Original Article

The developing use of strategic alliances in facilities management

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Michael Pitt

is professor of FM innovation at the Bartlett school of graduate studies UCL. His main research involves understanding and improving the supply chain mechanism in FM. He is a member of The Royal Institution of Chartered Surveyors working party on sustainability and an advisor to Modus services ltd at MOD main Building Whitehall.

Marjolein van Werven

is a research student at Maastricht University, and also at the University of Eindhoven. Her research looks at airport facility management.

Samantha Price

is a research associate with University College London at the School of the Built Environment. During the past year, she has developed research in the areas of sustainable facilities management and energy reduction process for existing building stock. Price has just commenced the second year of her PhD and is interested in change management techniques as a tool for FM to advance strategically towards sustainable FM.

ABSTRACT The latest trend of cooperation between bodies to deliver airport facilities management (AFM) can be interpreted as a networking activity. This article explores Facilities Management (FM) uses of strategic alliances through showing how alliances are formed, operated and also improve the strategic strength of the contract. Strategic alliances are diverse and complex in nature. The case of AF) is used to develop the theoretical understanding of the benefit of strategic alliances used to deliver strategic change within FM. The increase in strategic strength for FM and AFM is evidenced through improved strategic positioning, improved efficiency, greater environmental benefits and improved utilisation of the benefits of privatisation. This article will examine why airports form strategic alliances to deliver AFM and whether interfirm rivalry and managerial complexity can cause problems within these strategic alliances.

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Correspondence:

Michael Pitt
Bartlett School of Graduate
Studies, University College London,
1/19 Torrington Place,
London WC1E 7HB, UK

INTRODUCTION

It can be said that alliances in the aviation and facilities management (FM) industry are common. The use of alliances is seen as a method of responding to changing economic and regulatory conditions (Albers *et al*,



2005). Alliances are particularly common between airline companies, with the last decade alone seeing over 500 alliances forming between airlines (James, 1999). In contrast, strategic alliances within the wider airport industry are less developed. Recent research has identified gaps in the knowledge, both academically and practically, of the dynamics of collaboration, which is crucial to the idea of strategic alliance (Bell *et al*, 2006; Jiang *et al*, 2008). Cooperation and network structures based on AFM can be considered as one of the new trends within the aviation industry.

A strategic alliance is thought of as an agreement between two or more partners to share knowledge or resources, with an aim to deliver a benefit to the parties involved (Vyas *et al*, 1995). Alternatively, it can be viewed more specifically as 'a cooperative relationship between two or more firms to develop and commercialise a product' (Deeds and Hill, 1996). The alliances can range from a simple sharing of resources to complex R&D alliances involving several partners. The FM function within airports has gained more strategic importance over the past decade. AFM is extensive in nature, a key part of the future income of an airport (Pitt, 2001), and encompasses both aeronautical and non-aeronautical services (Brown and Pitt, 2001). FM faces many strategic and competitive challenges in the operation of airports and the wider built environment. It is necessary to identify and account for the strategic and competitive direction of FM and its importance to airports within the research.

Owing to the strategic importance of AFM, a number of airports are outsourcing their FM contracts to specialists. A new development, however, is the formation of a network structure with cooperation between two airports or between an airport and a third party to managing FM. A network can be described as a collection of players pursuing continued and lasting two-way relations with each other while having a lack of organisational authority (Podolny and Page, 1998). Airline networks are an interesting case and are categorised by their complex nature, with each relationship between airlines benefiting from different values (Gudmundsson and Lechner, 2006).

REASONS FOR STRATEGIC ALLIANCES

Two decades ago, strategic alliances were a tool only used by large industrial organisations; however, in the last few years the situation has changed dramatically. The most significant reasons for the formation of alliances given in literature are the creation of *synergies*, sharing of *risk* and access to new markets (Lorange and Roos, 1992; Albers, 2000; Albers *et al*, 2005). Pressure on businesses to reduce costs and improve flexibility has in turn increased the pressure on FM to develop its competitive strategy (Alexander, 2004; Tuomela *et al*, 2005). The use of strategic alliances and networks within FM is a method to develop competitiveness through adapting to environmental pressures to developing strategic change. Tuomela *et al* (2005) found that network alliances utilised joint strategic planning to cope with the changing business environment. In the airport industry specifically, potential cost savings and risk reduction were found to be key advantages of strategic

alliances, with the reduction of costs delivered through lower investments in airport expansion and human resource efficiency savings (Albers *et al*, 2005). Contractor and Lorange (1988) reported on several other reasons, including access to complementary technologies and patents, blocking competition and overcoming trade barriers or government regulations. Alliances have also proven to be effective when used as part of an internationalisation strategy. They can also be used to vertically integrate a supply chain in order to gain access to, for example, markets, materials, labour and capital. This is a useful feature that will provide support for delivering successful strategic change within a developing FM industry. General economic forces such as privatisation, intensified foreign competition, shortened product life cycles and demand for new technologies also drive companies to cooperate (Vyas *et al*, 1995; Goh and Uncles, 2003).

In general, the reasons that firms form alliances can be split up into two factors: *market*-related and *technology*-related, based on the industry within which the partners operate (Vyas *et al*, 1995). Mature markets often show market-related alliances, because of a tough competitive environment. Market-related alliances often deal with operational issues, such as production, distribution or cost sharing. Defending market share or gaining access to new markets is one of the motivating factors found driving the engagement in alliances (Vyas *et al*, 1995). Other market-related examples of reasons to cooperate are: access to foreign markets, access to raw materials, risk sharing, access to resources such as facilities and expertise, sharing R&D costs and enhancing or retaining competitive advantage through economies of scale, or image.

In contrast, younger markets often show technology-related alliances, because of the innovative character of such markets. Cooperation is based on technology transfer and joint R&D development. Alliances are aimed at improving product development, accessing new technologies, accelerating product introductions and limiting strategic risk. A combination between market- and technology-related factors is also possible. High-tech industries often have both market-related and technology-related alliances (Vyas *et al*, 1995). Alliances that strive for diversification of target markets are good examples of alliances based on both factors.

Strategic alliances have been found to be beneficial in building public awareness for environmental campaigns. Harrison (2008) found that strategic alliances that extended across spatial and social boundaries within the public domain deepened the public's understanding of a politically focused environmental campaign. Buijs (2009) concluded similar findings following research into an environmental project with a focus on river restoration. It was found that including local residents during the participation process of the project could be beneficial, if initiated through a strategic alliance with Non-Governmental Organisations and Governmental nature conservation bodies. Kumar and Malegeant (2006) demonstrated the benefits and logic in using strategic alliances for environmental and eco projects in the broader sense, arguing that the use of strategic alliances for an ecological group can be successful for strategy as it creates a green image, generates increased profit and can focus more on core business through outsourcing the collection activity of the supply chain. Through the



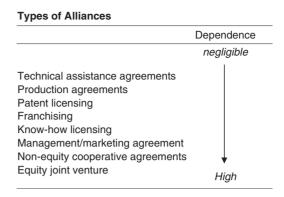


Figure 1: Types of alliances, adapted from Contractor and Lorange (1988).

formation of a closed loop supply chain and a strategic alliance (between the manufacturer and the company), the company can benefit from reduced costs and time to focus both on its core business and on reinforcing a green image (Kumar and Malegeant, 2006).

FM is coming under increasing demand to encompass sustainable development and energy management within its processes (Elmualim *et al*, 2010). It is evident that FM can benefit from the use of strategic alliances; it could be a method that FM can use to bring about organisational change to take advantage of the changing external environment. This strategy would enable FM to spread the risk of testing new technology (produced for the energy management sector) and to integrate the supply chain to gain access to new expertise. A strategic alliance could be argued to be a method that would increase the chance of success during a strategic change programme adapting to a changing market, one that is demanding increased energy management within FM.

ALLIANCE CLASSIFICATIONS

Most alliances are classified according to the dependence of both partners (Contractor and Lorange, 1988; Lorange and Roos, 1992; Vyas *et al*, 1995). Although not all previous work ranks alliances in the same order, a grid can be established classifying alliances in terms of dependence (Figure 1). With dependence, each step down shows an increase in commitment, long-term view, cooperation, risk, value contributions and integration (Lorange and Roos, 1992). Different classifications of alliances do exist however. One possible dimension would be the 'reach' of the alliance. Alliances can be domestic or international, which result in different opportunities and constraints. The nature of the industry would be another significant dimension to define an alliance. Alliances can be inter-industry or intra-industry, the later of which can result in problems based on possible competition in the future (Lorange and Roos, 1992; Park and Ungson, 2001).

ALLIANCE LIFE CYCLE

The description of a life cycle for alliances can provide insight into potential problems or structural requirements. According to Chan and Harget (1993), the alliance life cycle consists of seven stages. The first

stage is the *strategy stage*, in which the formation is prepared and top management decides upon strategic goals. This is followed by a search stage in which possible partners are screened. The third stage consists of a dialogue stage, which is the most critical stage. The possible partners are evaluated and a partner is selected to start the *negotiation stage*. After successfully completing this stage, the *formation* can start. In this stage, the alliance is created and operational issues are agreed. The alliance carries out its actions in the operation stage. The last stage is the termination stage in which the alliance either ends according to plan or because of a chance event. In early stages, cultural and strategic fit are important issues to consider; both partners should evaluate the qualities that are sought in the relationship and the aim should be a competitive advantage for both partners (Faulkner, 1995). Problems can occur at a later stage if this fit-process is not executed cautiously. After the initial stages, the focus should be on management of information. Both partners should strive to create transparency in the alliance in order to detect problems early on. If not performed properly, both partners might have different expectations that cannot be simultaneously delivered, and synergies may not be achieved (Chan and Harget, 1993; Faulkner, 1995).

At the formation of the alliance, all partners should agree upon the management control method (Lorange and Roos, 1992; Faulkner, 1995; Dickson *et al*, 1997) through the creation of control systems to deliver a clear understanding of the limitations of the collaboration (Dickson *et al*, 1997). Faulkner (1995) splits up the control issues into three factors: focus, extent and mechanism. Defining the focus of control will deliver the scope of activities, defining the extent determines the degree to which partners exercise control. Last, choosing a mechanism will answer the question on how to control the alliance; which can range from informal control to top-down management. Lorange and Roos (1992) stress the importance of control mechanisms in order for both partners to retain their core competences.

COMMON CAUSES FOR PROBLEMS AND OBSTACLES

A common obstacle lies in overcoming the reluctance of partners to give up their autonomy (Lorange and Roos, 1992), in particular for the control of strategic resources. There is a threat that the other partner might use tacit knowledge or insight during later commercial situations. This can result in firms entering into alliances with a degree of hesitation. The possible presence of future competition between the partners outside the agreement impairs chances of alliance survival (Park and Russo, 1996). This assumption is consistent with Park and Ungson (2001), who concluded that inter-firm rivalry impairs the success of the strategic alliance. If both partners in the alliance have a common market, this might create incentives to maximise their individual share of the market; which may be particularly true where the alliance shows cartel-like characteristics and hence the potential that one of the partners will act opportunistically. This together with the danger of overlap in strategic goals between the partners and the alliance increases the risk of problems within the alliance (Park and Russo, 1996). Park and Ungson (2001) argue that inter-firm rivalry and managerial complexity are the major



causes of alliance problems. Alternatively, the need to access, acquire and assemble capacity or ability quickly may lead some companies to join alliances under adverse conditions that can make the alliance unstable and possibly prone to failure (Lerner and Merges, 1998; Lerner *et al*, 2003; Haeussler *et al*, 2010).

A further obstacle is failure to achieve operating momentum (Lorange and Roos, 1992). Alliances require thorough post-formation integrative efforts. The formation period can be intensive and expensive, which can deter interest in the process and desire to invest. If responsibilities are not defined, the formations might result in misunderstandings and vague assignments. Differences in organisational culture enhance this problem. Furthermore, firms are likely 'to underestimate the likelihood of cultural conflict and coordination failure' (Weber and Camerer, 2003), increasing the negative effect of cultural differences. The more complex the task and form of the alliance, the more integration efforts are necessary (Killing, 1988).

A lack of external focus represents a further obstacle to alliance success (Lorange and Roos, 1992). Firms that focus too little on the external environment can cause the alliances to fail in the long run. This issue is linked to the over-politicking of the alliance, resulting in firms focusing too much on internal formalities (Lorange and Roos, 1992). Both these problems cause partners to not be able to create win-win situations, which is essential for alliance success. For Lorange and Roos (1992), there are several reasons that cause this problem. First, a lack of shareholder involvement often occurs; second, not following the formation with an internalisation of the concepts of the alliance foundations. This is essential in order to foster understanding for both partners. Lastly, firms neglect the necessary focus on the strategic planning process. This results in partners splitting up the gains of the alliance before gains being fully achieved.

Strategic alliances should be designed in such a way that they fulfil the goals of both partners and of the alliance itself. Its success can be seen as the value created for both partners and the fair distribution of this value (Park and Russo, 1996). It is important that both partners remain committed for the duration of the alliance to fulfil the targets (Lorange and Roos, 1992). Some alliances are based on unequal dependence (Lorange and Roos, 1992). This results from firms having to let go their own independence, in order to achieve synergies from the alliance. Mutual trust is essential and when lack of trust occurs, this can cause firms to maintain a high level of independence. Focusing on individual goals rather than collective goals can drive one partner to engineer disproportionate benefits for their side of the alliance. This view is supported by Blankenburg-Holm et al (1999), who showed that mutual commitment increases mutual dependence, which in turn increases value creation. Stability is fundamental if the alliance is to last and develop successfully and deliver performance criteria (Beamish and Inkpen, 1995; Dussauge and Garrette, 1995; Jiang et al, 2008). To date, little is known about which variables and factors impact on stability throughout the stages of alliance development (Jiang et al, 2008). In some instances, alliances have been found to result in anti-competitive behaviour



(Brueckner and Whalen, 2000; Sjögren and Söderberg, 2010), and alternatively when competition is significant and economies of traffic density are low alliances can reduce performance (Oum *et al*, 2000; Flores-Fillol and Moner-Colonques, 2007; Wan *et al*, 2009; Sjögren and Söderberg, 2010).

ALLIANCE CHARACTERISTICS AND STRUCTURAL REQUIREMENTS

There is no single success formula for strategic alliances, but many people have looked at various alliance characteristics and structures that increase the chance for alliance success. Partner relationships are more important as predictor of a successful alliance than other economic, organisational or structural factors (Faulkner, 1995). The focus of the alliance should therefore be on partner selection and cultural fit. The issue of alliance management is of course important and suggests that partners need to agree on congruent, non-conflicting objectives to make clear organisational arrangements. This issue is consistent with Vyas *et al* (1995), who propose four areas on which to focus to achieve success. This first area is goal compatibility. Both partners must agree on one or more common goals for the alliance to be aligned with individual goals. Furthermore, synergy among the partners will enforce success of the alliance (Faulkner, 1995; Vyas *et al*, 1995). Making sure that one partner can perform tasks and the other cannot will result in a more competitive alliance.

The use of complementary assets ensures the creation of synergies and Vyas *et al* (1995) bring forward the concept of value chain management within alliances. Both partners should make sure they know what value each will bring into the alliance, to increase mutual trust and positively influence the alliance. This view is consistent with Zajac and Olsen (1993), who propose the focus on transaction value (rather than transaction cost). Firms showing opportunistic behaviour in inter-organisational relationships make an estimation of the impact this behaviour has on the value of the relationship. Last, a balance between contributions to operational procedures must be made, to prevent one partner from dominating the alliance (Vyas *et al*, 1995). In order to ensure this, Blankenburg-Holm *et al* (1999) suggest creating mutual commitment and mutual dependence, which respectively will create value in the relationship.

Park and Ungson (2001) look at alliances where partners are in the same industry. This work is most suitable in analysing airport facilities management (AFM) alliances. Although their framework is on alliance failure, it is also useful in analysing alliance problems. According to Park and Ungson (2001), over half of all alliances fail because of poor management, poor communication, lack of trust from partners, competitive rivalry among partners, lack of top management commitment or cultural differences. Although these reasons are seen as possible explanations for the failure of alliances, Park and Ungson (2001) argue that these reasons are anecdotal in origin, *ad hoc* in content and fragmented in their development. A framework to analyse alliance failure can be constructed. This stresses two important issues: first, *inter-firm rivalry* has been introduced as a major reason for alliance failure. This rivalry causes an alliance to fail as both partners try to maximise their



own individual rather than collaborative interests (Park and Ungson, 2001). Second, *managerial complexity* has been put forward as a major cause of alliance failure. This managerial complexity causes failure owing to the difficulties in coordinating two independent firms and aligning alliance operations with that of the long-term goals of the parent operations (Park and Ungson, 2001).

Inter-firm rivalry

Park and Russo (1996) argued that an alliance between direct competitors is more likely to fail compared to one in which the partners are not direct competitors. This makes cooperating with competitors potentially risky, as protecting key knowledge from one's competitor within an alliance is difficult. Park and Russo (1996) explain that there is an incentive for one or both partners to act opportunistically, which is larger when two competitors collaborate within the same geographic area on similar functional skills or overlapping core competences. The issue can be seen as a prisoner's dilemma, as both partners in the alliance face the temptation to act opportunistically. However, Lorange and Roos (1992) see the issue of inter-firm rivalry as a top-management dilemma, using the 'black box' principle. This black box principle represents the partners' core competence; a decision needs to be made at executive level regarding the amount and detail of information to be revealed. One solution is to integrate discrete activities into an isolated activity, creating interdependence between the partners. It is important to constantly review the content of both partners' 'black box' (Lorange and Roos, 1992).

Faulkner (1995) explains the concept of inter-firm rivalry as the creation of a possible competitor through the action of transferring technology and information in their direction. According to Faulkner (1995), this can be prevented when both partners have positive attitudes. These attitudes should be based on mutual trust, commitment and sensitivity, resulting in a stabilising effect on the alliance and reducing rivalry. According to Park and Ungson (2001), the main cause of interfirm rivalry is opportunistic hazards. These issues influence trust, reputation and commitment within the alliance and therefore contribute to problems that can possibly result in alliance failure.

Managerial complexity

Managerial complexity can be defined as 'coordination difficulties in strategic, cultural and structural fit' (Park and Ungson, 2001). Complexity creates organisational inflexibility within the alliance, with managerial complexity being a major source of alliance failure. Strategic fit is enforced with alignment and coordination of strategic goals of both partners and the alliance itself. Cultural fit plays an important role in border-crossing alliances. Differences in national culture can cause problems in communication within, and management of, the alliance and result in conflicts; this is especially the case for international and wider national alliances. The dissimilarities in organisational structures and processes are a main reason for coordination problems (Park and Ungson, 2001); in addition, a lack of cultural fit negatively influences strategic and structural fit (Park and Ungson, 1997).

Killing (1988) elaborates on managerial complexity by breaking down the topic into task complexity and organisational complexity; task complexity is thought of as the complications within the actual activities for which the alliance was founded (Killing, 1988). Killing (1988) identified three factors that have an influence on task complexity: the first is the scope of the alliance (objectives, duration, number of business functions and number of markets to be served); second, environmental uncertainty (on demand, customers and competitors) causing a higher level of task complexity and finally the partner resources and skills. The partners resources combined are the base of the alliance out of which synergies are to be created. Generally, the greater the resources and the better the skills of both partners, the less complex the task of the alliance becomes

CONCLUSIONS

The main reasons to form alliances are the creation of synergies and the sharing of risk, as well as other market-related and technology-related reasons. Alliances can be classified according to dependence, reach or industry. Looking at the alliance life cycle provides understanding in the different problems and structural requirements of alliances. Most problems can be related to achieving autonomy, achieving operating momentum, lacking external focus and a strategic planning process that does not create sufficient value. Important structural requirements to achieve alliance success are solid partner relationships, appropriate management, balanced commitment (and dependence) and the creation of synergies and value.

The increasing and changing use of strategic alliances within FM can be seen as an effective method to deliver strategic change as a response to an ever changing external environment. FM is considered by some to still be in a stage of infancy, with FM moving away from a more simple process of building management towards a more holistic approach as a member of the core and support services of an organisation (Edum-Fotwe *et al*, 2003; Price and Pitt, 2010). Increasingly, the FM provider is expected to participate in delivering environmental commitments of the host organisation because of their knowledge of building services and their capability of bringing about change internally (Price and Pitt, 2010). The research in this article indicates that a strategic alliance between the FM provider, suppliers and building occupants could be an effective method to deliver environmental objectives.

REFERENCES

Albers, S. (2000) Nutzenallokation in Strategischen Allianzen von Linienluftfrachtgesellschaften. Cologne: Department of Business Policy and Logistics, University of Cologne. Working Paper no. 101.

Albers, S., Koch, B. and Ruff, C. (2005) Strategic alliances between airlines and airports – Theoretical assessment and practical evidence. *Air Transport Management* 11(2): 49–58.
Alexander, K. (2004) A strategy for facilities management. *Facilities* 21(11/12): 269–274.
Beamish, P.W. and Inkpen, A.C. (1995) Keeping international joint ventures stable and profitable. *Long Range Planning* 28(3): 26–36.

Bell, J., den Ouden, B. and Ziggers, G. (2006) Dynamics of cooperation: At the brink of irrelevance. *Journal of Management Studies* 43(7): 1607–1619.



- Blankenburg-Holm, D., Eriksson, K. and Johanson, J. (1999) Creating value through mutual commitment to business network relationships. *Strategic Management Journal* 20: 467–486.
- Brown, A.W. and Pitt, M.R. (2001) Measuring the facilities management influence in delivering sustainable airport development and expansion. *Facilities* 19(5/6): 222–232.
- Brueckner, J.K. and Whalen, W.T. (2000) The price effects of international airline alliances. *Journal of Law and Economics* 43(2): 503–545.
- Buijs, A.E. (2009) Public support for river restoration. A mixed-method study into local residents' support for and framing of river management and ecological restoration in the Dutch floodplains. *Journal of Environmental Management* 90(8): 2680–2689.
- Chan, P.S. and Harget, C.E. (1993) Strategic alliance life cycle model: Relevant key success factors. American Business Review 11(2): 21–28.
- Contractor, F.J. and Lorange, P. (ed.) (1988) Cooperative Strategies in International Business:

 Joint Ventures and Technology Partnerships between Firms. MA; Toronto, ON: Lexington Books.
- Deeds, D.L. and Hill, C.W.L. (1996) Strategic alliances and the rate of new product development: An empirical study of entrepreneurial biotechnology firms. *Journal of Business Venturing* 11: 41–55.
- Dickson, K.E., Coles, A.M. and LawtonSmith, H. (1997) Learning issues in successful, long-term, inter-firm research collabouration. Strategic Change 6: 273–282.
- Dussauge, P. and Garrette, B. (1995) Determinants of success in international strategic alliances: Evidence from the global aerospace industry. *Journal of International Business Studies* 26(3): 505–530.
- Edum-Fotwe, F.T., Egbu, C. and Gibb, G.F. (2003) Designed facilities management needs into infrastructure projects: Case from a major hospital. *Journal of Performance of constructed Facilities* 17(1): 43–50.
- Elmualim, A., Shockley, D., Valle, R., Ludlow, G. and Shah, S. (2010) Barriers and commitment of facilities management profession to the sustainability agenda. *Building and Environment* 45(1): 58–64.
- Faulkner, D. (1995) International Strategic Alliances: Co-operating to Compete. New York: McGraw-Hill
- Flores-Fillol, R. and Moner-Colonques, R. (2007) Strategic formation of airline alliances. *Journal of Transport Economics and Policy* 41(3): 427–449.
- Goh, K. and Uncles, M. (2003) The benefits of airline global alliances: An empirical assessment of the perceptions of business travelers. *Transportation Research Part A* 37(6): 479–497.
- Gudmundsson, S.V. and Lechner, C. (2006) Multilateral airline alliances: Balancing strategic constraints and opportunities. *Journal of Air Transport Management* 12(3): 153–158.
- Haeussler, C., Patzelt, H. and Zahra, S.A. (2010) Strategic alliances and product development in high technology new firms: The moderating effect of technological capabilities. *Journal of Business Venturing*, doi: 10.1016/j.jbusvent.2010.10.002.
- Harrison, J. (2008) Abandoned bodies and spaces of sacrifice: Pesticide drift activism and the contestation of neoliberal environmental politics in California. Geoforum 39(3): 1197–1214.
- James, O. (1999) Alliances spawn a web of global networks. Aviation Week and Space Technology 151(8): 52–53.
- Jiang, X., Li, Y. and Gao, S. (2008) The stability of strategic alliances: Characteristics, factors and stages. *Journal of International Management* 14(2): 173–189.
- Killing, J.P. (1988) Understanding alliances: The role of task and organizational complexity. In: F.J. Contractor and P. Lorange (eds.) Cooperative Strategies in International Business: Joint Ventures and Technology Partnerships between Firms. Lexington, MA; Toronto, ON: Lexington Books.
- Kumar, S. and Malegeant, P. (2006) Strategic alliance in a closed-loop supply chain, a case of manufacturer and eco-non-profit organization. *Technovation* 26(10): 1127–1135.
- Lerner, J. and Merges, R.P. (1998) The control of technology alliances: An empirical analysis of the biotechnology industry. The Journal of Industrial Economics 46: 125–156.
- Lerner, J., Shane, H. and Tsai, A. (2003) Do equity financing cycles matter? Evidence from biotechnology alliances. *Journal of Financial Economics* 67: 411–446.
- Lorange, P. and Roos, J. (1992) Strategic Alliances: Formation, Implementation and Evolution. Cambridge: Blackwell.
- Oum, T.H., Park, J.H. and Zhang, A. (2000) Globalisation and Strategic Alliances: The Case of the Airline Industry. Oxford: Pergamon Press.
- Park, S.H. and Russo, M.V. (1996) When competition eclipses cooperation: An event analysis of joint venture failure. *Management Science* 42(6): 875–890.
- Park, S.H. and Ungson, G.R. (1997) The effect of national culture, organizational complementarity and economic motivation on joint venture dissolution. *Academy of Management Journal* 40(2): 279–307.

- Park, S.H. and Ungson, G.R. (2001) Inter-firm rivalry and managerial complexity: A conceptual framework of alliance failure. *Organization Science* 12(1): 37–53.
- Pitt, M.R. (2001) Strategic direction in the airport business: Enabling or disabling? *Facilities* 19(3/4): 150–156.
- Podolny, J. and Page, K. (1998) Network forms of organization. *Annual Review of Sociology* 24: 57–76.
- Price, S.J. and Pitt, M. (2010) The implication of a sustainability policy for facilities management organisations. *Facilities* 29, Early release.
- Sjögren, S. and Söderberg, M. (2010) Productivity of airline carriers and its relation to deregulation, privatisation and membership in strategic alliances. *Transportation Research Part E*, doi: 10.1016/j.tre.2010.09.001.
- Tuomela, A., Heimburger, M., Nummi, J. and Toivonen, J. (2005) Interaction in a building owner centred network Case study. *Facilities* 23(9/10): 373–392.
- Vyas, N.M., Shelburn, W.L. and Rogers, D.C. (1995) An analysis of strategic alliances: Forms, functions and framework. *Journal of Business & Industrial Marketing* 10(3): 47–60.
- Wan, X., Zou, L. and Dresner, M. (2009) Assessing the price effects of airline alliances on parallel routes. *Transportation Research Part E* 45(4): 627–641.
- Weber, R.A. and Camerer, C.F. (2003) Cultural conflict and merger failure: An experimental approach. *Management Science* 49(4): 400–415.
- Zajac, E.J. and Olsen, P.O. (1993) From transaction cost to transaction value analysis: Implications for the study of interorganizational strategies. *Journal of Management Studies* 30: 131–145.