

Being closed in the open innovation era: is it possible? The case of Lindt & Sprüngli

Abstract

Opening up the innovation process is a “must”, or rather an opportunity? This paper discusses whether closed innovation models are still suitable in the era of increasing technological networking, or some degree of openness is substantially imposed. Starting from the premises given in the enormous amount of literature on open innovation, the paper investigates a case in the food industry, the Italian R&D subsidiary of the famous chocolate company Lindt & Sprüngli. The case concerns a company that claims the adoption of a closed approach to innovation. The paper shows what being closed actually means in Lindt, investigates why Lindt rejects an open model to innovation and illustrates how a “closed” approach is actually characterised in the open innovation era.

1. Introduction

Open innovation (OI) theories and practices have been receiving a great deal of attention in recent literature, (Chesbrough, 2003, Gassmann et al., 2010; Pisano and Verganti, 2008; Lazzarotti and Manzini, 2009) and some authors claim that OI represents “the imperative paradigm” to be successful and, as a consequence, that we are actually in the “open innovation era” (Chesbrough, 2003a; Chesbrough 2003b; Chesbrough 2007; Chesbrough and Crowther, 2006; Christensen et al., 2005; Huizingh, 2011). Some criticism emerges from several authors. In particular, the literature is still working to understand under which conditions companies adopting open innovation models outperform others (Lazzarotti et al., 2011a; Enkel and Lenz, 2009). In fact, opening the innovation process may have several benefits, but also many disadvantages. Among the main benefits, the literature emphasises accessing new competences and know how, sharing costs and risks of innovation, reducing time to market, increasing creativity, broadening product range, catching market opportunities, monitoring technological change (Tether, 2002; Calantone and Stanko, 2007; Dreschler and Natter, 2012; Tidd, 2014). Among the main disadvantages of open innovation, the literature brings into evidence uncontrolled spill over, loss of control over critical internal know-how, not invented here syndrome, increased managerial and organizational complexity and consequently increased time and managerial costs. (West, 2006; Trott and Hartmann, 2009; Van de Vrande et al., 2008; Huang et al., 2009; Praest-Knudsen and Mortensen, 2011; Hopkins et al., 2014). As a consequence, tensions arise within companies that open their innovation process, especially between the opportunity to access to external knowledge and the need to protect the

internal one, the willingness to reduce the costs and risks of innovation and the event to boost them because of the increased managerial and organizational complexity, the chance to capture new ideas from outside the company and the rejection of such ideas by the internal researchers. Facing these tensions is very difficult and only companies able to create the right “conditions” to manage them are actually able to capture the benefits of open innovation (Enkel 2012; Almirall and Casadesus-Masanell, 2010; Trott and Hatmann, 2009).

However, despite some criticism emerging in the academic literature, the main trend seems to be towards increasingly open innovation processes. Several facts suggest such a trend: it is for sure the dominant trend in software and related industry, especially with Open Source Software Development (Alexy et al., 2013), there is a growing diffusion of open innovation platforms (such as Innocentive or NineSigma), scientific conferences, special issues on leading management journals and events dedicated to open innovation are very common, and many multinational companies have introduced internal Open Innovation teams (such as, just to make some example, Procter & Gamble, Electrolux, Whirlpool, Nestlé). As a consequence, opening the innovation process actually seems a “must”, companies that remain closed are against the tide, and this creates some pressure on managers.

The paper explores the above problem and, while aiming at contributing to the recent debate, discusses the conditions under which a closed approach can be a successful way to achieve a sustainable competitive advantages (Enkel 2012; Almirall and Casadesus-Masanell, 2010; Trott and Hatmann, 2009; Alexy et al., 2013).

To this aim, the literature on the topic is investigated and an in depth case study is conducted on the well-known chocolate company Lindt & Sprüngli

This study adopts a contingency approach, according to which it is possible to find “an optimal organization structure, that best fits a given contingency, such as size, strategy, task uncertainty or technology” (Tidd, 2001, p. 173). Such a fit would foster and favour the organizational performance (Donaldson, 1996; 1999). Smith and Lewis (2011) (who in their paper illustrate the paradox approach in comparison or in opposition to the contingency approach), give a definition of contingency approach which is particularly appropriate for this paper: [the contingency approach] “explores conditions for selecting among competing demands”, and, hence, “attends to [underlying] organizational tensions” (Smith and Lewis, 2011, p. 381 and 394): openness versus closeness in innovation processes, i.e. exploiting the opportunity to access to external sources of knowledge and technology while, at the same time, maintaining proprietary know-how, avoiding spill overs, keeping excellent competencies inside the company. According to this approach, the paper first of

all investigates the literature on the topic, providing an overview of the contributions that bring into evidence the opposite forces that drive (or hold back) the adoption of open innovation, in a theoretical perspective which recognizes that open innovation can be implemented with different degrees of openness (Lazzarotti and Manzini, 2009; Laursen and Salter, 2006; Pisano and Verganti, 2008). Coherently, closed and open models are intended as two extremes of a continuum in which each company defines its own degree of openness. This theoretical part of the paper provides a framework that identifies a set of contextual variables that could push companies towards innovation models with different degrees of openness.

As the empirical study concerns a company operating in the Food and Drink Industry (F&DI), the paper also provides some insights from the literature on such industry, with a focus on the actual level of adoption of open innovation practices. The F&DI was traditionally considered a mature and relatively low technology sector (Christensen et al., 1996; Grunert et al., 1997), commonly associated with a low propensity towards OI (Chesbrough, 2003a), but more recent studies show that many big players are now adopting an open approach: Procter and Gamble, Mars, General Mills, Heinz (Vanhaverbeke and Cloudt, 2006; Sarkar and Costa, 2008; Garcia, 2011; Lazzarotti and Manzini, 2013). In this context, Lindt & Sprüngli (in the following, for sake of brevity, simply Lindt) claims the adoption of a closed approach, and thus represents an example which is not in line with both the behaviour of several big players in the industry and the advice from the great part of the literature. As will be explained later in the paper, the Lindt group decided to strongly limit the opening of its innovation process. Lindt Company decides to be “as closed as possible” (Dr. Pirotta, Lindt Italy R&D Manager), even if competition in the chocolate sector is increasingly strong, the pressure on time and costs is high and competitors are more and more aggressive and, hence, the opportunity to exploit external sources of innovation to reduce R&D costs and time could be very attractive. The Lindt & Sprungli case, which is studied in depth in the paper, along with the literature analysis, allows for providing tentative answers to the following research questions:

1. Are “closed” approaches to innovation still suitable in the open innovation era and how are they characterised (in terms of organizational and managerial practice)?
2. Why do companies decide to adopt a closed innovation approach in an open innovation era?

The research questions above are dealt with through a case discussion, where the case being studied is grounded in the framework drawn from the literature. The case discussion allows investigating the approach to innovation adopted by Lindt, which claims to be closed, and the related managerial and organizational practices. The study also aims at understanding the reasons behind the Lindt innovation choice and shows that a closed approach can still be successful.

The paper is structured as follows: section 2 gives the necessary theoretical background, section 3 presents the research design, section 4 illustrates the case study, which is discussed in section 5. To conclude, section 6 summarizes the main conclusions, managerial implications and suggestions for future research.

2. Towards Open innovation in the Food & Drink industry: opposite forces at work

2.1 Openness degree and context factors

Since Chesbrough published his book in 2003, the concept of OI has received a considerable amount of attention from practitioners and researchers. A large number of studies adopt this term to describe the phenomenon where firms rely increasingly on external sources of innovation, which means that ideas, resources and individuals flow in and out of organizations (Chesbrough, 2003): OI extends well beyond a company's traditional partners and moves deep into its ecosystem of extended business relationships (Enkel et al., 2009; Gassmann, 2006). In some industries, such as for example the software industry (Alexy et al., 2013) openness is the dominant trend in innovation management and the Open Source Software Development phenomenon represents the most evident consequence of this trend. However, a debate in Innovation & Technology Management literature is still ongoing, that critically examine the pros and cons of the OI concept (Dahlander and Gann, 2010; Trott and Hartmann, 2009). Such a concept is criticized in the widespread view that highlights an artificial dichotomy between closed and open approaches (Dahlander and Gann, 2010), whilst the idea of exploring different degrees and types of openness in a sort of continuum seems to provide a more interesting and richer way to investigate (i.e., the openness degree concept) (Chesbrough, 2003). In particular, this view allows for a deeper and multi-faceted investigation on company behaviour and on the particular nature and context of sources of innovation (Dahlander and Gann, 2010; Gassmann, 2006), and suggests to identify many different variables that characterize an OI model. Among others, Gassmann and Enkel (2004) studied more thoroughly the concept by identifying three core open innovation processes: (1) the outside-in process ("enriching the company's own knowledge base through the integration of suppliers, customers and external knowledge sourcing"); (2) the inside-out process ("earning profits by bringing ideas to market, selling IP and multiplying technology by transferring ideas to the outside environment"); (3) the coupled process ("coupling the outside-in and inside-out processes by working in alliances with complementary partners"). Laursen and Salter (2006) put forward the concept of breadth (i.e., number of sources used for OI) and depth (i.e., intensity of collaboration with each source) of external sources, recently revisited by Keupp and Gassmann (2009). Pisano and Verganti (2008) introduced the interesting concept of governance, where hierarchical governance identifies a low

level of openness degree (i.e., more closed modes of OI) whilst flat governance is associated with a high level of openness.

Lazzarotti and Manzini (2009) attempted to develop a concept of openness degree by integrating two variables: the number and type of partners (i.e., partner variety), and the number and type of phases of the innovation process opened to external contributions in and/or out (i.e. innovation phase variety) in order to collaborate and, hopefully, co-create along the innovation funnel.

Taking the concept of openness degree as a given, previous research in Innovation & Technology Management literature has also attempted to study the relationships among different OI degrees and several contextual factors, driven by the idea that these factors could be the determinants of OI, explaining the company choices in terms of degree of openness. Context factors can be both variables representing the external environment (i.e. industry's R&D intensity; technological turbulence; globalization trend; appropriability regime, only to quote the most studied) and the internal context, in the sense that they represent firm-specific situations, (i.e. firm's R&D investments; type of innovation; firm's IP strategy; size) (Lawrence and Lorsch, 1967).

As concerns environmental or external factors, the most relevant is probably *the state of technology in the industry*, studied in terms of intensity, turbulence and convergence. *Technological intensity* (Gassmann and Enkel, 2004) seems to force organizations toward cooperation in that they are not able to cope with technology using only their strengths: companies in high-tech industries (e.g., semiconductors) show a higher propensity to cooperate, extensively using external sources to support product development in an environment characterized by rapid technological change. In the meantime, costs, time and risks of R&D should be reduced (Calantone and Stanko, 2007). Examples can be found above all in the biotech and IT industry.

Technological turbulence seems to exert a similar impact (Ozman, 2008, Schweitzer et al., 2011) because it positively impacts the acquisition of technology. Rapidly changing technology conditions will increase the motivation of firms to be involved in a high number of interactions for the purpose of exploring new knowledge residing outside the firms' boundaries, and to be informed about new developments. In similar contexts, radical or breakthrough innovations, using new technologies and creating new markets, are more likely. Lastly, *technological convergence*, while reshaping the competitive arena and the borders of the different industries, presses firms to collaborate: a high level of interdisciplinary research means that a single company is not able to provide successful innovations using solely its own capabilities (Bröring, 2010).

Another relevant external contextual factor is the *globalization* trend (Chesbrough, 2003). Globalization seems to foster OI because it is characterized by higher mobility of capital, labour,

knowledge, lower logistics costs, more efficient ICT, and increased market homogeneity across different countries. As a consequence, entry barriers for new international competitors are lowered, and this provides an opportunity for competitive advantage for those companies that are faster in innovating and are better able to adapt.

Lastly, relevant is the influence of the *appropriability regime* on the choice whether or not to pursue an OI approach and how to do so. It seems clear that strong legal protection (i.e. based on patents) makes technology transfer attractive because it helps firms to capture related benefits (Teece, 1986; Arora et al., 2001; Cassiman and Veugelers 2002; Gallini 2002; Teece and Pisano, 2007). A study by Alexy et al., (2009) finds that legal IP rights, such as patents, can become the “currency of open innovation” and facilitate collaborative research and development activities. In fact, when companies find an idea that they want to turn into a product, its acquisition is much easier if the underlying technology is protected by a patent: from a patent, companies understand the idea and how it works, while inventors do not fear that companies misappropriate their idea, as the patent proves it is theirs. In summary, patents may be regarded as an essential facilitator of open innovation, but they work particularly well in some technological fields; for example, patents have contributed to the creation of technology markets in the chemical and pharmaceutical sectors. Conversely, some types of technologies, know-how and innovations are not effectively patentable, such as mature technologies, tacit know-how, process and incremental innovations (Bogers, 2011; De Faria and Sofka, 2010; Cohen et al., 2002; Hurmellina-Laukkanen et al., 2008; Kingston, 2001). Thus, other IP protection mechanisms, such as trade secret, are more widespread in these technological areas and technology markets have developed little. In such studies, trade-secret is seen as the real disabler of OI because it effectively inhibits potential collaborations and can also compromise the success of those eventually started by highlighting the lack of trust among the partners (Alexy et al., 2009; Hertzfeld et al., 2006; Bogers 2011).

As concerns the firm specific factors *Intellectual Property (IP) Strategy* is particularly important. Given a certain appropriability regime in the industry, the single company can in fact play the IP game to facilitate (or not) its open innovation strategy (Alexy et. al., 2009). It is clear that where the use of secrecy is excessive, or even where the use of patents is inadequate (i.e., a company does not collaborate with another if it does not have at least a patent in place, following the logic “no patent, no talk”), OI will be seriously limited. In any case, it should be recognized that for a company it is not always simple to find the right balance between protection and openness. As previously stated, some types of technologies, know-how and innovations are not effectively patentable, such as mature technologies, tacit know-how, process and incremental innovations. In such cases, secrecy and a lower degree of openness may become a necessary choice.

In addition to specific intellectual property strategies, companies belonging to a certain industry can also adopt specific behaviours in terms of *innovation strategy*. Commonly, literature measures this firm-specific variable in terms of levels of R&D investments and of strong emphasis on radical innovation (rather than on an incremental one) and then investigates its relationship with openness degree (Colarelli, 2006; Lazzarotti et al., 2011a; Drechsler and Natter, 2012). From these studies it seems to emerge that the greater the specific level of R&D intensity is, the greater the external technological acquisition is. This finding provides support for the assumption that firms pursue external technology acquisition as a complement to internal R&D and not as a substitute. Besides, it is important to note that the concept of R&D intensity is related to that of ‘absorptive capacity’ (Cohen and Levinthal, 1990): to be able to absorb technology and knowledge from the outside, companies must have a high level of ‘learning’ capacity, and an important way to generate this capacity is provided by R&D internal investing (Sofka and Grimpe, 2008; Spithoven et al., 2010). The degree of openness also seems to increase when there is an emphasis on radical innovation, concerning both the degree of external technology commercialization and external acquisition. This is true, on one hand, due to the possibility to facilitate acceptance on the market and to create a standard, and on the other, because firms which emphasize radical innovation are not able to develop all knowledge internally, but must rely strongly on complementary external sources (Fosfuri, 2006; Colarelli, 2006).

Size is another firm-specific factor that is investigated but still controversial, regarding to what extent it influences openness degree choices. Extant literature suggests that OI is mainly driven by larger companies: this can be justified by the more systematic approach they have in their innovation processes and by the larger resources they possess with respect to small and medium enterprises (De Backer et al., 2008; Keupp and Gassman, 2009; Drechsler and Natter, 2012). However, some literature emphasizes that especially small companies, which often lack resources and competence to innovate by themselves, would have benefit greatly by exploiting the OI model; indeed, small and medium enterprises (SMEs) are increasingly adopting OI practices (van de Vrande et al., 2009; Spithoven et al., 2013). In conclusion, no generalizable suggestion can be drawn as concerns influence on openness degree exerted by size, and a case-specific investigation is likely needed.

Figure 1 illustrates the external and firm-specific factors that can be considered the main determinants of OI. In figure 1, ‘+’ and ‘-’ identify the positive or negative influence exerted by the context factors on OI choices, respectively. Hence, the factors in the grey (white) rectangle drive towards (hold back) the adoption of open innovation. It provides the research framework on which the case discussion will be grounded.

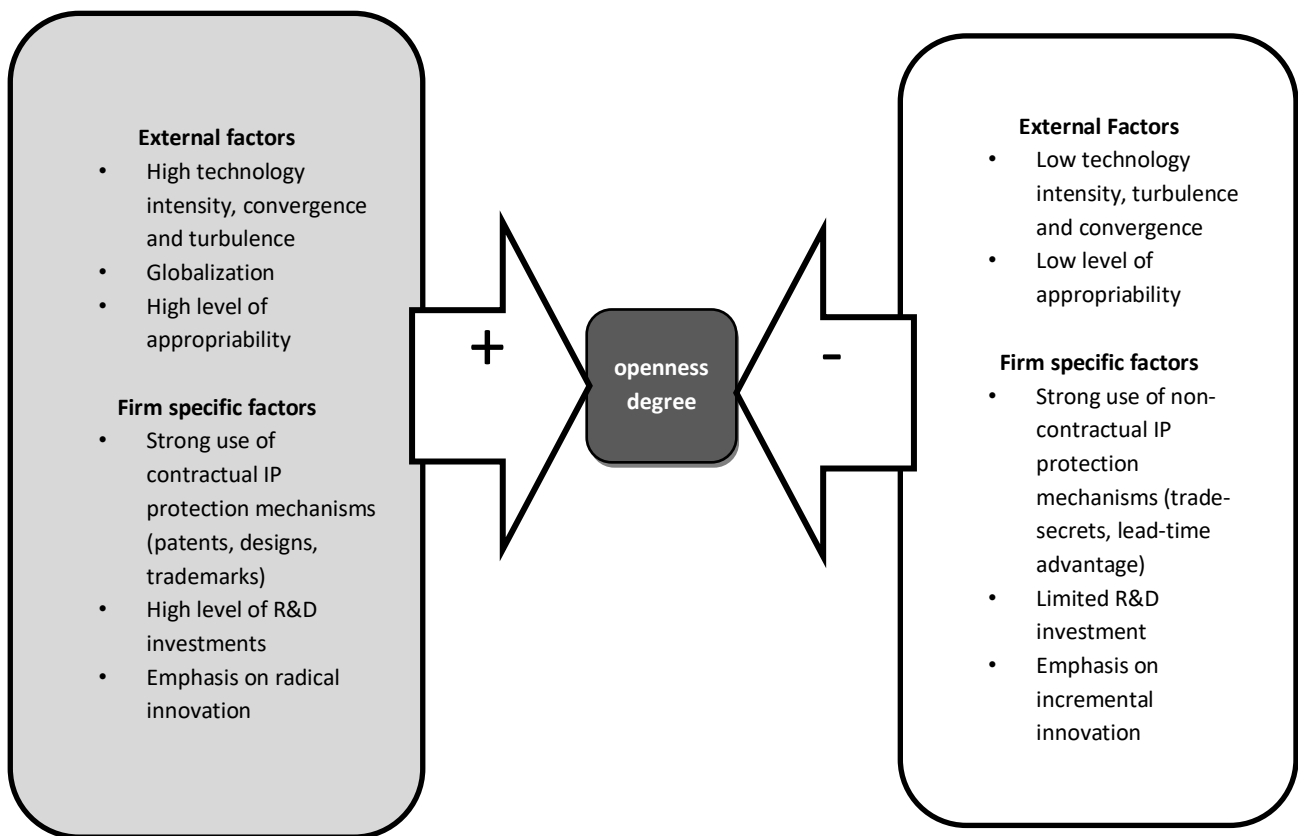


Figure 1: What the literature says about the context factors driving the choice of a company's openness degree

2.2 Open innovation in the Food & Drink industry

Taking into account the suggestions from Innovation & Technology Management literature on the influence of some context factors in choosing a certain openness degree, here it is relevant to understand how these factors occur in the Food & Drink industry in order to identify which ones eventually drive (or hold back) food companies towards open innovation.

The F&DI is an important pillar of the economy. It represents the largest manufacturing business in Europe, with an annual turnover of €965 billion, half of which is generated by SMEs. The EU agro-food industry also purchases and processes 70% of the EU agricultural production and employs 4.4 million people. France, Germany, Italy, the UK and Spain are the largest EU food and drink producers: together they account for almost 70% of the total EU turnover (CIAA report, 2009).

An important aspect to consider is that the Food & Drink industry is highly fragmented. SMEs make up 99.1% of the food and drink business population. These companies generate 48.5% of food and drink turnover and employ 63% of the total workforce. Large companies account for 0.9% of all food and drink enterprises but they provide 51.5% of the turnover, 62.9% of the value added and contribute to 37% of the employment (CIAA report, 2009).

Innovation in the F&DI was traditionally described as dominated by incremental innovations, low R&D intensity and large use of trade secrets, which fostered a low degree of OI (Christensen et al., 1996; Grunert et al., 1997; Garcia and Briz, 2000). The incremental nature of food product innovations is due to constraints on the demand-side. Consumers are conservative in their food choices and may initially reject new products; thereby in F&D manufacturing breakthrough innovations are extremely rare and the emphasis is on line extensions and me-too products (Fortuin and Omta, 2009). Concerning the intellectual property protection mechanisms in the Food & Drink industry, several studies shows that the share of companies using trademarks and trade secrets to protect innovation in the food and drink industry was large, whilst the use of patents was less diffused (Hardy, 2009; Hanel, 2011). Not by chance, Chesbrough (2003a) positioned F&DI as having a low propensity towards open innovation.

However, more recent studies show that the F&D industry's arena has changed radically in the last decade, both on the competitive and technological sides (Vanhaverbeke and Cloodt, 2006; Sanguansri and Augustin, 2006; Sarkar and Costa, 2008; Garcia, 2011; Bigliardi and Galati, 2012). On the competitive side, the demand-pull nature of innovation and the critical role of customers in new product development (Lagnevik, 2003), is manifested in the strong tendency to involve customers in the innovation process, so much as to promote even co-creation practices (Goers, 2009; Bérézai, 2010; Garcia, 2011). Furthermore, several structural changes are at work in the F&D market, due to many factors, such as globalization of the retails, rapid growth of markets that are increasingly more cost-effective, shortened product life cycles and private label competition (Grunert et al., 1997; Lagnevik, 2003; Thomas, 2011; Bigliardi and Galati, 2012). A powerful force is retailer globalization, since retailers are constantly trying to expand their operations into new markets. As large companies, they often set price levels and because they have the opportunity to compare different suppliers, the price of products is constantly monitored. Thus, in order to successfully introduce a new product in the market, a competitive price is necessary (Grunert et al., 1997; Lagnevik, 2003). Price competition has mainly taken place due to a lack of differentiation in some product categories, and this lacuna has led to a greater affirmation of private labels, as evidenced by Business Insight research (Thomas, 2011). Moreover, price competition pushes Food & Drink companies into a process of continuous cost cutting and rationalization. The only way to escape from this price competition and the risk of its eroding industry profitability is to innovate (Traitler et al., 2011). In addition, the product life cycle model has changed dramatically and customer needs require increasingly health-driven innovation: new products are being brought to the market much faster than ever before (Traill and Meulenberg, 2002; Garcia Martinez and

Broffman, 2011). In this context, food and drink companies have to innovate quickly and more often.

On the technological side, rapid technological changes in two areas cause a strong impact on both the enterprise and food chain levels: i) Information and Communication Technology (ICT) and ii) biotechnology and bioengineering, and nanotechnology.

ICT allows for significantly improved relations between the company and its customers. The use of technology such as the Internet and smart phones have grown enormously in all global regions, driving a huge increase in the number of connected consumers. A particularly notable trend is the extensive use of social media. These trends are driving deep and widespread changes in the way in which consumers interact with brands (Thomas, 2011).

As concerns biotechnology and nanotechnology, several studies have stressed the contribution made by these upstream industries to the F&DI technological development (Garcia and Briz, 2000; Sanguansri and Augustin, 2006; Sastry et al. 2010; Carew, 2005). Biotechnology used in the food industry covers the fields of biology, medicine and pharmaceuticals. Molecular biology provides new tools which could offer revolutionary opportunities to researchers and developers of new products, paving the way for breakthrough innovation (Garcia and Briz et al., 2000; Grobe et al., 2008). Some industrial applications of nanotechnology have already taken place in multinationals, such as Unilever, Nestlè, Kraft Foods, (this last company started the first technology laboratory in 1999, and the number of companies actively communicating the use of nanoscaled materials in their products is increasing every year. In food processing, nanotechnology can lead to a better understanding of how to control the quality of foams and emulsions of beer, sauces, creams, yoghurt and butter. For the application of nanomaterials and nanotechnology to packaging, the emphasis is on the sensing and diagnosing of chemicals, pathogens or toxins in food. What is often called “smart packaging” has the potential to improve the quality of food or inform consumers about the safety or the freshness of their purchases (CIAA, 2009; Garcia Martinez and Broffman, 2011).

It is worth noting that these changes have greatly increased the turbulence, convergence and intensity of technology, which, in turn, are drivers towards OI, as suggested in Innovation & Technology Management literature literature (Gassman and Enkel, 2004; Ozman, 2008; Bröring, 2010; Schweitzer et al., 2011; Carew, 2005; Bigliardi and Galati, 2012).. Indeed, the growth of competition on a more international scale, a growing number of chain actors, changes in customer needs and the emergence of new technologies have created new working conditions for companies operating in this sector, guiding them particularly in an opening up process to the outside, in search

for successful new products and technologies by simultaneously saving innovation costs and risks (Lagnevik, 2003; Sarkar and Costa, 2008).

As a consequence, following the several factors pushing towards open innovation, many companies have adopted this approach. The literature has described several interesting cases; among them the experiences of General Mills, Kraft, PepsiCo, Mars, Nestlè and Heinz (Erickson, 2008; Goers, 2009; Noble, 2009; Traitler and Saguy, 2009; Lazzarotti and Manzini, 2013; Garcia, 2013). All these companies, that claim to be open, have introduced practices aimed at exploiting the opportunities offered by an open approach to innovation. The set of practices suggested by the cited literature is quite varied, including managerial and organisational practices. Just to give some example: the Eureka Catalog of Procter and Gamble for collecting and screening product ideas from outside; the Idea StoreTM of Nestlè, for joint creative problem solving, the Global External Innovation Team created in Heinz, aimed at defining the organisation and governance of collaborations, writing contracts and defining the collaboration targets; the Open Innovation Community of Practice, an open platform created by Kraft; the introduction of “Innovation Ambassadors” in Mars and of “innovation Entrepreneurs” in General Mills, organisational roles aimed at facilitating the introduction of external solutions into the internal development process.

The experience of these well known cases and the relevance of factors pushing F&D companies towards open innovation make worthy our basic research questions: Are “closed” approaches to innovation still suitable in the open innovation era and how they are characterised? Why do companies decide to adopt a closed innovation approach in an open innovation era?

The Lindt case study will be useful to answer to these questions. Although it represents only a single case study, the Lindt experience seems to give interesting insights on whether and how a closed approach can be conceived.

3. Research method

The research method adopted in this work is based on a single case study. Despite the widely acknowledged limitations of this approach, especially in terms of reliability and validity (Ginsberg and Abrahamson, 1991; Yin, 2003), case study is a very powerful method for building a rich understanding of complex phenomena (Eisenhardt and Graebner, 2007). In particular, the case study approach allows for distinguishing and taking into account the richness of the context, which is made of different context variables within a contingency approach. Thus, given the aim of our empirical study, the aforementioned advantages of the case study method was a critical factor in selecting the research approach.

As previously stated, this study adopts a contingency approach, i.e. it “explores conditions for selecting among competing demands”, and, hence, “attends to [underlying] organizational tensions” (Smith and Lewis, 2011, p. 381 and 394): openness versus closeness in innovation processes, or, in other words, exploiting the opportunity to access to external sources of knowledge and technology while, at the same time, maintaining proprietary know-how, avoiding spill overs, keeping excellent competencies inside the company. Contingency theory suggests that ““an optimal organization structure, that best fits a given contingency, such as size, strategy, task uncertainty or technology”” (Tidd, 2001, p. 173) and with the Lindt case we aim at bringing into evidence how the company aligned the internal demand for closeness with the external pressure for openness.

The research design is described hereafter and is composed of seven steps: definition of the research questions, case selection, identification of the unit of analysis, definition of the reference research framework, data collection, data elaboration, and data analysis.

Definition of the research question. The two research questions, anticipated in the introduction, are the following: RQ1. Are “closed” models of innovation still suitable in the open innovation era and how they are featured (in terms of organizational and managerial practices)? RQ2. Why do companies decide to adopt a closed innovation model in an open innovation era?

Case selection: Lindt & Sprüngli appeared to be an interesting case from the start of our early exploratory contacts, since the company showed an explicit rejection of OI, therefore arousing our curiosity; in fact, the aim of this paper was to trigger the concept of OI with some criticism, investigating cases where OI is not considered an imperative.

Identification of the unit of analysis. As the unit of analysis we chose the Italian branch located at Induno Olona (in the following indicated as Lindt Italy), with a focus on the R&D unit. As part of a very cohesive group, the branch necessarily follows the company’s basic collective philosophy in terms of R&D and innovation policy, but, at the same time, is very autonomous in defining the internal managerial and organizational practices (as better explained in section 4).

Definition of the reference research framework. In order to answer to RQ1, we used the models by Gassman and Enkel (2004), Laursen and Salter (2006), Pisano and Verganti (2008) and Lazzarotti and Manzini (2009). These models (already described in section 2.1) allow positioning Lindt in terms of open innovation model, i.e. to determine the degree of openness /closeness of the company. As a matter of fact, they allow capturing the multidimensional features of an open / closed innovation model, which is what the recent literature on OI suggests. Furthermore, in order to go in depth into the organizational and managerial practices of the model, we compared the practices of open companies (drawn by the literature and described in table 2) against the Lindt practices. Then, in order to answer to RQ2, we investigated the (internal and external) context factors in order to understand the reasons behind the Lindt openness / closeness degree, by applying the contingency analysis according to the framework synthesised in figure 1.

Data collection. Data were collected in a two year period and included several primary and secondary sources, as detailed in table 3. As primary sources, the first contact point was the head of Italian R&D unit, who allowed us to access two sets of information: (i) the general policy and guidelines on R&D and innovation management at the Lindt & Sprungli group level, including the propensity to open the innovation process; (ii) the detailed technology strategy, organization and management in the Italian R&D unit. Moreover, this first interview allowed for the identification of two other key informants: the Technology Projects Innovation Manager, whose contribution was necessary to understand in detail the nature and specificities of the innovation processes, and the Marketing Projects Innovation Manager, who was expected to clarify the relations between innovation and marketing activities. These two informants allowed us to gather detailed information concerning the specific activities conducted within the innovation funnel, starting from the concept generation phase up to the final commercialization choices, including the organization and management of activities involving external partners. In total, seven direct interviews were carried out with the three key informants: the first one with the R&D Director, the second with the three informants together, then four separately with the Technology and Marketing managers, and the final again with the RD Director. Semi-open questions (reported in appendix) were used for direct interviews, in order to gather all the necessary data and information in coherence with the reference literature models and framework adopted in this research, at the same time leaving interviewed people the opportunity to enrich the context description and to enlarge the set of variables investigated. Then, several phone calls discussions followed with them during the data elaboration and analysis processes, that allowed discussing and reconciling ambiguous or contradictory elements. As secondary internal sources we analyzed the last 5 years company's annual reports and financial statements, the Lindt website (especially the "company" section), and the documents

concerning one specific innovation project, the Noccior. This project and the related documents were investigated in order to have detailed confirmation about the management and organization of the innovation projects and of the external partners (eventually) involved during such projects. The annual reports and the balance sheets provided data concerning the financial and the innovation performance of the company (reported in section 4). As secondary external sources: (i) the Amadeus Bureau van Dijk database was used to verify and integrate data on the financial performance; (ii) the Lexis-Nexis® database was used in order to find out articles and news concerning Lindt; (iii) IISole24Ore database (the main Italian economic and financial newspaper) was used in order to find out articles and news about Lindt Italy.

Topics investigated	Primary sources	Supporting secondary sources	Supporting Tools
Description of Lindt & Sprüngli group innovation strategy and organization; identification of key informants for the case study.	Director R&D Italy	Lindt Website; Lexis-Nexis® database; Lindt 5 years annual reports	Interview guide, part I
Focus on the Italian subsidiary; sharing of the case study aim and scope; general description of the innovation process phases and of the roles involved; analysis of the general attitude of the company towards open innovation.	Director R&D Italy, Technology projects Innovation Manager, Marketing Projects Innovation Manager	Lindt Website; Annual reports – Italy section; IISole24ore database	Interview guide part I
Detailed description of the activities within the innovation process and of the necessary competences; Description of the organization and management of relations between R&D and marketing; analysis of the organization and management of external partners (where existing); analysis of one innovation project: the Noccior.	Technology Projects Innovation Manager; Marketing Projects Innovation Manager	Documents relating to the innovation project Noccior (under a Non Disclosure Agreement - NDA); Internal organizational documents	Interview guide part II and III
Economic and financial performance	--	5 years of annual reports and balance sheets (Lindt reports and AIDA Bureau Van Dijk)	
Innovation performance and its relation to the Italian BU performance	Director R&D Italy	5 years of annual reports; Lexis-Nexis® database; IISole24ore database	Interview guide part IV
Final verification of the case study validity	Director R&D Italy	--	

Table 3: Sources of data and information for the case study

Data elaboration. The interviews reports and the documents collected were first of all elaborated with data categorization, using the categories / variables suggested by the reference literature models, as synthesized in table 3. For each variable, information collected by the different sources was compared and, in case of incoherencies, these were discussed with the interviewed persons by phone calls. When information provided by the internal primary sources could not be reconciled

with the external sources, this was explicitly reported in the case description and discussion. All external and internal documents - articles, annual reports descriptive sections, news - were investigated according to the topics reported in table 3 and elaborated according to the variables in table 4. In order to be sure that all data and information relevant for this study were captured from the documents, after the first categorization of information the texts' analysis was also carried out using the search keywords "innovation", "collaboration", "alliance", "partnership", "open innovation". The set of documents analysed and the results of the keywords search are reported in appendix 2.

For each variable investigated, the triangulation of data was guaranteed: data from the direct interviews were integrated with the secondary sources in order to ensure construct validity and to limit post hoc rationalization.

RQ	Variables categories	Sources for data triangulation
RQ1 – positioning Lindt in terms of openness / closeness degree	external partners in technological collaborations (number and type)	Director R&D; Technology projects Innovation Manager; Marketing Projects Innovation Manager; Documents of the Noccior project; Lindt annual reports; Lexis-Nexis® (articles reported in appendix 2)
	phases in which the company has technological collaborations (number and type)	
	intensity of relations with partners (partners depth)	
	flow of knowledge during collaborations with external partners	
	governance of technological collaborations (hierarchical / flat)	
	participation (open / closed)	
	direction of openness (outside-in , inside-out, coupled)	
RQ1 – managerial and organizational features of the Lindt open / closed innovation approach	managerial practice for open innovation	Director R&D; Technology projects Innovation Manager; Marketing Projects Innovation Manager; Documents of the Noccior project; Lindt annual reports; Lindt web sites
	organizational practices for open innovation	
RQ2 – identifying the context factors that determine the Lindt openness / closeness degree	technological context (intensity, convergence, turbulence)	Literature on the F&DI (as reported in section 2.2);
	globalization	
	level of appropriability	
	type of IP protection mechanisms used by the company	Director RD; annual reports;
	level of R&D investment	Director RD; Lindt annual reports – financial statements;
	type of innovation (radical / incremental)	Director RD; Technology projects Innovation Manager; annual reports

Table 4: Case study – Data categorization

Data analysis. Data collected and categorized as in table 4 were used according to the reference models (cited above in this section) in order to answer to the research questions. In order to answer to RQ1, the four OI models adopted as reference framework were applied to depict the degree of

openness of Lindt; the detailed analysis of the managerial and organizational “setting” of Lindt and the comparison against “open” practices allowed to give a complete answer to research question 1. Then, in order to answer to RQ2, the analysis of the context factors was carried out, with the contingency model provided in figure 1: this allowed to understand the reasons that determined the specific level of openness / closeness adopted by Lindt. A case report was drawn up with the above analysis, basically a first “rough” version of sections 4 and 5, and was sent to the company, in order to verify whether data and information reported were correct. Amendments and revisions were discussed with the key informants, also by integration with secondary source data. At the end of this process, the final version of the whole case study, together with its theoretical background, was discussed with the head of the Italian R&D unit. In this phase, a discussion was also held on the role of the Italian R&D activity and of the related innovation performance in supporting the achievement of the specific objectives (financial and economic) assigned to the Italian unit.

The applied research methodology maintains its basic limitation, as it does not allow for any systematic generalisation. However, it is acceptable given the aim of this empirical investigation, which is to provide a detailed description of the phenomenon and some new insight for future investigations.

4. Case description: Innovation in Lindt & Sprüngli

4.1 The company

Lindt & Sprüngli is well known as one of the leading companies in the market for premium quality chocolate, offering a wide range of products in more than 100 countries around the world. It is also recognised as a highly innovative company, and some of its most famous products, such as the "Gold Bunny" or the "Lindor" have been imitated by many competitors. Lindt & Sprüngli, was founded in 1845 as a family company and has been transformed into a multinational company, with six production sites in Europe, two in the USA and distribution and sales companies on four continents, with integration of licensees and strategic acquisition. Its major brands include Lindt, Caffarel, Hofbauer, Ghirardelli Chocolate, Küfferle, for consolidated sales in 2012 around 2350 million euro, with an increase compared to 2011 (2045 million in 2011).

With more than 7700 employees, Lindt is one of the few chocolate makers in the world that controls all the aspects of its chocolate production, from raw material to finished product, its main competitive advantage being based upon high quality ingredients, craftsmanship, assortment, innovation and excellent competence.

Concerning the Italian Lindt & Sprüngli subsidiary, which is the unit of analysis in this paper, table 5 shows that, despite the dramatic economic crisis in Italy, sales have increased since 2008; the

EBITDA, has gone through fluctuations, but anyway in 2011 is higher than it was in 2008. The comparison of the % EBITDA against the average of the chocolate industry shows that Lindt performance is significantly higher than the industry average, either considering the 15, 10 or even the 5 greater companies operating in the industry in Italy. In synthesis, we can argue that the economic results of the Italian subsidiary are satisfactory. For year 2012, Lindt & Sprüngli can register another very good result: as the Italian CEO Fabrizio Parini said in a public interview to the Italian newspaper “La Repubblica”, “... we have gained market shares, overcoming two competitors”, thus becoming the second player in the segment of pralines and bars, after Ferrero.

	2008	2009	2010	2011	2012
Sales (million €)	207,68	218,33	233,20	250,93	257,69
EBITDA (million €)	16,20	21,06	18,14	19,59	16,49
EBITDA (%)	7,67	9,42	7,61	7,66	7,46
Average industry EBITDA (%) of the 15 greatest companies	6,80	7,24	6,74	5,65	6,69
Average industry EBITDA (%) of the 10 greatest companies	6,33	7,41	6,71	5,69	6,65
Average industry EBITDA (%) of the 5 greatest companies	7,12	7,89	7,20	6,51	7,65

Table 5: economic and financial performance of Lindt & Sprüngli Italy (Source: Amadeus Bureau van Dijk). The average EBITDA is calculated on the basis of 15, 10 and 5 greatest companies belonging to industry NACE REV 2 1082 - Manufacture of cocoa, chocolate and sugar confectionery

Lindt in Italy is responsible for R&D, manufacturing and commercialization of some of the most well-known Lindt products, such as the Noccior (milk chocolate with chopped hazelnuts), the Lindor balls, the Golden Bunny.

The Italian CEO is assigned specific goals in terms of turnover and EBIT, in turn, he translates such goals into objectives assigned to the different functions of the Italian subsidiary. Concerning R&D and innovation, the CEO defines which part of the Italian turnover and EBIT should derive from new products and, then, the R&D Director is measured against that. In the last five years, the Italian R&D has always achieved the objectives assigned by the Italian CEO (in terms of New Product contribution to the turnover and EBIT of Italian Subsidiary).

4.2 Innovation in Lindt

Lindt is proud to have remained innovative with regard to products, production and packaging since 1845. As the CEO Ernst Tanner says: “The good sales performance was driven by steady innovation in our year-round business and by numerous new creations for traditional festive occasions, in particular for Easter and Christmas. We also repeatedly manage to create many additional gift-giving opportunities and events with special offers in a limited edition to highlight the precious gift character of our products.” (Annual Report 2012)

The heart of Lindt innovation strategy is its excellent competence accumulated in more than 150 years of experience in chocolate products and production processes, which is strongly embedded in people and which is transferred from employee to employee.

Lindt recognizes that people and their competencies represent the critical factor for sustaining the company's strategy in the long term. Coherently, Lindt encourages, recognises and rewards individual innovation, personal initiative and leadership throughout the organisation. Respect for individuality, trust and fair play characterise working relationships. Teamwork across all disciplines, business segments and regions is considered essential for creating a company whose employees foster each other's mutual success and contribute to innovation.

Lindt has eight R&D units in the eight countries where there is a production plant. Coordination of R&D and innovation activities is defined at the group level by means of two departments, which provide all the R&D units with the basic guidelines for their activities: the International R&D and Quality Department and the International Marketing Department. The International R&D and Quality Department establishes the main specifications concerning the type and quantity of aroma and raw materials that can be used and the type of packaging (in terms of functional performance, for example for alimentary safety); the International Marketing Department provides the guidelines concerning the product concepts and packaging (in terms of design). The international guidelines are especially severe for the "key franchising products", such as the famous Lindor or the Gold Bunny but also the sub-brand products are verified in terms of concept, recipe, packaging. The selection of new products to be launched in the market comprises two "filters". The first filter is represented by the "Marketing Plan Dialogue", in which, once a year, the International Board of Lindt & Sprüngli group analyses all the new product proposals for the following year, coming from the eight R&D units. New products that are not coherent with the company's philosophy (in terms of concept or recipe), or for which the market response is highly uncertain, are eliminated. The approved product concepts, which must always respect the International R&D and Quality guidelines, are developed and then discussed with the International Marketing Department, which has to give the final approval before market launch (second filter).

During the product development process of a new product concept, after the approval in the Marketing Plan Dialogue, the eight R&D units are completely autonomous in the organization and management of the process. In other words, the head of each R&D is responsible for all the choices concerning the way in which the new concept will be transformed into a new product launched in the market.

Concerning the innovation process, it can be argued that in the chocolate industry such a process has not evolved to a great extent over the last 150 years. Hence, innovation in Lindt mainly concerns the following elements:

1. recipe: it is the most difficult to innovate and it usually occurs incrementally; innovation is triggered by market feed-back on existing products and by the need to widen and complete the product variety;
2. product concept: concerns the way the product is expected to be used, its specific target and the atmosphere it should create. Chocolate is not a necessary food; hence, product concepts should be linked to consumer desires, emotions, lifestyles;
3. product packaging: particularly significant in the chocolate industry; its task is to immediately communicate the product concept, as well as company vision;
4. machines used in the production process: new products with new concepts may require modifications to production machinery.

In the following we describe the innovation process as regards the Italian subsidiary.

Innovation in Lindt Italy involves three different units: R&D, Marketing, and Operations, with a leading role held by R&D. R&D is responsible for concept definition (done with the Marketing unit), product recipe realization and selection of suppliers; Marketing defines the product concept (with R&D) and packaging; the Operations unit is responsible for packaging realization and design. The innovation start-up is mainly related to the work of the Marketing Department through the researching of new products, forms of packaging, etc.; the aim is to understand current consumer trends and tastes. After this analysis, the Marketing unit can develop the product concept, which may be a new or revised version of a product already in the portfolio. A design studio is then contacted in order to understand the visual style that is best suited to conveying the recently developed concept. The Italian plant works closely with 15 agencies that have developed Lindt concepts, but none of these has the task of new concept identification, which remains absolutely internal. The concept must then be submitted for approval by the International Board of Lindt & Sprüngli.

Sometimes there may be a new prototype product without a concept; in these cases, the marketing department has the task of developing the basic idea.

The innovation process is divided into the following steps:

- Concept: the product idea can come from the Marketing Department, a dialogue with suppliers, or the need to complete a given product line.
- Development of the idea: implementation of the first prototypes by the R&D department.
- Project elaboration: the first draft of the project is elaborated, during which time relationships with marketing staff are of key importance.

- Development loop: production of the first samples, with possible changes to the recipes. This phase is crucial, as it allows for understanding the true effectiveness of the idea/product.
- Sensory test: sensory tests are conducted on the prototypes resulting from sample selections of recipes. In this phase, a consumer panel target group is used to assess and select the recipes
- Packaging: product packaging is carried out in parallel to the sensory test.
- Production test: conducted through a combined action of technology and research and development, making it possible to understand what production process must be set to obtain products with the predefined standards. This phase ends with the compilation of a data sheet.

In parallel, the marketing staff analyses what product image to develop. The executive committee, constituted by the heads of each department, follows each step in monthly meetings where the latest news are presented. More precisely, the executive committee analyses the letter of intent of the idea (LOI), the project proposal (PP, giving the project details) and the letter of recommendation (LOR), which basically suggests and supports the product launch.

The innovation funnel has an average duration of two years. The percentage of ideas that passes the concept phase is about 80%. This percentage goes to the Marketing Department and 60% of the ideas usually move on to the next step. In one year, 600 product variants/recipes are developed, corresponding to 30 ideas, and 7/8 launches.

Concerning the IP strategy, Lindt basically relies upon trade secrets. Recipes, together with the related process technology, are the critical know-how for Lindt and kept under tight control in order to avoid spillovers. Only a very limited number of people within the company actually have complete information about recipes and process routines for unique products, such as the Lindor. For example, seeds are clipped at precise temperatures depending on the nature of the seeds and the results desired; certain temperatures lead to specific aromas and the right conching, which in turn provides products with a high degree of softness, homogeneity and fluidity. In other words, in Lindt the strategic know-how is composed of different “parts” or “elements” (i.e., recipes, process sequences, machinery regulations, raw materials treatments) and very few people (five to be exact) have complete knowledge of all these parts. This obviously limits the risk of spillovers greatly. The choice to use trade secrets seems to be more effective than patents, also because after 20 years patent protection would expire, making critical know-how (still usable and strategic for a competitive advantage) available to all competitors. Lindt is conscious that this could be only partially true for machinery technologies; yet, at the moment they do not believe that patents could

actually be more effective. Lindt protection of trade secrets is reinforced by means of contractual agreements with all employees and external consultants, with non-disclosure of critical know-how being demanded. ICT tools that store critical information are tightly protected by complex backup and storage procedures and by limited access to critical files, which are always protected by passwords.

The results of the R&D unit are measured in economic terms: the Italian CEO, who, as previously stated, is evaluated on the basis of turnover and operating profit (EBIT), defines how much of the annual turnover must be generated by new products. This becomes the objective for the R&D unit.

4.3 Closed or Open innovation in Lindt

It is at the group level that the company's approach towards open innovation is defined: so far, the eight national R&D units have received an explicit indication to be "as closed as possible, open only when the internal competencies and technologies are not able to support the development of a new (approved) product concept" (Dr. Patrizia Pirotta, Head of the Italian R&D unit). Lindt considers its experience and competences to be truly excellent and unique in the world of chocolate; as a consequence, the opening of the innovation process is considered unnecessary and very dangerous. Its "maitre chocolatiers", working in eight production plants around the world, are actually the repository of a specific and distinctive know-how, accumulated over more than 150 years of experience and not imitable by competitors. As a consequence, even if Lindt R&D Managers are aware about the open innovation practices adopted by other companies, they know that they are not allowed to adopt similar practices.

However, in some cases Lindt needs to interact with other actors in order to develop innovative products. Yet, in doing so, they state that their collaborations are strongly "guided" by Lindt strategy, experience and knowledge.

The way in which the innovation process is partially opened varies according to which elements - recipes, product concept, packaging or production machineries - require innovation. As a consequence, each R&D unit may have different needs in opening its innovation process; in the following we specifically refer to the Italian R&D unit, which is the focus of our study.

The most significant and critical innovation concerns the recipes. Here Lindt is closed as much as possible, since recipes are protected only by means of trade secret, as Lindt does not use any legal intellectual property tool. It is therefore of vital importance not to have any uncontrolled spillover of know-how. Recipes are also protected within the company: as previously stated, there are few people who know the "Bill of Material" of the product, the origin of ingredients, their composition

in the finished product and the manufacturing process. The Marketing division has absolutely no knowledge of the recipes and no specific information about the ingredients.

In any case, the need to interact with other companies does emerge, since innovative recipes require finding the appropriate (new) ingredients. Concerning raw materials (cocoa, nuts, walnuts, etc), interaction with suppliers is limited, since the fundamental choice occurs only when the appropriate origin of the cocoa is selected and after this act there is no need to actually collaborate for the development of new recipes. As a matter of fact, suppliers of raw materials work with Lindt on the basis of precise technical specifications (chemical and physical parameters) but are not made aware of the new product concepts in which their materials will be used. Again Dr. Patrizia Pirota, R&D Director: “suppliers of raw materials do not know what will be the innovation in which their product will be used, they only know the characteristics and technical specifications required”.

With companies producing aroma, the interaction is somehow more collaborative. In fact, after years and years of experience, Lindt has identified a list of a very few excellent suppliers for each different typology of aroma (for each new product up to 5 or 6 different producers of aroma are involved) and with them Lindt needs to work in iterative experimentation until the appropriate mix is achieved, in coherence with the product concept. However, Lindt does not communicate the results of the experimentation to these suppliers, or the reasons why a specific aroma has been selected or why it has outperformed others. Communication is based again upon technical specifications, without sharing the new product concepts. Furthermore, a Non-Disclosure Agreement is signed with all these suppliers to protect any information exchanged during the interaction. It is only at the end of the process, when the new recipe is finally realized and the new product is commercialized, that Lindt communicates why and how a specific aroma was selected. With some of the selected partners, those that in the long run have shown themselves to be reliable and bearers of high quality, Lindt organises meetings to collect suggestions, proposals, data and information that may stimulate future innovation.

Even if the development of new product concepts in Lindt is strongly led by the internal strategy, in Lindt Italy there is the clear feeling that a more intense interaction with the final consumers would greatly increase creativity and the quality of concept generation. Hence, some external sources are consulted in order to understand new consumer trends, lifestyles and different uses of chocolate: qualitative and quantitative marketing studies are carried out, contacts with different types of vendors are established, focus groups with different market targets are held, and the company participates in trade shows. All these interactions are only “one way”, where Lindt does not disclose its ideas. Similarly, there are no interactions with competitors, but their behaviour and product innovations are carefully monitored and analysed.

Once identified, new concepts have to be tested by making the first rough prototypes using already available materials. This experimentation phase (sensorial testing) is conducted with the collaboration of a panel of selected expert consumers, chosen in coherence with the specific market target, in order to evaluate how the product fits within the concept. Experts have a strong long term relationship with Lindt and are selected from among frequent consumers of Lindt chocolate. The company has a panel of 150 local tasting experts, which is called every two weeks; 1500 other tasters who are scattered throughout the national territory and chosen on a geographical basis that respects the Italian percentage of sales are sent product samples.

Packaging is critical for Lindt, not only to preserve product characteristics and to allow for easy and safe logistics, but also to effectively communicate the product concept. As a consequence, several design agencies collaborate with Lindt in this phase, as do consumer focus groups. The final choice of the most appropriate graphics for each product is the result of an iterative process in which proposals are analysed using feedback from vendors and focus groups. Again, in this case, the interaction is “one way” only: Dr. Ilaria Cereda, Marketing Projects Innovation Manager says: “The Italian subsidiary works with around 15 marketing and packaging agencies, but none of them is actively involved in the identification of new product concepts”, even if, she said, by sharing internal ideas and concepts with packaging suppliers, the company would increase creativity and put more ideas forward.

Machinery used in the chocolate production process is very expensive; hence, Lindt cannot even imagine having a new machine for each new product. As a consequence, when a new product is approved by the board, the internal technical team is responsible for identifying the necessary modifications to current machines in order to manufacture the new product efficiently and reliably. Then, the few machinery suppliers are involved to evaluate the feasibility of making and implementing the proposed modifications. This is the only case in which an iterative collaborative process is conducted: there is the need for the Lindt technical team to share with the machinery suppliers the testing and evaluation of the modifications introduced, in order to verify their effectiveness and eventually to introduce corrective actions. However, even in the case of machineries, the involvement of suppliers is avoided whenever possible; for example, in the case of the new product Noccior, “a closed innovation process was carried out and the machinery used for the Noccior was born as an incremental modification of existing machines, previously used for producing Lindt snacks, realized by the internal engineering” (Dr. Nico Tomaselli, Technology Projects Innovation Manager).

The whole innovation approach in Lindt can be synthesised as in figure 2: the funnel is really open only in the phase of manufacturing, where suppliers of machinery actually work closely with

internal people. As an example of the Lindt approach, in Appendix 3 the innovation process concerning the Nocciol is described.

The R&D Director is responsible for the authorization of all the relationships occurring along the recipe development and the development of manufacturing technology; the Marketing Projects Innovation Manager is responsible for the organization and management of relationships concerning the development of packaging, naming and graphic issues. They always work in coherence with the policy defined at the group level. The company uses Non-Disclosure Agreements which are defined at International level with the help of external attorneys.

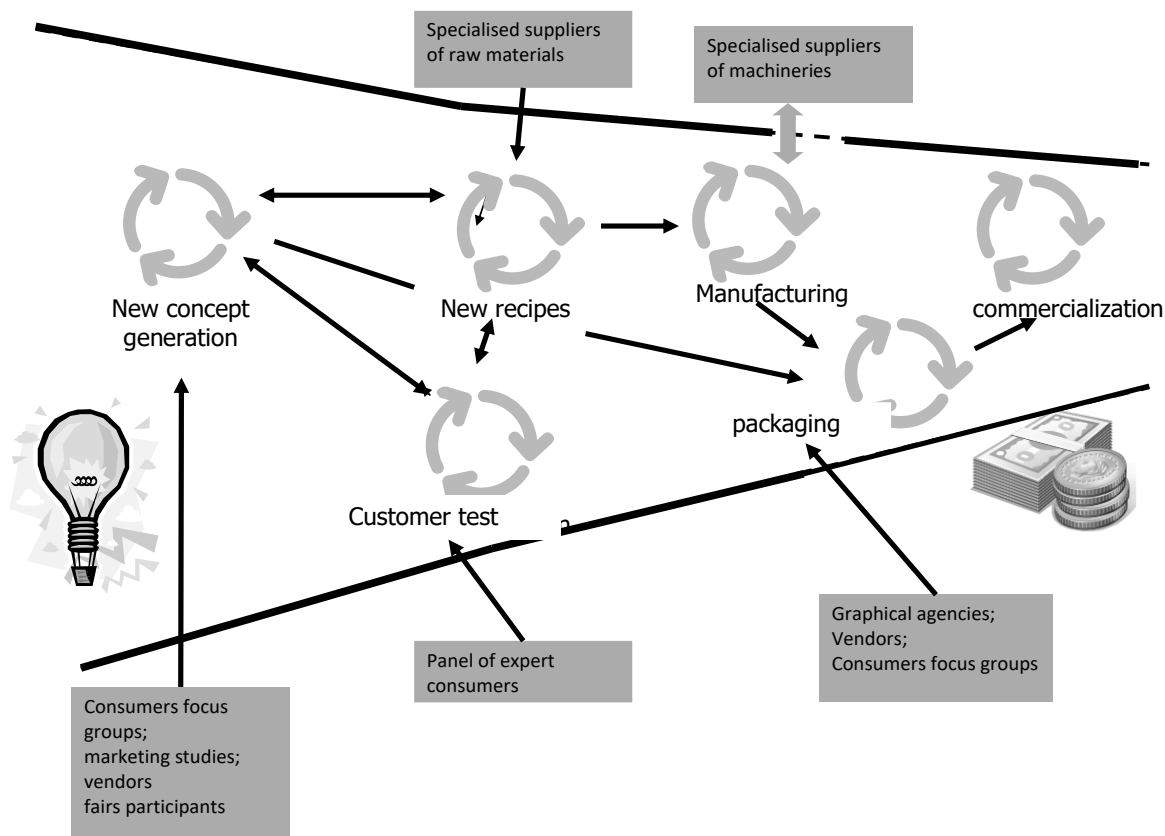


Figure 2: The Innovation funnel in Lindt

5. Case Discussion

The Lindt approach to open innovation is quite clear: Lindt prefers to be closed whenever possible. However, the company anyway manages some external relations during the innovation process, but only when the internal competences are not able to support the innovation process. According to the research design described in section 3, the openness degree chosen by Lindt (or, in other words, the

OI approach) can be depicted by exploiting the most recent models proposed in literature and already cited in section 2 (see figure 3) In the model of Gassman and Enkel (2004), Lindt does not make use of the inside-out process, and only marginally uses the outside-in (3-a); in the model of Laursen and Salter (2006), in Lindt the number and especially the type of innovation partner cannot be considered broad and the intensity of collaboration should be considered more “surface” than “deep” (fig. 3-b); in the model of Pisano and Verganti (2008), Lindt OI is characterized by elite circles, since it opens its innovation process only to a selected set of partners and with collaborations that are hierarchically managed by Lindt itself (fig. 3-c); only in few cases a flat organisation approach is adopted, such as when the “voice of the market” needs to be heeded; finally, in the model of Lazzarotti and Manzini (2009), Lindt is a case between closed innovator and integrated collaborator, since it accesses external know-how (for example for raw materials and aromas) along the whole innovation funnel, but only from a limited set of partners, mainly suppliers and customers, and mainly with one-way relationships (fig. 3-d).

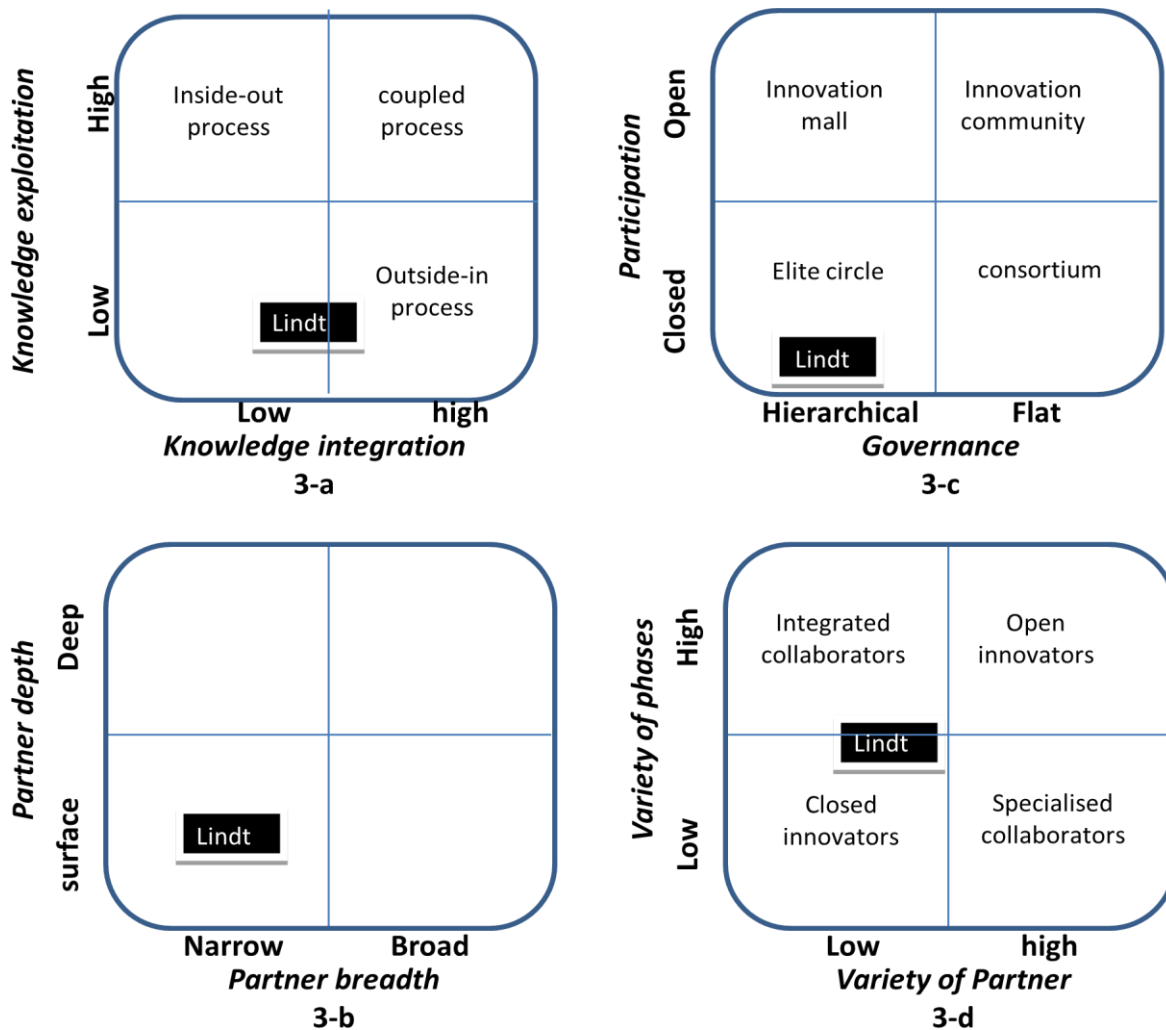


Figure 3: the Lindt approach to open innovation.

The four models above suggest a very low level of openness for Lindt. The comparison of Lindt organisational and managerial practices against the practices of open companies, synthesised in the following table, confirms the idea that in Lindt the organizational structure and the management style are not conceived to support the openness of the innovation process, but, on the contrary, are aimed at maintaining inside the company ideas, activities, technologies, know-how, people. Even if the open companies mentioned in the table are not comparable with Lindt in terms of size, several of their products are direct competitors of Lindt ones, and especially the chocolate snacks and bars (for example Mars, Nestlé).

Managerial practices for open innovation		
Issue	Open companies	Lindt
Definition of the company's managerial framework for supporting open innovation	<p>P&G: Connect and Development program</p> <p>Mars and PepsiCo: adoption of the Want Find Get Manage® (WFGM) framework for Open Innovation¹.</p> <p>Kraft : personalized version of the WFGM approach.</p> <p>General Mills: G-WIN initiative.</p> <p>Nestlé :SiW (sharing is winning) model.</p>	None
Creation of tools for stimulating, collecting, sharing and supporting ideas for new products	<p>P&G: product ideas are logged on P&G's online "eureka catalogue" through a template documenting pertinent facts—such as current sales of existing products or patent availability for a new technology. The document goes to P&G general managers, brand managers, and R&D teams worldwide. Product ideas are also promoted to relevant business line managers, who gauge their business potential and identify possible obstacles to development.</p> <p>Nestlé: joint creative-problem-solving Tools: IdeaStore™, which is a variant of brainstorming. It is based on three main characteristics: (1) facilitation by "visualizers," (2) large diversity of participants, and (3) disciplined and stringent selection and prioritization process. Netslé FastPack™ has the same roots and elements as IdeaStore. Use of Open Social Networks.</p>	Focus groups with consumers and vendors to understand new consumer trends
Introduction of rewarding systems for promoting openness to external ideas, in collaboration with internal roles	<p>P&G: rewards employees for speed of product development; Reward and incentive systems ("Making a Difference " award)</p> <p>Kraft: Innovation Days</p> <p>General Mills: growing list of awards and external recognitions; has a number of partners who are seeing tangible rewards from partnering with General Mills</p>	None

¹ Slowinski, 2004

<p>Use of a systematic process for partner scouting, analysis and selection</p>	<p>Heinz: involves external partners only in relation to specific technology platforms that are defined consistently with the company's innovation strategy. Heinz Scouting activities to search partners able to fill gaps.</p> <p>Mars: written procedures for the Find and Get phases of the WFGM model (a formal list of 20 criteria to select potential partners; contracts to define purposes, terms and priorities of the collaborative agreements)</p>	<p>Careful selection of a limited set partners whom long term relationship are created in order to generate mutual trust and with prevalence of one way relationships</p>
<p>Use of project management techniques for managing partnerships (timelines, performance targets etc.)</p>	<p>Heinz: The GEIT (Global External Innovation Team) defines the organizational form and the governance of the collaboration; writes the contract to be signed with the partners (with the support of the legal staff, especially for what concerns intellectual property issues); involves internal people from the various internal units (R&D, marketing, manufacturing etc.), defines the team of each open innovation project; defines specific performance targets, timelines and resources devoted to collaboration.</p> <p>General Mills: detailed description of a project resulting from one or more joint ideation meetings or discussions between the partners. Typically, the main body of a MJDA (Master Joint Development Agreement) details the project, expectations, resources, timelines, intellectual property, and all other elements necessary for best practices</p>	<p>None</p>
<p>Management of IP for supporting OI</p>	<p>Mars: Within the open innovation team there is an innovation contract manager for IP issues.</p> <p>Pepsi: Flexible management of IP for facilitating OI.</p> <p>Nestlé: Master Joint development agreement (MJDA).</p> <p>Comprises the terms of confidentiality between the two parties as well as possible affiliates of each partner (it may also contain a definition of the potential ownership of the jointly created innovation solutions). Precise IP rules: as a simple rule of thumb, the most straightforward way to share IP is this: every physical solution, such as ingredients or even technologies, is owned by the competency-providing partner. In turn, the smart applications of this solution are owned by the receiving party.</p> <p>Heinz: wide use of patents</p>	<p>Emphasis on tacit, excellent know-how embedded in people and protected by means of trade secrets, rather than patents; introduction of knowledge management practices (secrecy and limited access to information) that ensure protection of know-how</p>
<p>Organizational practices for open innovation</p>		

<p>Creation of proprietary networks</p>	<p>P&G: proprietary networks includes its top 15 suppliers, who collectively have 50,000 R&D staff; creation of a secure IT platform to share problem briefs with these suppliers—who can't see others' responses to briefs.</p> <p>Kraft: web portal for finding new ideas, new technologies or new partners; open line to its customers, including free numbers where customers can call with ideas for new products or improvements</p>	<p>Prevailing use of dyadic relationship and networks are exploited, these are conducted with close participation and hierarchical governance</p>
<p>Use of open network platforms and tools</p>	<p>P&G: open networks include NineSigma, Innocentive, Yet2com; tools are used for open data searching, data mining, simulation, modeling, virtual and rapid prototyping.</p> <p>Kraft: Open Innovation Community of Practice; Supplier Innovation & Co-creation tools; Open Innovation Website & “Cool Tools”: innovatewithkraft.com</p> <p>General Mills: open portal for collecting new ideas; dedicated centralized Connected Innovation Team that is developing new tools and methodologies and sharing much of that work through publications and speaking engagements</p>	<p>None</p>
<p>Creation of units dedicated to external technology scouting and internal competencies leveraging</p>	<p>P&G: Technology Acquisition Group (TAG) to seek complementary technology from external sourcing and govern licensing; Global Technology Council, made up of business technology directors, corporate heads and key geographical R&D leaders, to represent all the of company's competencies. The main task of the Global Technology Council is to explore how to leverage technologies. It is a global management tool, because it can see almost every new-to-the-world product P&G has in its pipeline and encourages collaboration within and outside the company.</p> <p>Mars: cross-functional team named Open Innovation Team (focus 100% on OI activities).</p> <p>Kraft: Cross-functional BU team-OI led (sales, marketing NPD, R&D, legal, procurement, operations)</p> <p>General Mills: External Speed Team, a cross-functional team that meets every other week to openly discuss projects, share insights and to make sure the appropriate communications are taking place</p>	<p>None</p>
<p>Creation of a unit dedicated to organize and manage relationships with partners</p>	<p>Heinz: GEIT, Global External Innovation Team, which acts as a sort of “hub” between the external world and the internal units involved in innovation activities.</p> <p>General Mills: A dedicated External Partner Development group focused on building creative business models and partnering relationships</p>	<p>cautious selection of the set of activities in the innovation funnel to be opened, limiting univocal intensive collaboration to those phases in which internal competencies</p>

		available
Creation of an open organizational structure for R&D	PepsiCo: integrated innovation ecosystem, made up of three fundamental aspects: people, technology, culture	focus only on external acquisition, external exploitation that would bring outside knowledge
Creation of specific roles of open innovation champions	<p>P&G: <u>technology entrepreneurs...</u></p> <p>Mars: Open innovation ambassadors coming from different functions (20% of their time as open innovation champions).</p> <p>General Mills: A team of Innovation Entrepreneurs dedicated to each of the businesses who triage submission on a timely basis and seamlessly integrate external components into development projects</p> <p>Nestlé: champions and internal experts who can speak at “eye level” with external counterparts</p>	None

Table 6: comparing the organizational and managerial practices of open companies against Lindt ones.

The above analysis allows to answer to research question 1: Are “closed” approaches to innovation still suitable in the open innovation era and how they are characterised (in terms of organizational and managerial practice)? We have shown that Lindt adopts an innovation approach with a very low degree of openness, as it appears from the application of the models by Gassman and Enkel (2004), Laursen and Salter (2006), Pisano and Verganti (2008) and Lazzarotti and Manzini (2009). The degree of openness in Lindt is so low that, internally, the approach is indicated as “closed” from people throughout the company. Furthermore, the analysis of the Lindt organizational and managerial practices supports this conclusion, as it clearly shows the differences between the Lindt practices and those of the open companies. Answering to RQ1, we can say that a closed approach is thus suitable, and it did not undermine (at the moment) the performance of the company. In fact, the economic, innovation and market performance of Lindt in recent years has been very good - despite the economic and social crisis (as detailed in section 4.1). We are aware that many other factors besides the closed innovation approach have surely influenced such a good performance and that the rapid trend of many other companies towards open innovation together with the short marketing cycles make such performance uncertain for the future, but what we can argue is that there is no evidence of a bad influence of such an approach. So, it can be said that the Lindt case shows that, even in the open innovation era, adopting a closed approach to innovation (or a very low degree of openness) can still be a successful strategy.

Answering to the second research question - Why do companies decide to adopt a closed innovation approach in an open innovation era? - requires the application of a contingency analysis, by means of the framework synthesised in figure 1. And it clearly emerges that the approach adopted by Lindt reflects the action of the context factors. From among the external context factors that the literature recognizes as triggers towards open innovation, Lindt is experiencing especially globalisation, which is starting to be relevant, and the technology turbulence and intensity, higher than in the past because of the increased rate of new products launched and, contemporarily, the pressures on cost reduction. On the other side, as already written in section 2.2 with reference to the whole F&DI, the appropriability regime - characterised by limited use of formal IP protection mechanisms - pushes against the opening of the innovation process. As concerns the firm-specific context, in Lindt several factors push against openness. First of all, the company’s IP strategy, which is based only upon trade secrets to protect critical know how. Whilst open companies are trying to introduce a more flexible IP management (PepsiCo), new types of agreements that facilitates collaborations, (Mars and Nestlè) and a more intense use of patents (Heinz), Lindt remains only on trade secrets and rigid NDAs (Non Disclosure Agreements). Second, the content of novelty of Lindt innovations

is always very limited, since tradition (and, thus, traditional tastes and styles) remains the focus of Lindt competitive strategy. Other companies, such as Netslé and P&G, are adopting a more aggressive innovation strategy in terms of novelty content and innovation rate (Huston and Sakkab, 2006; Dodgson et al., 2006; Traitler and Saguy, 2009). Finally, R&D investment is still limited: around 0,3% of turnover, whilst the average R&D intensity of the top 25 EU food producers is around 2% (EU Innovation scoreboard 2012).

Hence it is worth noting that the tension between forces that pull the company towards and against open innovation, at the moment, is significantly unbalanced against open innovation, especially for the firm specific factors. The tension is thus unbalanced on one side and the need for “alignment within the internal system and with the external environment” (Smith and Lewis, 2011, p. 395) explains why the approach adopted in Lindt has such a low degree of openness, that Lindt considers “closed”.

Does this analysis mean that Lindt is totally indifferent to the open innovation opportunities? Not at all. On the contrary, the company feels the tension described above. Especially the R&D and the Marketing managers are fully aware that some of their competitors have opened their innovation process and that probably for this reason they are able to increase their creativity and innovation rate (in terms of number of new products launched in the market) and also to reduce their time to market and their costs.

However, being “closed as much as possible”, as Lindt managers claim, does not mean complete avoidance of collaboration. As a matter of fact, even Lindt has some relationships along the whole innovation funnel, and some of them are more intense than a simple buyer-supplier relationship. So it can be argued that the case studied sheds some light on what “being closed” in the open innovation era actually means, where innovation can no longer be conceived and developed in an ivory tower of scientists and researchers.

6. Conclusions: managerial, research and teaching implications

This paper aims at giving a contribution to the recent debate on open innovation, about the need to verify whether or not opening up the innovation process is really the best way to achieve a sustainable competitive advantage. The most relevant conclusions of this paper include implications for researchers, for managers and also for teachers of innovation management.

From a researchers perspective, within the stream of literature on OI, that is still trying to validate and reinforce theory by means of empirical studies (Huang and Rice, 2014; Salge et al., 2014; Hopkins et al., 2014), this paper provides an unconventional example of a successful company that adopts an unfashionable innovation approach, strongly limiting open innovation in an era in which openness seems to be prevalent. Even if the main trend in innovation management seems to be towards openness, as it is shown by the many initiatives on Open Innovation carried out by companies, universities and also consultants (as underlined throughout the paper) the effect on performance of open innovation approaches is still debated on, even in the literature. This paper would suggest that opening the innovation process is not an imperative, and that rather closed approaches are still suitable. This conclusion can be grounded in the literature following the contingency approach adopted in this paper. We argue here, in perfect coherence with the literature on contingency theory in innovation management (Tidd, 2001), that context factors such as company's strategy and technology affect innovation management and especially the approach towards closeness or openness in the innovation process. More precisely, when the company's strategy is based upon excellent internal competencies and know-how, which are not protected by means of formal intellectual property protection mechanisms (such as patents, trademarks or design), and when product and process innovations are essentially based upon competences embedded in people, a closed approach to innovation is suitable and can positively influence the company's performance.

Furthermore, the paper suggests a new meaning for the traditional closed approach to innovation. The case example describes a company that claims to adopt a closed approach to innovation ("to open the process only when it is not possible to move forward on our own", as Dr. Pirotta said) and shows that in the open innovation era being closed does not actually mean avoiding *any* type of external technological collaboration. The case also gives a concrete description of the mix of organizational, strategic, managerial and technical elements that characterize the closed innovation approach. In other words, the case gives some guidelines for a closed approach in the open innovation era. These include all the "countermeasures" that Lindt has put in place in order to remain competitive, when competitors are achieving advantages by opening their innovation process (for example in terms of reduced time and costs of new product development). Hence, even if the dynamic evolution of technology, the fast trend towards openness and the short marketing cycles prevent us from stating that Lindt performance will remain good in the long term, it can be argued that the closed approach and the related organizational and managerial practices adopted represent a good reference for facing such a complex and aggressive competitive context.

First of all, a closed approach to innovation requires huge investments in people and in their competencies, in order to nurture the gap of know-how and excellent competencies that distinguish Lindt from competitors, in all the activities of the innovation funnel. If distinctive competencies and resources are the result of a long term accumulation process (Prahalad and Hamel , 1990; Barney et al. 2001), competitors won't be able to rapidly close the know-how gap, even if they work together. This means that a high stability of employees is a critical factor. In fact, Lindt always acts in order to create good working conditions, a pleasant atmosphere, and reciprocal trust, which ensure long term relationships with employees, especially those in R&D, where the distinctive competencies are embedded. Dr. Nico Tomaselli, Technology projects innovation manager, said: “we know that people are our most relevant resources and that their competence is critical for our competitive advantage; hence, we manage in order to give them good conditions to their best for the company and we create with them a relationship based upon trust”.

Investing in internal people means also fostering their habits to continuously benchmark against competitors, in all possible ways, by: buying the competitors' products in supermarkets and testing them, comparing marketing campaigns, and collecting opinions from regular chocolate consumers. This obviously stimulates internal people to always be aware of competitor evolution and to support the marketing activity conducted with testers and with marketing agencies.

As even a closed approach to innovation implies for some collaborations (“only when necessary”), it is critical to create long term relationships with key suppliers of materials. For example, that was the case in Lindt of cocoa and aroma suppliers; a consolidated relationship with them reduces the time needed to find the best and most appropriate materials to develop new product concepts and, in the end, reduce the time to market, without the risk of reducing the quality level, a critical success factor for Lindt. “Our partnership with our consumers, customers and suppliers is mutually rewarding and prosperous. An in-depth understanding of our consumers‘ needs and our customers‘ and suppliers‘ objectives and strategies enables us to build a mutually rewarding and long lasting partnership” (Lindt Group annual report 2012, section “CREDO”). In the case of cocoa, Lindt is even able to directly influence the cultivation quality, by means of its program "Lindt sustainable value chain". This program ensures the use of cultivations without trafficking, child labour, environmental damage, and at the same time guarantees that the most important raw materials are always available for new product development. In the case of technical (machinery) suppliers, the strict selection of a few partners and long term relationships with them builds a trust that ensures limited time and costs for implementing the necessary process innovations, without losing critical know how (e.g. spillovers).

The practices described above have some reference to the specificities of the Lindt Italian subsidiary, which is the unit of analysis of this paper, but the underlying logic is representative of the whole company's approach. Hence, this description could give some guidelines to all those managers who face context conditions similar to Lindt, and thus go against the adoption of an open innovation approach, and have to find a way to maintain a competitive advantage. For this reason, we argue that the conclusions of this paper are relevant also from a managerial perspective.

For both researchers and managers, the paper suggests how to apply a contingency analysis of all the forces, both external and firm-specific, that pull the company towards or against openness, in order to understand whether a company is suitable (or not) for adoption of an open innovation approach. The paper, being based only on a single case study, cannot exactly determine the "boundary conditions" that suggest a company the shift from a closed to an open approach of innovation. However, it gives some basis for future research that, by means of new cases with literal and theoretical replication, could lead to identify such conditions.

Literal replication in future research could also be aimed at reinforcing the conclusions given in this paper, enriching the set of organizational and managerial practices supporting a closed approach in the open innovation era. As a matter of fact, in this paper some concrete guidelines are given, but for sure they do not actually give a complete and exhaustive "model" to be followed by managers. Future research could thus attempt to make further steps towards the definition of a model for closed innovators in the open innovation era.

Theoretical replication in future research can be also hypothesised, aimed at improving the validity of results. It would be useful in fact to verify whether or not companies facing different context conditions (especially in terms of strategy, technology and innovation) actually adopt a different approach towards openness. Examples of open innovators could be investigated, with the related context factors, in order to verify their effect on the degree of openness adopted.

Literal and theoretical replication, together, would allow to precisely define the level of generalizability of the conclusions given in this paper, i.e. to specify the contexts in which the guidelines given here can actually represent an appropriate reference.

Finally, this paper offers also a contribution for teaching activities focused on innovation management. It is worth noting that the case presented in the paper allows for applying some of the most relevant theoretical models of OI presented in literature and discussing, with a rational and discriminating approach, the pros and cons of different open innovation models.

Appendix 1: the interview guide

• Part I: innovation in Lindt & Sprüngli

- *Governance.* What is the Lindt & Sprüngli technology strategy, at the group level, and who is (are) the decision maker(s)? How are the R&D and innovation decisions at the group level communicated to (and coordinated with) the eight R&D units? What are the roles and mandates?
- *Results.* What are the results by which the Italian subsidiary is evaluated (economic and financial, but also non-monetary)? How is the impact of R&D influence measured in relation to overall Italian subsidiary results? Does the company use specific indicators to analyze such results?
- *R&D and innovation.* What is the role of the Italian R&D with respect to the other R&D units in Lindt? What are the mechanisms used at the group level to communicate the group strategy and to coordinate the different R&D unit activities? How autonomous is the Italian R&D unit, especially concerning the organization and management of the innovation process?

• Part II: Open innovation in Lindt Italy

1. Describing your company's approach to open innovation:
 - a. Does your company consider and evaluate, for the innovation projects, the opportunity to collaborate with external actors?
 - b. Does your company collaborate with a wide variety of external actors? Which ones in particular? Why?
 - c. How does your company evaluate the contribution given by the different partners with whom you have technological collaborations?
 - d. In which phases of the innovation process does your company collaborate with external partners (or has done so over the last three years)?
 - e. Why does your company rely on external sources of knowledge and technology? What are the main objectives and the most relevant benefits expected?
2. Describing your company's organisation for managing technological collaborations and open innovation projects:
 - a. What elements hinder the opening of the innovation process in your company?
 - b. What organizational forms does your company use for technological collaborations? Equity alliances, joint ventures, R&D contracts...?
 - c. What organizational mechanisms are used to support the opening of the innovation process? Do you have a specific organisational unit and/or specific roles dedicated to technological collaborations?
 - d. Do you have specific techniques and tools for managing and monitoring technological collaborations and open innovation projects?
3. Understanding the perceived advantages and main problems in open innovation
 - a. What have been the main benefits achieved through past technological collaborations?
 - b. In the experience of your company, what are the main reasons which have led to the failure of technological collaborations?
4. Verifying the role of IP rights in open innovation
 - a. Does your company use IP rights to protect innovation? Which IP rights are used?
 - b. Have IP rights in protecting innovation been effective in your company's experience? In particular, can IP rights be considered as enablers or facilitators in open innovation?
 - c. Is licensing in and/or out used in the innovation process? When and how?
 - d. Does your company have a wide patent portfolio? How is it managed? What is the strategic intent in portfolio management?

- e. Does your company have unused patents or other IP rights?
- **Part III: studying a specific innovation project in Lindt Italy**
 - Describing in depth the whole project from idea generation to commercialisation
 - a. What was the idea and how did it become a new product/service?
 - b. Which internal actors were involved in the process from idea generation to commercialisation?
 - Describing the open innovation approach used during the project
 - a. What benefits were expected from opening the innovation process? The risks?
 - b. Which partners were involved and how were they selected?
 - c. What was the organisational form of relationship with each partner (JV, alliances ...)? Which governance for the innovation network was established (hierarchical vs. flat)?
 - d. How were the activities conducted in partnership planned? How were roles and tasks for each partner identified?
 - e. Did you use licensing in and/or out?
 - f. How was the project managed? What tools (IT, managerial ...) were used?
 - g. Did the project evolve from the beginning until the end of the collaboration activities?
 - h. Was the project successful from your point of view? What precisely were the main benefits achieved with respect to what was stated at the beginning of the collaboration?
 - i. What were the main problems and difficulties and how did you solve them?
 - **Part IV: Lindt economic and innovation performance**

Economic performance: with reference to the last 5 years financial statements, how can be considered the economic performance of Lindt Italy? Which are the main internal and external determinants of this performance?

Innovation performance: What influence innovation had on the economic performance of Lindt Italy in the last 5 years? How is it measured? Could it be considered satisfactory or not? And why?

Appendix 2: secondary source articles and documents used for the case study

Documents	Search keywords and related occurrence
<p>Articles and news from the Il Sole 24 Ore database: 15 articles from 2008-01-01 to 2013-12-31 concerning Lindt:</p> <ul style="list-style-type: none"> • 12-11-2013, Pag. 21 Competitività - le strade possibili • 07-09-2013, Pag. 25, Volumi in crescita per i re del cioccolato • 21-08-2013, Pag. 22, LINDT, I consumi di cioccolato spingono gli utili • 21-06-2012, Pag. 39, L'Italia che batte la crisi/3. Le esportazioni dei settori alimentari, meccanica e metallurgia crescono a doppia cifra, Tre locomotive trainano Varese • 17-01-2012, Pag. 43, LINDT, Crescita frenata dalla forza del franco • 30-11-2011, Pag. 34, Occupazione. Trend in ascesa per un settore che con 180.525 addetti ha un giro d'affari di oltre 21 miliardi. Nel franchising 5mila posti • 24-08-2011, Pag. 40, Coloniali. Lindt alza i prezzi ma le vendite migliorano anche in Europa • 24-08-2011, Pag. 39 LINDT & SPRUENGLI, I margini crescono più del mercato • 23-04-2011, Pag. 22, Per Barry Callebaut e Lindt la crescita non conosce soste • 25-08-2010, Pag. 31, Industria dolciaria Balzo di vendite e utili per Lindt & Sprüngli • 31-07-2010, Pag. 4, DOVE VANNO LE BORSE Tornano i dividendi: le 30 	<p>Innovazione: 8 Collaborazione: 0 Partnership: 2, concerning the creation of a new plant in the USA and the collaboration with cocoa producers Alleanza: 1, concerning to origins of Lindt Italy; Open innovation: 0</p>

<p>regine dei listini Eni, Lindt e Sears al top delle attese su Mib, Stoxx e S&P</p> <ul style="list-style-type: none"> • 17-03-2010, Pag. 45, I conti del cioccolato • 08-09-2009, Pag. 44, Coloniali. Gli acquisti di cacao e caffè saranno gravati da un premio volontario • 12-06-2009, Pag. 33, Corte Ue. Lindt citata per l'annullamento del brevetto • 21-01-2009, Pag. 37, LINDT & SPRUENGLI, Ricavi del 2008 inferiori alle attese 																																					
<p>Articles and documents from the Lexis-Nexis® database (only newspapers and web-based publications section): 6 articles from 2008-01-01 to 2013-12-31 concerning Lindt</p> <ul style="list-style-type: none"> • Lindt USA Unveils New Brand Platform, 'Chocolate Beyond Compare', India Retail News, October 9, 2012 Tuesday 6:30 AM EST, 463 words • Hot cocoa, The Union Leader (Manchester, NH), March 4, 2009 Wednesday, Pg. 01, 535 words, LARA BRICKER, Special to the Union Leader • DKSH expands partnership with Lindt & Sprüngli, Progressive Media - Company News, April 15, 2013 Monday, QUICK SERVICE RESTAURANT & FAST FOOD; Business Expansions, 119 words • DKSH and Lindt & Sprungli Expand their Successful Partnership to Singapore Hong Kong Government News, April 12, 2013 Friday 6:30 AM EST, 524 words • Lindt USA Unveils New Lindor Advertising Featuring Roger Federer India Retail News, August 23, 2012 Thursday 6:30 AM EST, 416 words • Shaheen pushes SUGAR Act The Union Leader (Manchester, NH), February 15, 2011 Tuesday, Pg. 04, 541 words 	<p>Innovation: 1 Collaboration: 3, concerning a collaboration with a cocoa supplier and market expansion service company Partnership: 7, concerning a market expansion service company and the Roger Federer sponsorship Alliance: 1, concerning a market expansion service company Open innovation: 0</p>																																				
<p>5 years annual reports (2008-2012)</p> <div data-bbox="536 1178 1445 1559" data-label="Figure"> <table border="1"> <caption>search keywords and related occurrence</caption> <thead> <tr> <th>Year</th> <th>innovation</th> <th>collaboration</th> <th>partnership</th> <th>alliance</th> <th>open innovation</th> </tr> </thead> <tbody> <tr> <td>2008</td> <td>16</td> <td>1</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>2009</td> <td>9</td> <td>1</td> <td>2</td> <td>0</td> <td>0</td> </tr> <tr> <td>2010</td> <td>8</td> <td>1</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>2011</td> <td>3</td> <td>1</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>2012</td> <td>18</td> <td>1</td> <td>7</td> <td>0</td> <td>0</td> </tr> </tbody> </table> </div> <p>The keywords “collaboration”, “partnership”, “alliance” are referred to:</p> <ul style="list-style-type: none"> • Consumers and customers • Cocoa Suppliers • Roger Federer sponsorship • shareholders 		Year	innovation	collaboration	partnership	alliance	open innovation	2008	16	1	1	0	0	2009	9	1	2	0	0	2010	8	1	1	0	0	2011	3	1	1	0	0	2012	18	1	7	0	0
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2011	3	1	1	0	0																																
2012	18	1	7	0	0																																

Appendix 3: The Project Noccior

The first version of the product was born 50 years ago: an Easter egg, made by using a technology named “Rocher”, which allows to achieve a rock effect given by the chopped hazelnuts. At that time, the product did not have any identification name (the name Noccior arrived later), was produced by hand, and sold only in pastry shops: it was a high price, high quality product. In the nineties the effort of Lindt was more focused on the Gold Bunny and little attention was paid to the “rocher” Easter egg; anyway, in 2008 it represented 14% of total sales for the company. In these years the aggressive pricing strategy of some competitors forced Lindt to revise its own strategy. The idea for the premium price Easter egg was to realize the product also in smaller sizes, in order to make the price more affordable, still maintaining the high level quality. With this aim, a real New Product Development process started within Lindt Italy. The project comprised a communication study and a technical study.

The new communication strategy, aimed at communicating to the client the superior quality of the product included the naming of the product, the definition of a new packaging and the packaging and the delivery of a testing kit to a panel of customers.

The definition of the product **name** involved both the internal functions (both R&D and marketing) and an external marketing company, specialized in products naming. After five months of work, the new name came out (promoted mainly by the Lindt internal people): Noccior, given by the combination of “*nocciole*” (hazelnuts in Italian) and “*oro*” (gold in Italian). By collaborating with another external marketing company, a market analysis was conducted on the proposed name, aimed at verifying if it was able to transfer the concept; the name resulted easy, explicit and direct.

The redesign of the packaging involved the Lindt Italy packaging suppliers and a marketing agency. Packaging colors, graphic and materials should communicate the idea of a premium product and of festivity at the same time. The new packaging, with gold side opening, rectangular-shaped, wavy sides, was very expensive, and consequently had a strong impact on the total cost of the product.

Finally, the product “downsizing” started from the traditional version of the product, a 500g egg, and led to a 350g version, and then to a very small praline egg, with the consequent price reductions. Through the downsizing, Lindt realized a brand line extension: from a premium, expensive product dedicated to (and consumed only in) Easter festivity, to a small, high quality, every-day product.

The product downsizing and the new packaging imposed the revision of the whole manufacturing process.

Until the mid-nineties the manufacturing of Noccior was totally manual, but the new volumes expected for the new product sizes required the mechanization of the process. Hence, a new plant was necessary. Lindt decided not to involve outside partners in the development of the new manufacturing machinery: the number of manufacturers of such machineries in the world is very limited and involving one of them was too dangerous for the company trade secrets. Hence, a closed innovation of the process took place, internal engineers re-designed the existing machines, already used in the production process of other Lindt products.

The new packaging as well required a new dedicated production process, able to pack even little eggs, (very fragile as empty inside), and to use a material suitable for the irregular shape typical of the “rocher” technology. In this case, the internal effort of manufacturing engineers, with some collaboration with packaging suppliers, allowed to develop the required technology.

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