Marketing Information Exchange Mechanisms in Collaborative New Product Development

The Influence of Resource Balance and Competitiveness

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Interfirm collaboration for new product development (NPD) is an increasingly attractive route to reduce internal investment and gain access to skills and resources embedded in the partner firm. Yet, the process of collaboration is problematic. The effective integration of marketing information into the NPD process is seen as a critical determinant of NPD success. This article investigates mechanisms to integrate such information in the context of NPD collaboration between competing firms. It develops a conceptual framework that brings together previous research in the domains of NPD marketing information in the single firm, functional integration for NPD, and integrative mechanisms. The dynamic relationship between such constructs and the dimensions of interfirm resource balance and competitiveness are explored. The constructs derived from the framework are applied in a longitudinal study of four major Euro/Japanese cases of NPD collaboration. Conclusions drawn from these cases are reported. © 2000 Elsevier Science Inc. All rights reserved.
INTRODUCTION AND OBJECTIVES

It is well recognised that new products are the life-blood of an organisation. Yet, the complexities, expense, and risk involved in managing such new products create enormous challenges for practitioners and academics alike [1].

In particular, it has long been established [2–4] that the incorporation of a customer focus into the NPD process is a key determinant in successful new product introductions. The effective dissemination and use of marketing information is seen as critical in establishing such a customer focus [5, 6]. Yet, the actual processes and mechanisms for integrating marketing information are complex and are the focus of more recent exploration by a number of marketing academics [6–9].

Collaboration in new product development with firms from similar or competing product sectors may offer significant advantages over intrafirm NPD. In particular, interfirm collaboration can secure access to new resources (such as skills and technologies). It can lead to shared costs and risks and reduce development times [10]. Collaboration with European firms, for example, has been a popular market entry route for Japanese firms, providing access to European design, styling and local customer knowledge. Despite its appeal, research [11] indicates that interfirm collaboration at the NPD stage is infrequent. The fact remains, however, that such agreements are usually strategic, long term, and can affect the competitive structure of whole industries.

Notwithstanding the growth and strategic nature of collaborative NPD activities, suggested means to improve the NPD process and more particularly to encompass a customer dimension remain focused primarily on the tasks and quality of management within the context of the single firm.

Undoubtedly, the complexities of managing the NPD process are sharpened when it crosses organisational boundaries. The focus may drift towards managing complex interfaces and information flows. Knowledge-based and firm-specific resources cost a firm dearly, and there is an inevitable desire to exert some control as such resources are transferred to a current or potentially competing partner. Moreover, technological challenges and opportunities may become priority considerations as both firms consider fresh ideas and products. These are concrete issues that may come to the forefront by the very nature of their tangibility. There is a danger that softer more tacit based activities be ignored or pushed down the priority list. The market perspective, already difficult to incorporate into the single firm’s NPD process, may be neglected altogether in a joint NPD scenario.

Indeed, empirical research by Littler and Leverick [10] into collaborative NPD points to the danger of managerial effort being directed towards making the relationship work at the expense of a market focus. Such concern is reiterated by Piercy and Cravens [12] who claim that network organisations risk becoming myopic and obsessed with the relationship per se rather than the realities of the outside world.

This study aims to explore the role of marketing information within collaborative NPD. It investigates the type and quality of marketing information entering the joint NPD process. Second, it aims to gain insight into the types and use of processes and mechanisms to incorporate such information into the NPD process.

Such integration takes place against a context of competitiveness and interdependency between firms. The nature and effectiveness of integration mechanisms may vary and be driven by the context of the interfirm relationship. Much research has illuminated the critical role of the power relationship in shaping the success of interfirm partnerships. The power relationship is determined

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Information transfer may be messy, informal, or structured.

by the many facets of bargaining position within inter-firm agreements [13]. The interplay of resources are critically influential here. The industrial networks approach [14] identifies resources as being extricably linked to the activities of networked firms. The way firms create and use resources arising from the interfirm relationship, termed here the “balance” of resources, is dynamic and creates a powerful context within which information exchange occurs. Second, competitiveness adds a novel dimension to the concept of collaboration. Partnering firms already may compete directly in the same market or fear that information transfer may equip a previously non-competing partner with the necessary skills and knowledge to enter such markets.

The research develops a conceptual framework, presented below, which outlines the dimensions of the process of marketing integration within NPD collaboration and explores explicitly the influence of resource balance and competitive forces on this process.

CONCEPTUAL FRAMEWORK

Marketing Information for New Product Development

There is a danger of focusing too narrowly on customer driven information to develop new products. Many critics [4, 15] maintain that market research has limited use in developing innovative products, particularly in technology led industries where, it is proposed, customers are incapable of imagining truly innovative products [7]. Work on the development of a marketing orientation [16, 17] suggests a need to focus on customer and competitor information to create marketing intelligence. Day [18] recommends the need to keep a wide and flexible definition of marketing information to develop effective outside-in capabilities, such as market-sensing and customer-linking skills. The research adopts a broad definition of marketing information that encompasses customer, competitor, intermediaries, and wider environmental influences, such as technology and regulatory factors.

Information can emanate from a variety of sources. Internally such intelligence may not reside, as tradition assumes, with the marketing department and may not derive from formal market research projects [19]. Previous research [7] into technology led firms has shown that many market focus activities (such as customer interface and competitor analysis) are being carried out by engineering or technical staff. Within a network setting the marketing process and its supporting structures may differ dramatically from the conventional marketing department [12], removing the need for marketing specialists. Marketing tasks, such as marketing information collection, may be undertaken by new kinds of specialists (e.g., customer focus team).

The research identifies and investigates structural mechanisms developed to collect marketing information within a collaborative setting. A number of studies have suggested that the quality of marketing information may affect its use. Hart [6] proposes that quality information should be timely, accurate, and dynamic as changes occur. The newness and comprehensibility of the information, along with the credibility of the information source, can play a critical role in its acceptance [15, 20]. The study by Workman [7] found that information emanating from the marketing department lacked credibility with engineering due to marketers’ perceived lack of technical expertise, inability to unravel design assumptions embedded in competitors’ products and inability to conduct meaningful market research. Whilst studies of joint ventures [13] have identified the difficulties of transferring high tacit based information, there has been limited in-depth examination of the impact of the characteristics of marketing information on its use within the collaborative NPD process.

Functional Integration for New Product Development

The research draws on the body of work studying interfunctional integration. Scholars traditionally have studied functional coordination from a contingency the-
The balance of resources is fragile.

ory context, viewing the firm as an independent entity and drawing on the work of Lawrence and Lorsch [21]. Company functions are expected to operate according to the environment in which they operate. Functions must be differentiated to do this. Their major tasks are to cope with the uncertainty of their environments. Functions are, however, interdependent and it is commonly accepted that functional coordination is necessary for the firm to be effective. Each member is dependent on the performance of others to fulfil their own specialised goals and the ultimate attainment of common goals [22]. As differentiation is a requirement for success in organisations [21], conflict is inevitable and interfunctional coordination problems are well documented [8, 23]. The main coordination concern, they purport, is to manage conflict and reduce uncertainty rather than encourage its disappearance.

A number of researchers [8, 24] propose that the extent of information sharing between major functions, particularly R&D and marketing, are key measures of integration. Integration can effecuate or inhibit any organisational mechanisms in place for information sharing.

How much integration is required depends, it has been proposed, on a firm’s perceived environmental uncertainty [8]. It is where the firm faces highly uncertain environments and pursues innovative strategies (prospector category along the Miles and Snow [25] typology) that a high level of both integration between R&D and Marketing along with a high degree of differentiation is key. The development of new products requires ventures into unfamiliar territory where new knowledge (technical and market) is sought. Firms are making unfamiliar and complex decisions as they need to adapt to new markets and technological opportunities. Thus, interfunctional conflict is likely to be high, and understanding how to deal with interfunctional problems is paramount [26].

However, interfunctional integration research to date has focused primarily on the single firm operating independently in a market context. Current NPD researchers (see Jassawalla and Sashittal, [27]) are flagging the need for research that captures the processes by which managers foster new types of cross-functional linkages. Within a collaborative new product setting cross-functional interaction occurs both inside and outside the firm and interdependencies become more complex. Firms are by their very nature differentiated and yet collaborative NPD, as illuminated above, requires a significant level of integrated effort [28]. Indeed such a high degree of conflict and cooperation produces the very climate necessary for innovation. The research studies the interfunctional difficulties arising from information flows throughout internal and external networks for NPD.

**Integrative Mechanisms**

Effective integration thus plays a key role in the dissemination of marketing information. Previous research into interfirm partnerships [29] has shown that the quality of the information sharing process between firms is indeed critical to the success of the partnership.

Information can be transferred formally within the boundaries of defined mechanisms or informally. The study explores both the development of formal processes and organisational mechanisms and the informal methods that facilitate integration.

Much work has been undertaken to ascertain the most appropriate organisational structure for NPD within the single firm. Many studies forward variations of NPD models as effective means to transfer information [3, 4]. Such models define a number of stages during which decisions and actions are made. Information flows in and exits from each stage. Hart [6] proposes a multiple convergent approach to NPD where convergent points provide mechanisms for functional integration throughout the process, allowing for information sharing.

Within a collaborative setting, information sharing may become more messy, and information transfer mechanisms may evolve outside such a linear process, as described above. Research into interfirm alliances suggests that mechanisms developed to share information may be driven by the desire to control flows of resources [30, 31] or to make information flows more efficient [32, 33]. Moreover, previous research [33] indicates that the approach towards the formalisation of information sharing is intrinsically linked to the cultural business morays of the partners concerned. European firms, for example, show a desire for documented and formal processes.
whereas Japanese firms prefer verbal agreements based on word of mouth and trust.

It has been suggested that high performance firms operating in dynamic environments require effective conflict resolution processes to disseminate information effectively [34]. A high level of disagreement between collaborating firms who previously operated independently is likely. The contractualisation of such interfirm relationships makes conflict more visible than within the single firm. The study explores whether the use of structured processes for surfacing disagreements are used more effectively in collaborative settings rather than informal resolution methods.

Formal systems may not be the primary means by which to integrate marketing information in product development decisions. A case study of a computer firm’s NPD by Workman [7] identified informal personal networks as critical to help engineers “internalize” marketing information and perceive it as better quality. Similarly Maltz and Kohli [19] contend that the actual process used to disseminate marketing intelligence affects the receiver’s perception of the quality of such intelligence. Ohmae [32] and Koot [35] suggest that within interfirm collaboration the development of communicative and trusting personal relationships creates a more positive environment for information sharing than forced contractual processes. The information itself often is perceived as better quality in such an environment.

Information acquisition, dissemination, and shared interpretation are key variables in organisational learning. Slater and Narver [34] suggest that the acquisition of objective environmental information through external sources, such as joint venture partners with different perspectives from internal employees, can facilitate higher order (generative) learning. Learning within the context of collaboration may take different forms [36]. It can be a specific output for the firm to use as a tangible benefit (such as knowledge of a market) or the learning may be an output in itself. It may consist, for example, of learning how to manage cooperative linkages in general, and the information flow in particular. Such learning is usually enhanced by the experience of managing many alliances and learning from mistakes [31, 37–39]. The research draws on relevant constructs from the learning literature to understand the role of learning in aiding effective marketing information dissemination and use.

**Contextual Factors**

In viewing firms as part of a large whole, the part of the whole must be understood to analyse the conditions for how the firm and also the functions within it operate [28]. Interfirm integration issues must be addressed within the context of the evolving relationship itself.

Alliances frequently are viewed as a route to extend or upgrade a firm’s existing pool of resources [40]. The interplay of resource contribution and output is linked to power. Root [41] and Harrigan [38] suggest that clever manipulation of bargaining power is at the root of successful relationships. Research from the strategic management domain suggests that partners should be matched strategically and culturally [42, 43] and that synergistic resource input and output designed into the relationship is likely to lead to a satisfactory outcome. Yet, such complementarity or balance of resources is fragile. It can be upturned by internal and external events and shift from the original conditions. It can be influenced by, for example, the arrival of new alternative resources (partners, products, or technologies). Firms may gain familiarity and knowledge of formerly unknown markets or the criticality of resources to core strategy may shift. As it is difficult to specific ex ante partner synergy, the study takes a longitudinal perspective and explores the evolution of the relationship between balance of benefits and the process of information integration.

When competitors join together to develop new products, a new dimension is added to the context of the relationship: closeness of competition. Competition may be very close, whereby all actions to improve your competitor may adversely affect your own position. On the other hand, competition may be less close where the firms concerned are successful in differentiating themselves from
The evolution of Euro/Japanese collaborative ventures.

One another in one way or another, such as operating in different market niches or utilising different distribution systems. Direct competitors may purposefully pursue alternative markets if the benefits of the relationship outweigh the importance of maintaining existing market position. A study by Khanna, Gulati, and Nohria [44] proposes that firms’ behaviour within alliances is affected by the ratio of private (competitive) to common (cooperative) benefits. Indeed, they emphasise the dynamic nature of collaborative contexts, as reported by this author, and stress the need for collaborating firms to be flexible and adapt their organisational routines according to the competitive or cooperative stance taken. This study gives further insight into the role of competitiveness in collaboration by exploring explicitly the impact of fluctuating competitiveness on integration mechanisms.

**METHODOLOGY**

The case study research method has long been recognised in the management literature [45] as a tool to gain depth of insight and provide valuable supportive detail to capture how and why events unfold and outcomes occur. In particular, longitudinal cases are ideal vehicles to track processes that evolve and adapt over time. Multiple cases allow for more detailed understanding of these processes by exploring them in different contexts.

A small number of cases of collaborative new product development were selected to build a comprehensive understanding of the issues outlined above. The criteria adopted was as follows: the firms should operate in dynamic industry sectors where uncertainty was paramount; the firms should be large organisations that had operated together for several years to capture the complexity and dynamics of the relationship; and the firms should be international in scope to incorporate cultural differences.

The sample focused on collaborative ventures between major European and Japanese firms, namely ICL/Fujitsu in the computer sector, Rover/Honda in the automobile sector, Olivetti/Canon in photocopiers, and Olivetti/Canon in inkjet printer segments.

Multiple and extensive interviews were conducted with key informants in a variety of functions from both partners concerned. Although Japanese representatives were interviewed at the European sites, the interviews were tempered by a bias towards European personnel due to the practicalities of access. A range of functional and managerial responsibilities was represented. Archival material also was consulted.

**THE CASES STUDIES**

**ICL/Fujitsu**

The initial impetus in 1981 for the ICL and Fujitsu collaboration was funding of the next generation of mainframe. Fujitsu provided investment in mainframe core technology that was licensed to ICL whilst ICL focused on development of mainframe software and agreed to utilise its distribution capacity to sell Fujitsu’s 360 compatible mainframes in Europe, assisting Fujitsu’s strategy of market penetration in Europe. At this point, both firms competed directly in the mainframe market.

However, with time, ICL has decreased its reliance on mainframe technology and developed new hardware environments (such as Unix) whilst concentrating on building skills in software and services, frequently through collaborative arrangements with software providers. Fujitsu maintains its leading position in the mainframe area whilst developing know how in the newer domains of multimedia and telecommunication applications. Product focus has become differentiated. ICL and Fujitsu are no longer in direct competition defending their markets but are gaining greater benefits from their relationship. Complementary resources and activities became closer and closer leading ultimately to ICL’s acquisition by Fujitsu. ICL and Fujitsu have enlarged the scope of their collaboration moving along a continuum from technology transfer to new product development and joint business development. Fujitsu support was key, for example, in attaining a major British Gas contract and ICL participated in a Japanese NTT project. New products
have spawned from the differentiated resource concentration. Jointly developed products have been marketed by each other in their respective territories.

ICL and Fujitsu have utilised a number of integrative mechanisms to exchange information. At a corporate level the principle of information sharing is established through a number of structured methods. An official liaison office was set up immediately after acquisition to make information flows more efficient. Many different groups were now involved and eager to talk to their counterparts and such flows needed to be managed for greatest effectiveness. The initial technical collaboration agreement ensures technical and market information is transferred outside the boundaries of specific projects. Structured presentations spanning new product development ideas to environmental monitoring and market scenario reports take place regularly to pass on knowledge from one partner to the other. Partners can access each other’s technologies freely but must negotiate a license fee if the technology is implemented in products.

Control is low. Fujitsu gives ICL considerable autonomy and maintains an arms length relationship, allowing ICL freedom to respond flexibly to local markets. Personalities have played a key role in building Fujitsu’s trust in ICL. Thus only a limited Fujitsu representation (typically one Board member) is located in ICL’s UK Headquarters. Nonetheless, there is evidence that Fujitsu checks to ensure they are achieving learning benefits. Every three months, an ICL review is conducted and a number of projects identified as synergy product development projects are assessed as to whether they are successful or not.

A high degree of informal communication outside formal channels has been harnessed. Marketing and product development groups meet regularly and extensive use is made of e-mail, direct telephone links, and video conferencing. Such an approach has led to both tangible and soft results. Respondents feel a high level of trust, which is self-perpetuating. They also feel commitment to the collaboration, demonstrated by a willingness to invest time, effort and financial resources into joint projects outside the parameters of the contractual arrangement. The collaboration is seen as dynamic with new developments, such as joint marketing actions, spawning.

Rover/Honda

In the case of the Rover/Honda alliance, initial resource contributions and benefits seemed complementary. Honda viewed the link up with Rover as a means to acclimatise into Europe. Rover was seen as a vehicle to learn about European design and assist Honda’s penetration of the European market. Shared manufacturing also provided a critical mass for Honda’s suppliers in Europe. Rover saw the alliance as an opportunity to reduce new product investment commitments by sharing facilities and engineering resources. It looked to Honda to improve its product development skills and, in particular, reduce product cycle time.

With time, the Rover/Honda relationship demonstrated shifting status of resource synergy as the external environment dictated changed priorities. Honda’s dependence on Rover’s volume and design knowledge became less critical as its own manufacturing capacity built up in Swindon, UK, and it established its own design centre in Germany. Furthermore, Rover encountered considerable difficulties in implementing and disseminating Honda’s key processes. Honda’s NPD techniques were transferred to Rover as a package. Rover did not go through the learning curve themselves and found they were unable to incorporate such techniques in non collaborative projects. Indeed Rover tended to duplicate Honda rather than use the learning to develop know how adapted to its own style.

The direct competitiveness between the two firms (new products were based on a common engine platform)
was evident in a number of ways. It forced efforts to differentiate products through strong product branding (such as wooden fascias and doors on Rover models). It also created a reluctance and nervousness to pass on information from both sides unless within the boundaries of the project. Rover was guarded and did not disclose more, from a marketing point of view, than was necessary for the purpose of managing the projects under way. A senior executive commented that “there is an appreciation that we will only go so far. If there is any invitation to go further we would not until we had checked and got approval. But both Honda and Rover know how far to go. It is unlikely that difficult questions would be asked from either side.” This inhibited the natural development of informal communication networks and the discovery of unplanned for learning and knowledge acquisition.

Both firms became frustrated with the overall reluctance to share information. Honda, in particular, showed impatience with Rover’s ad hoc requests for information. In the later stages of the relationship (particularly during the Rover 600 project), the two firms adopted a more structured approach to information flows through the establishment of common business processes that forced the documentation of processes to drive the flow of information critical to the achievement of the project at hand. Such formal processes also served to control unwanted leakage of information. Indeed Honda maintained a tight grip on these processes by keeping the phase gate of each project shut until the principles of such processes were translated by a group of experts into a clear set of actions. The gate opening for each project was authorised by the MD of the Rover Group and the president of Honda Europe. Mere superficial efforts at cultural empathy meant communication of the more intangible elements of essential information, such as market inputs, branding features, were misunderstood. Rover, for example, was unable to convince Honda of the vital role of wood in Rover’s branding policy. Honda simply viewed wooden fascias and doors as superfluous costs. The focus of the relationship centred on devising methods to assure the flow of essential hard technical information. Low priority was attached to efforts to share the softer, more tacit domain of marketing information.

Undoubtedly the tangible end product of the Rover/Honda collaboration was a success. The Rover 200/400 series has been one of the most successful product ranges ever of the Rover Group. Moreover, by the late 1980s, Rover’s annual R&D expenditure did drop to be one of the lowest of the European auto makers, reaching one third the size of BMW and half the expenditure of Renault and Fiat [46]. However, a lack of trust and commitment led to inabilities to develop the relationship beyond its original remit. As resource synergy became increasingly disparate, the alliance was disbanded in 1994 when BMW took over the Rover Group.

**Olivetti/Canon**

Olivetti, an Italian office products manufacturer, signed an agreement in 1986 with Canon of Japan to form a joint venture company “Olivetti Canon Industries” (OCI) for the development and manufacture of photocopiers destined for sale in Europe. In 1992, an additional agreement covering inkjet printers was incorporated into the existing collaborative arrangements. Despite the same parents, the products represented contrasting market and competitive scenarios and the collaboration process was managed differently for the two products concerned.

Canon offered Olivetti both a technological and marketing partner. Olivetti could not afford to invest in copying technology yet wished to exploit an existing investment in terms of human and financial resources tied up in a manufacturing plant. Canon also offered Olivetti sales volume (80% of output from the joint venture subsequently went to Canon’s sales division) and sales and marketing know how. Photocopiers were at the periphery of Olivetti’s office product range. The company struggled technically with the product that used very different technology from the rest of the range. The sales and marketing division showed little commitment to the photocopier range. Indeed minimum investment was made in necessary product support and service and the product was sold just like a typewriter. Photocopiers require considerable maintenance yet spare copier parts were considered a costly burden by Olivetti and rarely carried. Consequently Olivetti carried a negative image for copiers in the market and failed to achieve critical mass in sales.

At the time, Canon was extending its interests towards information technology systems but was still a newcomer in this field. Olivetti offered considerable experience here. More pertinently, a medium range manufacturing facility would complete their copier product planning in Europe and assist greater market penetration. Moreover, an antidumping measure imposed by the European Commission speeded up the negotiation process.

As the relationship developed Olivetti and Canon showed increasing commitments to each other, demon-
strated in particular by the gradual transfer of product development responsibility to the Italian engineers at OCI. For the first six months of the collaboration, Canon bought Olivetti’s existing in-house designed machines that were distributed to Canon and Olivetti sales arms throughout Europe. From 1986 to 1994 machines were totally designed in Japan with minor cosmetic modifications by OCI and manufactured in Italy. Duplication was at its height. Gradually Canon entrusted greater development responsibility to the OCI engineers and in 1996 a product was launched that was based primarily on Italian technology with only a few, yet critical, Japanese parts.

Critically, the management of the relationship was influenced by a lack of close competition in the copier market. Olivetti was not perceived as a serious competitor by Canon. Olivetti had a 5% share of the European copiers market in contrast to Canon’s 26% market share. A customer survey commissioned by Olivetti revealed a poor market image for the Olivetti copier product compared with Canon’s machine—yet it was the same product manufactured by OCI! Size and market positioning provides a clear source of differentiation for the two organisations. This allowed a sense of trust and mutual respect to develop between them and influenced the approach towards communication. Olivetti was happy to allow the market leader to drive the information flows. Product specifications in terms of technical design, features and quality/reliability levels were formally dictated by Canon. Whilst Olivetti’s R&D capability was increasingly utilised at the design stage of the product development process, Olivetti’s marketing arm was rarely consulted. In one instance where Olivetti’s marketing division proposed a display on the console, the Canon non-display solution prevailed. Olivetti’s marketing knew how was not respected.

Control by Canon was accomplished via rigid targets. No flexibility was shown in terms of shifting such targets. However, there was minimum intervention in terms of day-to-day operations that were entrusted to OCI management with only one permanent Japanese manager resident in Italy. This situation suited everyone. Olivetti recognised its weaknesses in the copier area. Thus as market leader, Canon’s technical and marketing expertise was respected by both Olivetti engineers and marketers. As the weaker partner, they accepted quite a high degree of control.

In the early 1990s Olivetti started the search for a partner in the inkjet printer market. As with copiers Olivetti lacked the critical sales mass necessary to maintain investment in inkjet technology. Exploiting a historical patent, Olivetti has developed its own inkjet technology based on Hewlett Packard (HP) technology. Unlike in the copier segment, Inkjet is viewed within Olivetti as a critical and strategic technology. Olivetti’s medium term plans predict its incorporation in other leading product ranges, for example, ATMs and facsimiles.

Talks were initiated with Canon who, like HP, had a winning inkjet technology. As the product was in a high growth, technology driven segment (unlike copiers that are in a mature market with known technology) Olivetti wanted to keep any inkjet agreement outside the OCI joint venture. Olivetti’s objective was to continue developing its own printers but saw the opportunity to converge on Canon’s printhead technology (the heart of the machine) to offset investment made. Canon wanted the inkjet agreement in the joint venture. Discussions ensued for two years before an agreement was reached to use OCI to manufacture machines for Canon. The agreement foresaw a convergence of technologies but was imprecise in detail.

The inkjet agreement presented a different resource and competitive scenario from the copiers venture. The partners are bringing similar resources to the venture in terms of marketing and technology know how. Olivetti is considered a closer competitor to Canon in the European printer market. Canon is clearly larger with four times the human development resource than Olivetti. However, Olivetti is experienced and dedicated to this market and displays a better market image. Furthermore Olivetti is particularly well positioned in product streams that might use the technology, such as cash registers and ATMs.

The communication mechanisms in the product development process reflect this lack of synergy. Information flows have been severely hampered and efforts at formal processes to force communication have broken down. Whilst Olivetti’s marketing input would be credible in this product area there are no mechanisms to include such input in the product development process. Canon exercised its control from the outset at the agreement stage by forcing an extremely detailed and closed contract that forbids, for example, overseas manufacturing for OCI.

The dynamics of the collaboration have reinforced the strained relationship and engendered a high degree of conflict. Externally the market has seen large reductions in inkjet printer prices with technology dominated by the major players. Cost control and sales volumes are now seen as the ways to compete. The printhead is the core of
printer technology and where the money is made. So whilst the relationship has evolved from a simple screw-driver operation for Canon designed machines to the development of a hybrid product in 1994 with Olivetti electronic handling, Canon carefully protects and maintains its printhead technology. Olivetti is frustrated at being denied access to this technology and being forced to maintain its separate technology with low sales volumes and without the means to sustain it.

**CONCLUSIONS AND MANAGERIAL IMPLICATIONS**

The longitudinal studies suggest that complementarity of resource inputs and outputs and the state of competitiveness can influence the approach towards integrating marketing information in the collaborative new product development process. The four cases demonstrate a variety of power relationships. The findings suggest that the nature of resources contributed play an important part in determining integrative methods, not only in terms of their complementarity but also their strategic importance to the firms concerned. Competitive forces within the relationship may influence exchange methods. They may foster the need for informal networks to nurture trust to allow the relationship to develop. On the other hand competition may work against the very social networks necessary to harness trust.

In some cases, such as ICL/Fujitsu and Rover/Honda, the product under development was mainstream and core to the firm’s strategy. However, in the former case, complementary resources and activities became closer and closer leading ultimately to acquisition. The case of Rover/Honda demonstrated shifting status of resource synergy over time as the external environment dictated changed priorities and duplication became evident. These cases showed different approaches towards the integration of marketing information. ICL/Fujitsu harnessed a trusting, communicative environment with formal interfaces to encourage this. As the relationship grew between Rover and Honda emphasis was put on control and formal processes to drive the flow or otherwise of information and resolve conflict.

In other cases, the venture concerns a secondary product for one of the partners (e.g., Olivetti in copiers), having limited effect on its principle business. In this case, the major know how resources reside with the dominant Japanese partner who has ultimate control over information flows, including marketing information, despite the Italian partner owning 51% of the joint venture shares. Such control is accepted by the weaker partner in recognition of the stronger partner’s capabilities.

The final case (Olivetti/Canon in inkjet printers) is a development of the existing relationship. Although the partners remain the same, they are unable to differentiate themselves and are bringing similar resources to the venture (marketing and technology know how). Such direct competition has led to a high degree of conflict and information flows are severely hampered.

In conclusion, the article contributes to greater understanding of the complexities of managing the new product development process across organisational boundaries. The study provides particular insight into the type and use of mechanisms to incorporate marketing information within collaborative NPD. It is suggested that the dynamics of resource balance and competitiveness play a key role in influencing the use and effectiveness of such mechanisms. A longitudinal perspective indicates that resources and competitive relationships are not static. It is difficult to precisely specify ex ante partner synergy that frequently evolves throughout partner interaction. Environmental and internal factors may refresh or threaten the initial conditions of the collaboration. Paradoxically, processes to communicate and disseminate information may develop over time, showing variations at different stages of the alliance. Such behaviour may deviate from the expected norm and help or hinder resource convergence and competitive harmony in a dynamic situation. Ultimately, the very conditions of the collaboration may be influenced by the information flow process.

**REFERENCES**


7. Workman, J. P.: Marketing’s Limited Role in New Product Development


