

Learning from Alliances

Knowledge Management or “Ignorance” Management?

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Abstract: The past two decades have seen the emergence of a variety of strategic alliances in an attempt by organizations to cope with the demands of rapidly changing and complex environments. Initially, reasons for strategic alliances have been primarily economic or strategic – risk sharing, market penetration, technology transfer or pooling resources. As the knowledge-based theory of the firm gained prominence, organizations have started realizing that knowledge is a critical resource for competitive advantage. Organizations have recently started paying more attention to processes that can enable inter-organizational learning and knowledge transfer. Research conducted so far regarding knowledge transfer between partners in strategic alliances clearly indicates that the transfer does not happen automatically and has to be managed. It also shows that managers may not be fully aware of how to facilitate knowledge transfer. The barriers to knowledge transfer are a complex mixture of issues covering organizational, social and technological factors as well as the nature of knowledge being shared. A review of the literature indicates that organizations do not seem to utilise tools created in the knowledge management field that can facilitate knowledge sharing. There is also a feeling among scholars that while organizations can develop strategies to exploit what they know, it is never possible to know everything that an organization needs and organizations should also learn how to manage their “ignorance” as well. This paper identifies some questions for knowledge management scholars and practitioners to carry out research in knowledge transfer and inter-organizational learning among strategic alliances.

Keywords: Knowledge Management, Organizational Ignorance, Incompetence and Failure, Careless Conversations, Toxic Organizations, Cost versus Capacity

Introduction

THIS PAPER REVIEWS the literature on knowledge sharing practices adopted by strategic alliances over the past fifteen years and the issues and factors that influence effective knowledge transfer. It then points out some gaps in the research on how organizations evaluate their knowledge transfer practices

The number of strategic alliances is on a rapid rise over the past two decades (Inkpen 1998) as firms are realising that the world is now moving away from a resource-based economy to a knowledge-based economy (Spender and Grant 1996; Grant 2002), and knowledge and innovation are the main source of competitive advantage (von Krogh and Grand 2002). In a rapidly changing environment, a firm is unable to generate all the knowledge it requires by itself. Alliances provide firms with an opportunity to leverage the strengths of its partners and gain external knowledge to supplement internal knowledge (Inkpen 1996).

Firms enter into strategic alliances for many reasons some of which are relevant to knowledge transfer and inter-organizational learning. Common reasons quoted in the literature are (Powell, Koput and

Smith–Doerr 1996; Fischer, Brown, Porac, Wade, DeVaughn and Kanfer 2000; Lane and Lubatkin 1998; Cimon 2004):

- Risk sharing to develop new products or to reach economies of scale
- Gaining access to each other’s resources such as expertise or technologies
- Growing beyond normal markets and even internationally
- Pooling complementary skills
- Increasing the efficiency of resources or acquiring new resources
- Meeting changes in the market structure
- Identifying, assimilating and utilizing a partner’s knowledge
- Learning and coordination in corporate crisis management
- Improving company image by partnering with a prominent alliance partner

While firms form alliances for strategic reasons they tend to assume that inter-organizational learning and knowledge transfer occurs efficiently in the alliance but there is lack of evidence that this actually takes place. While a great deal of research has been



carried out, especially in high technology industries such as biotechnology, pharmaceuticals, semiconductor industry regarding efficient knowledge transfer processes (Inkpen and Dinur 1998; Mowery, Oxley and Silverman 1996; Simonin 1999; Dodgson 1993; Lei, Slocum and Pitts 1997; Grant and Baden-Fuller 2004), there is still a lot of ignorance about the nature of knowledge and processes for acquiring and sharing knowledge.

Grant, who has written several papers about the knowledge-based view of the firm (Grant and Baden-Fuller 1995; Grant 1996; Grant 2002; Grant and Baden-Fuller 2004), points out that despite the realisation that knowledge is a source of competitive advantage, companies must also learn how to manage their ignorance as it may become impossible for firms to know everything they need to know as the amount of knowledge will increase in the world with the emphasis on knowledge management. As an example, Grant points out that a florist who wants to set up an Internet-based business need not be knowledgeable about the technologies that support such a business. He adds that companies must understand that learning is costly and it takes time, and it is impossible to know about everything that a company uses. Zack (1999:36) also says that while knowledge management helps organizations to create, share and disseminate knowledge, ignorance management helps them to recognise 'that it is never possible to know everything or even a lot of things'.

These sentiments are also echoed by Gray (2003) who says that organizations should also develop a healthy ignorance or "nescience" as otherwise they may stop innovating. Handel (2005) referring to a study conducted by Earl and Scott in 1988 state that while organizations have to deal with explicit and tacit knowledge they would also have to develop strategies to deal with planned ignorance (what they know they do not know) and innocent ignorance (what they do not know that they do not know).

Issues in Knowledge Transfer across Organizations

Spender and Grant commissioned a special winter issue of the *Strategic Management Journal* in 1996 to discuss knowledge transfer. In this issue, Spender (1996:8) states that despite realising that we are now moving towards a knowledge-based economy, 'the dilemma for management is that, for the same reason that competitors cannot replicate the firm's knowledge, so the firm itself may not understand it to exploit it more effectively'. Inkpen who has conducted studies into learning and knowledge transfer in alliances (Inkpen 1996; Inkpen 1998; Inkpen 1998a; Inkpen and Crossan 1995; Inkpen and Dinur 1998; Inkpen 2000; Inkpen 2005), states that, 'While managers usually agree that learning in their organ-

izations is a good thing, they are often baffled when asked to describe how their organization learns, acquires and manages new knowledge' (Inkpen 1998:70). He is of the opinion that this may be because organizational learning happens at a systems level while managers are more comfortable with processes that happen at an operational level. Fischer et al. (2000) point out that ambiguity about knowledge results in barriers to imitation that makes it difficult for competitors to understand which competencies result in competitive advantage.

Lane and Lubatkin (1998:463) quote Nichols-Nixon (1993:191), who investigated the response of pharmaceutical firms due to the technological discontinuity created by biotechnology, 'it is dangerous to regard strategic alliances as a panacea for staying in touch with rapidly changing technological environments. This is because the benefits associated with the use of strategic alliances are not automatic. Conscious management action is required to ensure that sourced technology can be acquired and integrated into the firm's technological capabilities'.

Grant (2002) points out some issues that can inhibit knowledge transfer among strategic alliances. Alliance partners may not reveal the explicit knowledge involved, before signing on, for fear of leakage due to which the real value of knowledge that could be gained would be unclear. It is difficult to know what tacit knowledge can be transferred as tacit knowledge is not easy to define. Alliances may lack the integration mechanisms present in individual organizations that are conducive to learning and knowledge sharing.

Grant (2002:141) suggests that 'the efficiency of integration could be maximized through separate firms integrating knowledge at the component or subsystems level, with an overall integration through an alliance among the firms'. This, he points out, is the reason why strategic alliances are a preferred form of organizations to mergers or acquisitions between dedicated biotechnology firms and large integrated pharmaceutical companies and in the semiconductor industry between designers and fabricators.

Factors Supporting or Inhibiting Knowledge Transfer

The efficiency of integration in knowledge-based organizations favours strategic alliances in the biotechnology, pharmaceutical and semiconductor industry. Strategic alliances also seem to be favourable where the knowledge requirements are broad and not product specific, and economies of scope (in knowledge) are considerable (Grant 2002:141). Therefore, these alliances can be found in the aerospace, automobile and consumer electronics.

However, Lorenzoni and Baden-Fuller (1995) report on successful alliances in the older and mature industries such as textiles. The proliferation of the Internet and e-commerce has resulted in the formation of new modes of strategic alliances to take advantage of complementary knowledge, such as the alliance between Amazon bookstore, which has adopted a pure 'click' strategy in selling books leaving the warehousing and logistics to Federal Express.

Cohen and Levinthal (1990:128), who conducted a study of research and development activities of 1,719 business units, representing 318 firms in 151 lines of business in the US, found that a firm's absorptive capacity or its ability to 'recognize the value of new, external information, assimilate it and apply it to commercial ends is dependant on its prior related knowledge'. Mowery et al. (1996) studied 800 alliances and used patent citation data to investigate the role of knowledge transfer in strategic alliances. They report that knowledge transfer is enhanced when partners possess similar technological bases, reinforcing Colin and Levinthal's argument about absorptive capacity. Lane and Lubatkin (1998), conducting research among the alliances between biotechnology firms and pharmaceutical companies, extend the absorptive capacity argument using a learning dyad construct in alliances, which they call "relative absorptive capacity". They have referred to research on absorptive capacity conducted by Pennings and Harianto (1992) in banks and by Nicholls-Nixon (1993) in the pharmaceutical industry and point out that inter-organizational learning is dependant on a firm's capacity to recognize and value external knowledge in strategic alliances.

Hamel (1991) used qualitative research methods (grounded theory and case studies) to study 11 firms with international alliances from Europe, United States and Japan in industries spanning aerospace, chemicals, semiconductors, pharmaceuticals, computers, automobiles and consumer electronics. Seventy-four individuals across the firms were interviewed, many of them functional supervisors. Concerns expressed by people interviewed include intent of partners (collaboration vs competition), transparency between the firms and receptivity (similar to the notion of absorptive capacity discussed above). Six major propositions were derived from this research: competitive collaboration, learning and bargaining power, intent, transparency, receptivity and determinants of sustainable learning.

Hamel (1991) contends that although researchers are interested in structural issues that contribute to inter-firm learning, access to both explicit and tacit knowledge is dependant on the ongoing process of collaborative exchange. A partner may use a number of micro-bargains to gain more knowledge even though they might have had a weaker bargaining

position at the macro level when the alliance was established. This goes to show that identifying knowledge transfer processes between alliance partners requires more in-depth study than by just using surveys.

Knowledge transfer is affected by the governance structure of alliances. Kogut (1988) claims that the learning propensity between firms is more effective in equity-based joint ventures than in other equity or non-equity based alliances. Strategic alliances can take several forms (Inkpen 1998; Grant and Baden-Fuller 2004) such as joint ventures (JVs); cross-equity holdings; licensing arrangements; distribution and supply agreements; research and development partnerships; outsourcing agreements; shared new product development; cross-selling arrangement; contractual agreements, like franchising, or technical exchanges/collaboration. Broadly, their governance structures can be equity alliances or non-equity alliances. Equity alliances usually involve some form of direct investment in the partner or the creation of a JV. With the evolution of e-commerce and e-business, new forms of strategic alliances are being formed between geographically separated organizations. In non-equity based arrangements it is likely that alliance partners may be highly protective about leakage of knowledge that results in loss of competitive advantage. Mowery et al. (1996) found that lower levels of knowledge transfer occur in unilateral contracts such as licensing compared to alliances where technology sharing or joint development projects were the goals.

Sharing of knowledge is dependant upon the context or nature of the industry where the alliance is formed. Appleyard (1996) investigated the patterns of knowledge sharing between the steel and semiconductor industry. She found that in a fiercely competitive industry, like the semiconductor industry, firms use both public and private mechanisms to source external knowledge in comparison with research conducted by von Hippel (1988) who found ample evidence that private, unrestricted trading of knowledge occurs in the steel industry where there is a slow pace of technological change.

Using examples of strategic alliances between international firms, Inkpen (1998) found several factors affect inter-organizational knowledge transfer. First, the alliance partner will be affected by the ambiguity about the knowledge possessed by an alliance partner. Secondly, a partner may become highly protective about knowledge leakage when there is an overlap of interests. Thirdly, tacit knowledge is more difficult to transfer than explicit knowledge. However, even explicit knowledge transfer is not easy as it may have some tacit dimension attached to it. Fourthly, a lack of absorptive capacity may result in poor transfer, which has been mentioned earlier in

this paper. Fifthly, the rate of transfer depends on the knowledge connections established between alliance partners through technology sharing, people-to-people interactions through visits and tours of facilities and the linkage between the partner's overall strategies. Sixthly, knowledge transfer is also affected by the alignment between the organizational cultures and, in the case of international JVs, national cultures of the countries where the partners are located.

In another paper, Crossan and Inkpen (1995) conclude that Japanese companies were more proactive in learning from their US partners and point out that there were three impediments to learning from their research among US and Japanese alliances: in situations where partner skills were similar managers had difficulty supporting the learning, the North American (US and Canadian) managers favour the home run (high return- low cost) over incremental learning practised by the Japanese and inability to differentiate between learning and performance outcomes.

Powell et al. (1996), who conducted research among dedicated biotechnology firms (DBF's) in human therapeutics and diagnostics by looking at data between 1990-1994, state that collaboration and inter-organizational learning is affected by lack of trust between partners, difficulties in relinquishing control, complexity of joint projects and the differential ability to learn new skills between partners. They found that in a field where rapid technological development takes place (Powell et al:142) 'the locus of innovation is found within the networks of inter-organizational relationships that sustain a fluid and evolving community'. They also found that an early choice of exploration resulted in positive feedback. While knowledge is garnered from specific projects the partnership resulted in unanticipated results not envisaged in the beginning. They conclude that 'when the sources of knowledge are disparate and the pathways of technological development are uncharted, we would expect the emergence of networks of learning'. This shows that it is difficult to predict how new knowledge would be created through inter-firm learning. The literature review showed that recently there is a lot of interest in learning practices of strategic networks as predicted by Powel et al (1996) rather than between alliances.

Gulati (1998), who has published many papers on strategic alliances in the *Strategic Management Journal*, also uses the concept of social network theory and states that the social network of prior ties can affect the trust among partners. He (1998) differentiates between relational embeddedness (strengths between actors, shared understanding, reduction of uncertainty, promotion of trust among partners) and structural embeddedness (which goes beyond direct

ties and is related to the position of actors in the overall network). He contends that the nature of embeddedness between partner organizations can affect patterns of knowledge transfer.

Dodgson (1993) studied two highly successful collaborations in the biotech industry between Celtech and the University of Kentucky's Medical Research Council and Celtech and American Cynamid and found that inter-organizational learning depended on trust between organizations characterised by a community of interest across organizations (similar to the concept of 'community of practice' in knowledge management), an organizational culture receptive to external inputs (i.e. without the "not invented here" problem) and widespread knowledge among employees of the status and purpose of the alliance. He also points out the role of technological "gatekeepers" who facilitate learning, which is similar to the use of "boundary spanners" in promoting knowledge management. He also found that project managers of joint projects become "project champions". Managers from the alliance partners took extra efforts to continuously make the outcomes of collaboration visible through site visits and seminars.

One of the barriers to knowledge transfer in strategic alliances is the fear that critical knowledge could be leaked that may result in the loss of competitive advantage. Kale, Singh and Perlmutter (2000) conducted research using surveys among 592 alliances in the pharmaceuticals, chemicals, computers, electronics and telecommunications and used 212 responses to analyse their data. They found that inter-organizational learning is enhanced through the establishment of "relational capital" based on mutual trust and respect gained through wide-ranging, continuous and intense contact. They also recommend that reducing the unexpected leakage of critical information can be prevented by an integrative conflict management (joint management of conflict with mutual concern to achieve a win-win solution) approach.

Gupta and Govindarajan (2000) investigated knowledge flows between multinational corporations and their international subsidiaries. Although their research is not conducted among strategic alliances, the findings are useful because some of the issues present between alliance partners in an international strategic alliance are the same as those between MNCs and their subsidiaries. Their research used surveys and interviews among 374 subsidiaries in 75 MNC's headquartered in the US, Europe and Japan. Their research showed strong evidence that knowledge flow between MNCs and their international subsidiaries depended on: the value of the source unit's knowledge stock, motivational disposition of the source unit, existence and richness of transmis-

sion channels and absorptive capacity of the target unit.

The review of the literature demonstrates clearly that inter-organizational learning and knowledge transfer is a very complex process and depends on a complex mixture of organizational, technological and social factors and also on the nature of knowledge. Table 1 summarises the factors that enable or inhibit knowledge transfer and inter-organizational learning among strategic alliances based on the liter-

ature reviewed for this paper. Many of the factors that impact on knowledge and learning are due to organizational and social factors. Technological factors were not found to be prominent. While organizational and social factors predominate, it was observed that much of the research conducted was based on quantitative methods of analysis using surveys and secondary data and focused on tangible results. Only some of the research was based on interviews and case studies and used grounded theory.

Table 1: Factors Affecting Knowledge Transfer and Inter-Organizational Learning Among Strategic Alliances ©

Organizational ¹	Technological	Social	Nature of knowledge
Governance structure Absorptive capacity Communication Nature of emeddedness Trust (organizational) Culture (Organizational) Control Differential ability to learn Complexity of joint projects Context (industry)	Transmission channels	Motivational disposition Relational capital Champions/ boundary spanners Connections Communities of interest/practice Trust (personal) Culture (national) Knowledge connections	Ambiguity Tacitness Breadth Non product specific Economies of scope (in knowledge)

¹ Developed from literature for this paper.

Knowledge Management and Inter-Organizational Learning

Most of the literature reviewed did not provide much evidence that knowledge management tools such as after-action reviews (Dixon 2000), storytelling (Denning 2001) or communities of practice (Wenger and Snyder 2000) have been used in helping knowledge transfer across alliances. Inkpen (1998) mentions lessons learned. Dodgson (1993) discusses communities of interest which is similar to the notion of communities of practice, and the use of technological gatekeepers which is similar to boundary spanners. He also talks about roles such as boundary spanners and knowledge.

Very little literature on knowledge transfer and inter-firm learning among strategic alliances was found among journals or books that usually publish in the area of knowledge management or organizational learning. Some points from what was found are now discussed.

Rolland and Chauvel (2000) writing in a book of readings on knowledge management, have suggested that six factors could support effective knowledge transfer in strategic alliances. Four of these factors (strategic intent, culture, trust and form) contribute to effectiveness, whereas two factors (transparency and learning capacity) contribute to strategic process outcomes. Some anecdotal evidence was included based on cases derived from the strategic manage-

ment literature, but they have not provided any empirical evidence.

An article that appeared in *Organizational Dynamics* by Levinson and Asahi (1995) investigated strategic alliances from an inter-organizational learning perspective, based on dialogues with managers of alliances, and advocates four steps to achieve inter-organizational learning:

- Becoming aware of and identifying new knowledge
- Transferring/interpreting new knowledge
- Using knowledge by adjusting behaviour to achieve intended outcomes
- Institutionalising knowledge by reflecting on what is happening and adjusting alliance behaviour

Although this paper mentions organizational factors such as culture, structure, technology and absorptive capacity, it also discusses inter-organizational learning using the ideas of Argyris and Schon (1996). The authors relate knowledge utilization (step 3 above) to first-order learning and knowledge institutionalisation (step 4 above) to second-order learning.

Roth (2003) carried out an action research project in AstraZeneca, on knowledge creation and sharing beyond project boundaries, and found that by using knowledge facilitators practical knowledge for action

is produced and shared. He used a series of meetings and seminars with team leaders and members in R&D projects followed by an interactive seminar to share experiences and create new knowledge to help in knowledge transfer.

As such, there is a paucity of literature in knowledge management and organizational learning of research conducted on inter-organizational learning and knowledge transfer in strategic alliances. Although scholars in organizational learning, such as, Argyris and Schon (1996) and Senge (1990), have been referred to in papers reviewed, their concepts do not seem to have been explored well in the studies on strategic alliances.

It was also found that most of the evaluation of strategic alliances, even when it is about learning and knowledge transfer, has mostly used tangible outcomes as a measure of success. It was difficult to find literature that discussed measures of evaluating the intangibles to gauge the success of strategic alliances even though several approaches to such measurements have been developed in the knowledge management literature (Stewart 1997).

Ignorance Management

Grant (2002: 145) states that ‘as the total stock of knowledge within society increases, so the proportion that lies within the knowledge domain of each individual must diminish. A key issue for companies, as it is for society is the *management of ignorance* [emphasis added]’. Zack (1999:1) who has written many papers about knowledge management, seems to concur with Grant’s (2002) view by stating that ‘Knowledge Management strives to locate, map, collect, share and exploit what an organization knows. *Ignorance Management*, on the other hand, recognises that it is never possible to know everything, or even a lot of things, well’.

Zack (1999) feels that a coherent framework to describe and manage organizational ignorance is needed to sort out four unique knowledge processing problems: uncertainty (not enough information), complexity (having to process more information that one could understand), ambiguity (lack of a conceptual framework to interpret information) and equivocality (having several competing frameworks).

In a recent edition of the *Harvard Business Review*, Gray (2003) says that it is time to appoint a CIO (Chief *Ignorance* Officer) instead of Chief Knowledge Officer. He states that knowledge could actually stand in our way to innovate further. He feels that organisations should also develop a healthy ignorance or “nescience”. Handel (2005:2) summarising an IBM sponsored study conducted by Earl and Scott in 1998, states that organizations have to contend with planned and innocent ignorance. According

to Earl and Scott ‘Planned ignorance is what you know you don’t know’ whereas ‘Innocent ignorance is what you don’t know that you don’t know’. Powell et al. (1996) found during their research with alliances of dedicated biotechnology firms and pharmaceutical companies that while knowledge was garnered from specific learning projects, the partnership resulted in unanticipated results not envisaged in the beginning supporting the notion that alliances sometimes may not know what they do not know.

Harvey, Novicec, Buckley and Ferris (2001), who provide a perspective on ignorance, state that specifying ignorance has become important in the current climate of rapid change due to rapid globalization and hyper-competition. They feel that organizations should also be concerned about ignorance management besides knowledge management as the boundaries between the two can become invisible, and ignoring organizational ignorance could make organizations myopic to their potential for increasing their capabilities and potential for innovation.

There seem to be two types of problems related to ignorance management. One is that ignorance can hinder knowledge management initiatives by firms when they do not know what they do not know. The second is that it is not possible for organizations to know everything that they want to know.

Forming a strategic alliance and facilitating inter-higher orders of organizational learning between partners could result in organizations exploring new knowledge instead of only exploiting each other’s knowledge. Although the notion of “exploration” and “exploitation” was found in the literature surveyed, there was little evidence of research differentiating between the two.

Secondly, when partners have complementary skills, one can use the knowledge of the other to achieve a common purpose without having to learn what they know but only understanding how that knowledge can help your own organization. The alliances between businesses and logistics organizations to achieve successful e-commerce applications are one example of such an alliance.

So there is scope for research to be conducted among strategic alliances on how they manage their ignorance.

Discussion and Conclusions

This paper reported on findings from the literature; from business and management journals covering knowledge transfer and inter-organizational learning among strategic alliances, over the past fifteen years focused on the enablers and barriers of such processes. From the review it was found that most of the research that has been conducted has been reported in the strategic management literature but very

little in the knowledge management and organizational learning literature.

It was found that effectiveness of tools devised by knowledge management or organizational learning scholars and practitioners have not been investigated in the research reviewed so far, although these are mentioned in some of the papers reviewed.

The reviewed literature primarily uses tangible outcomes to measure effectiveness of alliances, while a lot of work has been carried out by knowledge

management scholars in measuring the intangible benefits of knowledge management. It is felt that setting up measures for intangible benefits to measure the effectiveness of inter-organizational learning and knowledge transfer could shed some new light on their effectiveness.

The authors also feel that it would be useful to investigate how partners in strategic alliances could manage their ignorance in addition to their common knowledge, as managing organizational ignorance could also become increasingly important in the future.

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Professor Sankaran teaches knowledge management to MBA students and supervises doctoral students researching in the area of knowledge management. He also assists organisations implementing knowledge management as part of his research portfolio. Prior to joining academia he was a Director of Engineering at the regional headquarters of a Japanese multinational company.

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Professor Alexander Kouzmin teaches courses in Strategic Management and Critical Issues in Management and supervises PH.D/DBA candidates. He has published more than 265 research papers and book chapters. He is a founding Co-editor of Blackwell's international Journal of Contingencies and Crisis Management, published quarterly since March 1993. Since 1994, he has been listed with Who's Who in Australia and, since 2000, with The International Who's Who in Management Sciences

Dr Stewart Hase

Stewart Hase is a psychologist with an interest in work, and work and learning. He is fascinated by processes within organisations and particularly by expressions of intrapsychic phenomena and how to use psychotherapeutic methods to address them.