Hyung-Deok Shin[1], Maheshkumar P. Joshi[2], Andrew Inkpen[3]

LEARNING FROM REPEATED ALLIANCES AND ITS EFFECT ON PERFORMANCE: AN EMPIRICAL EXTENSION

Despite the growing interest in organizational learning and alliances various research questions remain unexplored. As an extension of the previous works by Sampson (2005) and Hoang and Rothaermel (2005), we propose that repeated alliances generate learning and subsequently improve firm performance when the number of alliances either with the same partner or with the same type of alliances increases. Our study includes 539 repeated alliances formed by 69 US biotechnology firms from 1982 to 1997. We find a consistent and strong support that repeated alliances with same partners impact the firm performance.

Keywords: *repeated alliances; alliance partners; alliance types; organizational learning.*

Хунг-Деок Шін, Махешкумар Джоші, Ендрю Інкпен

НАВЧАННЯ У АЛЬЯНСАХ, ЩО ПОВТОРЮЮТЬСЯ, ТА ЙОГО ВПЛИВ НА УСПІШНІСТЬ ФІРМИ

У статті показано, що, незважаючи на жвавий інтерес до організаційного навчання та створення альянсів фірм, багато супутніх проблем лишаються недослідженими. Попередні дослідження з питання розширено та висунуто гіпотезу, що навчання партнерів у альянсах, що повторюються, суттєво підвищує ефективність фірм – у випадках, коли альянс повторено з тими ж партнерами або коли повторюється тип альянсу. Досліджено 539 альянсів, створених 69 біотехнологічними фірмами в США з 1982 по 1997 рік. Знайдено суттєве підтвердження тому, що повторення альянсів з постійними партнерами позитивно впливають на продуктивність роботи фірм.

Ключові слова: *альянси, що повторюються; партнери в альянсі; типи альянсових структур; організаційне навчання.*

Табл. 2. Літ. 34.

Хунг-Деок Шин, Махешкумар Джоши, Эндрю Инкпен

ОБУЧЕНИЕ В ПОВТОРЯЮЩИХСЯ АЛЬЯНСАХ И ЕГО ВЛИЯНИЕ НА УСПЕШНОСТЬ ФИРМЫ

В статье показано, что несмотря на растущий интерес к организационному обучению и альянсам фирм, многие сопутствующие вопросы остаются неисследованными. Мы расширили предыдущие исследования по вопросу и сделали предположение, что обучение партнеров в повторяющихся альянсах существенно повышает эффективность фирм – в случаях, когда альянс повторяется с теми же партнерами или когда повторяется тип альянса. Исследованы 539 альянсов, созданных 69 биотехнологическими фирмами в США с 1982 по 1997 год. Найдено существенное подтверждение тому, что повторяющиеся альянсы с постоянными партнерами позитивно влияют на продуктивность работы фирм.

Ключевые слова: *повторяющиеся альянсы; партнеры в альянсе; типы альянсовых структур; организационное обучение.*

[1] Corresponding author, Hongik University, Seoul, Korea.
[2] School of Management, George Mason University, Fairfax, VA, USA.
[3] Thunderbird School of Global Management, Glendale, AZ, USA.

Introduction. Over the past several decades there has been a substantial increase in the number of strategic alliances. As an explanatory factor for the alliance growth trend, researchers have suggested that alliances provide a platform for organizational learning by giving firms access to partner knowledge and skills (Hoang and Rothaermel, 2005; Sampson, 2005). When two or more firms are brought together for an alliance because of their different skills, knowledge, and strategic complementarities, an opportunity for learning is created. Differences in partner skills and knowledge provide catalyst for learning by alliance participants.

There is a growing body of theoretical research (Inkpen, 2002; Ireland, Hitt and Vaidyanath, 2002; Parkhe, 1991; Kogut, 1988) and empirical studies (Kim and Parkhe, 2009; Squire, Cousins and Brown, 2009; Muthusamy and White, 2005; Singh and Perlmutter, 2000; Inkpen and Dinur, 1998; Kale, Mowery, Oxley, and Silverman, 1996; Hamel, 1991) that address some of the important questions associated with the conditions under which organizations exploit alliance learning opportunities. However, despite the scholarly interest in learning and alliances as well as the generally accepted notion that learning is one of many reasons to form alliances, various important research questions remain unexplored.

In the present paper we extend the arguments of Sampson (2005) and Hoang and Rothaermel (2005) and further explore the learning arguments by focusing on partner specific experience and experience in the type of alliance formed. We examine the idea that learning is increased when a focal firm uses repeated alliance partners and/or repeated alliances types (modes of alliance such as licensing or joint ventures). We argue that forming alliances with the same partners (again and again) supports learning because repeated alliances provide greater access to partner knowledge than one-time relationships. We also argue that greater learning takes place when firms deal with the same partners and the same type of alliances. After discussing the conceptual background for the study, the research methods are presented. Alliances in the biotechnology (biotech) industry are used as the source of data. The sample includes alliances formed by the US biotech firms from 1982 to 1997. The results are then discussed followed by the discussion of implications.

Conceptual Background

Repeated Partner Alliance Ties: Trust as an Additional Theoretical Lens. Researchers have argued that firms with greater alliance experience have advantages over competitors because as the alliance experience increases the firm has more opportunities to make inference about various processes and their effectiveness (Hoang and Rothaermel, 2005; Sampson, 2005). The benefit of multiple alliances with the same partners results from the use of effective governance mechanisms (Darr and Kurtzberg, 2000) or similarly existing channels to facilitate access to and knowledge transfer for a focal firm (Lavie and Rosenkopf, 2006). Additionally, alliances with familiar partners allow a firm to benefit from the prior experience of alliances as well as trust among partners to enhance the consistency that emanates from collaboration (Chung, Singh and Lee, 2000; Gulati, 1995; Li and Rowley, 2002). These arguments are consistent with the view that repetition in alliances leads to repetition based organizational improvement and organizational learning from doing (Levinthal and March, 1993).

From the transaction cost perspective, the researchers have argued that repeated alliances with the same partners reduce transaction costs and thus increase value cre-

ated (Dyer and Singh, 1998) because through such processes all the firms might be willing to invest in interfirm relation-specific assets (Hoang and Rothaermel, 2005; Saxton, 1997). This could lead to stable patterns of interfirm knowledge-sharing routines between the two alliance partners (Zollo, Reuer and Singh, 2002). In a single alliance, a firm may not have sufficient points of contact to develop a deep understanding of its partner skills. When a firm has multiple alliances with the same partner, the learning opportunity may be perceived as more valuable, which could lead to a greater willingness by the learning partner to invest in learning efforts.

Parkhe (1991) suggested that unplanned alliance termination is more likely when the firms are working together for the first time. Repeated cycles of exchange, risk taking and successful fulfillment of expectations strengthen the willingness of parties to allow learning to occur. Continuing business relationships often become overlaid with social content that generates strong expectations of trust and forbearance (Granovetter, 1985). In addition, repeated cycles of exchange increase the chance of building dedicated alliance functions that result in higher long term alliance performance (Kale, Dyer and Singh, 2002). Thus, attachment from one alliance can lead to subsequent alliances that begin their existence with the existing stock of 'relationship assets' (Fichman and Levinthal, 1991) and a higher degree of inter-partner trust (Gulati, 1995). Thus, we expect the following relationship to hold:

Hypothesis 1: The number of repeated alliances formed with the same partners is positively associated with the focal firm's performance.

Repeated Alliance Modes. The term "alliance" covers a breadth of different organizational forms, including equity joint ventures, technology licensing agreements, R&D partnerships, joint marketing and distribution arrangements, and minority equity relationships. Each of these different alliance forms will create different organizational and strategic challenges. Thus, learning effects should vary depending on a particular type of alliance form (Anand and Khanna, 2000). Anand and Khanna found evidence that the firms learn to create more value as they accumulate experience in joint venturing, whereas there was no evidence that firms learn to create value as they accumulate experience in licensing. They also found that the learning effects were stronger in R&D and production joint ventures than in marketing joint ventures.

The study by Anand and Khanna (2000) is one of the few studies focused on the type of alliance and learning. Accordingly, it is our contention that repeated alliances will provide an enhanced opportunity for learning. The rationale is as follows. Consider the case of an equity joint venture formed by two firms that follows the formation of a licensing agreement by one of the partners. A joint venture establishes a new organization, which creates the need for new managerial roles and new management processes relative to those of a licensing agreement. These new roles can be so different from those of other alliance form that the carryover of prior alliance management knowledge and its impact on the joint venture management experience is limited.

In contrast, if a company that forms a new equity joint venture already has joint venture experience, the firm should have some understanding of the joint venture management process and this prior experience should provide a base for exploiting an alliance learning opportunity. Thus, we expect that the formation of repeated alliances of the same form will enhance the probability of learning. When subsequent

alliances are created using different forms, alliance management processes will need to be different. In particular, prior relationships that are not equity joint ventures may not prepare the firms for the complexity of alliances as a mixed-motive structural form (Powell et al., 1996). Thus, we predict the following:

Hypothesis 2: The number of repeated modes of alliances is positively associated with firm performance.

Moderating effects of partners and modes. Finally, we extend the logic used to develop hypotheses 1 and 2 and suggest that a firm that is simultaneously engaged in repeated partner alliances and repeated alliance modes is likely to enhance the probability of exploiting learning opportunities. Previous literature explains various types of firm relationships interact with other variables to influence firm performance. For example, Rothaermel and Deeds (2006) showed alliance types, classified as upstream and downstream alliances, have moderating effects between number of alliances and new product development. Steensma and Corley (2000) also explained the types of organizational relationship such as acquisition and licensing moderate between technology attributes and outsourcing performance.

On the one hand, repeated modes of alliances allow a firm to develop routines and learning mechanisms for a specific alliance activity (Zollo and Winter, 2002). On the other hand, repeated partners can make learning process more effective to produce better alliance performance. Hence, we propose the following:

Hypothesis 3: The number of repeated modes of alliances formed and the number of repeated partners together are positively associated with firm performance.

Methods. Given the objectives of our research question, there were two important criteria in selecting the firms to study. Since the core argument in this paper is that learning obtained through repeated alliances improves firm performance, it was necessary to select a set of firms that had knowledge acquisition and learning as important strategic goals. To meet these two criteria we focused on a single industry in which the firms face similar levels of environmental opportunities and risks. This approach is consistent with Kogut's (1988) suggestion that some phenomena are better understood when one or a few selected industries are examined indepth. Furthermore, single industry studies have been used in prior research: Sampson (2005) focused on the telecommunication equipment industry and Hoang and Rothaermel (2005) focused on the pharmaceutical and biotechnology industries.

The data in this study came from the alliances formed by the U.S. biotech firms from 1982 to 1997. This controlled setting allows us to examine the repeated alliance ties over a period of time long enough to observe performance changes. Powell et al. (2002) found that biotech firms were dependent on external networks for creating innovations and receiving venture funds. Hence, biotech firms that invest in absorptive capacity (Cohen and Levinthal, 1990) should be better equipped to utilize the networks in which they operate. Legitimacy is the key issue for many young start-ups (Baum, Calabrese and Silverman, 2000). Young biotech firms must legitimize either their research methods or final products or both. In addition, legitimacy could lead to achievement of complementary resources. Kogut (2000) suggested that U.S.-based biotech firms were often motivated towards alliance formation so that they could gain access to marketing and distribution capabilities of the established firms. Thus, a set

of U.S. – based biotech firms provides an ideal setting to study alliance formation and repeatedness and the resultant learning in terms of firm performance.

Data. The data were obtained from the North Carolina Biotechnology Actions database, which contains information on strategic alliances created by biotech firms since 1982. The details on each alliance were examined and the name of a partner from the perspective of a focal firm was noted. Each alliance was categorized as one of the following: equity strategic alliance, non-equity strategy alliance, and licensing alliance. The first cut identified the total number of alliances over the time period (1982-1997) as 816 alliances, with 105 unique biotech firms captured during the time frame.

After eliminating the missing data points as well as single alliance firms, the final database was 69 firms with 539 total alliances. Since both Sampson (2005) and Hoang and Rothaermel (2005) found that as the number of alliances increases the performance of a firm improves, we decided to further focus on multiple alliances. All the firms used in the statistical analysis had at least two alliances and the maximum number of alliances was 35. The average number of alliances was 7.49, the mean number of partners was 3.73, and the maximum number of different partners was 19.

Repeated Partner and Alliance Mode Scores. Hoang and Rothaermel (2005) focused on partner specific alliances and operationalized the construct as the number of prior R&D alliances between the pair of firms in a focal dyad. We assert that counting just the number of alliances, while valid is relatively coarse measure that could be improved upon. Hoang and Rothaermel also argued that while firms benefit from repeated alliances, the benefit provides diminishing returns in terms of learning. They argued that this could be because of redundant information, generation of inertia, competency traps and lack of variation. Similarly, Sampson (2005) argued that there are diminishing returns to the learning benefit from a large number of prior alliances. To account for such issues we build a formula that encompasses diminishing returns in our repeated partner and repeated type scores.

A formula theoretically ranging from 0 to 1 was created to capture a score for repeated partners. 0 indicates no repeated partners and 1 indicates total repeatedness. In addition, the formula captures a score for a firm that creates repeated alliances with several partners. Thus, the scoring formula for a repeated partner score is given below where it ranges from 1 to 35.

1- {[Sum (1/number of repeated alliances with i^{th} partner)] / total number of alliances created}

The score for repeated types of alliances was calculated as:

1- {[Sum (1/number of repeated alliances within j^{th} type)] / total number of alliances created}

j ranged from 1 to 3 (non-equity alliances, equity alliances and licensing alliances).

Both measures helped to assess the repeated nature of alliance participation and allowed for capturing learning from repeated alliances while also adapting for diminishing returns form a single repeated partner.

Dependent Variable. Since the biotechnology industry is relatively new (during our timeframe) and firm survival is typically a challenge, we focus on growth measures rather than profitability or stock market returns. Growth measures over time appropri-

ately capture learning that may have taken place in a biotech firm after alliances are created. Indeed, some prior studies used sales growth measures for performance (McCann, 1991; Merz and Sauber, 1995). Sales growth measure is the most commonly used measure of entrepreneurship research (Murphy, Trailer and Hill, 1996). The measure captures increasing customer acceptance of a venture's products (Robinson, 1998). Compared to profitability measure, sales growth measure can be more appropriate especially for small biotech firms, because even potentially successful firms may not have enough profits but have sales that are growing quickly. Thornhill (2005) found that firms' stocks of knowledge are not significantly related to firm performance, measured by sales growth, but flows of knowledge are positively related to performance. Since learning through alliances may be slow and not easily observed, we used average sales growth after alliance formation in the third year. sales data were obtained from the COMPUSTAT (Research Insight) database. Thus, the performance measure considers the longer time duration required to capture aspects of organizational learning.

Control Variable. The R&D intensity was used as a control variable. All biotech firms are research oriented and R&D intensity (R&D expense divided by sales) provides a control for firm size. To normalize the size effect, the natural logarithm of R&D intensity was calculated as the control variable.

Statistical Methods. Regression analysis was used to test the hypotheses. The correlations among variables as well as the simple statistics are presented in Table 1. This table shows that none of the predictor variables used in the regression equation were highly correlated. Among 3 predictor variables – natural log of R&D intensity, repeated partner score and repeated type score – the only significant correlation was 0.321 between repeated partner score and repeated type score. Thus, multicolinearity is not a factor.

Table 1. **Simple Statistics and Correlations**

Variables	Mean	Max	Min	(1)	(2)	(3)	(4)	(5)	(6)
(1) Total number of alliances by a firm	7.49	35	2	1					
(2) Total number of partners by a firm	3.73	19	1	.933**	1				
(3) Repeated partner score	0.65	0.94	0	.212	-.024	1			
(4) Repeated type score	0.70	0.99	0	.533**	.489**	.321**	1		
(5) Natural log of R&D intensity	-0.092	4.41	-3.70	-.011	-.043	.155	.088	1	
(6) Average sales growth over 3 years after the alliance	0.21	3.01	-0.50	.089	.023	.247*	.173	-.016	1

**p < 0.01, *p < 0.05, †p < 0.10

Results. We conducted the regression analysis with the dependent variable as the average sales growth over a 3 year period subsequent to the creation of an alliance.

The full model is focused on all 69 firms (Table 2, Part A). 3 additional regressions were conducted to examine the changes in the relationship when only the firms with a higher number of alliances were retained. These additional regressions included the firms with 3 or more alliances (n = 52, Table 2, Part B), 4 or more alliances (n = 42, Table 2, Part C), and 5 or more alliances (n = 33, Table 2, Part D).

Table 2. **Hierarchical Regression Results**

Analysis with at least 2 alliances (n = 69) Part A	**Step 1 Std. Beta**	**Step 2 Std. Beta**	**Step 3 Std. Beta**
Log of R&D Intensity	-0.016	-0.60	-0.072
Repeated Partner Score		0.222 (0.04)*	-0.069
Repeated Alliance Mode Score		.107	-0.303
Repeated Partner X Repeated Mode Score			0.608 (0.05)*
R^2	0.000	0.075	0.111
ΔR^2		0.074	0.037
Adjusted R^2	-0.015	0.032	0.056
F-statistics		**2.611 (0.08)†**	**2.639 (0.10)†**
Analysis with at least 3 alliances (n = 52) Part B			
Log of R&D Intensity	0.17	0.054	0.049
Repeated Partner Score		0.272 (0.03)*	-0.799
Repeated Alliance Mode Score		0.131	-0.616
Repeated Partner X Repeated Mode Score			1.48 (0.08)†
R^2	0.011	0.12	0.15
ΔR^2		0.108	0.035
Adjusted R^2	-0.008	0.065	0.082
F-statistics		**2.949 (0.06)†**	**1.925 (0.08)†**
Analysis with at least 4 alliances (n = 42) Part C			
Log of R&D Intensity	0.128	0.081	0.069
Repeated Partner Score		0.286 (0.04)*	-0.659
Repeated Alliance Mode Score		0.134	-0.323
Repeated Partner X Repeated Mode Score			1.13
R^2	0.1	0.13	0.14
ΔR^2		0.112	0.012
Adjusted R^2	-0.008	0.060	0.048
F-statistics		**2.451 (0.10)†**	**0.533 (ns)**
Analysis with at least 5 alliances (n = 33) Part D			
Log of R&D Intensity	0.008	0.003	0.010
Repeated Partner Score		0.435 (0.001)**	0.912
Repeated Alliance Mode Score		0.051	0.333
Repeated Partner X Repeated Mode Score			-0.594
R^2	0.00	0.198	0.201
ΔR^2		0.198	0.002
Adjusted R^2	-0.031	0.116	0.088
F-statistics		**3.583 (0.04)***	**0.080 (ns)**

**p < 0.01, *p < 0.05, †p < 0.10 (one-tailed)

Based on the results reported in Table 2, part A, both H1 (direct effect of repeated partner score) and H3 (joint effect of type and partner scores) are supported. H2

is not supported. When we focus on the firms with 3 or more alliances the same results are obtained (Table 2, Part B). Interestingly, the analysis of the firms with 4 or more alliances (Table 2, Part C) shows that only the direct effect of repeated partners is significant, indicating support for H1. However, among all the different regression models the largest adjusted R2 is obtained for the firms with 5 or more alliances (Table 2, Part D) and this R2 value is about 12%. In the model with all the firms (Table 2, Part A) the adjusted R2 value is about 6%. The standardized beta for the direct effect of repeated partner score is largest for the model where alliances are 5 or more (beta = 0.435). In summary, H1 is consistently supported and there is some support for H3 when the number of alliances is 3 or more. H2, which hypothesizes a direct effect between type or mode of alliances and firm performance, was consistently not supported.

Discussions. We set out to explore the relationship between learning and alliance creation. We hypothesized that the use of the same mode of alliance and the use of the same partner repeatedly would lead to greater learning for firms that create such alliances. Further, based on the previous literature, we argued that the learning would translate into better firm performance. Through a focused study on biotech firms over the period 1982-1997 with 816 alliances across 105 biotech firms, we created a repeated partner score as well as repeated alliance type score to test our hypotheses. We find consistent and strong support for the repeated partners' hypothesis in terms of the impact on firm performance. While we find some support for the interaction hypothesis between partner score and type score, we find no support for the direct effect of repeated types of alliances on performance and, thus, no support for Hypothesis 2.

The lack of support for Hypothesis 2 is intriguing and there are several possible explanations. One explanation is that repeated types of similar alliances offer access to less diverse pools of information (Baum, Calabrese and Silverman, 2000). By forming different types of alliances, such as equity joint ventures and shared R&D relationships, firms can build a more diverse knowledge base, which is important for young startups. It is possible that for more mature firms, our original arguments about the relationship between alliance type and learning will hold true. The second explanation is tied to the nature of the biotech industry. Startup firms engaged in multiple repeated types of alliances might find themselves allied with firms that are each other's competitors. These multiple alliances could spark conflict that reduces the level of inter-firm trust and, hence, may mean that biotech firms are unable to get their partners to share critical knowledge, a key requirement for learning to take place.

The analysis indicates that creating repeated alliances with the same partners and doing so in higher numbers is a good vehicle for organizational learning, which reveals itself through improved financial performance. This result adds to the growing body of alliance learning research and provides empirical support for the argument that repeated cycles of exchange with the same partner can be a valuable competitive weapon, particularly for young startup firms. In addition, the study provides a new measurement score for repeated partners and modes of alliances that can be used in future research. Thus, the paper contributes to alliance theory as well as the empirical work related to analysis of alliance activities.

Although learning as an alliance motive is well accepted, much of the work on antecedents to learning has been conceptual in nature. In particular, there is limited

empirical evidence as to the role that previous alliance ties play in alliance learning and alliance performance. This study demonstrates that firm performance is enhanced when several alliances are repeated with one partner. The theoretical explanation for the enhanced performance is that repeated alliances with same partners leads to a willingness of a "teaching" partner to share its knowledge and help a "learning" partner, which in this study is a young biotech firm. The enhanced performance comes from the learning that takes place under the tutelage of a more senior partner.

While the research design based on a single industry has certain strengths as identified earlier, this design does limit the generalizability of the results. Further studies need to be done in other industries to create generalizable arguments. Thus, for future research we recommend researchers to focus on other industries where alliances are deemed to play a critical role for growth and survivability of firms. It should also be noted that alliance mode was categorized into 3 types in the present study. A more finely tuned measure of alliance modes, perhaps with 4 or 5 different types, might provide slightly different results compared to those obtained for Hypothesis 2. This may require breaking down equity alliances into minority equity alliances and joint ventures and non-equity alliances into types such as joint marketing alliances, production sharing relationships. For this particular study, finely tuned alliance type data was not available for equity alliances.

References:

Anand, B., Khanna, T. (2000). Do firms learn to create value? The case of alliances // Strategic Management Journal, 21, 295-315.

Baum, J., Calabrese, T., Silverman, B. (2000). Don't go it alone: Alliance network composition and startups' performance in Canadian biotechnology // Strategic Management Journal, 21, 267-294.

Chung, S., Lee, H., Singh, K. (2000). Complementarity, status similarity and social capital as drivers of alliance formation // Strategic Management Journal, 21, 1-22.

Cohen, W., Levinthal, D. (1990). Absorptive capacity: a new perspective on learning and innovation // Administrative Science Quarterly, 35, 128-152.

Darr, E.D., Kurtzberg, T.R. (2000). An investigation of partner similarity dimensions on knowledge transfer // Organizational Behavior and Human Decision Processes, 82, 28-44.

Dyer, J.H., Singh, H. (1998). The relational view: Cooperative strategy and source of interorganizational competitive advantage // Academy of Management Review, 23, 660-679.

Fichman, M., Levinthal, D.A. (1991). Honeymoons and the liability of adolescence: A new perspective on duration dependence in social and organizational relationships // Academy of Management Review, 16, 442-468.

Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness // American Journal of Sociology, 78, 481-510.

Gulati, R. (1995). Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances // The Academy of Management Journal, 38, 85-112.

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

Hoang, H., Rothaermel, F. (2005). The effect of general and partner-specific alliance experience on joint R&D project performance // Academy of Management Journal, 48, 332-345.

Inkpen, A.C., Dinur, A. (1998). Knowledge Management Processes and International Joint Ventures // Organization Science, 9, 454-468.

Inkpen, A.C. (2002). Learning, knowledge management and strategic alliances: So many studies, so many unanswered questions // In: P. Lorange, F. Contractor (Ed.) / Cooperative Strategies and Alliances, Pergamon, London, 267-289.

Ireland, R.D., Hitt, M.A., Vaidyanath, D. (2002). Alliance management as a source of competitive advantage // Journal of Management, 28, 413-446.

Kale, P., Dyer, J.H., Singh, H. (2002). Alliance capability, stock market response, and long-term alliance success: The role of the alliance function // Strategic Management Journal, 23, 747-767.

Kale, P., Singh, H., Perlmutter, H. (2000). Learning and protection of proprietary assets in strategic alliances: building relational capital // Strategic Management Journal, 21, 217-237.

Kim, J., Parkhe, A. (2009). Competing and cooperating similarity on global strategic alliances: An exploratory examination // British Journal of Management, 20, 363-376.

Kogut, B. (1988). Joint ventures: Theoretical and empirical perspectives // Strategic Management Journal, 9, 319-332.

Kogut, B. (2000). The network as knowledge: Generative rules and the emergence of structure // Strategic Management Journal, 21, 405-425.

Lavie, D., Rosenkopf, L. (2006). Balancing exploration and exploitation in alliance formation // Academy of Management Journal, 49(4), 797-818.

Levinthal, D.A., March, J.G. (1993). The myopia of learning // Strategic Management Journal,14, 95-112.

Li, S.X., Rowley, T.J. (2002). Inertia and evaluation mechanisms in interorganizational partner selection: Syndicate formation among U.S. investment banks // Academy of Management Journal, 45, 1104-1119.

Mowery, D.C., Oxley, J.E., Silverman, B.S. (1996). Strategic alliances and inter-firm knowledge transfer // Strategic Management Journal, 17, 77-92.

Muthusamy, S.K., White, M.A. (2005). Learning and knowledge transfer in strategic alliances: A social exchange view // Organization Studies, 26, 415-441.

Parkhe, A. (1991). Inter-firm diversity, organizational learning, and longevity in global strategic alliances // Journal of International Business Studies, 22, 579-602.

Powell, W.W., Koput, K.W., Smith-Doerr L. (2002). Interorganizational Collaboration and the locus of innovation: Networks of learning in biotechnology // Administrative Science Quarterly, 41, 116-145.

Powell, W.W., Koput, K.W., Smith-Doerr L. (2002). The spatial clustering of science and capital: Accounting for biotech firm-venture capital relationships // Regional Studies, 36, 291.

Rothaermel, F.T., Deeds, D.L. (2006). Alliance type, alliance experience and alliance management capability in high-technology ventures // Journal of Business Venturing, 21, 429-460.

Sampson, R.C. (2005). Experience effects and collaborative returns in R&D alliances // Strategic Management Journal, 26, 1009-1031.

Saxton, T. (1997). The effects of partner and relationship characteristics on alliance outcomes // Academy of Management Journal, 40, 443-461.

Squire, B., Cousins, P.D. Brown, S. (2009). Cooperation and knowledge transfer within buyer-supplier relationships: The moderating properties of trust, relationship duration and supplier performance // British Journal of Management, 20, 461-477.

Steensma, H.K., Corley, K.G. (2000). On the performance of technology-sourcing partnerships: The interaction between partner interdependence and technology attributes // Academy of Management Journal, 43, 1045-1067.

Zollo, M., Reuer, J.J., Singh, H. (2002). Interorganizational routines and performance in strategic alliances // Organization Science, 13, 701-713.

Zollo, M., Winter, S.G. (2002). Deliberate learning and the evolution of dynamic capabilities // Organization science, 13 May-June, 339-351.

Стаття надійшла до редакції 17.10.2011.