Strategic Alliances as Agents of Competitive Change

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In a world where no advantages seem to be sustainable for long, prowess in forming and managing strategic alliances has become one of the most-important sources of competitive advantage that firms can develop. Strategic alliances have changed the U.S. industrial landscape as dramatically as the telegraph and railroads did in their respective eras of innovation. Use of strategic alliances has precipitated enduring industry changes – the disruptive impacts of which have been exacerbated by the technological changes that they facilitated. As strategic alliances have become more commonplace, managers have learned to take their transformative powers for granted; they now treat strategic alliances as yet another trait characterizing competitive behaviors with which they must cope in order for their firms to survive and thrive.

Industry structure evolves due to changes in demand traits as well as due to changes that were instigated by firms' investments in order to satisfy the evolving nature of demand. Because strategic alliances enabled competitors to share the use of costly physical assets by pooling their respective demand (in order to operate said assets at breakeven volumes, or better), strategic alliances facilitated the serving of small market segments whose needs would otherwise be under-served – making customer demand more heterogeneous (and industry structures more fragmented) within those industries where they were utilized. Strategic alliances accelerated the speed with which customers adopted innovative products by reducing customer uncertainty through the creation of technology standards and support of technological platforms. Buyer learning about product applications was diffused faster through jointly-sponsored projects. Strategic alliances legitimized new processes for product development, e.g., biotechnology for making pharmaceuticals, and changed the structures of adjacent industries through the use of vertical strategic alliances. Most importantly, strategic alliances allowed unexpected firms with unforeseen resources to enter and compete within attractive, ongoing industries – potentially changing the ticket of admission for all subsequent would-be entrants – and they also facilitated firms' exits (through "fade-out" ventures) from industries that had become less hospitable in their structures and less profitable in the competitive behaviors utilized therein.

Changes in Purpose of Strategic Alliances

When American firms were focused primarily on selling their goods and services into overseas markets, they used strategic alliances (sometimes formulated as equity joint ventures) to enter unfamiliar, target markets (Osborn and Baughn, 1990; Woodcock, *et al.,* 1994). Whether by government mandate or strategic necessity, U.S. firms partnered with local firms possessing the customer knowledge that they lacked (Reuer and Koza, 2000). Since customer knowledge proved to be a more-enduring source of competitive advantage than their transient technological resources, their intervention in foreign markets transferred knowhow that often resulted in accelerated local economic development (Geringer, 1991; Hamel, 1991; Killing, 1983; Parkhe, 1993).

Initially strategic alliances were used domestically by U.S. firms to share the high costs required to enter capital-intensive industries such as railroads, copper mining, offshore oil exploration, underwater minerals extraction, coal gasification, and oil and gas pipelines, among others. As minerals extraction became more difficult, alliances were used to rework coal mines, fracture fields of oil shale, perform tertiary recovery on spent oil wells, and extract uranium. The aluminum smelting and fabrication industries developed quickly as firms entered through strategic alliances. Nuclear power plants were frequently built in the U.S. using partnerships for risk-sharing and governmental participation purposes.

When American competitiveness was undermined in the 1970s by imports from lower-wage economies, the scope and domain of their strategic alliances were enlarged to include offshore export platforms (and later offshore research centers); alliances became critical to domestic survival as U.S. firms struggled to cope with the need to create more-profitable business models (Hagedoorn, 1993; Reuer and Leiblein, 2000). Once again, an important effect of teaming with diverse partners was the diffusion of knowledge – albeit with bi-directional impact (Arvanitis, 2012; Hagedoorn; 1996; Nohria and Garciapont; 1991). As U.S. firms gained more experience in working with competent partners overseas, strategic alliances began to be used domestically as a valued strategic alternative for creating new products using lower-cost processes, while also easing irreversible resources out of their troubled lines of business (Hagedoorn, 2002; Harrigan, 1985c; 1988; Tong and Reuer, 2010; Roijakkers and Hagedoorn; 2007). Troubled domestic industries, such as automobile assembly, electrical power-plant equipment, paper-machinery, materials-handling and steel-making, were all given knowledge transfusions from overseas firms offering new ideas through strategic alliances as a means of preserving their commercial viability (Harrigan; 1985; Burgers, *et al.,* 1993). An incidental effect of these industry revitalizations was the opening of domestic markets for subsequent entry by contributing alliance partners in their own

right. The organizational and structural implications of such coopetition were widespread – with diverse effects being evident in the many different industry contexts where strategic alliances were being used (Belderbos, *et al.,* 2012).

The Visible Hand is Invisible Once Again

Chandler (1977) called managerial intervention in commercial decisions the "visible hand" by which vertically-integrated organizations harnessed available improvements in communications and transportation to exert control over all stages of industrial transactions from ultra-raw materials to reaching the ultimate consumer. During the vertical integration phase of U.S. industrial history, skillful managerial coordination of internal markets – wherever it occurred -- allowed American firms to expand geographically as well as diversify broadly to gain new skills while also guaranteeing control over product quality, innovation and customers for their outputs (Harrigan, 1983; 1985d; 1986). Vertically-integrated strategic postures were effective as long as demand for firms' ultimate products was predictable and uncontested; the high profits that they earned provided sufficient slack to cross-subsidize those vertical stages where firms were not the most-efficient competitors – all for the sake of controlling their throughput volumes in a stable business configuration.

Intense import competition forced firms to de-integrate abruptly as the competitive pendulum swung instead to favor substantial outsourcing within several formerly-integrated industries. As vertically-integrated firms rushed to exit from those activities where they were ill-equipped to compete, they used strategic alliances to ameliorate the exit barriers that they faced (Harrigan, 1980; 1981; 1985a; 1985b). When they lost their relative competitiveness, restructuring arrangements -- like the many ventures among European petrochemical firms that were used to spin off business units while combining and gaining critical mass for their pharmaceutical units -- removed non-performing assets from firms' balance sheets and offered them an alternative that was superior to bankruptcy (Sheppard, 1994). While they used strategic alliances to cleanse their portfolios of businesses, U.S. petrochemical firms also used strategic alliances for vertical supply agreements, development of new substances, diversification into new applications for extant substances, the pioneering of risky technologies, and other growth opportunities with high risk profiles. In particular, biochemical products – *i.e.,* commercialization of renewable chemistries, *e.g.,* 1-3 propanediol (bio-PDO), cellulosic ethanol, and biobutanol -- were undertaken jointly; early efforts to commercialize non-pharmaceutical applications of biotechnology were underwritten by partnerships among petrochemical firms.

As uncompetitive firms within older U.S. industries were using strategic alliances to reduce their diversification and de-integrate their many value-adding stages of production, other firms were using strategic alliances to create new industries, such as broadband entertainment delivery, programming packaging to create subscription-cable entertainment channels, home-video equipment, precision controls and robotics, software, database services, information technology products, and a wide variety of communications services that exploited newly-available technological capabilities, *e.g.,* the Internet and cloud computing. Opportunities to create complementary products created additional new industries that enhanced the functionality of those new communications services and computing technologies that had previously been pioneered using strategic alliances. Boundaries between these varied and complementary industries blurred quickly as successful firms diversified into adjoining domains by continuing their experimentation with partners to create technological innovations.

Meanwhile the new competitive reality that firms faced within many mature, formerly-vertically-integrated industries such as electronics, computers, computer peripherals, office equipment, and communications networks, among others, forced them to specialize in order to develop products in communications equipment, local area networks, data communications, cellular telephones, videotext and video communications, and online commerce, among others (Harrigan, 1985). Even firms within the financial services industries found opportunities to partner with specialist firms having superior expertise and economics for developing valuable new services; soon their traditional industry structures were also eroded by the need to allow jointly-owned specialists to coordinate value-adding activities among sponsoring firms who became their customers or suppliers (Anand and Khanna, 2000; Harrigan, 1988; Lazzarini, *et al.,* 2008; Mesquita and Brush, 2008). In particular, when the consumer electronics industry embraced de-integration to move from generation to generation of technology more rapidly, firms exploited the new-found advantages of strategic alliances through research consortia (such as Microelectronics and Computer Technology Corp., Semiconductor research Corp. and Sematech) whereby firms pooled their patents and served as second-source suppliers for each other. As with many cross-licensing and outsourcing arrangements, the substantial knowledge transfers that were required to qualify outsiders to serve as suppliers often allowed new firms to build upon the formerly-proprietary technologies that were disclosed with the result of faster diffusion of knowledge and shorter technological half-lives occurring within their respective industries (Mesquita, *et al.,* 2008).

The de-integrated model of firms who developed high specialization in core areas of knowledge and formed alliances to leverage extant competitive advantages while creating new ones reached its

penultimate form when virtual firms who controlled critical bottleneck resources, such as a brand name, distribution channel or stream of patents forged a spider's web of alliances with a vast array of partners (Kraut, *et al.,* 1999). The bilateral bargaining power of firms who were frequently chosen as "dancing partners" within their many networks of alliances provided the primary offset against industry concentration accruing to favor well-positioned virtual firms (Combs and Ketchen, 1999; Goyal and Moraga-Gonzalez, 2001; Gulati, 1998; Reuer and Koza, 2000). As firms struggled to find optimal corporate structures within the rapidly-evolving industries where they competed, strategic alliances formed the expedient and temporary flywheel needed in order for technological progress to be made while sponsoring firms individually scrambled to upgrade their respective competencies and resources in order to remain competitive in their chosen core areas of expertise. Strategic alliances also allowed geographically-disadvantaged firms to join forces in order to gain competitive parity with extant firms (Van Horn and Harvey, 1998), gain entrée into markets where outright entry would have been difficult (Leiblein and Reuer, 2004), or political uncertainties would have served as significant deterrents to investment (Hagedoorn and Sedaitis, 1998).

Alliances as Necessity

When strategic alliances were used as a means of risk sharing in oil exploration, their membership structures typically included several diverse and smaller firms as partners with the result that oil and gas exploration has long been a fragmented industry with many competent participants therein (Dollinger, 1990). When strategic alliances were used to build costly and complex projects having transnational customers -- products such as aerospace and defense products, communications equipment, or other infrastructural investments -- sponsors benefited from partners' diverse political ties as well as from access to their diverse research personnel, with the result that the use of strategic alliances in those contexts have concentrated the structures of industries which have costly entry fees and face globally-standardized product specifications (Butler, 2008; Dussage and Garrette, 1995; Garrette and Quelin, 1994; Mesquita and Lazzarini, 2008; Mitchell and Singh, 1996).

The temporal nature of strategic alliances has made them especially useful within industries, such as entertainment programming, where highly-diverse talents were needed for brief periods of time to perform highly-specific tasks. Tasks requiring syndication capabilities to distribute generations of new products quickly also benefited from the flexibility of quickly returning to proven partners, as needed, to commercialize media properties such as movies, online games or other perishable goods and services,

raise capital, or participate in other organized exploitations of resources (Carayannis, et al., 2000; Eisenhardt and Schoonhoven, 1996; Li and Rowley, 2002; Ozmel, et al., 2013).

Complex industries that were facing technological convergence of knowledge bases needed the insights of strategic alliances that were created among diverse partners in order to develop products that retained their cutting-edge advantages by remaining compatible across several technological platforms as customer uses of products diversified (Kotabe and Swan, 1995; Vanhaverbeke, *et al.,* 2002; Sobrero, 2002). In particular, the Internet's pervasive use for linking partners has transformed the nature of competition in creating software, information technology consulting and electronic commerce products, among others (Lavie, 2007; Manral, 2007; Mortehan, 2004; Park, *et al.*, 2004). Shorter technological half-lives and disruptive technologies have intensified the need for firms to learn to prosper through knowledge-sharing strategic alliances (Simonin, 1997) in competitive contexts where failure to "dance with many partners" means being left behind technologically (Gerwin, 2004; Harrigan, 1986; Lambe and Spekman, 1997; Mowery, et al., 1996; Steensma and Corley, 2000). Intensely-competitive markets exacerbated the tendency for atomistic firms to concentrate on being effective in developing products in single-business arenas of technology that were building blocks for creating more-complex systems of solutions (Simonin, 1999; Wu, 2012). One doubts that technology conglomerates built via acquisitions by firms such as Cisco -- or more recently, Google -- will maintain their cutting-edge viability in all of their respective areas of specialization without also contributing to strategic alliances with leading firms within relevant arenas of technology application (Robertson and Gatignon, 1998).

The need for firms to dance rapidly and advantageously with diverse partners in technologically-active settings places particular pressure on managers to leverage their firm's strongest resources by using alliances (Chi, 1994; Das, 2000) without undermining their potential value as a technology standard or platform for developing those future complementary products and services that will prolong the viability of their competitive advantages (Pangarkar and Klein, 1998; Weck and Blomqvist, 2008). Since the misuse of technology transfer has been so potentially damaging to participants, their past experience with, reputation of, and trust in alliance partners will be important to their economic survival (Krishnan, et al., 2006; Zaheer and Venkatraman, 1995). Managers must also learn to improve their firms' nurturing talents in order to gain access to knowledge about innovations that are being developed within young organizations (Alvarez, et al., 2006; Laamanen, 1999; Reuer and Ragozzino, 2008). Good partnering skills will be especially important where entrepreneurs become an increasingly influential

source of ideas within those industries where entry barriers based on adaptive flexibility within technologically-changing industries have replaced capital-intensive entry barriers.

The collaborative nature of technology development suggests that it will be increasing important for firms with standing to weigh in often and promulgate their opinions – by participating in many strategic alliances -- in order to forge the directionality of industry evolution by amassing the reputation and resources needed to command a place at any negotiating table that will affect their industry's development. Strategic alliances have been an important evolutionary stimulus for changing both industry structures and the links between related industries. That pattern of influence is expected to intensify in the future.

References

Alvarez, SA; Ireland, RD; Reuer, JJ. 2006. Entrepreneurship and strategic alliances. *Journal of Business Venturing*. 21: 401-404.

Anand, BN. Khanna, T. 2000. Do firms learn to create value? The case of alliances. *Strategic Management Journal*. 21: 295-315.

Arvanitis, S. 2012. How do different motives for R&D cooperation affect firm performance? - An analysis based on Swiss micro data. *Journal of Evolutionary Economics.* 22: 981-1007.

Belderbos, R. Gilsing, V. Lokshin, B. 2012. Persistence of, and interrelation between, horizontal and vertical technology alliances. *Journal of Management*. 38: 1812-1834.

Burgers, WP. Hill, CWL. Kim, WC. 1993. A theory of global strategic alliances -- The case of the global auto industry. *Strategic Management Journal*. 14: 419-432.

Butler, C. 2008. Problems in global strategic alliance management for European defense manufacturing firms. *Management Decision*. 46: 330-341.

Carayannis, EG. Kassicieh, SK. Radosevich, R. 2000. Strategic alliances as a source of early-stage seed capital in new technology-based firms. *Technovation*. 20: 603-615.

Chandler, AD. 1977. *The Visible Hand: The Managerial Revolution in American Business*. Harvard University Press.

Chi, T. 1994. Trading in strategic resources -- Necessary conditions, transaction cost problems, and choice of exchange structure. *Strategic Management Journal*. 15: 271-290.

Combs, JG. Ketchen, DJ. 1999. Explaining interfirm cooperation and performance: Toward a reconciliation of predictions from the resource-based view and organizational economics. *Strategic Management Journal*. 20: 867-888.

Das, TK. Teng, BS. 2000. A resource-based theory of strategic alliances. *Journal of Management*. 26: 31-61.

Dollinger, MJ. 1990. The evolution of collective strategies in fragmented industries. *Academy of Management Review.* 15: 266-285.

Goyal, S. Moraga-Gonzalez, JL. 2001. R&D networks. *Rand Journal of Economics*. 32: 686-707.

Dussauge, P. Garrette, B. 1995. Determinants of success in international strategic alliances -- Evidence from the global aerospace industry. *Journal of International Business Studies*. 26: 505-530.

Eisenhardt, KM. Schoonhoven, CB. 1996. Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms. *Organization Science*. 7: 136-150.

Garrette, B. Quelin, B. 1994. An empirical-study of hybrid forms of governance structure -- The case of the telecommunication equipment industry. *Research Policy*. 23: 395-412.

Geringer, JM. Hebert, L. 1991. Measuring performance of international joint ventures. *Journal of International Business Studies*. 22: 249-263.

Gerwin, D. 2004. Coordinating new product development in strategic alliances. *Academy of Management Review*. 29: 241-257.

Gulati, R. 1998. Alliances and networks. *Strategic Management Journal*. 19: 293-317.

Hagedoorn, J. 1993. Understanding the rationale of strategic technology partnering -- Interorganizational modes of cooperation and sectoral differences. *Strategic Management Journal*. 14: 371-385.

Hagedoorn, J. 1996. Trends and patterns in strategic technology partnering since the early seventies. *Review of Industrial Organization*. 11: 601-616.

Hagedoorn, J. 2002. Inter-firm R&D partnerships: an overview of major trends and patterns since 1960. *Research Policy*. 31: 477-492.

Hagedoorn, J. Sedaitis, JB. 1998. Partnerships in transition economies: international strategic technology alliances in Russia. *Research Policy*. 27: 177-185.

Hamel, G. 1991. Competition for competence and inter-partner learning within international strategic alliances. *Strategic Management Journal*. 12: 83-103.

Harrigan, KR. 1980. The effect of exit barriers upon strategic flexibility. *Strategic Management Journal*. 1: 165-176.

Harrgian, KR. 1981. Deterrents to divestiture. *Academy of Management Journal*. 24: 306-323.

Harrgian, KR. 1983. *Strategies for Vertical Integration.* Lexington, MA: D.C. Heath & Company. Subsequently republished as Harrigan, KR. 2003. *Vertical Integration, Outsourcing, and Corporate Strategy*. Frederick, MD: Beard Books.

Harrigan, KR. 1985a. Exit barriers and vertical integration. *Academy of Management Journal*. 28: 686-697.

Harrigan, KR. 1985b. Strategies for interfirm transfers and outside sourcing. *Academy of Management Journal*. 28: 914-925.

Harrigan, KR. 1985c. *Strategies for Joint Ventures*. Lexington, MA: D.C. Heath & Company. Subsequently republished as Harrigan, KR. 2003. *Joint Ventures, Alliances and Corporate Strategy.* Frederick, MD: Beard Group.

Harrigan, KR. 1985d. Vertical integration and corporate strategy. *Academy of Management Journal.* 28: 397-425.

Harrigan, KR. 1986a. *Managing for Joint Venture Success*. Lexington, MA. D.C. Heath & Company, Lexington Books.

Harrigan, KR. 1986b. Matching vertical integration strategies to competitive conditions. *Strategic Management Journal*. 7: 535-555.

Harrigan, KR. 1988. Joint Ventures and Competitive Strategy. *Strategic Management Journal*. 9: 141-158.

Killing, JP. 1983. *Strategies for Joint Venture Success*. Cengage Learning EMEA.

Kotabe, M. Swan, KS. 1995. The role of strategic alliances in high-technology new product development. Strategic Management Journal. 16: 621-636.

Kraut, R. Steinfield, C. Chan, AP. *et al*. 1999. Coordination and virtualization: The role of electronic networks and personal relationships. *Organization Science*. 10: 722-740.

Krishnan, R. Martin, X. Noorderhaven, NG. 2006. When does trust matter to alliance performance? *Academy of Management Journal*. 49: 894-917.

Laamanen, T. 1999. Option nature of company acquisitions motivated by competence acquisition. *Small Business Economics*. 12: 149-168.

Lambe, CJ. Spekman, RE. 1997. Alliances, external technology acquisition, and discontinuous technological change. *Journal of Product Innovation Management*. 14: 102-116.

Lavie, D. 2007. Alliance portfolios and firm performance: A study of value creation and appropriation in the US software industry. *Strategic Management Journal*. 28: 1187-1212.

Lazzarini, SG. Claro, DP. Mesquita, LF. 2008. Buyer-supplier and supplier-supplier alliances: Do they reinforce or undermine one another? *Journal of Management Studies*. 45: 561-584.

Leiblein, MJ. Reuer, JJ. 2004. Building a foreign sales base: the roles of capabilities and alliances for entrepreneurial firms. *Journal of Business Venturing*. 19: 285-307.

Li, SX. Rowley, TJ. 2002. Inertia and evaluation mechanisms in interorganizational partner selection: Syndicate formation among US investment banks. *Academy of Management Journal.* 45: 1104-1119.

Manral, L. 2007. Virtual alliances as coordination and influence mechanisms in the Internet context: evidence from a cross-section of Internet-based firms. In Therin, F. (ed) *Handbook of Research on Techno-Entrepreneurship*. Elgar Book Series: 234-262.

Mesquita, LF. Anand, J. Brush, TH. 2008. Comparing the resource-based and relational views: Knowledge transfer and spillover in vertical alliances. *Strategic Management Journal*. 29: 913-941.

Mesquita, LF. Brush, TH. 2008. Untangling safeguard and production coordination effects in long-term buyer-supplier relationships. *Academy Of Management Journal.* 51: 785-807.

Mesquita, LF. Lazzarini, SG. 2008. Horizontal and vertical relationships in developing economies: Implications for SMEs' access to global markets. *Academy of Management Journal*. 51: 359-380.

Mitchell, W. Singh, K. 1996. Survival of businesses using collaborative relationships to commercialize complex goods. *Strategic Management Journal*. 17: 169-195.

Mortehan, O. 2004. The role of firms' collaborative agreements in the information technology industry transformation. *Technology Analysis & Strategic Management*. 16: 53-71.

Mowery, DC. Oxley, JE. Silverman, BS. 1996. Strategic alliances and interfirm knowledge transfer. *Strategic Management Journal*. 17: 77-91.

Nohria, N. Garciapont, C. 1991. Global strategic linkages and industry structure. *Strategic Management Journal*. 12: 105-124.

Osborn, RN. Baughn, CC. 1990. Forms of interorganizational governance for multinational alliances. *Academy of Management Journal*. 33: 503-519.

Ozmel, U. Reuer, JJ. Gulati, R. 2013. Signals across multiple networks: How venture capital and alliance networks affect interorganizational collaboration. *Academy of Management Journal.* 56: 852-866.

Pangarkar, N. Klein, S. 1998. Bandwagon pressures and interfirm alliances in the global pharmaceutical industry. *Journal of International Marketing.* 6: 54-73.

Park, NK. Mezias, JM. Song, JY. 2004. A resource-based view of strategic alliances and firm value in the electronic marketplace. *Journal of Management*. 30: 7-27.

Parkhe, A. 1993. Messy research, methodological predispositions, and theory development in international joint ventures. *Academy of Management Review*. 18: 227-268.

Reuer, JJ. Koza, MP. 2000. Asymmetric information and joint venture performance: Theory and evidence for domestic and international joint ventures. *Strategic Management Journal.* 21: 81-88.

Reuer, JJ. Koza, MP. 2000. On lemons and indigestibility: Resource assembly through joint ventures. *Strategic Management Journal.* 21: 195-197.

Reuer, JJ. Leiblein, MT. 2000. Downside risk implications of multinationality and international joint ventures. *Academy of Management Journal*. 43: 203-214.

Reuer, JJ. Ragozzino, R. 2008. Adverse selection and M&A design: The roles of alliances and IPOs. *Journal of Economic Behavior & Organization*. 66: 195-212.

Robertson, TS. Gatignon, H. 1998. Technology development mode: A transaction cost conceptualization. *Strategic Management Journal*. 19: 515-531.

Roijakkers, N. Hagedoorn, J. 2007. Strategic and organizational understanding of inter-firm partnerships and networks. In Hanusch, H. Pyka, A. (eds.) *Elgar Companion to Neo-Schumpeterian Economic*s. Elgar Book Series: 201-210.

Sheppard, JP. 1994. Strategy and bankruptcy -- An exploration into organizational death. *Journal of Management*. 20: 795-833.

Simonin, BL. 1997. The importance of collaborative know-how: An empirical test of the learning organization. *Academy of Management Journal*. 40: 1150-1174.

Simonin, BL. 1999. Ambiguity and the process of knowledge transfer in strategic alliances. *Strategic Management Journal.* 20: 595-623.

Sobrero, M. Roberts, EB. 2002. Strategic management of supplier-manufacturer relations in new product development. *Research Policy*. 31: 159-182.

Steensma, HK. Corley, KG. 2000. On the performance of technology-sourcing partnerships: The interaction between partner interdependence and technology attributes. *Academy of Management Journal*. 43: 1045-1067.

Tong, TW. Reuer, JJ. 2010. Competitive consequences of interfirm collaboration: How joint ventures shape industry profitability. *Journal of International Business Studies.* 41: 1056-1073.

Vanhaverbeke, W. Duysters, G. Noorderhaven, N. 2002. External technology sourcing through alliances or acquisitions: An analysis of the application-specific integrated circuits industry. *Organization Science*. 13: 714-733.

Van Horn, RL. Harvey, MG. 1998. The rural entrepreneurial venture: Creating the virtual megafirm. *Journal of Business Venturing*. 13: 257-274

Weck, M. Blomqvist, K. 2008. The role of inter-organizational relationships in the development of patents: A knowledge-based approach. *Research Policy*. 37: 1329-1336.
163.

Woodcock, CP. Beamish, PW. Makino, S. 1994. Ownership-based entry mode strategies and international performance. *Journal of International Business Studies*. 25: 253-273.

Wu, J. 2012. Technological collaboration in product innovation: The role of market competition and sectoral technological intensity. *Research Policy*. 41: 489-496.

Zaheer, A. Venkatraman, N. 1995. Relational governance as an interorganizational strategy -- an empirical-test of the role of trust in economic exchange. *Strategic Management Journal*. 16: 373-392.