Partnering along the demand chain: collaboration in new product development process

Enzo Baglieri
SDA Bocconi School of Business, Operations and Technology Management Department
Via Bocconi 8 – 20136 Milan
Italy
enzo.baglieri@sdabocconi.it

Silvia Zamboni
SDA Bocconi School of Business, Operations and Technology Management Department
silvia.zamboni@sdabocconi.it

Abstract

The goal of this paper is to demonstrate what are the conditions for effective partnering in a strategic process as the New Product Development. The issues about the design, the management and the maintenance of a partnership have been investigated by many authors. Nevertheless, the conditions for effective collaboration in a strategic process as the New Product Development can be exploited much more, particularly in specific conditions as those we chose, i.e. the development of a core new product (with high risks both on the marketing and technological side) between a customer-supplier relationship unbalanced in terms of bargaining power and reciprocal competences. The case history we investigated s the interaction between Amplifon and Siemens. Through the analysis of this experience, we aim to demonstrate that in similar conditions, customer-supplier partnership can be successful if the relationship is a long term one, with high frequency of interactions, the players have complementary competencies, clearly distinguishable and distinctive of their core business, with few or no overlapping in terms of stages of the value chain owned. Finally they have to invest significantly in the building up of strong and reciprocal integrative capacity, to counterbalance their lack of absorptive capacity.

Keywords: strategic collaboration, new product development, effective partnering

Introduction

Supply chain management has been defined as "the integration of key business processes from end user through original suppliers that provides products, services, and information that adds value for customers and other stakeholders" (Lambert et al. 1998). Frohlich and Westbrook (2002) divided such integration into supply and demand integration. According to Handfield (1993), this social coordination was facilitated by the diffused policy of the reduction in the supply base, combined with information sharing (including, but not limited to, demand information). In the last decade, these policies have been carried on as ways to reduce the costs of the purchasing process and its complexity, as well. Yet, they require a stronger integration along the supply chain, in order to get the maximum benefit from the leveraging on the suppliers' competencies.

Particularly in the case of innovation, the ability of both reading the market signals correctly and quickly reacting during the product's life cycle call for effective integration along the whole demand chain. Actually, the purpose of leveraging on the demand knowledge is to ensure that the variety of new products reaching the marketplace matches what consumers really need. Therefore, the crucial flow of information occurs forward, from the marketplace to the chain, and backward. The critical decisions can be split in two main categories: on the innovation side, about functionalities of the new product and technologies to be adopted and how to develop and manufacture them; on the operations side, about production capacity and inventory, in order to decide where to locate inventory in the chain and the production capacity, to hedge against uncertain demand. As a consequence, suppliers must be chosen for their competencies, speed and flexibility, not only for their low cost (Fisher 1997).

Actually, if we observe the frequency with which researchers and practitioners tend to emphasise the increasing use of collaboration in company-supplier relations, we can deduce that the underlying reasons for the large-scale adoption of these practices go beyond merely economic and financial factors, being frequently based on the assumption that a good relationship with suppliers can be strategically leveraged for company competitiveness.

The goal of this paper is to demonstrate what are the conditions for effective partnering in a strategic process as the New Product Development. The issues about the design, the management and the maintenance of a partnership have been investigated by many authors. Nevertheless, the conditions for effective collaboration in a strategic process as the New Product Development can be exploited much more, particularly in specific conditions as those we chose, i.e. the development of a core new product (with high risks both on the marketing and technological side) between a customer-supplies relationship unbalanced in terms of bargaining power, being the supplier 20 times larger than the customer.

Recent empirical work confirms that investments in relation-specific assets are often correlated with better performance compared to more arms-length relationships (Dyer 1996; Parkhe 1993). Recent SCM and relationship marketing research has attempted to increase understanding of the conditions for win–win partnerships, i.e. customer–supplier relationships in which close long-term co-operation simultaneously increases the value produced by the demand chain and decreases the overall cost of the chain. Several researchers have come to the conclusion that companies need to divide their customer–supplier relationships into classes along the continuum from 'arms-length' relationships to true partnerships (Bensaou 1999; Cooper et al. 1997; Friis Olsen and Ellram 1997; Lambert et al. 1996; Moody 1993; Vollmann et al. 1995). While true strategic partnerships create new value, they are costly to develop, nurture and maintain[1]. Also, they are risky, given the specialized investments they require (Bensaou 1999; Cooper et al. 1997), and the number of real partnerships a company can build and maintain is limited. Therefore, partnership type of relationships cannot be expected to be built with a large number of customers or suppliers, and focusing the resources on building the right relationships requires careful planning and decision-making.

The case history we adopted is the interaction between Amplifon and Siemens. Through the analysis of this experience, we aim to demonstrate that in similar conditions, customer-supplier partnership can be successful if the relationship is a long term one, with high frequency of interactions and the players have complementary competencies, clearly distinguishable and distinctive of their core business, with few or no overlapping in terms of stages of the value chain owned.

---

[1] By "partnership", we mean a relationship of cooperation between parties that involves in-depth sharing of the information, risks and returns originating from the relationship. Consequently, not all forms of collaboration can necessarily be associated with the concept of partnership.

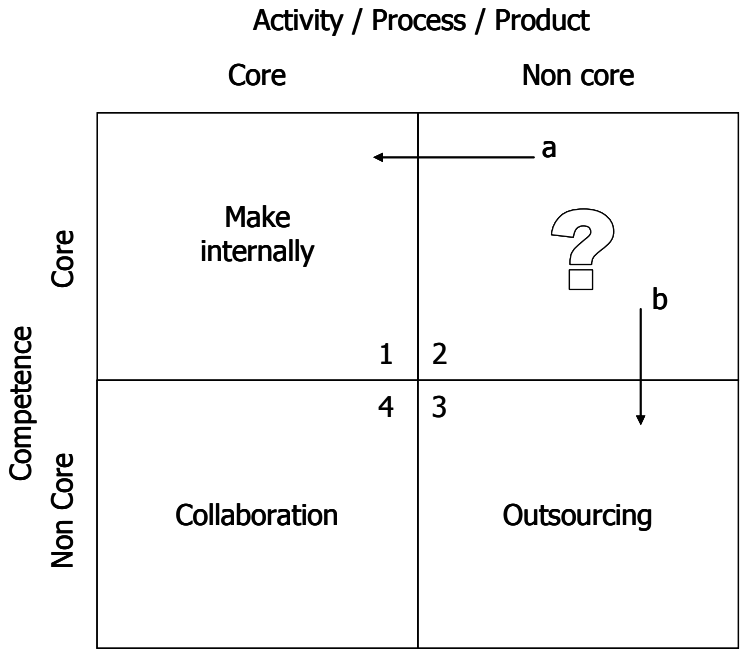
Literature review and scope of research

Study of the latest publications on this subject indicates that the theory of Operations and Technology management has overcome the traditional dichotomy between the *make* and *buy* options (Chandler 1977; Coase 1988; Williamson 1981) and had added a third approach, namely collaboration (Bensaou and Venkatraman 1995; Dyer and Singh 1998; Kamath and Liker 1994; Nishiguchi 1994). In operational terms, this new option means building up a long-term relationship with suppliers, which is mainly successful if: investments in assets specific to the collaboration are designed and supported jointly; know-how and complementary assets are shared; and the partnership governance mechanisms, that protect the parties' mutual interests and allow them to fulfil their expectations, are devised (Dyer and Singh 1998).
In view of what we have said so far, a relationship with suppliers based on the principles of massive collaboration and partnership derives more from a strategic philosophy than from simple portfolio management assessments. However, the costs required to develop, strengthen and maintain a strategic partnership with a supplier are often so high as to cool the company's enthusiasm and suggest a continual search for intermediate solutions.
A guideline can be provided regarding the suitability of collaboration, on the basis of two significant aspects:

- the degree of proximity to the business of the process to which the supplier contributes (core/non-core) (Boin, Merlino, Savoldelli, 1998);
- the degree of proximity to the business of the competencies that the company needs to use, and which it must decide whether to outsource or not (core/non-core).

For the sake of simplicity, the situations configured have been mapped in the matrix illustrated in figure 1.

Figure 1 *The process/competence matrix*



Source: Baglieri, Zamboni, (2004)

Collaborations are designed to manage endogenous and exogenous uncertainty on an ongoing basis by combining the different skills of the players, which are "specialists" in their own fields by definition.
Bensaou (1999), in particular, proposes a conceptual framework that identifies four different forms of collaborative relationships. The differential factor between the four classes of collaboration that he identifies (which exploits the quadrant we have defined as collaboration) is the specific investment borne by the client company and the specific investment borne by the supplier. According to Bensaou's analysis, the true strategic partnership arises when the client company (purchaser) and the supplier simultaneously make tangible and intangible investments designed to reduce the uncertainty

of the relationship between them and mutually improve feedback, and to ensure the continuity of the relationship and the economic management of frequent relations.
As said, the main scope of this research paper is to deepen the investigation on the critical success factors for effective partnering with a strategic supplier in a core process, namely in the new product development process.
Particularly, our research question is:

what are the conditions enabling a successful strategic collaboration between customer and suppliers in high risk process or activity ?

The first step of our work is to define the area of investigation and, particularly the process which we focus on. According to our research question, this process has to meet at least two requirements.

1. being "strategic", i.e. relevant for the long term competitiveness of the players of the collaborative relationship;
2. being "high risk", i.e. the uncertainty about the characteristics of the input, the cost and timing of the "transformation" activities and finally the quality of the output is higher than usual customer-supplier relationship in purchasing tasks.

Our past empirical investigation on the best practices of Italian companies in supplier relationship management demonstrates the first distinguishing feature is the duration of the relationship with the supplier (Baglieri, Zamboni 2004). According to the 56% of the respondents, a strategic relationship is always a medium-term relationship; the remaining 44% declared that these relationships are always long-term based. We found that the "medium term" was usually considered to relate to supply relationships lasting an average of 3 years, while the long term was associated with an average duration of 4.9 years. Some respondents said that these time limits mainly relate to contractual aspects, not necessarily to interaction with the supplier, which for some companies acquires the connotations of a partnership whenever this collaboration lasts for more than 10 years (Baglieri, Zamboni 2004).
The second feature relates to the contents of the strategic relationship. We asked what distinguishes strategic relations and, as shown in Table 1, the main aspects emerged to be the mainly the exchange of operational information, coordination at the planning stage, and the involvement of the supplier throughout all stages of a specific process.
The incidence of the partnership in its most complex form, namely the strategic partnership, on respondents' total transactions, can be measured, at least indirectly. Our research confirms Bensaou's findings (Bensaou 1999). According to our sample, integration and alliance agreements involving joint investments have been engaged with an average of 11 suppliers. In view of the average of 725 suppliers per respondent, these programmes involve not more than 2% of all registered suppliers. If we consider only the A-class suppliers (those from which companies purchase 80% in value of their supplies), the average number of suppliers falls to 247. Even as strategic partnership agreements are entered into with these ones, the occurrence still remains marginal, i.e. 4% (11 out of 247). It is interesting to note that these partnerships, though very few in number, account for 26% of annual purchases on average. In practice, there are a few highly intensive relationships, which account for a large proportion of strategic purchases, namely 68% of total strategic procurements.
Moreover, the referred research demonstrates that the new product development process predominate as typologies of quoted strategic procurement, counting 91,3% of positive responses on multiple questions (see Table 2.)
According to both literature review and our empirical evidences from this recent field research, we focus our current investigation on the new product development process as a relevant typology of strategic process along which companies can benefit from high quality relationships with their suppliers.

Table 1 *Distinguishing factors in the strategic relationship with the supplier*

	0 Not responding	1 Never (no cases)	2 Seldom (until 25% of cases)	3 Sometime (26-50% of cases)	4 Often (51-75% of cases)	5 Very often (76-99%)	6 Always (100%)	Average value **(0-6)**
	%	%	%	%	%	%	%	
A. a deep exchange of operational information	0,0%	0,0%	4,2%	8,3%	20,8%	**33,3%**	**33,3%**	**4,8**
B. a deep coordination in the planning phase	0,0%	0,0%	8,3%	0,0%	16,7%	**45,8%**	**29,2%**	**4,9**
C. an intense tuning of processes	4,2%	0,0%	12,5%	**29,2%**	**29,2%**	25,0%	0,0%	**3,5**
D. sharing and developing business plans	0,0%	0,0%	**25,0%**	**41,7%**	4,2%	20,8%	8,3%	**3,5**
E. Information System Integration	0,0%	**29,2%**	**16,7%**	**25,0%**	8,3%	12,5%	8,3%	**2,8**
F. supplier involvement in each stage of the process considered (i.e. co-development of a new product	0,0%	0,0%	16,7%	**20,8%**	**16,7%**	**25,0%**	**20,8%**	**4,1**

Source: Baglieri, Zamboni 2004

Table 2 *Activities that imply an integration of supplier (multiple choice)*

	% of respondent
New product development	91,3%
Research project	47,8%
ICT integration	47,8%
Logistics / Supply Chain Management	43,5%
Human resources / Training	17,4%
Expenditure cycle	17,4%
Travel services	8,7%

Source: Baglieri, Zamboni 2004

Finally, to stress the required condition of risky process, we decided to verify our hypothesis in a very specific case, the development of a breakthrough product.
As known, breakthrough projects are risky, as they require a high level of commitment and they determine huge impacts along the whole supply chain if the "innovator", because of the high level of uncertainty from both the technological and marketing side (Wheelwright, Clark 1992).
Particularly, the complexity arises, in our opinion, if the "innovator" (the customer in the relationship we want to observe) has no absorptive capacity, as we usual mean it (Cohen, Levinthal 1990). Actually we know that companies who run their own R&D are better able to use and implement externally available information. Yet, no evidence are reported in literature of the case of total lack of

accumulated technical knowledge to address and manage the collaboration with the suppliers, from the original definition of the requirements to the life cycle management of the new product on the market.
In such a specific situation, our hypothesis are that a successful relationship between customer and supplier can be achieved thanks to four main factors:

- Hp.1: long term relationship, that reduces the probability of an opportunistic behaviours and reinforce mutual trust (Butler 1985);
- Hp.2: significant specific investments by both companies involved in the collaboration, supporting willingness of cooperation and increasing the switching costs (Bensaou 1999);
- Hp.3: clear and unambiguous distinctiveness of the players' competencies and a balanced integration of them;
- Hp. 4: development of integrative competencies and dedicated organizational structure, to balance the eventual lack of absorptive competencies.

Methodology

To validate our hypothesis, we recurred to the case based research approach. Actually, according to various authors, case studies may provide unique means of developing theory by utilizing in-depth insights of empirical phenomena and their contexts (Dubois, Gadde 2002; Easton 1995; Yin 1994). A standardized conceptualization of the research process consists of a number of planned subsequent 'phases' that does not reflect the potential uses and advantages of case research. Instead, the two authors have found that thanks to cases the researcher, by constantly going 'back and forth' from one type of research activity to another and between empirical observations and theory, is able to expand his understanding of both theory and empirical phenomena. Therefore Dubois and Gadde suggest a standard non-linear process for effective case based research, consisting of four main components, strongly interacting each other: the literature review, the empirical world analysis, the general framework and the case study. The match of all these components may allow to demonstrate the hypothesis of research or confutate them and compell to redirect the research (Dubois, Gadde 2002).
Our case study is the result of interviews carried out with the Marketing Department of Amplifon Spa. Additional information come from public printed sources, such as financial statements of the different companies involved in the customer investigated demand chain.
According to the systematic combining approach, In the case study described, interviews were combined with other sources of information:

- Interviews were carried out with staff members involved at the case company. Most of the interviews were with the representatives of the suppliers and the purchasers at the customers;
- some production, R&D and design staff were also interviewed;
- discussions and negotiations between the case company and the contemplated supplier were attended. These meetings were discussed afterwards with one or several individuals who had participated in them;
- for about six months, the researchers attended monthly cross-functional internal meetings dealing with the problems related to the ongoing development of the product under investigation;
- interviews were carried out with staff members of the other quoted suppliers;
- printed sources of information, such as product calculations, cost estimates, quotations, records of meetings, drawings, and firm presentations, were also used.

The Amplifon case[2]

Hearing impairment is a common problem in the industrialised countries, and tends to increase with the average age of the population. In addition to the general demographic trend, a contributory factor in this disorder is increasing sound pollution due to the urbanisation of the industrial world, which subjects people to prolonged exposure to high noise levels at the workplace and in social life.
500 million people in the world suffer from hearing loss, 24% of whom live in the developed countries. The potential market in these geographical therefore amounts to approximately 120 million people. It

[2] Information and support were provided particularly by Vera Gualtieri, Benchmarking e Innovation Manager of the Amplifon SpA Marketing Corporate Department. The authors wish to express their sincere thanks to Ms. Gualtieri for her cooperation and assistance.

is estimated that by 2025, 900 million people (12% of the world's population) will suffer from hearing loss, 23% of them living in the most developed countries.
Currently, the most effective solution to hearing impairment is the use of a hearing aid. However, there are "historical" resistances and limitations on the use of hearing aids. Deafness is traditionally considered as a handicap, and a hearing aid is tangible evidence of it. People suffering from hearing impairment have difficulty in admitting the problem to themselves, and tend to delay seeking a solution.
The market is therefore under-penetrated; in the industrialised countries, only one person in six who suffers from hearing impairment uses a hearing aid.
In particular, in the case of mild and medium-mild hearing loss[3], which affects 75% of the population, the market penetration is only 10%. There is consequently an under-penetrated market amounting to 81 million people (in the industrialised countries), 56.1 million of which are aged over 55.
These people only perceive the problem in difficult listening situations, and associate hearing aids with aging.
To conquer this market, it is necessary to develop a new product concept that meets the expectations of this target and overcomes their resistance to the use of hearing aids.
To develop this product, Amplifon has collaborated with Siemens on the development of a new product called PE30, designed to cover a new customer target, the segment with mild or medium-mild hearing loss, where there is a considerable gap between incidence on the population and market penetration.
Amplifon is an Italian company, with headquarters in Milan, which now has multinational ramifications. It was founded in the early Fifties, and together with its subsidiaries (forming the Amplifon Group), Amplifon is the world leader in the distribution and customised application of hearing aids in terms of volume, turnover, geographical presence and coverage by its distribution network.
The Group's business has grown significantly in recent years, partly through strategic acquisitions. In addition to Italy, where its market share is nearly 49%, it is now present in France, the Netherlands, Portugal, Spain, Switzerland, the USA, Canada, Egypt and Hungary.
The products and services supplied are designed to improve the hearing functions of persons suffering from hearing impairment. The distribution and customised application of hearing aids is currently performed through a distribution network consisting of over 2000 specialist sales outlets, 3000 authorised centres, 1800 affiliated shops and some 2500 hearing-aid specialists in the 10 countries in which the group is present. In 2003 the Group's turnover amounted to € 443.4 million, with a volume of some 445,000 hearing aids sold.
The Amplifon Group conducts its worldwide business through different companies and brands. All the companies in the group are wholly owned by parent company Amplifon, but maintain the original names and brands recognised by local customers.
Amplifon organisational philosophy involves giving the maximum emphasis to specific local situations. In accordance with this approach, the company must be able to "think globally" but "act locally"; in other words, it must respect and understand specific local needs, but in accordance with the group's policies, so that the synergies deriving from membership of a multinational can be exploited.
The parent company handles a number of international activities and control functions: institutional communication, strategy and marketing, investor relations, information systems, relations with suppliers and key partners, promotion of audio-logical research, and quality policies.
The Group operates in this business without performing any design or manufacturing activities; it only deals with the distribution and customised application of hearing aids and other hearing accessories. The company is therefore engaged in the business of selling products manufactured by third parties, which is closely connected with the product application service provided by the Group. The products could not be sold without the application service, as the success of the product with customers depends largely on the quality of that service. This business model is typical of Amplifon' strategy, and dates from the time of the company's foundation.

---

[3] The WHO classifies hearing impairment on the basis of hearing loss in dB:
<=20dB normal hearing
21<dB<=34 mild hearing impairment
35<=dB<=49 medium-mild hearing impairment
50<=dB<=64 medium hearing impairment
65<=dB<=79 medium-severe hearing impairment
80<=dB<=94 severe hearing impairment
dB>= 95 profound hearing impairment

A key factor in Amplifon' strategy is therefore close collaboration between the Group and its suppliers of hearing aids and accessories, which involves a constant flow of information about the needs of end users that Amplifon transfers to its suppliers. The manufacturers are not in contact with end users of the product, but need this information to develop products in line with developing market trends.
The hearing aid manufacturing market is highly concentrated, partly due to a process of concentrations, mergers and acquisitions over the last decade; six groups of manufacturers now cover over 85% of the market.
The importance of the relationship with suppliers derives not only from the concentration of the market described above, but also from the fact that suppliers transfer to the company the necessary technical know-how relating to the products (by means of courses, specific meetings and training aids).
The great importance of supplier relations has led the Amplifon Group to enter into strategic collaboration agreements with some suppliers for the joint development not only of products, but also of innovative methods and application solutions designed to meet customers' needs.
Due to both the strategic relevance of continuous innovation and the historical and voluntary lack of technological competencies, the Group has entered into strategic partnerships with three suppliers: Siemens, GN ReSound and Phonak.
As can be noticed from the Table 3, these three main suppliers have different characteristics, size and bargaining power with Amplifon, being sometimes pure suppliers (but larger than the customer, see Siemens) or both suppliers and competitors (GN ReSound and Phonak).

Table 3 *Amplifon vs Strategic suppliers: size, competencies and processes*

	Amplifon	**Siemens Medical Solutions (Med)**	**Phonak**	**GN ReSound**
Sales / turnover *(2003)*	443.4 ml €	7072 ml € (8,8% of consolidated sales)	410.9 ml €	405.15 ml € (54,4% of consolidated sales)
R&D expenses / turnover	0,031%	8,6%	7%	5,7%
Products and services	• Distribution and application of hearing-aids • Development, production and marketing of audio-logical instruments, distribution of diagnosis and biomedical equipment in different sectors.	With reference to the medical business area: • Hearing instruments • Diagnostic imaging systems • Therapy equipment • Intensive care units	Design, development, production and worldwide distribution of technologically advanced hearing and wireless communication systems.	• Contact center & Offices Handsets • Mobile Handsets • Hearing Instruments • Audio-logical Diagnostic Equipment
Core competencies on the value chain of the hearing aids	• Marketing • Retailing and distribution • Technical assistance (pre and post sales)	• Research & Development • Industrialization • Prototyping and testing • Manufacturing	Fully integrated	Fully integrated

The strategic importance of managing relations with "core suppliers", particularly in the case of the development of a new product, has led the Group to delegate the task of interacting with these partners to its corporate marketing structure. The Corporate Marketing Department therefore not only establishes marketing strategies at Group level, but also negotiates framework agreements with strategic partners.
The Corporate Marketing Department is therefore responsible for the management of the relationship with these suppliers, particularly in the case of the innovation process.
Actually, usual procurement activities for the "standard" or already marketed products are handled by the Procurement Department, collecting request for orders by the distribution system. If we assume these activities as the typical operations of a retailer (also if high value adding as Amplifon is), their level of complexity is quite low and circumscribed to the reduction of missing delivery and stock outs.

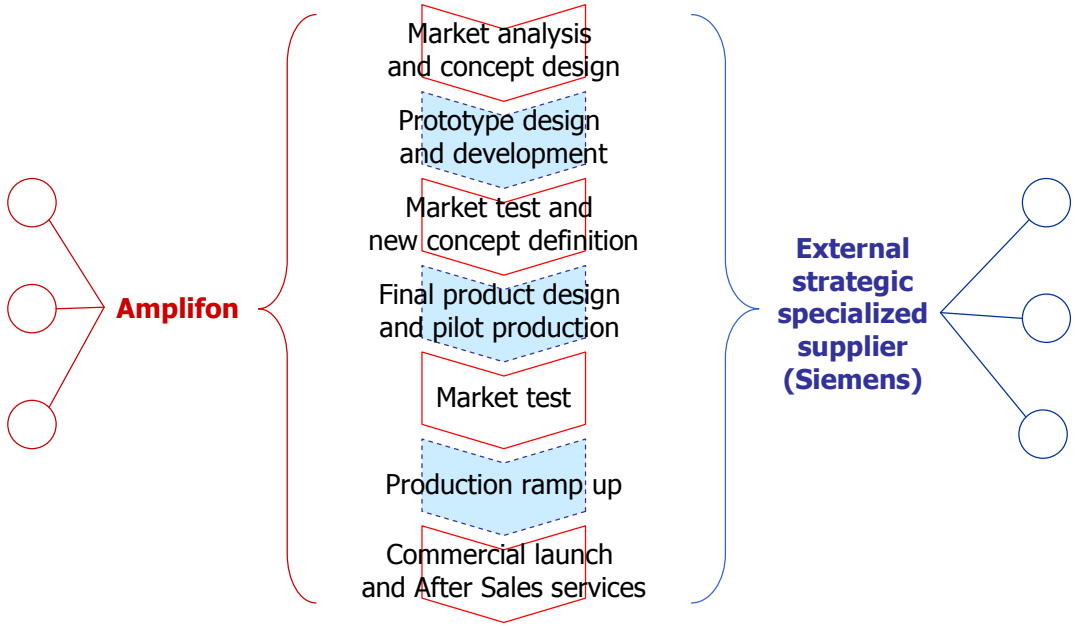
These events are rigidly foreseen in the formal agreement among Amplifon and its suppliers and do not require specific deepening here.
The development of a new product, on the other hand, is a non repetitive set of activities, usually requiring specific investments and determining a potential risk of failure, increasing as a consequence of the growing degree of novelty of the concept to be marketed.
The new product development is a process requiring high level of flexibility. No typical system for reducing and governing the risk of opportunistic behaviours seems to be adopted at Amplifon (Noteboom, 2000). Their approach is to focus on a single source and to reduce at the minimum level the relevance of the contracts.
The PE30 project, which is targeted at the uncovered market segment of mild and medium-mild hearing impairment, falls into this context.
The collaborative development of the PE30 was based on an intuition by Amplifon Corporate Marketing Department, which identified a strategic niche in the mild and moderate hearing loss market and conceived the broad idea of a product that would meet the expectations of this market segment. The Marketing Department, which is also responsible for strategic relationships, then decided to identify the best partner to develop the product.
The requirements that the partner had to meet were firstly a brand recognisable even by a segment unfamiliar with the solutions offered for hearing impairment in general, and secondly the ability to offer a product which is not associated with hearing aids, but with a hi-tech communication tool (like a mobile phone).
Siemens was the only one of the Group's strategic suppliers to have a brand that is widely recognised on the mass market in Europe and associated with an image of cutting-edge technology.
A number of other factors also contributed to the decision to team up with the German company. Siemens is the supplier with which Amplifon has had the longest partnership relationship, and Amplifon is the distributor of the Siemens brand of hearing products in Italy. An agreement was signed in the USA in 2000 whereby MEMSI, a company in the Siemens Group, is to manufacture hearing aids with Siemens technology exclusively for Miracle-Ear (one of Amplifon American companies) under the Miracle-Ear brand.
Moreover, Siemens accounts for almost 70% of the purchase volumes of the Amplifon Group. In order to ensure the highest probability of success in such innovative projects, Siemens is the only one of Amplifon' suppliers to have a structure dedicated to the development of original products.
These organisational unit has historically cooperated with Amplifon also in the development of other new products and the people working in it share with the Amplifon members of the mirroring unit a lot of common experiences and soft values.
All these requirements were necessary because the PE30 originated as a "core new" product concept, not classifiable in the hearing aids category. It is an original communication tool which could be described as a "digital personal enhancer". The product is designed for people aged 50 to 60, suffering from mild or medium-mild deafness (21 to 49 dB hearing loss). They are beginning to notice hearing problems in particular situations (e.g. in a restaurant with background voices when lips movements cannot be seen, during meetings held in a foreign language, etc.) but for whom a "hearing aid" is premature and psychologically unacceptable.
The PE30 is not offered on the market or to the regulatory system as a medical device, and therefore follows a different development route from traditional hearing aids, which have to undergo significant administrative controls.
Also from the technological and manufacturing point of views, PE30 emerges as a radical innovation, compared with the best existing hearing aid. In such sense it can be considered a breakthrough, and, as any breakthrough, the probability of success (both technical and commercial) is very uncertain, particularly if compared with the usual incremental innovation generated by the continuous feedback coming from the technical assistance.
For the development process of such an innovative product, Amplifon asked its supplier to set up an *ad hoc* unit, which managed equally the projects. This unit was an inter-company team consisting of one member from Amplifon Corporate Marketing Department and one from the Siemens innovation group, both of whom held responsibility in their companies for the various stages of the PE30 development process.
The building up of this team was very easy for both the players, due to both the historical relationship between Siemens and Amplifon in new product development process and the knowledge created in the two mirroring department on the competences, expertises, skills and typical expectations of the partners.

As the project related not merely to a new hearing aid, but to a product aimed at an unexplored segment of the reference market, the first activity performed was a concept test, conducted by Amplifon, which has thorough knowledge of the market and the users of these products.
On the basis of Amplifon's recommendations, Siemens developed a first prototype of the product in limited quantities.
Amplifon also selected an agency to handle market research, and conducted qualitative research to:

- establish the real communication of the target customer
- present the new product concept and establish how credible and accepted it could be
- present the new product and establish how well it met consumers' needs and how consistent it was with the concept
- investigate the perceived value and customers' purchasing propensity (price, sales channel, brand and advertising).

On the basis of the results of this research, Amplifon provided Siemens with feedback on the product, and asked it to make some functional and design modifications.
At the same time, Amplifon collected the information required to define the marketing strategy relating to the product name, distribution channels, promotional materials and price.
When Siemens had made the necessary modifications to the product, a second qualitative research project was conducted on the same sample of respondents as the first one to validate the product concept.
As this second research demonstrated complete acceptance of the product concept by the target, Amplifon authorised Siemens to start the pre-production stage, 1000 articles to be used for a quantitative test on the Italian market.
Currently, the process of development of this new product is now in its final stage, the quantitative test. As Italy will be the first entered market, two sample cities have been selected which are considered representative of the Italian market on the basis of Amplifon's long experience of promoting new products.

Figure 2 *The development process of the new PE30*



Amplifon's Marketing Department has prepared all the promotional material and performed direct marketing activities on a file of external lists, acquiring some 2000,000 names of people aged between 50 and 70.
The test is designed to estimate the size of the market for the product and consumers' sensitivity to price; the product is therefore on sale at different prices in the two sample towns. As said, the product is not comparable with hearing aids, partly because it is not a medical device, and partly because of its price positioning.
Amplifon has established parameters to assess the outcome of the test by agreement with Siemens:

- the number of products sold

- the number of names collected in the file (the product is being tested partly as a teaser for potential customers)
- the number of hearing aids sold to people invited to try out the new product.

On the basis of the results of this test, it will be decided whether or not to introduce the product onto the Italian market. As a consequence of its novelty, both the players agreed that the project can drop also if it is in such an advanced stage. This agreement is totally different from more usual new product development projects and it is based on the reciprocal trust that both the partners are doing their best to maximise the probability of success of the project, but the market is really unknown at the moment.
The PE30 case, morevore, is demonstrating the need to formalise the collaborative development process of new products which are not traditional hearing aids.
This rationalisation was forced by some difficulties which were encountered during the development of the PE30, despite the long collaboration between Amplifon and Siemens.
The project team had to deal with considerable delays associated with production problems caused by the design and construction of a new production line involving new components that differ from the traditional ones used for hearing aids. Siemens therefore had to select new sub-suppliers, which failed to deliver by the due dates, causing the launch date to be delayed by several months.
Moreover, in view of the fact that the companies had done business together for years, no specific procedures were established; the project team did not schedule periodic progress report meetings, but only met when urgent problems arose.
Finally, the degree of innovation of the product was perhaps underestimated. Amplifon's idea, for example, was that the product should be distinguished partly thanks to its multifunctionality. It had to be able to double as headphones for a mobile phone or a CD player. To achieve this purpose, an adapter is needed for the various mobile phone models, which is not made by Siemens and is hard to find on the market. This aspect was overlooked at the development and concept testing stage, and had to be tackled urgently when the market test began, involving additional project costs.

Evidences from the case

The relationship between Amplifon and Siemens on the hearing products and accessories market, described in the preceding pages, is a particularly interesting case of collaboration (and costs of collaboration) in high risk context between customer and supplier.
First of all, primarily because it does not represent the culmination of an early emerging strategy of gradual involvement in supply and withdrawal from in-house manufacture. This collaboration is not the result of a tactical outsourcing decision that has been considered for some time, but reflects the Amplifon's strategy since its foundation. It is an even more delicate matter for this company, because the decision does not appear to be reversible. Amplifon is not able to - and never will be in the position of - reconsider its partnering decisions in favour of internal production, unless there is a drastic turnaround of its strategy. Actually these "industrial" competences are totally lacking and, from the theoretical point of view, we can say that Amplifon has outsourced totally its industrial side to its strategic partners, particularly to Siemens whom they usually join their competences with in new product development process[4].
The configuration provided is therefore similar to the one shown in the bottom left-hand quadrant of Figure 1. In practice, Amplifon dialogues with all suppliers of aids and accessories in a collaborative way, and is also forced to do so by the degree of concentration of the supply market, which places the Group in a complex situation. As mentioned, however, it has only entered into partnership agreements with three suppliers, and only initiated a true strategic partnership agreement with Siemens in new product development, with mutual investments, also dedicated to the management of the complexity and uncertainty of innovation, as the PE30 project demonstrates.
Some of the distinguishing features cited are of particular interest.
If we look closely at the roles undertaken by each party during the development of the PE30 project, we will see that what distinguishes this strategic relationship is the clear, unambiguous distinctiveness of the two players' competencies (*ref. to Hp.3*). Amplifon holds a comprehensive and global understanding of consumer needs thanks to its focus on marketing, retailing and technical assistance. By the way, even if new product development process is crucial for its competitiveness, Amplifon has

[4] The collaboration with other partners will be very risky, because of thei double role of both suppliers and competitors. Thus, Siemens is usually considered both a provider of "production capacity" and, particularly, innovation competences.

no ownership of competencies in the technological side of the product. On the other hand, Siemens knows how to develop and manufacture the new product, thanks to its synergies with the whole Medical and Mobile Communication industrial processes, but has no clear understanding of consumer expectations, having no direct contact with the market of hearing aids. Summing up, Amplifon has outsourced its industrial side and Siemens has outsourced the demand management, in terms of marketing, distribution and technical services, before and after sales !
Neither could operate in this business without the other, but together they can be highly competitive, because the collaboration takes place in a process that involves the parties without any overlap between them. Their skills are so distinct as to identify their roles not only in the described project, but along the whole supply chain. As Noteboom (2000) underlines, spillover is the typical problem of governance in partnerships, if knowledge exchange is the focus of the relationship. Mutual advantage lies in novel combinations of knowledge from different partners, and in joint production of knowledge. However, one may fear that information which is competitively sensitive, i.e. close to one's core competence, is copied by ('spills over' to) partners (Noteboom, 2000). Moreover, in our experiencing of the nature of this relationship, the partners show a high amount of openness, as first of all Amplifon demonstrates towards Siemens being never worried by the opportunistic behaviours of a suppliers that in its only Medical Solution Business Unit is 20 times larger than the customer. Actually, Amplifon does feel secure (and the same is Siemens) because of the distance of the reciprocal core competence. The longer Amplifon can demonstrate to Siemens its focus on the demand side of the value chain and the longer Siemens can ensure to Amplifon its increasing focus in the complementary side of the value chain, the more this relationship will be durable.
The result is a win-win strategy with dramatically better performance for both, compared with the two other suppliers, being concurrently Amplifon's competitors.
The high level of trust between the parties is the only explanation of the strong commitment to cooperate also in such a delicate process as the development of a breakthrough product requires. In this case, trust seems to be the product of the "quantity" of the relationship (Siemens accounts for 70% of purchases by Amplifon, which is an A class customer for Siemens in the Medical Business Area) timed by the lenght of the relationship, which is really long-lasting (more than 10 years), continuous and systematic (*ref. to Hp.1*). However, in this case the continuity and "familiarity" of the relationship are almost counter-productive, because unwritten habits and practices, which are well-known and accepted, are unsuited to the management of a project which is different in terms of the primary objective, and therefore also in the approach to development of the innovation. Actually, they both showed the need to formalise some mutual responsibilities in an ad hoc process, because the flexibility required by these kind of projects can be very costly and tiring if not rewarded economically along the project itself. In some sense, this sound as the relational contracting with loyalty and incentives some Authors refer as effective tools to handle risks in knowledge based relationships (Noteboom, 2000). By the way, the description of this case clearly demonstrates that the trust and stability of the relationship have increased the risk propensity of both the two partners. Each of them has incurred significant investments for its share of the project and suffered the consequences of low coverage of competence on their complementary front (*ref. to Hp.2)*. Consider, for example, the extra costs for modifications imposed on Siemens by the underestimation of some technical aspects due to Amplifon lack of skills and the delay suffered by Amplifon while unexpected technical problems arising at Siemens were solved.
Finally, in the management of the relationship with the partner, the existence of an organisational unit – in both the partners, as in the Amplifon and Siemens collaboration is - with basically equivalent powers and authority, specifically instructed to collaborate during the life cycle of the project, is another major factor for the success of the partnership between the customer and the solution provider. Moreover, this is the only way to counterbalance the lack of both industrial competences at Amplifon and customer understanding at Siemens. The reciprocal absence of absorptive capacity, particularly for Amplifon, should be a constraint to exploit and invest in innovative projects and new product development, because of its total reliance on the suppliers' competences. Despite of this, Amplifon can be competitive, and usually considered the most innovative player, in a business where both technological innovation is a key success factor and the typical player is a manufacturing company. Amplifon acts in this arena as a value adding retailer for the whole value chain, providing both marketing insights to a high technology manufacturer as Siemens and customised services to customers. The competences located in these two units and merged time by time in the shared team represent the real absorptive capacity, being most of all integrative capacity (*ref. Hp. 4)*. They do not know technically what to ask for, but they know exactly how to. They cannot compare the released output with alternative technologies, but they trust the suppliers always provides them the state of the

art or the most suitable solution, also because they always ask for the highest performance perceivable by the customers.

Limitations

This study, while carefully designed, was based on subjective evaluations of the case descriptions. In addition, the case writers may have interpreted the phenomenon we were viewing through a lens which corresponded to the model presented in class. Senge (1990) describes how our "mental models" prescribe our perceptions of the cause and effect of events we witness. However, this level of precision is appropriate for the stage of theory development at which the study was conducted. Furthermore, we can receive confidence in the findings from the fact that the study is supported by previous research, and the propositions are grounded in the literature. The major contribution of this study is to integrate these previous studies and research and to provide an overall specification of the relations and interactions between the individual variables.
Moreover, our study is focused on a single case history. According Johnston et al. (1999), we should at least investigate additional case, some of them with expected contrasting results based on theorized differences and some others to verify rival hypothesis.

Theoretical implications and future research

Previous theory has focused on single issues (i.e., long term relationships, reciprocal specific investments, complementary competences and absorptive capacity) to describe the success factors in strategic relationships. This paper argues that the most likely way to achieve a superior performance in the collaboration with a supplier in high risk strategic process is through the development of an organizational capability based on the balancing of multiple factors, such as those identified above. By the way, we sustain that this kind of balanced and respectful collaboration is the results of a long term policy of supplier relationship management and the consequence of a committed willingness of pursuing a diverging business model also thanks to the contribution of the core suppliers.
We will work to develop concepts which reflect the complexity of the phenomenon under study and to verify, in future research, if such a typology of partnership is industry, technology, country or market dependent.

Managerial implications

From the managerial point of view, it's fundamental to state that, together with the potential benefits in terms of flexibility and cost reduction a company can achieve from such a deep collaboration with a highly qualified suppliers, we have to take into considerations the unsustainable switching cost of a similar practices. As said, Amplifon is strongly depending, from the technological point of view, from Siemens, and the only weapon to maintain the stability of the relationship is to be more and more the "A class" customer for Siemens, growing in volume internally or by mergers and acquisition around the world (see the Miracle Ear and National Hearings buy out in the US in the last 3 years).
Finally, such an equilibrium is the result of strong organisational design and core competence management: the former to define and run with the appropriate operational mechanism and organisational rules the two way relationship; the latter to maintain always at the state of the art their own competence, which are reciprocally attractive and not substituting in the short term without high and unsustainable investments.

References

Axelsson Björn, Easton Geoffrey (1992), *Industrial Networks: A New View of Reality*, Routledge, London

Baglieri Enzo (2003), *Dall'idea al valore. Organizzazione e gestione del processo di sviluppo dei nuovi prodotti*, ETAS, Milano

Baglieri Enzo (2004), a cura di, *La gestione strategica degli approvvigionamenti*, ETAS, Milan

Baglieri Enzo, Zamboni Silvia (2004), Produrre, acquistare e collaborare, in Baglieri Enzo, a cura di, La gestione strategica degli approvvigionamenti, Milan, ETAS

Bensaou M. Ben (1999), "Portfolio of Buyer-Supplier Relationships", *Sloan Management Review*, Summer, 40 (4), 35-44

Bensaou M. Ben, Venkatraman N. (1995), "Configurational of interorganizational relationships: a comparison between U.S. and Japanese automakers", *Management Science*, vol. 41, 9, settembre, 1471-1492

Blankenburg D. Holm, Johanson Jan (1992), "Managing network connections in international business*", Scandinavian International Business Review,* vol. 1, n. 1, 5-19

Boin Andrea, Merlino Massimo, Savoldelli Antonio (1998), "Outsourcing: uno strumento operativo o una moda?", Sistemi & Impreaa, n. 1. gennaio-febbraio
Brown Andrew D., Boyett Inger, Robinson P. (1994), "The Dynamics of Partnership Sourcing", *Leadership & Organization Development Journal*, vol. 15, n. 7, 15-18

Burt D.N., Soukup W.R. (1985), "Purchasing's role in new product development", *Harvard Business Review*, September-October, 90-97

Burt N. David, Dobler W. Donald, Starling S. L. (2003), *World class supply management – The key to supply chain management,* 7th edition, McGraw-Hill, Irwin

Butler R. (1982), "A transactional approach to Organizing Efficiency: Perspective for Markets, Hierarchies and Collectives, Administration and Society", *Administration and Society*, November, 323-362; trad. it., "L'efficienza organizzativa nei mercati, nelle gerarchie e nei collettivi", in Nacamulli R., Rugiadini A. (1985), *Organizzazione & Mercato*, Il Mulino, Bologna

Butler R., Carney M.G. (1985), "Managing Markets: Implications for the Make or Buy Decisions", *Journal of Management Studies*, vol. 20, n. 2, 213-231; trad. it., "I mercati gestiti e le decisioni di "make or buy"", in Nacamulli R., Rugiadini A. (1985), *Organizzazione & Mercato*, Il Mulino, Bologna

Chandler Alfred Dupont (1977), *The Visible Hand: The Managerial Revolution in American Business,* Cambridge, Massachussetts, Harvard University Press; trad it. (1981), *La mano invisibile*, Milano, FrancoAngeli

Coase Ronald Harry (1988), *The Firm, The Market, and the Law*, Chicago, The University of Chicago Press

Cohen Wesley M., Levinthal Daniel A.,(1990) "Absorptive capacity: a new perspective on learning and innovation", Administrative Science Quarterly, Vol. 35, No.1, Mar, 128-152

Cooper M.C., Ellram, L.M., Gardner J.T., Hanks A.M. (1997), Meshing multiple alliances, *Journal of Business Logistics* 18 (1), 67–89.

D'Aveni Richard A. (1994), *Hypercompetition. Managing the Dinamics of Strategic Manoeuvring*, The Free Press, New York

Dubois Anna, Gadde Lars-Erik (2002), Systematic combining : an abductive approach to case research, Journal of Business Research, vol. 55, pp.553-560

Dubois Anna, Pedsersen Ann-Charlott (2002), "Why relationships do not fit into purchasing portfolio models – a comparison between the portfolio and industrial network approaches", *European Journal of Purchasing & Supply Management*, vol. 8, 35–42

Dyer Jeffrey H. (1996), "Specialized supplier networks as a source of competitive advantage: evidence from the auto industry", *Strategic Management Journal* 17 (4), 271–291

Dyer Jeffrey H., Singh Harbir (1998), "The relational view: cooperative strategy and sources of interorganizational competitive advantage", *Academy of Management Review,* vol. 23, 660-679

Easton G. (1995), "Case research as a methodology for industrial networks: a realist apologia." *Proceedings from the 11th IMP Conference,* Manchester. Manchester: Manchester Federal School of Business and Management, pp. 368– 91

Ellram Lisa M. (1990), "The Supplier Selection Decision in Strategic Partnerships", *International Journal of Purchasing and Materials Management*, vol. 26, n. 4, 8-14

Fisher Marshall L. (1997), "What is the right supply chain for your product?", Harvard Business Review, vol. 75, n. 2, pp. 105–116

Frohlich Markham T., Westbrook Roy Frohlich (2002), Demand chain management in manufacturing and services: web-based integrations, drivers, and performance", Journal of Operations Management, vol. 20, n.6, pp. 729-745

Gadde Lars-Erik, Snehota I. (2000), "Making the most of supplier relationships", *Industrial Marketing Management*, vol. 29, n. 4, 305–316

Håkansson Håkan (1982), *International Marketing and Purchasing of Industrial Goods – An Interaction Approach*, John Wiley & Sons, Chichester

Håkansson Håkan, Snehota I. (1995), *Developing Business Relationships in Industrial Networks,* Routledge, London

Handfield Robert B. (1993), A resource dependence perspective of Just-in-Time purchasing. Journal of Operations Management, vol. 11, n. 3, pp. 289–311

Holmen E., Pedersen Ann-Charlott (2000), "Avoiding Triadic Reductionism: Serial Tetrads – a Useful Concept for Studying Connected Relationships?", in Ford D., Naudé P., Ritter T., Turnbull P.W., Leek S. (Eds.), "Interaction, Relationships and Networks", *Proceedings form the 16th IMP Conference*, Bath

Kamath R.R., Liker J.K (1994), "A Second Look at Japanese Product Development", *Harvard Business Review*, November-December, 154-170

Kraljic Peter (1983), "Purchasing must become supply management", *Harvard Business Review*, n. 61, September-October, 109-117

Johnston Wesley J., Leach Mark p., Liu Anne H. (1999), "Theory testing using case studies in business-to-business research", Industrial Marketing Management, 201-213

Lambert Douglas M., Cooper Martha C., Pagh J.D. (1998), "Supply chain management: implementation issues and research opportunities", *International Journal of Logistics Management*, vol. 9, n. 2, pp. 1-19

Lambert Douglas M., Emmelhainz M.A., Gardner J.T. (1996), "So you think you want a partner?", *Marketing Management* 5 (2), 24–33.

Lamming Richard (1993), *Beyond partnership: strategies for innovation and lean supply,* Prentice Hall, Hemel Hempstead; trad. it. Lamming R. (1993), *Oltre la partnership. Strategie per l'innovazione e la produzione snella*, CUEN, Napoli

Moody Patricia E., 1993. Breakthrough Partnering: Creating a Collective Enterprise Advantage. Omneo, Essex Junction, UK.

Nishiguchi Toshihiro (1994), *Strategic Industrial Sourcing*, Oxford University Press, New York

Noteboom Bart (2000), "Learning by interaction: absorptive capacity, cognitive distance and governance", Journal of Management and Governance 4: 69–92

Olsen Rasmus Friis, Ellram Lisa M. (1997), "A portfolio approach to supplier relationships", *Industrial Marketing Management,* vol. 26, n. 2, pp. 101-113

Olsen Rasmus Friis, Ellram Lisa M., (1997), A portfolio approach to supplier relationships. International Marketing Management 26 (2), 101–113.

Parkhe Arvind, (1993), "Strategic alliance structuring: a game theoretic and transaction cost examination of inter-firm co-operation.", *Academy of Management Journal*, 36 (4), 794–829

Powell Walter W. (1991), *Expanding the scope of Institutional Analysis*, in Powell Walter W. e Di Maggio Paul J. (1991) (a cura di), Chicago, University of Chicago Press

Secchi Raffaele (2000), *Produrre e gestire informazioni per integrare la supply chain*, Guerini e Associati, Milano

Senge Peter N. (1990). The fifth discipline. New York: Doubleday Currency.

Vollmann Thomas E., Cordon Carlos, Raabe Hakon, (1995) From supply chain management to demand chain management. IMD Perspectives for Managers. November.

Wheelwhright Steven C., Clark Kim B., (1992) "Creating project plan to focus product development", Harvard Business Review, March-April , 1-14

Williamson Oliver E. (1981), "The Economics of Organization: the Transaction Cost Approach, American Journal of Sociology", vol. LXXXVII, n. 3, 548-577; trad. it., *L'economia dell'organizzazione: il modello dei costi di transazione*, in Nacamulli R., Rugiadini A. (1985), Organizzazione & Mercato, Il Mulino, Bologna

Yin Robert K. (1994), *Case study research. Design and methods.*, Thousand Oaks, Sage Publications