions. Thus, a collective emphasis with a relational logic results in polygamous constellations.

The ability to enact these different strategies successfully depends on a PSF's organizational capabilities. It is difficult, if not impossible, to pursue successfully an individual strategy if a PSF does not have stellar distinctive expertise and status. If skills are average and status is low, then clients and partners who can provide challenging customized, complex tasks will not hire or collaborate with the PSF. This limits the firm's ability to learn from exposure to a variety of partners' techniques and clients' problems or to enhance opportunities by its affiliation with high status partners and clients. In this case, the PSF pursuing an individualist, entrepreneurial strategy will most likely be relegated to performing routine professional service work.

In contrast, a firm pursuing a collectivist strategy must have exceptional relational skills and good distinctive expertise so that partners will reciprocate work opportunities and clients will engage constellation members for repeat business. Often a collectivist strategy requires PSFs to seek out several clients who are expanding rapidly so this client may use the constellation's services repeatedly. This gives PSFs greater control over constellation membership. For example, a growing HMO or real estate developer may use the same constellation to build numerous facilities. Without strong client relations, clients may change their PSFs, especially if they perceive they have outgrown their PSFs' expertise (Levinthal and Fichman 1988). If distinctive expertise is not competitive, neither clients nor partners will want to continuously align with this PSF. Without distinctive expertise, these PSF may be relegated to performing more routine tasks where efficient exchanges among partners are critical. For example, a grocery chain may need 100 new stores opened, or a

fast-food chain may need new locations built. In essence strong relational skills enable commitments to future interactions among PSFs and with clients whereas distinctive expertise allows the constellation to perform more unique, complex tasks.

These individual and collective strategies influence constellation members' scope of activities, and governance mechanisms, which we discuss in the next section.

A Range of Constellations: Promiscuous, Polygamous, and Intermediate

Constellations reflect strategies and means for managing tensions inherent in hybrid systems and aligning logics of action. We identify how promiscuous and polygamous constellations differ in their scope of activities and governance mechanisms (see Table 2). *Scope of activities* pursued by PSFs in constellations results from the degree of overlap in knowledge domains and geographic markets (adapted from Khanna (1998)). We identify a range of scopes, from a specialized scope involving depth and innovation in expertise with a presence in national and international markets to an expanded scope involving breadth of expertise and presence primarily in a local or regional geographic market. These scopes of activity result in different "routines or repertoires of possible joint activities" (Larsson et al. 1998) such as innovation and diversification among constellation partners. *Governance mechanisms* are means for coordinating and safeguarding exchanges among parties (Jones et al. 1997). Coordination mechanisms allow specialists to integrate their diverse contributions whereas safeguarding mechanisms ensure equity, resolve conflicts, and mitigate opportunism among partners. We also describe a constellation in the intermediate range, which has aspects of both polygamous and promiscuous constellations.

Promiscuous Constellations. Given firms' strategies of pursuing individual advantage with an entrepreneurial logic, constellation membership tends to have high rates of change from one project to the next. An entrepreneurial logic focuses firms on forging new ties and cultivating new markets. In professional services, access to many new clients and partners is defined by a PSFs ability to add unique value, typically by a highly specialized expertise that few competitors possess. Thus, PSFs tend to have a specialized scope of activities allowing them to move across constellations in different geographic markets for work, often aligning with local talent in areas to gain these projects. For example, an architectural firm specializing in Olympic winter sports parks has few clients for very expensive projects; this type of specialist strategy requires seeking projects all over the world and

Table 2 Comparing Two Endpoints in the Constellation Continuum

Domain	Promiscuous	Polygamous
Strategic Emphasis	Pursue individual advantage Constellation as Vehicle Enhance innovation through learning and exposure to new ideas and techniques from a variety of partners and client	Pursue collective advantage Constellation as Identity Enhance client and partner relations to ensure consistent work flow. Follow clients and partners into related skills and areas
Constellation Membership	High rates of change Low rates of prior interactions among firms	High rates of stability High rates of prior interactions among members
Scope	Highly specialized, deep knowledge of a specific domain Requires either wide geographic market (national and international) or rapidly expanding knowledge domains	Related diversification with broad skill set Synergistic skill sets that allow movement into diversely related areas (e.g., hospitals, senior assisted living centers, clinics in a limited geographic market)
Governance: Coordination and Safeguarding Mechanisms	Industry protocols such as accepted conventions and codified standards (e.g., uniform building code) Formal third party or brokerage roles Greater reliance on formal contracts	Relationship-specific routines developed from repeated interactions Social mechanisms such as judgement, reputation, and collective sanctions

pursuing related projects that can also use this expertise, such as practice facilities and recreational resorts. In these types of projects, stable constellation membership may be difficult, if not impossible, because of the intense demands for local content, filled by regional or national PSFs. Hence, a PSF in this kind of niche may have significantly less control over constellation membership. In addition, since these PSFs are specialists, they need to maintain their cutting edge skills and maximize exposure to new techniques, methods, and knowledge by moving across partners and clients who present them with new challenges.

Governance mechanisms within promiscuous constellations tend to be standardized since many members may have little prior interaction. Thus, they need well-established institutional structures (e.g., industry, national or international standards) and widely shared industry recipes and routines (Spender 1989) so parties can coordinate their expertise and actions. Widely shared industry recipes and standards enhance reconfiguring specialists from project to project and facilitate flexibility: the ability to quickly respond to a wide range of contingencies (Volberda 1996, page 361). For example, research on Hollywood studio musicians (Faulkner 1987) and on art worlds (Becker 1982) provides insight into how industry conventions ease coordination among parties with little prior interaction. When constellation members do not share industry recipes, common standards, or have different national cultures, they may experience high levels

of conflict and misunderstandings requiring intense negotiations among parties to resolve these differences.

In addition, formal mechanisms such as third party roles and formal brokers (e.g., independent project managers, governing bodies), a form of trilateral governance (Williamson 1985), are used to safeguard exchanges, resolve conflicts, and ensure equity when many constellation members have limited prior experience together (Ring and Van de Ven 1994). According to a recent study, the increasing use of these formal third party roles is one of the most important trends in architecture, especially for very large projects, and are termed "hybrid project-delivery methods" in the profession (Boston Society of Architects, Future Search, Martha's Vineyard 1994). These types of constellations are also more likely to rely on formal contracts between a lead firm and members.

A strategy of individual advantage with an entrepreneurial logic leads PSFs to emphasize specific capabilities such as distinctive expertise and status in conjunction with specific relational patterns of many, diverse clients and partners to maximize learning. When successful, the capabilities and relations that are developed provide positive feedback, further entrenching an individual strategy and extending these capabilities and relational patterns.

Polygamous Constellations. Given firms' strategies of pursuing collective advantage with a relational logic, constellation membership tends to be stable because parties seek opportunities for repeated interactions. Since reciprocity is a cornerstone of a relational logic (Larson

1992, Ring and Van de Ven 1992, Uzzi 1997), constellation members who gain work are expected to reciprocate partner's past work opportunities with future opportunities. This creates entangling obligations among constellation members, reinforcing their likelihood of working together over time. In this way, PSFs' scopes of activity are likely to expand and diversify as they follow clients and partners into related areas. For example, a healthcare provider may move from building hospitals to senior assisted living centers and group homes taking the building constellation from complex technical buildings into residential arenas. In investment banking, there is not only the constellation of providers involved in the offering, but also a complex network of investors (Eccles and Crane 1988). As these clients experience value-added services provided by the constellation, each client has other projects that may make use of the group's talent.

Governance mechanisms for polygamous constellations involve specific interfirm routines to coordinate efforts and social mechanisms to safeguard exchanges. These routines facilitate the "collective capacity to perform recognizable patterns of action" and can be used in situations characterized by "high task variety, low task analyzability, and a highly deliberative search process" (Pentland and Reuter 1994, p. 485; see also Nelson and Winter 1982), which are typical of complex professional services.⁶ These routines enhance transferring knowledge and learning each others work styles and methods, creating "synergistic partnering" (Powell et al. 1996). They also facilitate aligning logics of actions into constellation-wide understandings, which is imperative for coordination (Camerer and Knez 1996).

Social mechanisms that judge, exclude, or hinder participation in constellations provide a powerful lever to mitigate opportunism since repeated interactions are central to polygamous constellations. Partner judgments may be a powerful means to constrain malfeasance and engender "fair dealing" among parties because repeated interactions create a common identity where parties assimilate one another's interests to their own and wish to avoid negative judgments from their exchange partners (Blau 1986; Granovetter 1992, p. 42; Larson 1992; Ring and Van de Ven 1992). Other social mechanisms such as reputation influence work opportunities. In professional services, reputation is an important asset that requires a substantial amount of effort and time to develop (Maister 1993). Indeed, negative gossip by third parties reduces the likelihood of direct relations whereas positive gossip strengthens it (Burt and Knez 1995). Gossip is therefore critical because a direct relationship is an important predictor of alliances (Gulati 1995). Thus, informal social mechanisms may provide viable means for mitigating,

but not eliminating, adverse selection and moral hazard in polygamous constellations due to parties' dense, repeated interactions.

A strategy of collective advantage with a relational logic leads PSFs to emphasize their client and partner relationships and diversify their skills as they follow clients and partners into related areas. Thus, these PSFs tend to have repeated interactions with a limited set of partners, enhancing their desire and ability to develop firm-specific coordination mechanisms and the viability of social controls. When successful, the capabilities and relations that are developed provide positive feedback, further enhancing a collective strategy and these relationships and specific capabilities.

Intermediate Constellations. Although the primary focus of the paper has been on the extreme ends of the spectrum, intermediate constellations combining attributes of promiscuous and polygamous constellations are also possible. Some of these may be at incipient stages of development. Nexia, an international organization whose membership is comprised of medium-sized accounting firms from various countries, provides an example of how constellations may be created (Koza 1997). Nexia appears to be attempting to create a polygamous constellation in several ways. First, it restricts participation in its professional service projects to Nexia members. This restricted access may create repeated interactions since members have less choice in their partners. Nexia also mandates interaction among partners by requiring members to visit local offices while on vacation, by sponsoring an annual partner meeting, and by asking partners to accompany clients to introduce other Nexia staff (Shaughnessy 1995). However, Nexia has been growing rapidly; thus, it is not clear whether its exclusive contract and friendship rules create repeated and informal interactions among its many participants. Nexia also appears to benefit from brokerage roles and trilateral governance typically found in promiscuous constellations. For example, Nexia provides a brokerage role by linking clients and partners. It also establishes common standards to enhance coordination among partners with little prior interaction, and uses trilateral governance mechanisms such as a Board of Directors and standing committees to monitor parties and resolve conflicts. Koza (1997) provides greater insight on Nexia's challenges, governance mechanisms, and brokerage roles.

Constellation Reproduction: Influence of Feedback on Strategy and Structure

We expect that PSFs' prior choices influence their later options by reinforcing strategies, developing certain capabilities, and utilizing specific governance mechanisms.

These prior choices and experiences foreclose some paths, entrench others, and generate new challenges. This path dependency is seen in how prior strategies and structures influence current options.

Strategy and Constellation Reproduction. As constellation members gain greater experience in pursuing individual or collective strategies, they find partners, either from direct experience or from recommendations, whose strategies and logics of action are more similar to their own. For PSFs pursuing individualist strategies, their learning and innovation make them desirable constellation partners, which enhances their opportunities for moving across constellations. The challenge is in managing the entrepreneurial logic within the PSF so it does not undermine the firm. A PSF's individualist strategy and entrepreneurial logic attracts personnel who are more likely to use the firm to advance their own learning and move on. This may lead to a PSF potentially losing its distinctive expertise in its human assets and breeding its own competitors. For example, ProServ, an entertainment law firm, has generated its largest competitors from employees who held strong relationships with key clients such as basketball stars and took the firm's entire market niche in this area when leaving (Helyar 1997). Thus, when lucrative contract deals among sponsors, advertisers, and clients are composed, ProServ is not part of these constellations within professional basketball.

For those pursuing a collective strategy, their repeated interactions ease coordination as partners develop inter-firm specific routines and enhance steady work opportunities as reciprocity generates more collective work. This provides an incentive to continue working together as it takes less time and energy to coordinate expertise, align logics of action, and pursue future work. In addition, this may reduce the tension that parties experience in hybrid systems because the success of the individual PSF and constellation have come to be tightly linked. However, interactions with limited partners inhibit innovation that comes from exposure to numerous partners' and clients' problems, solutions, and techniques, which is why individualist PSFs eschew this strategy. The challenge is that a PSF's distinctive expertise and ability to provide unique solutions may atrophy as parties restrict exposure to new techniques, ideas, and solutions through their continued interactions with a limited set of partners. In addition, these continued and extensive relations with some partners may lead parties to become overly reliant on one another so that the demise of one partner endangers the livelihood of other partners. This is especially hazardous in industries such as investment banking and building where a key firm acts as a gatekeeper for the rest of the constellation with a client.

Social Structure and Constellation Reproduction. The social structures of constellations tend to reproduce themselves and their characteristic types of exchange over time. Numerous strong ties among members stabilize a group by retaining members, whereas numerous ties to outsiders destabilize the group by pulling members out of it. For example, the research of McPherson et al. (1992, p. 153) on voluntary associations and Sedaitis' (1998) research on Russian new ventures found that the rate of entrance and exit to a group depends on the number and strength of ties among members to each other and to nonmembers. Russian spin-offs were formed by bureaucrats who knew each other and had worked together before. These prior dense relations were reproduced in the newly founded spin-offs which sold products to those the founders already knew. Thus, many strong ties among constellation members reinforce stability because investments in relationships create persistence by signaling commitment (Levinthal and Fichman 1988) and by providing incentives to maintain relations. In addition, many strong ties provide rich sources of information about partners and potential partners, reducing uncertainty about parties' competencies, strategies, and processes (Granovetter 1992, Larson 1992) and are a strong predictor of future alliances (Gulati 1995). Thus, repeated interactions among partners move constellation members toward the polygamy end of the spectrum through positive feedback processes.

In contrast, Russian start-ups were comprised of entrepreneurs who "came from all walks of life," whose network processes tied many new parties together, creating highly diverse networks, and who sold goods primarily to outsiders. These new ties facilitated more new ties across new markets. This was also true in voluntary groups (McPherson et al. 1992), where groups with many weak ties reinforced changes in membership. In essence, for PSFs this means that any exposure to work outside the constellation increases the number of new ties, thereby increasing the probability of forging new relations. The more constellation changes a member makes, the more opportunities there are to change (Sedaitis 1998). Thus numerous exchange partners across constellations reinforce changes in constellation membership. The positive feedback provides firms the opportunities to engage in promiscuous constellations.

Conclusion and Future Directions

This paper has pursued three major objectives to better understand constellation dynamics in professional services. First, we offer a definition of constellation that goes beyond either the causal or metaphorical use of the term.

This is an important step in facilitating empirical investigation of constellations. Second, we identify the tensions that result from constellations as hybrid systems comprised of individual and group tasks and outcome. Firms may focus on individual or collective advantage and in doing so influence rates of change and stability within constellations, pursue different scopes of activity, and employ different means for coordinating and safeguarding their exchanges. This process creates distinct constellation types. Third, we show how prior PSF strategies and structures provide positive feedback, reinforcing constellation change and stability. These objectives enhance our understanding not only of different types of constellations but the processes by which these distinct constellations are created.

Examining empirically the relationships we have proposed is a logical next step in advancing our understanding of constellation dynamics. We have proposed relationships on how firm strategy and structures influence constellation stability and change. Nevertheless, such research will present a demanding task because of the extensive longitudinal data on constellation composition and firm-level capabilities needed to examine some of these relationships. A number of research agendas also arise from this paper. First, we need more understanding of how constellation partners are chosen. Many questions remain unanswered, such as the processes by which partners select one another, the criteria these selections are based upon, and how selection processes and criteria influence the emergence of an individual or collective strategy in constellations. Some progress has been made in studying how status (Podolny 1993, 1994) and past interactions (Gulati 1995) influence partner choice. However, the relative impact of and conditions under which status, reputation, and past interactions are used for partner choice needs to be assessed. Partner selection, while critical, is still a relatively unexplored area in constellation and alliance research. Second, we need to understand more about the range of governance mechanisms used to coordinate and safeguard exchanges among multiple partners in constellations. For example, we know very little about industry protocols, standards, and institutions that facilitate firm movement among constellations. We also know very little about routines specific to constellation members, which is not surprising given that research on firm routines is in somewhat of an incipient stage. Fine-grained approaches to understanding routines such as that used by Pentland and Reuter (1994) will likely produce important insights. Thus, an area ripe for study is the types of governance mechanisms that constellations use to adapt and coordinate diverse sets of expertise.

A final comment on the scope of our paper is in order.

Our focus has been on constellations involving PSFs. However, our model is not strictly limited to settings traditionally thought of as professional services. Wherever complex coordination is required among specialized firms who have the mixed incentive to both compete and cooperate, we are likely to observe both the tensions we have identified and similar dynamics of constellation stability and change. For example, American automobile manufacturers and suppliers have moved from promiscuous to polygamous constellations through restricting the number of suppliers, providing longer-term repeated interactions, and developing interfirm specific routines for coordinating their efforts (Dyer 1996).

We predict that constellations will be employed with increasing frequency in the future. Environmental forces (Daft and Lewin 1993) that have brought both greater turbulence and an increased need for complex collaboration show little sign of subsiding. Moreover, the proliferation of technologies that makes such collaborations more feasible (Lewin and Stephens 1993, Zenger and Hesterly 1997) also promises to facilitate greater use of constellations. Thus, we see an increasing role for constellations in the organization of production and services. It follows, therefore, that the effort to understand the underlying forces of stability and change in constellations constitutes an important agenda for the field of organization science.

Acknowledgments

We thank our colleagues Benjamin Lichtenstein, participants at the INSEAD conference on partnerships and alliances, and the special issue editors, Arie Lewin and Mitch Koza, for their comments and insights on earlier drafts prompting us to expand and extend our original ideas. These extensive revisions would not have been possible without the generous support of Boston College, which provided a faculty fellowship to the first author.

Endnotes

¹They have also been called interfirm networks (Ring and Van de Ven 1992, 1994; Uzzi 1997), or network organizations (Miles and Snow 1986, Powell 1990).

²Based on interviews by the first author with 37 randomly selected architectural and engineering firms in the Western United States.

³The first use of "polygamy" to refer to constellations is a review of Comes-Casseres book, *Alliance Capital*, in *The Antidote*, 7 (Summer), 1997, where the reviewer contrasts polygamous constellations with monogamous joint ventures.

⁴Status and reputation are often used interchangeably. However, they are distinct constructs and can be inversely related. Reputation involves in-depth knowledge about partner attributes whereas status involves a partner's rank in the social group. One may have high status and a terrible reputation, as is the case with prima donnas.

⁵The concept is based on the earlier notion of betweenness (Freeman 1979) which formalizes ideas of brokerage, liaisons, boundary spanning, and gate-keeping.

⁶Our use of routine should not be confused with those who use it to refer to repetitiveness (Gersick and Hackman 1990) or to automatic, fixed responses to defined stimuli (Grant 1996).

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Accepted by Mitchell P. Koza and Arie Y. Lewin, special editors; received March 8, 1996. This paper was with the authors for two revisions.