

ELENA BONEL AND ELENA ROCCO

## Coopeting to Survive; Surviving Coopetition

**Abstract:** *This study is based on an inductive study, and it aims to present the theoretical distinctions of the possible unintended effects caused by coopetition. The study focuses on San Benedetto SpA, an Italian drinks and bottling company that survived competition in the soft drinks and beverages industry thanks to a coopetition-driven strategy. In addition to competitors such as Ferrero and Schweppes, big players such as Coca-Cola and Pepsi Co. signed contracts with San Benedetto. However, following coopetition, there emerged several differently originated interferences in the firm's original business model. This study highlights that the inability to fully foresee the effects of competition, and eventually to metabolize them, might in the long run turn coopetition from opportunity into a trap.*

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Elena Bonel <**what is her position? is a professor of what subject?**>, University of Trento, Department of Informatics and Business Management, Via Inama 5, 38100 Trento, Italy (tel.: +39 0461882100; fax: +39 0461882124; e-mail: elena.bonel@lett.unitn.it). Elena Rocco <**what is her position? is a professor of what subject?**>, University Ca' Foscari of Venice, Department of Business Economics and Management, San Giobbe Cannaregio 873, 30121 Venice, Italy (tel.: +39 0412348744; fax: +39 0412348701; e-mail: rakele@unive.it).

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<<is there some other way to phrase this? the paras will not be numbered when this is typeset>> Nonetheless in terms of writing, and counting the first paragraph as n.1, paragraphs 1, 2.1, 4.2, 4.3, 5.1, 5.2.1 and 6.2 can be more directly attributed to Elena Bonel, and paragraphs 2.2, 2.3, 3, 4.1, 5.2.2, 5.2.3, 6.1, and 7 to Elena Rocco.

The birth of the intrinsic concept of cooptation dates back to decades ago. In fact, cooptation brings to the studies of strategic management a distinction set forth in early times by game theorists Von Neumann and Morgenstern (1944). Later, in *The Strategy of Conflict* (1960), Schelling made a remarkable step forward in distinguishing pure versus mixed-motive games, and Brandenburger and Nalebuff (1996<<AU: 1996a or 1996b?>>) took a strategy view. Nonetheless, as Dagnino and Padula wrote, “Far from being a compact monolith, cooptation strategy is a multidimensional and multifaceted concept which assumes a number of different forms . . . it is all but easy to grasp its structure, processes, and evolving patterns” (2002, 13). Advances have been made to identify typologies of cooptation, distinguishing levels of analysis and cooptation forms. A wide array of research has concentrated on the strategic level of cooptation issues versus the operational level that is still underresearched (Brandenburger and Nalebuff 1996a; Dagnino and Padula 2002; Jolly 2002). Cooptation has mainly been studied, both explicitly and implicitly, under the form of strategic alliances, joint ventures, and contractual agreements (Brandenburger and Nalebuff 1996a; Burton 1995; Doz and Hamel 1998; Lorange and Roos 1991; Yoshino and Rangan 1995). The relevance of the topic makes us expect further articulations and additional contributions. Our contribution consists of an inductive study investigating an overlooked class of risks stemming from the operationalization of a cooptation strategy from a single partner’s point of view. Here we articulate a theoretical distinction of the negative impacts of cooptation on a firm, particularly as ensuing from the possibly disrupting effects on the internal coherence of the firm’s original business model complementarities (Milgrom and Roberts 1995). The study is focused on a firm, San Benedetto SpA, that based its recent strategy and success on an active cooptation-driven strategy.

Cooptation emphasizes the mixed-motive nature of relationships in which two or more parties can create value by complementing each other’s activity. A complement to a product X is any other product Y that makes product X more, rather than less, attractive (Brandenburger and Nalebuff 1996a). The exponential growth of academic interest around the concept of cooptation mirrors increasing corresponding needs in several competitive markets where the pace of innovation puts firms’ survival at risk. However, as cooptation is based on a partially convergent interests structure, its advantages might be blown by a change in the latter. So far, literature has focused on the fragility of cooptation at its inter-firm level, mainly due to opportunism risks or external changes (Bresser 1987; Faulkner 1994; Gulati, Nohria, and Zaheer 2000; Hamel 1991; Hamel and Doz 1989<<AU: Not in References—please provide>>; Harrigan 1988; Yoshino and Rangan 1995). Studies focusing on the phenomenon of cooptative relationship formation or death outweigh those

dealing with their evolution. Ring and Van de Ven (1994) propose a process framework where the evolution consists of the three stages of negotiation, commitment, and execution. Ariño and de la Torre (1998) and Doz (1996) look at how learning and interaction issues mediate between initial conditions and outcomes at a relationship level, yet remain silent on the execution stage and the single partner level.

We believe research on coopetition should delve into the execution stage, and we focus on the issues stemming from operationalizing coopetition, particularly at the intra-firm level. We aim to investigate the following: What are the effects of a coopetition strategy on a single partner? How is a partner's original web of complementarities affected, and does a well-grounded coopetition strategy necessarily engender virtuous effects only? The research contributes to both theory and practice of coopetition. Theoretically, it contributes to the investigation of the structure and behavior of a single partner's web of complementarities before and after it engages in coopetition. From a managerial point of view, it aids in reaching better-informed decisions and terms of agreement when engaging in such a strategy, as well as in managing the ensuing setting over time, and allowing the partners to pay due attention to otherwise unforeseeable consequences.

## **Stretching yourself to shake hands with your competitors**

### *Cooperating with a competitor*

Our ground hypothesis is that coopetition affects the internal coherence, synergies, assumptions, and conditions on which each cooperating firm's business model rests (Laine 2002). This research is concerned with the impact a coopetition strategy has on the individual cooperating partner. We argue that the sustainability of a coopetition strategy should be subject to a deep and systemic understanding of its effects on the individual parties' business models. Complementarities and synergies among the various elements involved in the latter might be positively or adversely affected, threatening the robustness of a firm's business model.

Researchers in various fields converged to agree that the performance of a firm system could be explained by looking at the system of interdependent elements underlying its workings. For instance, literature on business process reengineering (BPR) explored the importance of complementarities and of business model internal coherence in determining firms' success, as well as in addressing change management settings (Davenport and Stoddard 1994; Hammer and Champy 1993; Hauser and Clausing 1988). Miller and Friesen (1984) used the term "configuration" to relate a firm's success to its internal

coherence. In a broader fashion, Porter (1996) put forward the notion of “activity system” to stress the role of mutually reinforcing activities in creating and sustaining competitive advantage. In parallel, economists relied on mathematical frameworks for rigorous modeling of mutually reinforcing interactions (Milgrom and Roberts 1990, 1995). Recently, Siggelkow (2001, 2002) proposed a distinction between external and internal fit. External fit is the appropriateness of a configuration given the environmental conditions a firm faces; internal fit concerns the degree of internal coherence among a firm’s elements. Both should be achieved to be competitive. Competitive advantage is more likely to be sustainable, if based on activities’ contextual interactions that are strategy specific. Contextuality helps explain different performance levels among firms belonging to one industry (Porter and Siggelkow 2004).

The framework adopted in this study builds on the above-mentioned literature. It applies the concepts of complementarity and internal coherence in order to address the operational issues of cooperation implementation, management, and sustainability at a single firm level.

The adopted notion of complementarity takes its cue from the concept of Edgeworth complements. Activities are complements if the marginal returns to one variable (activity) are increasing in the levels of the other variables (activities)—that is, if doing more of any one activity increases the returns to doing more of the others. A sound business model (or system) will display a set of complementary activities, more or less closely knitted and intertwined. Some activities will not be reciprocally complementary, but the internal coherence of the model will depend on the presence of some degree of interdependence.

Complementarity helps in suggesting a basis for tackling coherence and fit among strategy, structure, and process elements: “they [complementarities] help us model how the elements of optimal firm strategy and structure are linked to one another and . . . how they would change in a coherent fashion in a changing environment” (Milgrom and Roberts 1990, 190). The notion of complementarity as defined here is positive and does not envisage negative outcomes of interdependence between the various elements considered. Although measuring the complementarity is not within the scope of our analysis, or of that of Milgrom and Roberts, because we are focusing on the overall effects of interdependencies, the overall sign of the complementarity is instead crucial. Because this study is focused on both the possible positive and negative effects of cooperation, we leverage on the concept of complementarity by considering its sign. A “positive complementarity” acts as described here, whereas a “negative complementarity” is an “interference” that arises when increases in one variable result in decreases in the other variables considered. In some cases, the effect is spurious, neither strongly reinforcing, nor com-

pletely interfering. A “noncomplementarity” will be one in which a variation in one variable does not affect the other variables.

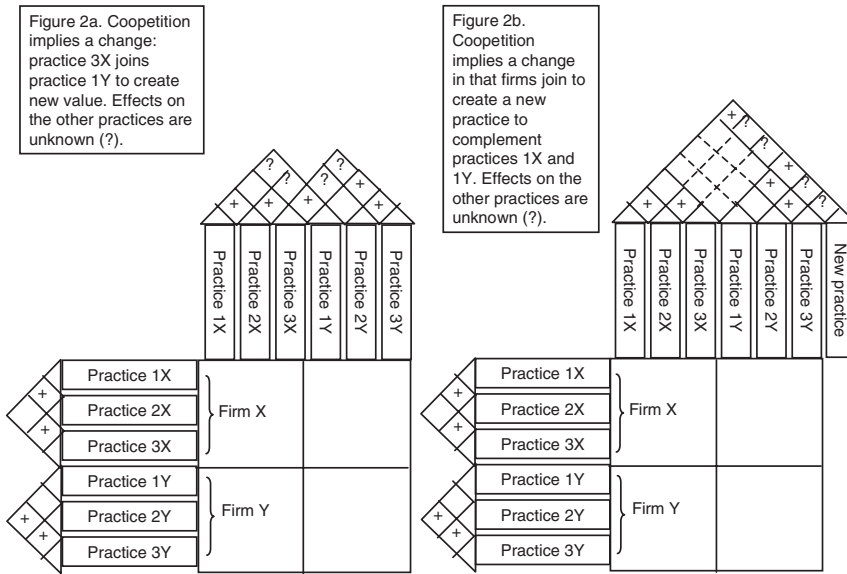
### ***Representing business model changes***

At a strategic level, when deciding on coopetition, firms take into account their respective interest structure in order to individuate win–win, possibly collaborative, solutions to the competitive game (Brandenburger and Nalebuff 1996). This means that at the functional and operational levels, each partner should consider the possible consequences of the strategy on the firm’s structure and performance. In order to research the possible risks stemming from implementing coopetition at an individual firm level, we adopt a process approach to the internal change a coopetition strategy possibly entails.

Consider now a business system facing change in terms of its constituting elements and their internal reciprocal coherence. The notion of element designates a heterogeneous group of factors, such as a firm’s activity, an organizational form or procedure, a technology, a strategic approach, or a human resource policy (Brynjolfsson, Austin Renshaw, and Van Alstyne 1997; Levinthal 1997; Siggelkow 2002). Brynjolfsson and colleagues (1997) proposed a representation of change within business models building on the concepts of complementarities and interactions. In their work, the notions of element and practice are used as synonyms. The representation aims at capturing connections between elements within a business system. It graphically displays the various elements and activities a firm consists of, highlighting both reinforcing and interfering system elements. The representation encompasses a view of both the present-state business model of a firm, and of the prospective model. In Figure 1 we present a simplified version of such representation.

The rows in Figure 1 represent the elements of the current (or past) business model of a firm, and the resulting triangular table on the left-hand side graphically displays the ensuing presence of positive complementarities “+” (complementary practices in the graph), negative complementarities “–” (interfering practices), and noncomplementarities “blank” (no interaction) between the elements of the current model (rows), as they can be recognized in their overall sign. Spurious interactions where an overall positive or negative does not emerge are represented by “+/-.” In Figure 1, in the triangle to the left, we observe positive complementarities between practices one and two, two and three, one and three, and three and four. Interferences arise between practices one and four. Finally, “noncomplementarities” emerge between practices two and four. The columns in the figure represent the elements of the prospective or change-originated business model, with their respective interactions’ evaluation in the surmounting triangular table. The change may





**Figure 2.** Predicted pattern: potential unintended direct effects raised by a competition strategy

disruption following change, its business system being unstable in case the knitting unthreads.

**Representing cooperation-driven change**

We employ the above approach in order to study a cooperation setting in terms of complementarity and interaction. We adopt the representation in order to display the merging of elements of two or more different business models. Both cooperating partners have an original (precooperation) business model. By entering a cooperation setting, some elements of each party’s model start interacting with the other party’s elements, as strategic interactions develop into implementation. This new inter-firm interaction might engender positive complementarities, but also negative ones, thus interfering with each partner’s original business model. Figure 2 presents two simplified representations of the possible effects of cooperation on a firm’s business model. In Figure 2a, we represent two collaborating firms, simply putting side by side some of their organizational practices. Each firm’s business model changes in that the ought-to-be, strategically envisaged new positive complementarities between practices 3X and 1Y are created. However, although the interrelation between these practices might extract the envisaged cooperation benefits, the effects

on other practices might be unknown or unforeseen, as represented by the “?” symbols displayed in Figure 2a. Firm X verifies the sustainability of the practice 1 of firm Y against its own practices, and vice versa. In Figure 2b, two firms jointly create a new element (e.g., a technology), which is meant to constitute positive complementarities with practices 1X and 1Y, respectively, within each firm’s model. Before coopting, both firms must test the sustainability of the new practice against those constituting the existing business models (2X, 3X and 2Y, 3Y).

Furthermore, changes raised by cooptation can have indirect effects on complementarities between existing practices. For instance, the new practice can complement two existing practices. However, the latter two practices may, as a result, become incompatible. As shown in Figure 2, a complementarity system may entail interactions that are not apparent when the cooptation strategy is devised, and next to reinforcing or positive effects between two existing practices, other unknown effects (as symbolized by “?”) can arise between other practices as a result, and be positive or negative in outcome.

In general, undesired effects cannot be wholeheartedly rejected or solved according to the firm’s own interest structure (and thus in a fashion respecting its own system of complementarities), being tied in with the “cooperation side” (Dagnino and Padula 2002) implicit in any cooptation strategy. This can have a twofold effect. The effect can be positive, the changes bringing some sort of positive synergic consequence to the firm, such as learning, innovation, resources, better scale economies, and so forth, or they can be negative, unsettling or stretching its complementarity system, as might happen in cases of excessive complexity, production planning systems disruption, priority rules stall, or loss of control. A dynamic approach to cooptation would allow for this strategy’s viability and sustainability to be assessed, as well as for strategic reassessment to occur in order to reap the benefits tied in with the establishment of positive complementarities, yet controlling the rise of negative complementarities, or the disruption of existing positive ones.

## Methodology

Cooptation is an emerging theme in the literature. To better understand the range of possible unintended effects stemming from this mixed-motive strategy, we engaged in an inductive study of a company’s cooptation-driven evolution (Eisenhardt 1989; Miles and Huberman 1984; Siggelkow 2002; Yin 1989). The unit of analysis is an internationalized firm in the mineral waters and soft drinks industry, San Benedetto SpA. The firm is currently engaged in several cooptation relationships, which allow for a literal replication study (Yin 1989). The study was carried out in three stages, mirroring methodology



and interviewing protocols from reported studies on complementarity identification, organization, mapping, and evaluation (Brynjolfsson et al. 1997; Milgrom and Roberts 1990, 1995; Porter and Siggelkow 2004; Siggelkow 2000, 2001).

In the first stage, we relied on preliminary interviews with the top management and collected company documents to develop a chronology of San Benedetto's business model evolution over time. To build a business model, as a first step, we employed the business model concept implied in the MOC methodology of Brynjolfsson and colleagues (1997). This methodology is based on the identification of the key industry competitive requirements. The second step consists of individuating peculiar practices or activities performed by the firm in order to meet each requirement. The firm's business model consists of the whole set of practices and of the relationships among them (Brynjolfsson et al. 1997; Porter 1986<<AU: Or 1996 as in the References?>>; Porter and Siggelkow 2004; Siggelkow 2001, 2002). Our goals were to elicit hypotheses and questions about the year universally recognized as a landmark in the firm's business model evolution due to coopetition; the business model until that year; the changes to that model that were driven by coopetition; and the role of practices, existing and ensuing, and their overall respective complementarity signs. The empirical study employs a pattern-matching logic (Trochim 1989; Yin 1989). This logic compares an empirically based pattern with a predicted one. The predicted pattern should be based on existing literature and theory. When the two patterns coincide, the internal validity of a case study is strengthened. In our case, we were interested in comparing the empirical evidence with the research questions presented in the previous paragraph. Namely, we wanted to address whether coopetition brings into the new business model only positive complementarities, or, as we predict based on existing literature (Brynjolfsson et al. 1997; Milgrom and Roberts 1995; Porter and Siggelkow 2004; Siggelkow 2001), it might also lead to the emergence of negative unforeseen effects as illustrated in Figure 2.

In the second stage, we engaged in a series of interviews to investigate the hypotheses about the questions above and to answer further questions raised in the first stage. The empirical research was based on semistructured interviews and participant observations. Overall, the authors jointly conducted about eighty hours of personal interviews. Thirty-four open-ended and semistructured interviews were conducted at the executive (11 interviews), functional (14), and operational (9) levels. The interviews covered topics such as past history and development of the firm, its success factors, anecdotes of the firm's development, new issues arising from the relationships with coopeting partners, new business system elements, work and management beliefs and methodologies, production techniques, and coopetitive agreements. Interviews

were recorded and transcribed. Participant observation complemented the interviews: the authors spent about 100 hours interacting with the personnel at both shop-floor and clerk levels, wearing the San Benedetto uniform and, in some cases, participating as a coworker. Through this interactive process and the high number of interviews and observations at different firm levels, we were able to formulate the firm's business model before and after the drastic wave of cooptation started. Through this fieldwork, we could build the business model after having identified the key industry requirements. We then identified the firm's strategy as a response to the requirements and described it through practices. Finally, we attributed each practice to the corresponding industry requirement. At this point, we could report the net of complementarity signs among practices on the basis of the evidence collected. The results of this research step have been iteratively tested with the subjects involved in the analysis, leading to convergence on contents by different judges so as to increase the external validity of the analytical construct (Yin 1989) and to search cross-case patterns in identifying practices and complementarities (Eisenhardt 1989).

The third methodological stage involved in-depth interviews with top management. In particular, the authors jointly conducted in-depth interviews with the CEO, the human resources director, the COO, and the marketing director. These interviews permitted us to further refine and test the business model representation and its net of complementarities. It also permitted us to triangulate the soundness of the empirical findings collected at the shop floor about the difficulties brought in by cooptation (Eisenhardt 1989; Yin 1989).

The research was focused on gaining an understanding of San Benedetto's business model and system of complementarities both before and after cooptation, with a special focus on the operations function. In fact, the firm adopts a functional structure and is strongly production centered in its business model elements. For these reasons, the study concentrates its analysis on the production function, even though we recognize the relevance of cooptation with regard to other areas, such as logistics and procurement, which were also treated in the field research.

### **The San Benedetto case: coopting in the mineral waters and soft drinks industry**

#### *An overview of the industry*

The mineral waters and soft drinks industry has been growing and concentrating over the last 15 years. Between 1988 and 1999, the increment in the

Italian market, which mirrors that of the European market, was 92 percent for the mineral waters segment and 43 percent in the soft drinks segment. The disposable bottle, the PET innovation, and the parallel (and correlated) growth of home consumption help to explain this growth. Concentration rates soared, and the three main competitors in the Italian competitive arena (San Benedetto, Nestlè, and Danone) now share about 70 percent of the market. Nestlè and Danone tend to grow through acquisitions (e.g., in 1997 Nestlè bought San Pellegrino), and San Benedetto privileges an internal growth mode.<sup>1</sup> Currently, the firm possesses four factories in Italy (Scorzè, Popoli, Biella, Nepi) and is working on the construction of a fourth in Paese (Treviso).

The industry is a high-volume, relatively low-margin industry. In distributors' view, it offers a bulky product with a low margin/m<sup>2</sup> ratio, and therefore, in order to gain access to congested distributors' shelves, a well-known brand name or competitive price are needed. For this same reason, reducing storing and logistics costs is essential, which calls for production decentralization and a careful production and inventory planning taking due care of seasonality. Good logistics is crucial to retain even loyal customers, because thirst is a need that does not wait. The same applies to soft drinks, although less markedly so thanks to the higher margins and higher customer loyalty characterizing this kind of products. Also, it is a relatively mature industry where market growth is pursued by stimulating consumers to a more intense or extended use of soft drinks. The main requirements of a strong competitor's profile in the industry are high levels of economies of scale, access to distribution channels, low-cost operations, short response times, flexibility to variable market conditions (e.g., weather conditions, seasonality), and product innovation (concerning both packaging and containers, and contents). Market share is all important in exploiting economies of scale. At the same time, an organization with multiple locations helps minimize distribution time and costs. These factors explain why small players are gradually giving way to bigger ones who can better exploit economies of scale and thereby enjoy a stronger position concerning access to multiple distribution channels. These advantages lead to a lower cost structure allowing for more intensive investment in terms of innovation and R&D. In this setting, coopetition is becoming an inevitable strategy.

### *San Benedetto: from mineral waters to lines manufacturer*

San Benedetto S.p.A. is located in the northeast of Italy in Scorzè, near the city of Venice. The factory was built in 1956 around an ancient spring well, named "Well of Health" after the excellent quality of its waters. In the early 1970s, the then two new managers, Mr. De Polo, the President, and Mr. Zoppas, the CEO,<sup>3</sup> decided to pursue radical change and transform the company

into a modern factory. Inspired by overseas examples, in particular, through personal visits to UK and U.S. multinational-owned plants, they invested in modern technologies to improve the quality and speed of bottling lines. San Benedetto initially bottled water into glass bottles and distributed them in northeast Italy, competing with local firms.

In the 1980s, San Benedetto's evolution took off. The first important change occurred with the introduction of PET. San Benedetto is among the early companies in Europe to believe in PET as a substitute for glass. At the beginning, San Benedetto bought second-hand PET-bottle manufacturing machines from vendors in the United States. Within a few years, the company was able to design its own "blowers" (machines manufacturing PET bottles) based on San Benedetto's projects and designs. San Benedetto blowers made by SIPA4, a company owned by the CEO's family, increased production from 8,000 to 36,000 bottles per hour, per blower, on average. At the same time, San Benedetto was exploiting PET as a source of innovation in bottle design, as well as in creating a new cost-management and logistics system. The PET innovation was a key leverage for future marketing and growth strategies, allowing for greater packaging flexibility and innovation, and reduced distribution costs, and also relieving the customer from returning bottles. At this stage, San Benedetto started launching new beverages in addition to water, such as orange-based soft drinks. Soon, San Benedetto's production strength and sophisticated technical level attracted the interests of other companies. In 1984, San Benedetto signed a franchising agreement with British Cadbury Schweppes International to produce and distribute its products in Italy. The second important agreement came in 1988 with Pepsi Co. International to produce Pepsi and 7-Up. From this time on, San Benedetto enters into foreign markets through dealers, wholesalers, and traders in the final markets (e.g., in France, the former Yugoslavia, Denmark, South America, Hong Kong).

In the 1990s, a second important stage took place. Foreign companies, especially in the United States, were bottling in cold environments, thanks to aseptic bottling lines. Until then, beverages had to be sterilized at high temperatures and then cooled before bottling, a time- and space-consuming process. San Benedetto decided to adopt the innovation, in spite of its high costs. In a few years, San Benedetto has learned to build aseptic in-house bottling lines. The innovation brought in a cascade of correlated innovations and expanded San Benedetto's portfolio of soft drinks (juice-based, milk-based, vitamin-added, and so on). In less than ten years, the firm became a manufacturer of aseptic bottling lines not only for internal use, but also for worldwide competitors. The permanent emphasis on innovation allowed the company to achieve an international reputation as a manufacturer of aseptic bottling lines, facilitating a new wave of alliances with foreign partners.

In terms of coopetition, this meant that San Benedetto was becoming complementary to its competitors, by delivering fast, cheap, high-quality bottling capacity and product development and engineering speed and flexibility. The setup of joint ventures entailing joint management and based on technology transfer for manufacturing, running, and maintaining state-of-the-art bottling lines also highlighted San Benedetto's role as a coopetitor of the big global players. In turn, competitors offered San Benedetto a means of saturating capacity, of smoothing seasonality, a strategic window on world-class quality and know-how in new product concept generation. Thus, the firm set up with its competitors a network of relationships consisting of strategic alliances, meeting Yoshino and Rangan's (1995) conditions, as partners retained independent goals but shared the benefits of the alliance on a continuing basis.

The first joint venture with Cadbury Schweppes, called Européenne d'Embouteillage S.N.C., was set in Gadagne, France, in 1996. A year later, a new plant was built in Valencia, Spain. In 1999, San Benedetto owned shares in Agua Mineral Santa Clara, in the Dominican Republic. In 2001, through a collaboration agreement with Danône, the company Polska Voda was opened in Eastern Europe (Poland). Others followed term; all strategic alliances struck up by San Benedetto over the years are still in place. The sequence of newborn joint ventures aided San Benedetto's revenue growth through both the selling of lines and the appropriation of a percentage on the margins from the joint venture partners' sellout. San Benedetto did not need to fear its joint venture partners, as each competed in its national market.

Over the years, San Benedetto also started producing high-value products for Ferrero (EstaThè), coinvesting in new technologies for tea infusion over long-term contract agreements. The last important production and product development agreement dates back to 2002, with Atlantic Beverages Limited (ABL) to produce a range of Coca-Cola products for the European market, and led to the establishment of a technology transfer JV<<AU: Spell out JV—joint venture?>> of San Benedetto and Coca-Cola (ABL) in Germany.

### *Coopeting to survive*

The mineral waters and soft drinks industry is a mature one in which ensuing consolidation poses survival strategy issues to existing firms. In particular, the presence of a few very big global players makes the risk of being acquired very palpable, alongside with that of being pushed out of the consolidating industry because of cost structure, having become a comparatively small, low-volume player. In the case of San Benedetto, the firm had gained by the middle of the 1990s an established market position in Italy as well as abroad thanks to its low cost structure, technical excellence and innovation, and

product quality. In order to achieve yet higher volumes, the firm engaged in production for competitors. In 2004, about 20 percent of San Benedetto payoff came from production for others. More important, San Benedetto also leveraged its technical abilities by initiating a new business in selling production lines to third parties and competitors, or injecting them as capital in technology-transfer-based joint ventures outside the national market, thus also gaining new market openings for its own production. These two kinds of cooperative activities, based on complementing competitors' activities through production and operations advantage, in order to meet its need for commercial expansion, have had a profound impact on the firm.

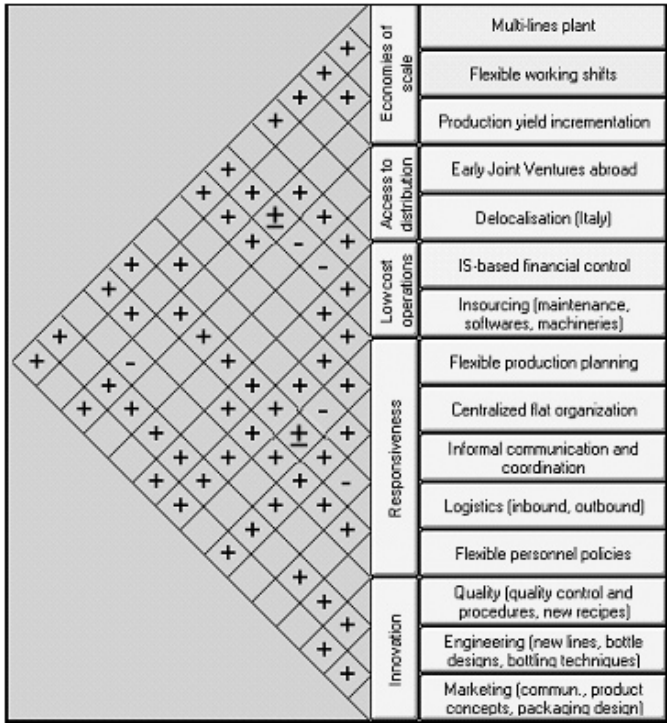
In the early 1990s, San Benedetto was cooperated in order to take advantage of its technical superiority by technologically complementing competitors and selling them aseptic lines worldwide. Newborn joint ventures aided San Benedetto's growth through revenues by both the selling of lines, and the appropriation of a percentage on the margins from the joint venture partners' sellout. This helped San Benedetto in cashing out from the continuous investment it had always made according to its in-sourcing and do-it-yourself policies, thus avoiding it becoming too rigid as a result of internal investment costs. San Benedetto also gained important logistics nodes. Later, when Coca-Cola and Pepsi started to loom large in the European market not only with sparkling, but also with still drinks, thus invading an area in which San Benedetto had a competing edge,<sup>5</sup> San Benedetto once again started cooperating with its competitors on yet another front. San Benedetto cooperated in engineering and the developing of new products, and producing them for the very big players, which were invading its markets. By cooperating with them before someone else would, San Benedetto capitalized on its high-level quality and technology, low-time-to-market period, and low-cost features.

The two waves of cooperation illustrated above—namely, line and machine production for technology transfer joint ventures to develop internationally, and long-term contracts of co-design and production for competitors to smooth seasonality and achieve higher margins—are having profound implications for San Benedetto. The firm's commitment to excellence is now a very precise requirement for San Benedetto to not be discarded by its strategic allies in favor of another partner. At the same time, cooperation is stressing out San Benedetto's business model coherence, putting excellence at stake.

## **Results**

### ***The San Benedetto business model until 1996–1997***

The results of the interviews suggest that a drastic cooperation-driven change



**Figure 3.** A representation of San Benedetto’s business model until 1996–97

in the business model occurred after 1996–97. In presenting the results, we first present San Benedetto’s business model as it was in 1996–97. We then illustrate the empirical evidence about the double-sided impact of ensuing coopetition on the 1996–97 business model, raising issues about the current management of change. In particular, we identified three “areas of impact” due to coopetition: the production capacity area, the product development area, and finally, the engineering area.

Based on the Matrix of Change (see above), we drew Figure 3 that represents the 1996–97 business model according to the three steps described in the Methodology section. The five blocks to the left of the figure (labeled economies of scale, access to distribution, low-cost operations, responsiveness, innovation) report the main industry requirements for being a strong market player in the mineral waters and soft drinks industry. Beside each block, we indicate the practices employed by the firm to meet such requirements. Both requirements and practice clusters were identified and validated through a cross-pattern interview process, and through the analysis of primary and

secondary data. In the triangle, we indicate the net of complementarities and interferences as well as their signs (positive for complementarities, negative for interferences or “+/-” for double-sided cases).

For instance, the multi-line Scorzè plant, the marketing push for innovation, and the incremental production yields create a net of positive complementarities. Until 1996–97, the multi-line plant in Scorzè complemented marketing product innovation as the firm had the capacity to satisfy in-house new product testing and production without compromising planning. At the same time, having multiple production lines allowed the firm to test machinery innovation geared to increment production yield on idle machines. In turn, production yields on multiple lines made a wider product range feasible, satisfying marketing demands for innovation.

At a glance, Figure 3 shows the tightly knit net of positive complementarities among the business model elements, as resulted from the interviews, observations, and data analysis conducted. Except for a few interferences among activities, in 1996–97 the firm ran a fairly coherent business model (many + signs). It is against this presentation that we pitted the qualitative evidence collected in the field.

### **Coopetition-driven changes in San Benedetto**

Once San Benedetto had engaged in a coopetition strategy, the firm’s business model came in contact with that of competing partners. Interdependencies engendered desired complementarities as well as interferences that had to be managed.

#### ***Production capacity area***

Producing for others aids in exploiting economies of scale. Higher production rates justify the costs of full-time employment, with positive returns for learning and skill accumulation. However, coopetition in production also created a whole set of negative consequences for the firm, as compared with the 1996–97 status quo at San Benedetto. In the busy season, production planning is focused on following consumers’ demand. Since San Benedetto started producing for others, this planning focus increased exponentially as all partners faced the same demand San Benedetto faced. Over the busy season, the firm often runs out of the capacity needed to satisfy internal and external demands. The problem of conflicting priorities could be identified in several production issues across the whole process: PET bottles production,<sup>6</sup> concentrated syrup for soft drinks production, and bottling. To bypass at least some of the problems caused by capacity saturation, the firm tries to move



from an informal, flexible production planning to a more rigid one based on a make-to-stock philosophy, forcing partners to launch orders in advance. This requires better formal coordination procedures. In addition, the firm expands the main production season beyond the mid-May to August period.

In general, capacity saturation is compromising responsiveness in many ways, compared with the 1996–97 model. First, partners are reluctant to get engaged in rigid planning. Storing products is costly, and products often quickly expire in six to nine months. Second, the longer production season is in conflict with San Benedetto's tradition of devoting non-busy months to maintenance, training, and technical improvements, all of which are key resources for lines and product innovation. Given the rising complexity of the production lines, and the increase in the number of employees, a penalization of training results in a loss of ability in conducting activities according to the traditional San Benedetto do-it-yourself approach. Responsiveness is penalized as workers along the lines are no longer able to solve problems by themselves and on the fly, but must wait until a trained technician is available. Because of coopetition, this last issue is more problematic than it appears.

### ***Product development***

The multiple alliances San Benedetto entered had a positive effect not only in monetary terms, but also in strengthening San Benedetto's competitive advantages and know-how in many areas (marketing, logistics, quality control, etc.). For instance, by producing for others, San Benedetto improved its own product innovation strategies. One example is the push–pull cap. San Benedetto did hold a license for this kind of cap, but it was Coca-Cola who recommended later adjustments in the diameter and other technical features of the cap, so as to comply with the EEC norms on products' safety for children use. San Benedetto immediately transposed the improvement to its own products.

Yet problems arose when the firm was confronted with external innovation requested by Ferrero, a coopetition partner. Ferrero intended to produce its tea in a new bottle and asked San Benedetto to produce and fill a new one designed by the famous industrial designer Giugiaro. In the expert eyes of San Benedetto's technicians, trained by daily informal contacts with the engineering department, it was clear the design of the bottle was not responding to industrialization requirements: the bottle was too light and thin, easily collapsible; it was not stable when standing; and the top was larger than the base, making storing difficult. Nonetheless, Ferrero insisted on using this design. San Benedetto engineers slowly and incrementally managed to introduce some changes to the bottle's original design. Meanwhile, though, the bottle was on production lines, causing productivity slowdowns and line

stops and requiring one dedicated person to redress toppled bottles on the runs and continual care in creating and moving pallets.

The roots of such problems can be traced back to the breakdown between the marketing and the engineering departments of San Benedetto. Being an external innovation imposed by Ferrero's marketing department, the *Giugiaro* bottle could not benefit from the technical-savvy collaborative approach to bottle design employed in San Benedetto. This collaboration represented a synergy between San Benedetto's bottle producing, bottle filling, and bottle distributing, which was fostered by informal and tight coordination mechanisms between the marketing and engineering areas. Instead, as was the case with Ferrero, external clients such as cooperating partners came in with a request (their practice), and expected San Benedetto to modify its practices in order to comply with the partner's request.

### *Engineering area*

Due to competition, engineering know-how is allocated between Scorzè and the partners' plants scattered in Europe (e.g., Germany, France, Poland, etc.) and overseas (Santo Domingo, Hong Kong, etc.). This reduces the number of technicians and engineers available for interventions on the Scorzè lines, both for maintenance and innovation. During an interview, a line conductor stated: "I don't understand any more if San Benedetto's mission is selling bottles or bottling lines." The benefits of San Benedetto's international leadership in terms of aseptic line innovation are evident: the higher the reputation, the higher the interest by partners (especially multinationals) to cooperate with the firm, that complements them technologically and gets in return both higher revenues and an international reputation. Once again, the complementarity between San Benedetto's technical know-how and its alliances weakened multiple preexisting complementarities in the business model for 1996–97. The success of the latter was indeed rooted in a tight relation between engineering and other areas such as quality and production, sustaining the learning on the job accountable for San Benedetto's winning "do-it-yourself" approach. Engineering was also responsible for swift intervention when production called for a change (e.g., a mold change to comply with an unexpected order) or a production yield improvement. Today, the explosive demand for aseptic lines pushed toward a reorganization of the technical service into an independent unit called "engineering." Soon, the unit started offering services to San Benedetto in Scorzè as well as to partners abroad. The organizational shift for Scorzè line workers was huge, as they started losing fast access to, and contamination by, technical services. In addition, the new generation of engineers and technicians behaves and interacts differently from the senior generation

of production workers. In turn, this means lower quality and delays in house, as well as frustration. Combined with the shortening of learning times in the bottling lines due to longer production seasons, the picture that emerges is that of a business model that starts missing out on core complementarities vital for responsiveness and innovation.

## Discussion

The sections above summarize the main empirical findings. After describing the business model until 1996–97, which is recognized as a landmark in the firm’s strategy, we focused on the areas of impact of cooperation. In each area, we could observe the dual effects of cooperation. On the one hand, we observed the positive effects explicitly pursued by the management in adopting such a strategy. On the other hand, we could register several negative and unpredicted effects driven by cooperation. We can conclude that the empirically based pattern matches the predicted one.

In the next part of the paper, we elaborate on the findings in order to show how the negative effects of cooperation can have different natures and, therefore, have different implications at the business model level, thus asking for different solutions. In order to do this, we mapped the empirical findings described into the three areas of impact, so as to show how a business model’s internal coherence can be differently “spoiled” by the negative effects of cooperation.

Figure 4 shows the “snowball effect” of production capacity saturation: positive complementarities weaken between the multi-line plant and the flexible production planning, as producing for partners overwhelms the lines. As highlighted in Figure 4, the impairing of some of the practices adopted in order to respond to the responsiveness industry requirement leads in turn to a further disruption of the practices set related to the economies-of-scale requirement. For instance, the transition driven by capacity saturation from a flexible to a more rigid production planning meant that slack times for innovation testing shrank. This, in turn, meant production yield increments became an issue.

For what concerns the effects of external innovation deriving from cooperation, the injection of external know-how (in our example presented in the Results paragraph, the Giugiaro-designed bottle by Ferrero) can lead to a breakdown of an existing synergy between practices, as highlighted in Figure 5. The Ferrero marketing approach to product development implied that the bottle design was introduced “as is” into the set of innovation practices usually performed at San Benedetto, rather than having emerged from the usual tight connections and iterative process between the engineering and marketing departments, which used to work over a synergic development procedure.



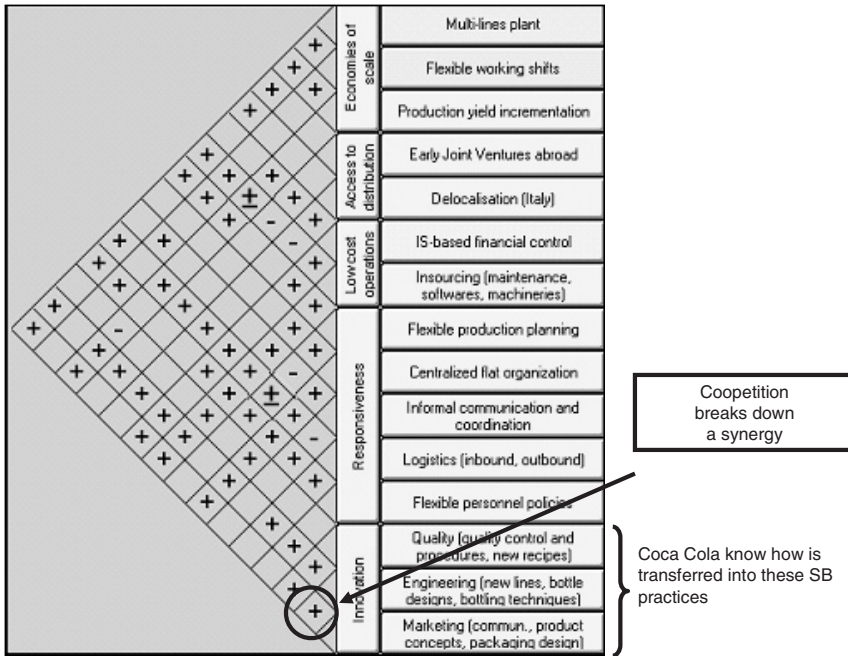


Figure 5. Unintended effects of external product development

happened but at a slower rate, as it lost the daily support of the engineering department.

*A theoretical distinction of the unintended effects of coopetition*

In this study, we discussed the impact of coopetition at the individual firm’s level. As is the case with theory generation through case study research, we aimed at eliciting a typology of the possible unintended effects of coopetition on a firm’s business model. Focusing on the system of complementarities displayed in its business model by a firm engaged in coopetition, and based on a theoretical framework developed in change management (Brynjolfs-son et al. 1997), we assessed the differing coherence levels among business model elements before and after the firm engaged in coopetition, when it also acknowledged priorities and interferences that were earlier no issue.

The examples presented on the unintended effects of coopetition are only some of the many parallel ones we could produce for each displayed category. The resulting wide set of examples was used for theory building, thus allowing the authors to elicit from empirical data a cross-pattern, literally replicating

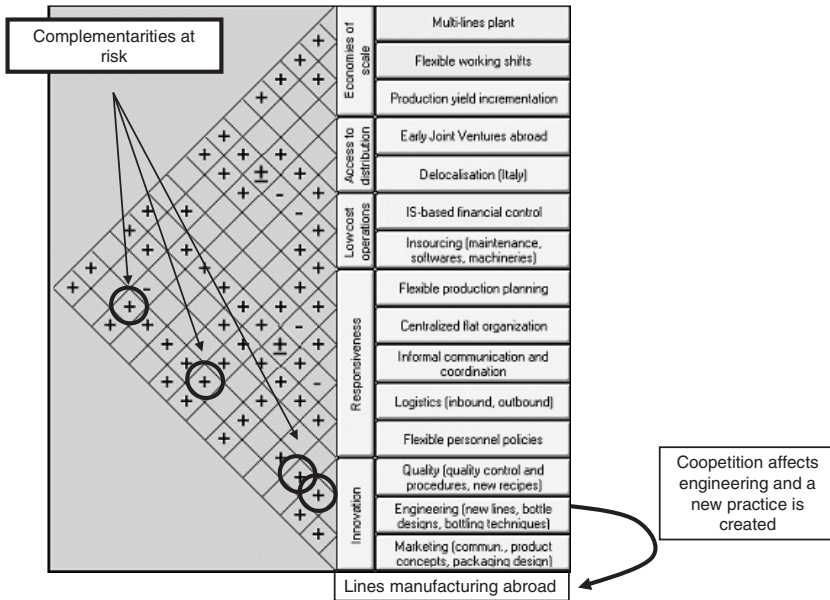


Figure 6. Unintended effects of a new engineering practice

theoretical distinction (Figure 7) of the various possible unintended effects caused by coopetition on the existing individual business model of a firm (Eisenhardt 1989; Miles and Huberman 1984; Yin 1989).

Consider a web of complementary activities as in Figure 7.1. Each double-edged continuous line corresponds to a plus sign in the matrix of change. The first class of risks associated with coopetition comes from the saturation of one or more activities simultaneously (Figure 7.2). Once an activity is saturated, complementarities with other activities might decline. In these circumstances, coopetition enacts a threshold effect. Beyond such a threshold, positive complementarities cease to exist or become negative. An analogy of a threshold effect can be found in Porter and Siggelkow’s (2004) empirical evidence against the unbound-ness of the concept of complementarity à la Milgrom and Roberts. In general, the more activities reach the threshold, the lower the robustness of the business model, as original complementarities fade.

The second class of unintended consequences regarding the replacement of an internal practice with an external one comes from the coopetitor (Figure 7). The loss of preexisting complementarities might be compensated by the gain of new ones, but the change must be centrally coordinated. This means that

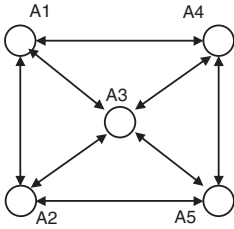


Figure 7.1. Complementary practices

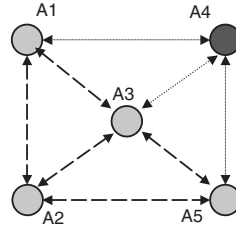


Figure 7.2. Practices saturation

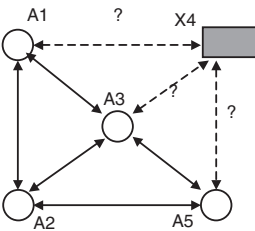


Figure 7.3. An external practice substitutes an internal practice

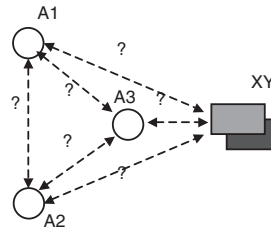


Figure 7.4. External practices replace internal practices and their complementarities

**Figure 7.** A theoretical distinction of unintended coopetition effects at the individual business model level

the new practice must pass a “compatibility test” before being injected into the system. In San Benedetto we observed many subtle substitutions, which were not always apparent or smoothly managed. External innovations such as the Giugiaro bottle belong to this class. Another such case arose when Coca-Cola imposed its own syrup recipe coding and stocking procedures, so as to keep the formula secret. The new procedures, implying several number-coded small packages of ingredients to be mixed, each set yielding small amounts of syrup, raised inconsistencies with San Benedetto’s logistics, and increased dramatically the likelihood of human error due to the complex coding and mixing system: recipes’ mistakes implied that product had to be discarded. Given that Coca-Cola shifted the number of recipes from three in 2002 to 70 in 2003, the effects were far from negligible.

The third class of risks concerns the replacement of a set of activities and their complementarities with a whole cluster of externally imposed practices. In this case, the shape of the business model changes, and coherence might be severely damaged. In fact, the concurrent elimination of a large number of activities and complementarities may paralyze other activities and complementarities of which functioning was contextual to that of the substituted ones. Interactions among activities are not always independent of other activities, as

Milgrom and Roberts' definition of complementarities would require (Porter and Siggelkow 2004). Contextuality can lead to interactions that change their nature when a drastic change occurs. In San Benedetto, producing and filling a new bottle for a partner caused a cascade of problems that led to the collapse of the production yield because it was contingent on the complementarities between engineering and marketing. The same applied to other San Benedetto business model's elements, such as quality. Because business model's activities are strictly interwoven, contextuality is difficult to disentangle. This makes cooptation even riskier as problems surface when the alliance is rolling in its configuration, and negotiating solutions to unforeseen problems may weaken the relationship.

Finally, cooptation could imply changes that add one or more new practices to the existing individual business model, thereby enriching the preexisting business model. Nevertheless, the compatibility test with preexisting activities is mandatory, the risk being a draining effect caused by the new practice. In San Benedetto, this effect was evident when the engineering department acquired a quasi-firm profile and started systematically having to provide engineering services to external firms abroad. This led the department to consider San Benedetto as yet one more of its customers lining up for the services of the scarce personnel, disrupting the close circuit of continuous maintenance and innovation between line operators and line engineers on which San Benedetto had counted thus far.

### **Conclusions and future research directions**

In the consolidating industry of mineral waters and soft drinks in which Coca-Cola and Pepsi are towering players, cooptation turned out to be a necessary transition for San Benedetto. The effects of this strategic decision turned out to pose several problematic issues for the firm. The study presented an inductive research aiming to draw a theoretical distinction of several classes of risks deriving from cooptation. Cooptation involves changes that might have an impact on the original system of complementarities on which a firm's business model rests. Several consequences can ensue. On the one hand, the firm may quit the cooptative relationship. Conversely, it might uncover internal limits and embrace a set of correlated changes to counteract the unintended effects brought in by cooptation. At San Benedetto, we observed many instances of counteracting behavior. In some cases, this meant loosening interdependences among business model elements, to keep the level of complexity under control. For instance, San Benedetto started to produce for partners on dedicated lines. The company is gradually becoming aware that cooptation involves the entire organization. To sustain



coopetition strategies in the long run, the business model structure should be carefully revised, in order to exploit emerging new complementarities and to address ensuing interferences due to interactions with coopeting partners. In the case of San Benedetto, managing change might prove particularly difficult because of two reasons. First, change within a firm displaying a tightly knitted business model (a tight web of complementarities between the various business model elements) requires strong, centralized direction (Davenport and Stoddard 1994; Hammer and Champy 1993; Hauser and Clausing 1988; Milgrom and Roberts 1990). Second, the company has to incorporate and negotiate with several coopeting partners with different needs, and in some cases, the company may find itself in a comparatively weaker position with respect to the partner.

Future research should apply the theoretical framework to test its robustness against different firms in various industries. Further work on this same case is under way, testing the proposed coopetition effects on complementarities through quantitative data. A relational approach to coopetition effects would also be recommendable, taking into consideration all coopeting partners' business models and ensuing interactions. In this sense, our future research also will try to address the issue of the dynamic aspects of coopetition along the above lines, expanding the case presented here.

## Notes

1. San Benedetto also grows by acquisitions, but rather because of portfolio considerations. In 2001, for instance, the firm bought Acqua di Nepi, a Lazio-based company (and corresponding spring) of naturally carbonated water, a product that San Benedetto did not hold in its product portfolio.

2. Producers are introducing drinks for new occasions of use: for sports, for special diet requirements, biological, etc.

3. Before we completed this paper, Mr. de Polo passed away. The CEO took on his role and a new CEO was appointed. This implied a profound change in the management of the firm. However, this study portrays roles and results based on data collected until July 2004 and therefore does not take into account this change.

4. SIPA is a company belonging to the Italian Zoppas family. It initially produced armored resistances for white goods, and subsequently developed, on San Benedetto's cue, an expertise in bottle-producing machines.

5. The aseptic-line production technology in which San Benedetto has gained excellence is especially important in drinks production. The carbonation present in sparkling drinks, in fact, reduces the need for an aseptic bottling environment.

6. New bottles are stored in silos before they are shifted to the bottling lines. San Benedetto built new silos, but it still must discard bottles contained in a silo, when the latter needs to be connected to a different bottling line. The wider the range of bottles produced due to external production, the higher the costs San Benedetto suffers in case of planning mistakes.

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