Case study
Organisational learning and lean supply relationships: the case of Apple Ireland

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Abstract
Examines organisational learning in a lean supply arrangement between a multinational buyer and its local suppliers. Looks at how organisations learn and unlearn. Reviews buyer-seller relationships. Presents a lean supply model that combines the essence of learning and buyer-seller relationship literature. Uses as a case study, the buyer-seller relationships between the Irish subsidiary Apple Computer and two of its local suppliers. Discusses how the relationships represent co-existence of competition and co-operation.

Introduction
Over the last three decades there has been a considerable increase in the global mobility of production facilities of Japanese and US manufacturers. The internationalisation of production and the development of globally managed value-adding chains has been particularly evident in the computer industry, where a number of multinationals have invested in production facilities in regions such as Scotland and Ireland. This development poses many interesting questions as to how and why the multinational firms and their indigenous suppliers interact and acquire knowledge from each other.

This paper examines organisational learning that takes place in a lean supply arrangement between a multinational buyer and its local suppliers. The paper is divided into five main sections. First, we look at how organisations learn and unlearn. Second, we review buyer-seller relationships. Third, we present as our research model a lean supply model that combines the essence of learning and buyer-seller relationship literature. Fourth, we describe and analyse on the basis of this model a concrete real-world case: the buyer-seller relationships between the Irish subsidiary of Apple Computer, a multinational, and two of its local suppliers. Finally, we discuss how the relationship between Apple Ireland and the two suppliers represents coexistence of competition and co-operation, and propose how and why the precise balance between learning and efficiency considerations has been struck in this particular case.

How firms learn and unlearn
Most scholars agree that even a simple model of firm-level learning must include the belief that as generations of organisational members come and go, the transmission and conservation of knowledge does not cease. Within this process of “social inheritance”, knowledge-based interaction reflects the transformation of resources within firms and exchange of resources across firms (Baum and Singh, 1994).

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How individual beliefs underpin the learning organisation

One of the best illustrations of organisational learning is the "garbage-can model" (Cohen et al., 1972). This cyclical model of learning suggests that experiences are stored in the minds of individuals. Individuals interact within an organisation to produce meaningful actions. Environmental responses to the firm’s past and current actions, as well as likely future actions, are experienced by individuals, reported back to the organisation by individuals, and affect organisational action through individuals. Figure 1 shows how the garbage-can model views organisations as modifying beliefs and actions (i.e. as learning) through changes that take place in the beliefs and actions of individuals.

Scholars who have evaluated the garbage-can model know that it is equally true that organisational arrangements are responsible for fostering the learning of individual members within the organisation, who, in turn, transfer the knowledge they have learned to other individuals inside and outside the organisation (Hedberg, 1981). The organisation as a whole continuously accumulates knowledge through individuals who generate and transfer new solutions (Nonaka and Takeuchi, 1995). Whenever the organisation adapts to new situations, the adaptations are partly intentional and partly unplanned. As adaptations become history, they become institutionalised as “words of wisdom” or standard operating practices for the organisation and its individual members. This is the theory of how firms are “institutionalised learning systems” (Imai et al., 1985).

The same scholars usually agree that in practice organisational learning is more complex than the model suggests. Organisations are collections of diverse individuals each of whom have very different sets of objectives, being multiple actors playing to multiple audiences. Some individuals favour searching for new solutions, while others favour imitating the actions of others. This situation triggers many possibilities for the firm to unlearn and relearn in novel ways (Imai et al., 1985; Nonaka and Takeuchi, 1995). It results in the firm facing conflicting political, social and competitive demands (Levinthal, 1994).

How original visions degenerate: “the curse of specialisation”

In the early stages of most firms’ development, entrepreneurs typically have creative “master programmes” or visions of what new solutions their firms are going to pursue. These master programmes are mental maps of how these managers feel and think. Such a master programme frequently dominates the firm’s processes and is shared collectively in a way that it successfully governs all behaviour within the firm (Argyris, 1991).

With the passing of time, shortcomings of the master programme nonetheless appear. As these are remedied, individuals other than the initial entrepreneur usually become increasingly responsible for managing the firm. In addition, new managers are also hired from outside. These managers, who have reached their positions by being highly successful in earlier employment or management positions, begin to dominate the entrepreneur’s master programme. As individuals who have a history of rarely failing, they have not learned to learn from failure. They tend to apply previously-acquired knowledge in the new positions in which they are placed, copying what they have done earlier (Argyris, 1991).

The dominance of the managers who have reached their positions through success forms a collective theory of action that slowly and silently replaces the original master programme. This theory of action may differ from what they and other individuals in the organisation feel and think they ought to do, but collective manipulation of success within the firm tends to maximise perceptions of “winning” by amplifying positive feelings and minimise “losing” by suppressing negative feelings (Argyris, 1991). The concern of managers and other organisational members to emphasise their legitimacy makes the firm as a whole react defensively in a single completely closed loop, into which no external stimuli enter. There is an illusion of control whereby each individual focuses on what are considered to be errors in the firm’s
environment, instead of correcting mistakes in the firm’s actions (Hedberg, 1981).

Most individuals seek to “weather out the storm” (Levinthal, 1994) by relying only on solutions that are readily available in-house. They work towards developing long-term relationships with institutional interest groups such as banks, suppliers, distributors and government (Levinthal, 1994). It seems the easiest thing to do is to link the firm with political and social institutions that buffer the competitive effect of a lack of innovation and learning. In both the instances of over-reliance, on in-house solutions and on the firm’s social-political “extended network” (Epstein, 1969; Håkansson, 1987), nominal survival of the organisation rules over creativity, since such institutionalisation is more comfortable in the short term, kills time, and postpones difficult and unpleasant decisions. In this way, creative individuals who have the ability to learn become less influential within the firm than when it was first established. Reality will catch up with escapism only in the long term, by which time it is often too late to avoid even further decline.

How a two-party system in principle, but not in practice, maintains favourable momentum

In principle there are, even in the organisation that has existed for a substantial length of time, at least a few entrepreneurial and creative individuals who experiment, break existing norms and values, and challenge master programmes within the organisation (Hedberg, 1981). These individuals possess multidimensional stimulus-response mental maps that include many sophisticated alternatives that are not known within the organisation as a whole. They search for, find and select responses to fit problems that others have not recognised, engaging in what is called “double-loop learning” (Argyris, 1991). Such learning opens up radically new ways to assemble the firm’s responses to its environment on the one hand, by outdating old knowledge, and on the other hand, by freeing capacity to learn new knowledge. Once double-loop learning is stimulated it continues as long as the information-processing capacity within the organisation is not overloaded in ways that shift beliefs towards a theory of action within the line of the curse of specialisation. When things proceed optimally, double-loop learning takes place frequently, is richly rewarded, and moves the firm to even higher levels of integrative complexity.

However, the act of persuading individuals and the organisation as a whole to learn is not an easy one. Hedberg (1981) notes that it is typically only either outside or in peripheral parts of organisations that creative individuals can be found. Hedberg suggests that organisations of the future ought to be governed by a two-party system whereby one group tries to formulate a convincing alternative strategy while the other manages the existing one; if the opposition group at “election time” convinces the others that the alternative strategy is better than that of the ruling group, the two management groups exchange positions. Suitable creative individuals are always in place for resetting double-loop learning that is needed. There is an “élite of professional revolutionaries” (Selznick, 1957) that protects the long-term needs and pressures of the firm’s environment against the short-term needs and pressures of the firm.

How a buyer-seller relationship maintains the favourable momentum

Traditionally, it was believed that, for most firms, there were two basic ways in which to engage in a two-party system. Such a belief is based on Williamsonian transaction theory (see Williamson, 1985) and implies that the market mechanism means that a firm must always be an “exploiter” or be “exploited”. The former category of firms was believed to succeed, while the latter category was believed to ultimately fail and be replaced by more efficient firms if they did not find others to exploit and replenish their resources. One party’s loss was always the other’s gain.

However, in practice only a few companies are sufficiently vertically integrated to “go-it-alone” and operate across the whole spectrum of technologies required in modern product markets (Quintas et al., 1997). A number of empirical studies have concluded that dyadic relationships are not always a win-lose phenomenon (Sako, 1992). A relationship between two parties can provide a cross-organisational architecture as “lean” as in the case of within one firm, but at less cost (Womack et al., 1990). Interaction and co-operation between buyer and seller do not mean that their co-operation could not be lean.
Recent studies, grounded in practice and disciplines such as channel and operations management (Bessant et al., 1994), relationship marketing (Evans and Laskin, 1994), competitive advantage (Porter, 1990) and social exchange (Cook and Emerson, 1984) conclude that the benefits that accrue from “partnership” buyer-supplier arrangements include a combination of the benefits of competition and co-operation, as well as efficient capacity planning, sharing of technology acquisition, scale economies, co-opting or blocking competition, profitable positioning within the value chain, and risk reduction (Lamming, 1993). Buyers and sellers who omit consideration of mutual co-operation waste energy in trying to outsmart each other when many goals could be converged.

There are several interrelated reasons that underpin why co-operative buyer-seller relationships are strategically more valid and timely than ever before in today’s industrial marketplace (Håkansson, 1987). First, industrial manufacturing and marketing systems are less simple than they were in earlier times. The product frequently moves along quite complex chains of production. Global competitive advantage is based on “clusters” (Porter, 1990). Effective buyer-seller relationships are not purely co-operative or purely competitive, but rather a combination of the two dimensions. Second, customers often have specific requirements that are highly dependent on the commitment of a specific supplier. The objectives of the buyer and the seller can thus converge, with their “lean supply” (Womack et al., 1990) relationship lasting several decades.

Third, modern technical exchange simply tends to be two-way. Buyers and sellers that engage in interaction frequently can learn from each other as much as, if not more than they ever could by keeping all of their actions internal. Finally, an interactive relationship enhances each organisation spanning its boundaries to “learn to learn more” (Cohen and Levinthal, 1990). The organisation also increases its capacity to learn from its interaction with other firms and other organisations (e.g. research and regulatory institutions), and with the larger industrial and marketing networks in which it participates.

Buyer-seller relationships can result in increasing returns to interaction, so that a buyer and seller effectively become locked into each other (Lamming, 1993; Womack et al., 1990). With such goal convergence it becomes a worthwhile exercise to enter into buyer-seller relationships. Good relationships include consideration of not only the two interacting parties, but also the elements of the interaction environment, the atmosphere of the relationship, the interaction process and the content of the interaction (Ford, 1980).

**How there are two basic strategies to entering buyer-seller relationships**

There are two basic types of strategy by which buyers and sellers enter into buyer-seller relationships (Håkansson, 1987). In both strategies, initially there will very often be one “strong tie” (Granovetter, 1973) or relationship, subsequently followed by others. Also, both strategies are directed towards the same end result: steady and comfortable positions that, besides being workable, also build goodwill between the parties. Conversely, the two basic strategies represent a different pattern of co-operation in the long run.

In what can be labelled the “periphery” strategy, the buyer or supplier enters a larger industrial manufacturing and marketing system (i.e. industry) which it seeks to join from the “outside-in”; that is, the firm enters the system at its peripheral fringes and works itself towards the core, gradually enlarging its sphere of influence over the industry. In this strategy, the firm makes market investments principally on the basis of positive financial feedback. Cumulatively, the firm develops many “weak ties” (Granovetter, 1973). Innovative behaviour is of a step-wise nature, successively exposing the firm to an increasing number of other industry players. Over time, the fittest of the weak ties become “strong ties”. The problem with this strategy is its slow place. At first, there will typically be only one strong tie. However, if the strategy has been adopted, the firm has other relationships in which it has participated with the same potential level of relationship intensity.

In what can be called a “core” strategy, the buyer or seller enters the industrial manufacturing and marketing system at its very core. Initially, the firm proactively forces itself to the centre of a system by engaging in a buyer-seller relationship with a counterpart that has strong ties with the rest of the system (a focal relationship), and then works itself “inside-out” towards the edges. This strategy usually requires large up-front investments. If the focal relationship is subsequently dissolved...
the entire (often costly) investment is lost, especially if there has not been time to create new relationships. The advantage of this strategy is that benefits appear immediately. The relationship has the effect of making the firm part of a larger network. Firm size is indirectly increased and it can take larger risks than it could alone. Finally, moving from the core to the periphery is faster than vice versa.

The research model: how lean supply provides optimal balance

The foregoing review of the relevant literature indicates that the implication of firms’ learning and unlearning is that organisations that become internally overly homogeneous run the risk of decline. A two-party system is a possible remedy to such a possibility. Successful, modern, industrial innovation occurs less and less within only one party and more and more within intimate interplay between several. Buyer-seller relationships provide stretch and leverage to buyers and suppliers to internationalise using less resources.

Synthesising the contributions of the relevant literature provides a strong theoretical grounding for our research model. We concluded from the literature that relationships that omit renewal can result in a loss of momentum within the relationship, just as can happen within one firm that over relies on in-house solutions or an extended network. A buyer-seller relationship cannot omit consideration of competition from firms outside the relationship. Competitiveness is a prerequisite for cooperation.

In our model we adapt Lamming’s (1993) eight levels of lean supply, which represent a clear evolutionary path, wherein each level is a prerequisite for the next, and the next stage towards lean supply is never too far away:

1. Continuous competitive pressure on the supplier. High levels of market pressure drive the supplier independently from the buyer’s explicit expectations.

2. Continuous competition for buyer’s orders. The supplier continuously competes for orders from its “key customer” or key buyer. In ways that are part self-imposed, part buyer-imposed, it maintains readiness to provide service when and where the buyer desires.

3. Joint planning of capacity and delivery. The buyer and seller jointly plan capacity.

4. Joint decisions towards cost savings. The buyer eliminates traditional competitive bidding and instead challenges supplier to reduce costs continually. Buyer and seller openly and honestly discuss each other’s cost structures and processes.

5. Mutually negotiated price changes. With the cost optimisation in place, price changes on the final market can also be co-ordinated. Both buyer and seller benefit.

6. A mutually constructive attitude to quality. The goal is that the notion of partners constantly vetting one another eventually becomes redundant. Advancement towards this goal becomes an objective according to mutually agreed criteria.

7. Reciprocal information exchange. Supplier and buyer work in confidence to gain joint competitive strength, reciprocally sharing knowledge about management abilities, market potentials and the general business environment. Interdependence spans input, process and output, as well as potentials and consequences of changes.

8. Joint research and development. There is joint research and development (R&D). Buyer and supplier direct their R&D to serve also the purposes of the other secure in trust and experience that the other will not exploit it unfairly.

Figure 2 synthesises our reviews of organisational learning and buyer-seller relationships into a research model of lean supply that proposes how a buyer-seller relationship optimally works from the perspective of learning.

The research method

To develop our research model, we use as our “unit of study” (see Yin, 1994) the relationship between buyer and seller. Our research focus is on how and why the relationship between a multinational computer producer and its local suppliers has developed. We have chosen Apple Ireland as the case buyer because of its reputation in Ireland for, and high profile in, developing a local supply base.
We focus on one buyer-seller relationship in one component group (data input devices or keyboards). Data are based on recent (1994-95) data from 15 in-depth semi-structured interviews within Apple Ireland and two local suppliers, collected over a three-month period. Each interviewee had been pre-briefed regarding research objectives. Interviewees/informants are senior management executives responsible for operations, procurement, logistics, quality and technical support.

The case study: Apple Ireland and its local suppliers

Apple Computer, established in 1977, is generally credited as being one of the first companies to seriously advance the concept of the personal computer (PC). From the outset, it targeted all types of customers including large and small industrial companies, educational institutions and the individual consumer. The company has four manufacturing plants: one in Singapore, another in Ireland and two in North America.

Apple Computer’s global procurement function (including the Irish operation) is organised on a “product team” or product basis. The product teams are responsible for the procurement of components and raw materials and possess both business and technical skills. These teams, comprising individuals from functions such as procurement, engineering and design, are responsible for the selection and evaluation of components and materials. Performance is measured against a series of business metrics which measure the ability to maintain minimum inventory levels and the ability to decrease incoming defects.

Globally, Apple Computer constantly seeks cost-cutting measures, but only to the point where quality is not sacrificed. It has not been particularly difficult to improve supplier practices. Of course, some suppliers find it difficult to cope with demands, but often with 70-80 per cent of business taken up with orders from Apple Computer, suppliers do not wish to lose the contract. Apple’s buyers and engineers have full access to their suppliers’ operations and know the standards of each facility and almost all suppliers have managed to reduce costs over time. Apple Computer is conscious of the power-dependence nature of relationships, and while it is prepared to change suppliers if the situation demands, it will generally prefer to maintain and develop such relationships.

All suppliers are expected to produce components and sub-assemblies up to standard. Technical assistance is offered to suppliers, if required, but the onus is entirely on the supplier to provide quality goods. Apple Computer does not operate incoming materials inspection. Apple specifies lot sizes and delivery dates, but the supplier is expected to accommodate special requirements, and has, on request, full access to Apple Computer’s production schedules. New suppliers are inspected fully for a short period, usually a number of weeks, until confidence is gained with respect to quality. Some suppliers have requested greater input into Apple Computer’s operations, which has been granted by occasionally locating supplier personnel within the Apple Computer plant.

Apple Ireland’s production and warehousing facility at Cork

Apple Computer’s production facility in Ireland, located at Cork, produces and assembles modular, desktop and portable computer systems in more than 500 different product configurations. The facility serves the whole of the European market, is the service and repair centre for all products sold in Europe, as well as delivering, servicing and repairing the small number of products that are distributed from Apple Ireland to regions and markets outside Europe.

The production facility was set up in 1980 as a final assembly and test centre for central processing units (CPUs). By keeping a stock of basic products and only customising them
at the last moment in the production process, Apple Ireland is able to offer wide product variety without having wide variety on its manufacturing processes. Components and products in Cork are stored in a locally developed warehousing system, based on a computer-controlled carousel storage and retrieval system. Although building up stocks appears to flout JIT theory, what Apple Ireland has done is to transfer the weight of stock from distribution centres across Europe back to the production facility in order to increase the ability of these centres to respond to varying demand across different countries (including more than 30 different languages).

Keyboards, software, documentation and accessories are components that are customised for each market and added only when the product comes off the carousel to meet an order from a specific country. Such peripherals as geographically localised keyboards for various countries are subcontracted to local companies in Ireland because of capacity constraints of the production facility.

Cork as a “vendor hub” in Apple’s warehousing system

The Cork production facility is the “vendor hub” (supplier hub) for roughly 250 suppliers. No components or materials are single-sourced but Apple Ireland has considerably reduced its number of suppliers over the last five years. There are no immediate plans to further reduce the supply base. As things stand, Irish-based suppliers account for 60 per cent of its total purchases. Since 1980, 70-80 per cent of this 60 per cent, in turn, have been indigenous Irish companies. These suppliers are encouraged to broaden their customer base to reduce their dependence on Apple. Greater volumes lead both to lower costs and reinvestment in new production technologies. Apple indirectly employs up to 2,000 people in Irish-based firms and contributes £110 million (1995) to the revenues of local suppliers.

Apple Ireland’s foreign suppliers are based outside of Ireland and are primarily located in the USA and the Pacific Rim. Apple Ireland has full autonomy over its fully local supply base but plays a less influential role in decisions concerning suppliers who also serve Apple Computers’ production facilities in Singapore and the USA. However, Apple Ireland also manages this international supply base to some degree with its vendor hub approach: third party Irish shipping companies store and manage the components from foreign suppliers. The shipping companies and the local and international suppliers jointly assume total responsibility for operating the hub on behalf of Apple Ireland. The benefits to Apple Ireland from this arrangement, which effectively performs in a similar manner to its fully local supply base, include inventory savings worth £12 million.

The Cork production facility places its orders daily, with JIT deliveries arriving direct to the factory floor, in most cases the next day. Suppliers include such companies as IBM and Sony. The components that are bought range from volume goods to high-value goods such as hard drives and data input devices (i.e. keyboards). Of these components, keyboards are different from other components bought at Cork. The team in charge of buying keyboards at Cork co-operates with the three other Apple Computer production facilities (one in Singapore, two in the USA). Twelve team members around the world each purchase the keyboards for their particular plant. However, purchases of keyboards for the other Apple Computer production facilities are co-ordinated from Cork, who are also responsible for the negotiation and finalisation of contracts.

Lean supply of keyboards to and from Cork

Use of local Irish suppliers of keyboards, is convenient from the perspective of the co-ordinators situated in Cork. Delivery and communication are efficient and effective. At the same time, Apple Ireland has to balance its decision to select and maintain a local supplier with company policies and emerging business developments. For example, a local supplier in Ireland may currently exhibit efficient production and acceptable product quality. Yet the supplier may lack technological know-how or ability to cope with future worldwide developments at Apple Computer. If Apple selected such a supplier, this shortcoming would have a potentially significant downside in the future.

Currently Apple Ireland has two keyboard suppliers. Both are subsidiaries of multinational companies and both multinational parents established their subsidiaries in order to supply Apple Computer’s production facility in Ireland. We have labelled the two subsidiaries supplying Apple Ireland as
“supplier A” and “supplier B”. Both supplier A and supplier B manufacture and supply a similar range of data input devices and deliver on a similar daily just-in-time basis. Initially, both supplied Apple Ireland to an extent where sales to Apple Ireland were 80 per cent of their total sales in monetary terms. The monetary worth of sales to Apple Ireland have since dropped to 30 per cent. Unit volume has since increased. In other words, prices have come down.

Supplier A’s multinational parent took the initiative to establish in Ireland in tandem with Apple Computer’s announcement that it was looking for a European supplier of input devices. For the first two years of operations, supplier A had a written contract with Apple Ireland, which was its only customer. There is no indication of supplier-invoked developments in this relationship. Most changes introduced into the relationship have tended to emanate from Apple Ireland, with little interaction between the parties. It was on the suggestion of Apple Ireland that supplier A broadened its customer base and now supplies a number of other electronics manufacturers.

Supplier B’s multinational parent company has supplied Apple globally already since 1983, longer than has the parent of supplier A. Supplier B’s parent initially won its contract and set up the subsidiary because of these well-established global links. The parent companies have a global written contract covering all buyer-seller relationships, which is the template for project-by-project contract. In addition, there is a local contract template between Apple Ireland and supplier B:

1. Continuous pressure on suppliers A and B. The two local suppliers are subsidiaries of global multinational companies, who have gone to great self-imposed lengths to retain Apple Computer as a customer. That is, they have followed Apple Computer to Ireland. This pressure, the suppliers felt, was primarily buyer-imposed.

2. Continuous competition for Apple’s orders. Both suppliers agree that Apple Ireland would, in principle, have no hesitation in changing suppliers – and thereby inviting new entrants – if, after repeated effort, the existing supply base was not willing to cooperate. Both suppliers respect this right: the future of the computer industry is inherently uncertain because of technological progress and intense global competition; the potential entrance of new players cannot be overlooked. This given, both suppliers confirmed that working relationships with Apple worldwide are well-established, long-term and healthy. Apple’s decision to select its present suppliers of input devices has been pleasantly informal and has become an ongoing relationship.

3. Joint planning of capacity and delivery. Both suppliers agree with Apple Ireland that co-operation in capacity and delivery planning strengthens buyer-supplier relationships. The three companies co-ordinate their actions and converge their interests to achieve buyer-seller balance. For example, Apple Ireland is aware of the capacity levels and information constraints of both suppliers. It understands what can be expected from them in terms of JIT delivery. Final deadlines are established on this basis. Because of such realism, both suppliers are committed to Apple Ireland’s JIT schedules. The arrangement works well and delivery performances are excellent.

4. Joint decisions towards cost savings. At Apple Ireland, price, quality and delivery (in rank order), are the most important criteria in purchasing components. The extent of a supplier’s ability to become fully involved in Apple Ireland’s operations receives less attention. There is very little sharing of costs between Apple and suppliers. One of the suppliers has an explicit policy not to share materials costs with customers while the other revealed that Apple Ireland has never requested a cost breakdown from the company.

5. Mutually negotiated price changes. Price changes invoked by Apple Ireland on suppliers are quite rare and relate mostly to currency fluctuations. Suppliers argue that a lower price for supplied keyboards for any other reason would require very convincing evidence before acceptance. Apple Ireland and its suppliers have not made a substantial effort in establishing joint responsibility to find ways to counteract the need for price reductions. To date, no major price increase has been imposed by either supplier, while suppliers internally attempt to suppress any need for price decreases.

6. A mutually constructive attitude to relationship quality. Apple Computer has no
formal worldwide evaluation procedures. This is more a matter of circumstance than a deliberate decision – the last major evaluation procedure adopted by Apple Computer’s worldwide global procurement operations failed to achieve consistency among all four facilities and was abandoned. However, at Apple Ireland, quarterly reviews of suppliers’ operations have become institutionalised. Although this procedure is not very thorough, it provides the suppliers with motivation to keep up certain performance standards and to satisfy Apple Ireland’s requirements. At an operational level, the standard is consistently maintained, defect levels are low and returns are rare.

(7) Reciprocal information exchange. At the time of the study, there does not appear to be a conscious effort on the part of supplier A, supplier B or Apple Ireland to become involved in each other’s affairs beyond the scope of the production process. Once production runs smoothly and quality is acceptable, suppliers are free to operate as they wish. No formal procedures exist for Apple Ireland to develop an understanding of the suppliers’ position. Equally, neither supplier is aware of the extent to which Apple Ireland is familiar with their operations. Improvements in this respect would probably be relatively easy to achieve, given the extent to which good communication channels are already used between Apple and suppliers. For example, e-mail, face-to-face and telephone contact provide ample opportunity to transfer information in a two-way process while a greater use of EDI could increase both confidence and trust. At present, however, parties do not take advantage of possibilities to discuss issues other than operational and technical details. The only exception is that suppliers are made aware of consumer preferences through the customer-user groups employed by Apple Ireland. This information is channelled by Apple Ireland from the user groups to its suppliers. This would seem to imply that transfer of information is not a critical element in improving efficiency throughout the length of this chain.

However, there are substantial differences in how the two suppliers view Apple Ireland as a buyer. Globally, supplier A’s multinational parent company competes on the basis of price, quality and technology. Its Irish subsidiary has competed primarily on the basis of price alone. Supplier A is aware of its “junior partner” position in its relationship, and desires a more equal relationship, even if Apple Ireland considers that it has a healthy and sufficiently well-established long-term relationship with supplier A.

Supplier B’s parent company competes globally on the basis of flexibility, quality and cost efficiency, and these are also the strengths of its parent. Supplier B is very proactive in developing its relationship with Apple by taking over some of the operational activities such as repairs and has a “rolling agenda” to report progress. While operational criteria are of primary importance in Cork, Apple Ireland greatly values the contributions made by a proactive supplier like supplier B. Nonetheless, supplier B has made significant sacrifices and incurred burdens in terms of the time and effort required by its dynamic approach to managing its relationship with Apple globally and in Ireland.

(8) Joint R&D. Supplier A does not undertake joint R&D with Apple Ireland, whereas supplier B does. The involvement of supplier B in Apple Ireland’s and thus Apple Computer’s worldwide operations is a testament that this supplier is proactive in terms of its relationship with Apple. It produces not only what is ordered, but also actively markets. Thus, supplier B participates actively in the operations of the Cork Service and Repair Centre. As one form of compensation, it receives information about customer preferences about keyboards not only indirectly through Apple Ireland but also directly from end-customers. This kind of active stand of supplier B is interesting since technical assistance ranks only eighth in Apple Ireland’s list of formal criteria. Supplier B personnel feel that Apple Ireland is fully conversant with all of supplier B’s processes. In contrast, supplier A takes everything as a “given” and fulfils a purely manufacturing role. At supplier A, personnel slavishly focus on operational issues, “business as usual” is the adopted approach, and there are some signals that personnel perceive the
relationship with Apple Ireland as in need of being set on a more equal footing.

**Conclusions: lean supply and learning**

This research set out to evaluate the impact of organisational learning in buyer-seller relationships. On the basis of literature, we have identified an evolutionary path of increasing commitment to a buyer-seller relationship that can provide increase returns.

When we compared the case to this evolutionary path, what is interesting in the case of Apple Ireland and suppliers A and B is that neither suppliers have yet reached the stage where they self-impose responsibility for developing relationships, even though they do feel continuous pressure from Apple Ireland. In our view, this might equally be a show of weakness in the management skills of the managers of suppliers A and B as it could be a typical Irish way of attributing the source of problems to the other party. This latter interpretation is supported by the fact that the Irish managers at Apple Ireland have kept the relationship pleasantly informal with the Irish managers of suppliers A and B, which is a typical national characteristic. This idea that local culture rules over universals in lean supply would at first seem to qualify an earlier infamous finding by Womack et al. (1990).

However, our research model would seem to suggest that such Irish informality may explain why neither supplier has been able to move beyond joint capacity and delivery planning into sharing information about cost structures and processes with Apple Ireland. In a relationship between a strong multinational buyer and relatively weak local sellers it is only natural that buyer-seller relationships are unbalanced. The validity of this idea is supported by the fact that the few elementary formal mechanisms that do exist in information exchange receive ample support from the suppliers. Lack of cost-transparency in the relationships keep parties from developing familiarity with each other’s processes, so that they could move on to higher levels of lean supply. Rather than requiring suppliers to reveal costs across the board, Apple Ireland could request directly-relevant data and justify any requests while also being prepared to share data and costs regarding its procedures. Such sharing of data would help both companies in the relationship to face the tough market requirements with maximum strength, and pave the way for future relationship developments. Our research model suggests that once attitudinal change towards this direction is made, meaningful progress may be made.

A second issue that is interesting in the case is that supplier B has taken a more active stance to develop joint R&D with Apple Ireland and with Apple Computer worldwide than has the rather passive supplier A, who has remained a competitor on the basis of price and dependability. Revisiting our literature review, we can identify that supplier A, the early entrant into a relationship with Apple Ireland, follows a periphery strategy, whereas supplier B, the relatively later entrant, follows a core strategy. Supplier A is disconnected from developments that take place at the core of the computer industry and remains a low-cost producer, whereas supplier B maintains intimate links to the core through its multinational parent, Apple Computer and Apple Ireland. Things add up when we remind the reader that supplier B’s parent is more at the core of Apple Computer’s global supply network to start with than is supplier A’s parent. In other words, Ireland represents movement from the core to the periphery for supplier B’s parent, and movement from the periphery to the core for supplier A’s.

We conclude that high levels of performance with respect to the basic requirements for a healthy relationship at the lower stages of the evolution, such as competitive quality and price, requisite capacity to produce and deliver, and pressure from the buyer, do not ensure that relationships will move towards higher stages. In principle, of course, it would be attractive if a firm would increasingly participate in the industry’s system of production and marketing, while maintaining competitiveness. However, this necessitates there be mobilisation of the other actor and intensifying effectiveness of innovation. These demands are validly met only by supplier B, and even so in a limited form. Thus, even if in principle something can be said to be desirable, it does not mean that in practice it would be simple or straightforward. Our model works both ways: the same forces that intensify a buyer-seller relationship can also break it (Figure 3).

A final aspect that is interesting is that supplier B’s R&D facility is consistent with its multinational parent’s global strategy,
whereas supplier A follows a different path from its parent. Supplier B develops new local technologies to meet challenging global demands external to the two-way relationship in Ireland. These technologies come from its multinational parent, and from the relationship this, in turn, enjoys with Apple Computer. Learning between supplier B and Apple Ireland can thus seamlessly be institutionalised globally. Finally, supplier B’s direct relationship with Apple Ireland and the indirect ones with Apple Computer have developed from an initial emphasis on the exchange of explicit legal contracts and technical specifications into a higher-level emphasis on the exchange of tacit knowledge between individuals and organisations (see Quintas et al., 1997).

Findings from our study synthesise the broad literature that spans lean supply and learning theory to recognise that new knowledge acquisition is an important objective in a business-to-business relationship. We see that success in short-term market exchange between buyers and sellers in itself is not the overriding objective of success. In the long term, success is measured in terms of knowledge exchange. Success in market exchange leads to complacency, is not conducive to learning new actions, and leads to organizational decline (Argyris, 1991). The success of a buyer-seller relationship should remain “a movement towards a technological optimum and satisfying needs that do not necessarily yet exist” (Håkansson, 1987).

When a relationship is to engage in successful movement, future needs must be linked to current competitive pressures, either through movement from the core to the periphery, or from the periphery to the core. In the first instance, we have argued that successful lean supply between buyer and seller should be based on the recognition by both parties that competitiveness is not enough, that there is also a need for co-operation in the relationship. Goals converge when there is mutual agreement that parties contribute with strengths, not weaknesses, and that efforts are conscious, conscientious, ongoing, and reciprocal. There is an illusion that rapid advances are routine, indeed almost costless. In practice it is probably not an overstatement to say that core firms fund their expensive advances at the core in large part by exploiting the peripheral where firms sell at low prices and buy at high prices.

We also conclude that in successful movement from the periphery to the core, the goal must be to reach the second level in our research model; that is, the explicit and formal recognition of the criteria of the buyer who typically is closer to the core than the supplier. Given the uncertainty and intense competition of the computer industry, reaching this second level is not easy. Reaching it is somewhat like running upstairs towards the next level in an escalator moving in the opposite direction. One has to run simply to keep in place. To hope to proceed up, one has to run faster than the escalator, or the escalator will have to at least temporarily halt. Different players have different personal limits, and escalators also differ. No runner can usually reach the top with one bold leap. Steps must be taken one, or at the most, two at a time. At the same time, progress demands that each achievement must be maintained. Achievements are not considered in terms of the steps themselves, but in terms of the positions of the steps, relative to distances upwards and downwards. Each step up from the bottom up (i.e. from the periphery to the core) represents the incremental development of the convergence of one’s position with the desired or next level. The secret is that through endurance and intent to succeed, much is possible. The motivation is that running is enjoyable when one is running forward on the next higher level, when distance achieved increases with each stride taken, when one has achieved the revolutionary feat of moving from relative insignificance to the top, and weak ties to other successful “athletes” have become strong. However, until stellar performance is achieved, unfulfilled aspirations
towards the next steps and towards higher levels of performance are as important in maintaining favourable momentum as is the institutionalisation of relative position.

Our study implies that an atmosphere similar to complacency, much like being in the shade, is necessary for continuing to be able to drive one’s vehicle from the periphery towards a “brighter” environment. As evidence of this kind of endurance and intent, neither supplier in our case refuses to be fully satisfied with the intensity of its relationship with the focal buyer, and the supplier having the less intense of the relationships is also the less complacent of the two.

References


