

The exchange of knowledge: a case study

Annunziata de Felice¹, Isabella Martucci² and Dario A. Schirone³

Abstract

The Brundtland Report (1987) is the first formalization of the relationship between development and environment: "Development is sustainable if it meets the needs of present generations without compromising the ability of future generations to meet their own needs." In the sixties and seventies, economists began to study the relationships that exist between the economic and natural environments. Before then, standard economics had not considered the natural capital as a factor of exhaustible production; a process accelerated by rapid economic growth, technological innovation, and international trade.

One can underline how the integration of social responsibility into corporate strategy is a factor of competitiveness in the market. Such an integration internalizes the positive externalities generated, achieving the full involvement of all stakeholders.

A prime example of this is found in the world's leading furnishing company IKEA. Widely regarded as one of excellence in the field of environmental responsibility, IKEA is a Swedish company which aims to make sustainable development the core business value. Among the company's many activities, we will be examining IKEA's transportation infrastructure; as it has the greatest impact on the environment.

The efficient allocation of resources has always been a goal of the science of economics and in the realization of this objective, companies play a dominant role, especially when one considers the importance assumed by the social and environmental sustainability of development. Companies, in fact, interact with the

¹ University of Bari "Aldo Moro", e-mail: tdef@libero.it

² University of Bari "Aldo Moro", e-mail: i.martucci@uniba.it

³ University of Bari "Aldo Moro", e-mail: darioschirone@libero.it

environment through the exchange of matter, energy, information and knowledge. The optimal allocation of resources cannot be left to the impersonal forces of markets that are often inefficient and one cannot but recognize that there is an ethical judgment in every business decision which may favor one stakeholder at the expense of another. According to the view held by stakeholder theorists (Carroll, 1979), corporate social responsibility is expressed not only in the legal and economic fields but also has a dimension of ethical responsibility. In other words, the separation between ownership and control leads one to conclude that managers cannot act in shareholders' or their own interests without taking into account the higher interest of society as a whole. The company, in fact, does not only engage in market transactions, but establishes actions of a cooperative and competitive nature with a large number of individuals and groups.

The company's mission, therefore, must take into account its social responsibility which has to be present at all stages of the production process and in all relationships that the company has with the various stakeholders. Among these an important role is played by suppliers, with whom the firm sets itself in a position of internal auditor, recognizing that the creation of knowledge also comes through cooperative behavior. Businesses, therefore, being able to encode and transfer knowledge to suppliers, become organizations that facilitate the production of benefits for the community in the medium to long term.

In the light of these considerations, the present work, focusing on a business case, represented by IKEA, the world leader in furniture, sets out to illustrate how suppliers, having integrated IKEA directives into their production processes and supported by the transfer of the latter's knowledge, in the long term obtain a competitive advantage, whilst at the same time ensuring the IKEA brand is more reliable.

The importance of the exchange of knowledge between companies and suppliers that takes place during the adoption of rules of conduct is discussed in the theoretical part of the paper, while the empirical aspect remains based upon results of surveys directed towards the top management of IKEA Italy in the social and environmental fields, IKEA's Italian suppliers and the company's accounts.

JEL classification numbers: D83, D21, D23

Keywords: Knowledge, Firm Behaviour; Organizational Behaviour

1 Introduction

For many years the science of Economics has examined the efficient allocation of scarce resources, but only recently has it tried to combine this goal with that of environmental sustainability. Development is considered sustainable "if it meets the needs of present generations without compromising the ability of future generations to meet their own needs"(WCED, 1987). Given that the

companies, as open systems, exchange matter, energy and information with the environment, the aim of the present work is to show that the multinational IKEA (a world leading Swedish furnishings company), having identified sustainable development as a corporate value, has adopted socially responsible behavior that gives rise to long-term earnings growth and competitive advantage. In this scenario, the responsibilities of businesses tend to have a rather complex configuration. Environmental, social and ethical concerns, external to firms, in fact, require both the review of those paradigms that are firmly established in business practice as well as the creation of a territorial-production system that stimulates all the other actors to assume their responsibilities. Firms that anticipate change, with a strong vocation to create synergies with stakeholders, put in place codes of ethics that are increasingly shared with their employees and suppliers. It is worth noting that if the sacrifices businesses ask of their customers are rather limited or easy to implement in the light of a commitment of an exclusively voluntary basis, those required of their suppliers can prove particularly stringent and positively discriminating, following the typical logic of “green public procurement” (Molteni, Todisco, 2008). With these considerations in mind, the present work, focused on a business case, represented by IKEA Italy, seeks to show how the suppliers, having integrated IKEA directives into their production process and supported by the transfer of knowledge from the company, over the long-term gain a competitive advantage, while ensuring a more reliable IKEA brand. Laid out in the theoretical part of the work is the importance of the relationship between production and environmental protection. In the empirical part, after describing the structure of the IKEA Group, among the various suppliers, we single out the printers Antezza Tipografi s.r.l., with its important market position in southern Italy, for analysis. Thus it has been possible to analyze how the selected supplier, already attentive to environmental protection issues, has changed its production process to embrace the IKEA code of conduct.

2 Economy, Environment and Sustainable Development

The problems associated with development have been addressed from a theoretical perspective in relation to the evolution of economic systems over time and during history. In the 1960s researchers began to examine the problem of environmental degradation and in the 1970s, following the energy crisis, the relationship between human beings and nature was re-evaluated, identifying the first not so much as a ruler of the second but as its squanderer, uncaring of future generations. Making headway in the theoretical debate on one hand, was the neo-Malthusian interpretation, which, denying the long-term prospects of development, proposed the maintenance of economic systems in a steady state, reducing production activity (Meadows et al. 1972), and the second, that claimed Malthusian scarcity could be overcome through the substitution of resources and technological progress. Development could, therefore be supported in the long

term as a result of efficient market mechanisms (Simon-Kahn, 1984). The free action of market forces, in fact, although limited by the presence of failures, permits the implementation of sustainable and durable development through the gradual substitution of ever scarcer and more expensive resources with alternatives. If, however, one were to satisfy the environmental constraints, there would be a break in the economic growth process and perhaps, a decline in the levels of activity. In 1987 the Brundtland Report defined sustainable development, showing that environmental protection and development are inextricably linked, because if poverty exists and, therefore, there is no development, then the environment is being degraded and, conversely, in a degraded environment, poverty is itself created. Development, if sound, is no longer part of the environmental problem, but represents one of the solutions. (Nespor, 2009). This definition seems to coincide with the idea of a weak sustainability of development reachable by substituting natural resources for manufactured capital, which, together with other factors, allows the implementation of the production process through a combination that the entrepreneur “tweaks” to take maximum advantage. Considering, in fact, that a scarce resource is more expensive than a widely available one, the replacement of the first with the second permits a more efficient combination to be effected. In this case, substituting natural resources with manufactured capital, the level of economic activity would remain constant, without reducing the availability of resources for future generations. Environmentalists, however, believe that natural resources and manufactured capital are not replaceable, but complementary, since each level of increased welfare is associated with a greater amount of resources. On the other hand, it is evident that the consistency of the combination of natural resources and manufactured capital can only be maintained through their reintegration, there being no doubt that both the first and the second are subject to degradation. Consequently, if one believes it is true that the lower the level of development, the greater the environmental impact, then the contrary is true. In fact, an increase in disposable income per capita sees consumption grow in a less than proportional fashion, or at the least, is constant, while the disutility of environmental degradation increases. The statement is true only if, with the increase in the scale of production, technological progress allows for a reduction in the quantity of inputs used and promotes the adoption of production processes that entail less harmful emissions to the environment. The role of business and especially its relationship to the environment would therefore appear relevant in enabling sustainable development. Every company should adopt strategies that allow efficient production in terms of harmful emissions and the use of energy and raw materials, as well as in the production of waste. The eco-efficiency of an enterprise can be improved by using tools such as an analysis of the product life cycle and environmental management systems. In other words, to achieve sustainable development, it is necessary to pursue a positive economic outcome protecting the environment, which if on one hand represents a cost to the company, on the other provides many opportunities related to its ability to innovate. In

addition, one cannot deny that the achievement of corporate goals comes from the interaction with customers, suppliers and employees. Consequently, the optimal allocation of resources cannot be left to impersonal and often ineffective market forces and cannot be separated from the recognition that every business decision, potentially favoring one stakeholder at the expense of another, implies an ethical judgment. According to the theorists of the stakeholder view (Carroll, 1979), corporate social responsibility is expressed not only in the legal and economic fields but is also an ethical responsibility that should permeate its social relations. In other words, the separation between ownership and control leads to the conclusion that managers cannot act both in shareholders' and in their own interests without taking into account the higher interests of society itself. The company, in fact, does not only engage in market transactions but engages in actions of a cooperative and competitive nature with a large number of individuals and groups, variously organized, which, as a result of this, attempt to achieve their own objectives. The company mission, therefore, cannot but take into account the social responsibility that must be present at all stages of the production process and in all relationships that the company has with the various stakeholders. Among these an important role is played by its suppliers, with whom the firms place themselves in a position of internal auditor, recognizing that the creation of knowledge also comes about from cooperative behavior. Businesses, therefore, being able to encode and transfer knowledge to suppliers as part of an ongoing constructive dialogue, become organizations that allow for the production of benefits for the community as whole in the medium to long term.

3 Socio-environmental strategy in production and supply in IKEA Group

In the early 1990s, IKEA took its first steps towards sustainability, rethinking its own actions, both in the field of the environmental and social consequences of their actions. The changes that were introduced have passed through all the functions of the IKEA production chain from design to logistics, from retail to the relationship with suppliers. To better illustrate how IKEA has implemented sustainability in its corporate activity, it is well worth analyzing the structure (Figure 1).

IKEA Italy, which also includes Switzerland and Austria, is composed of three operative units which are involved in the implementation of environmental responsibility (Figure 2).

The staff is part of the Social and Environmental Co-ordination Group (SECO), reporting to the IKEA group that has among its main objectives, the environment, non-use of child labor and the ensuring of acceptable and properly remunerated working conditions.

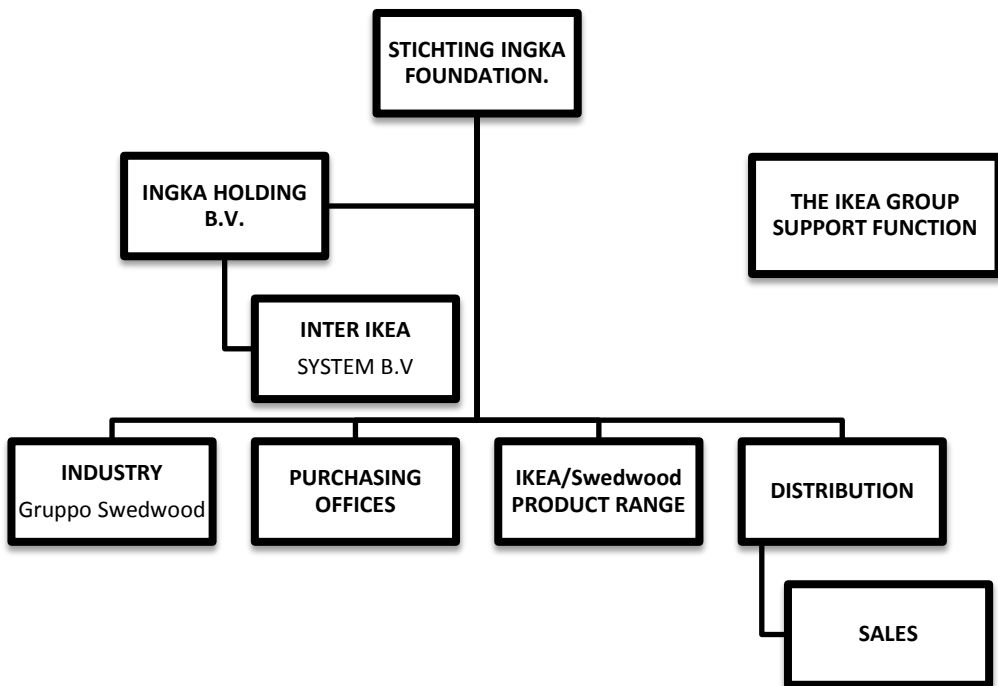


Figure 1: The IKEA Group

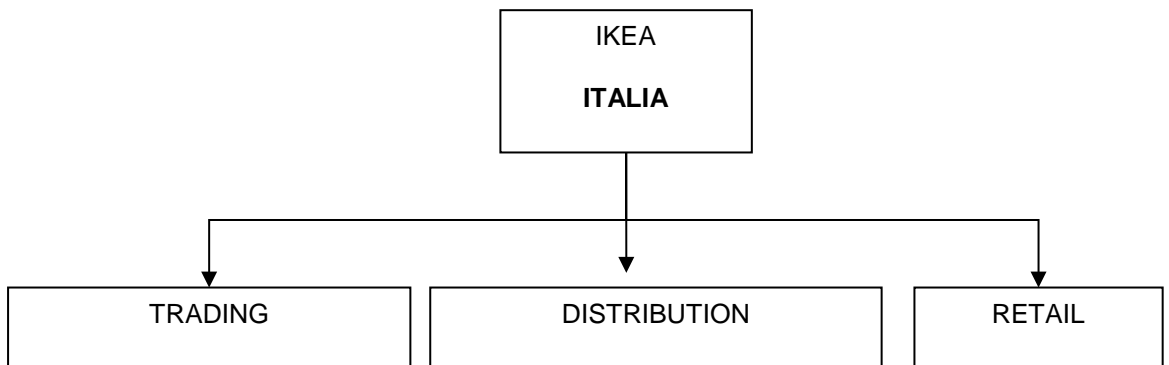


Figure 2: The IKEA structure in Italy

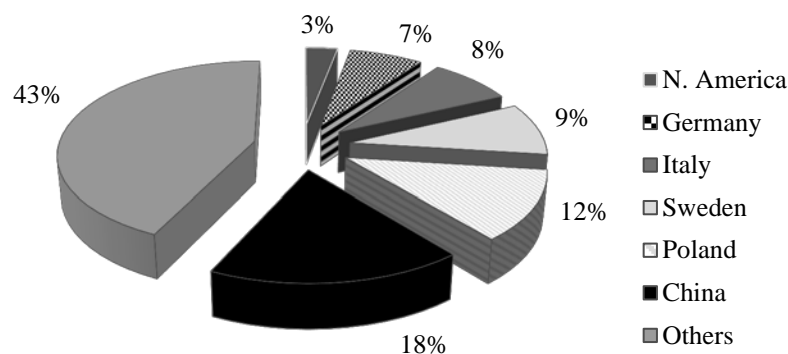
Each phase of the project foresees a continuous synergy within the GBA (Global Business Area), including amongst those responsible for the various functions relating to a product group, and between them and external factors such as suppliers. Internally, each GBA consists of a Purchase Strategies and Supply Coordinator in constant contact with the TSO (IKEA Supply Offices / Trading Service Offices) around the world in order to monitor the market for supplies,

interacting with suppliers, contacting and evaluating potential ones and assessing their particular characteristics. Among these and relevant to making a choice are the flow of imports and exports, domestic prices and foreign exchange rates between different currencies, the geographical distance from the target market, the quality and cost of materials and their productive capacity both in terms of technology adopted and in terms of human capital.

Environmental sustainability constitutes an integral part of the Swedish multinational's activity and influences the entire product life cycle from design to disposal. The initiatives taken to this end, are not explicitly communicated through ad hoc advertising campaigns, as IKEA believes it favors the emergence of respect for the environment through its own behavior which is embodied in the goods that are produced and sold. The entire IKEA staff is testimonial to the attention that the company pays to environmental and social issues.

Based on this set of values, the company assesses the internal and external environmental impacts of its business and by reducing these it can gain benefits not only by introducing innovations in terms of both product and process, but also by adopting marketing strategies aimed at sustainability including, for example, charging lower prices for recycled products and / or providing discounts for the withdrawal of used products as well as packaging techniques that are achievable in synergy with the distributors.

Over the years, IKEA has become increasingly attentive to the environmental impact related to the use of certain materials. The knowledge gained from several initiatives has improved both existing products and those coming through from new production and design in terms their of environmental sustainability.



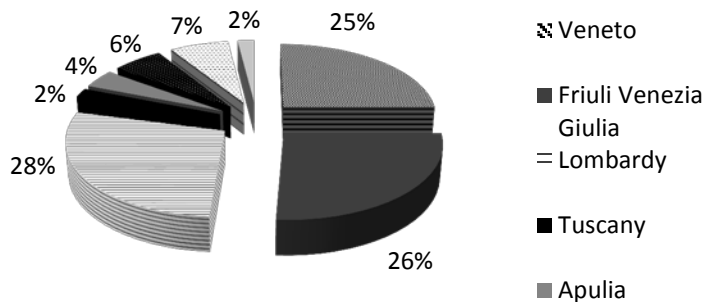
Source: our analysis of IKEA's data

Figure 3: Breakdown in geographical areas of IKEA's suppliers by volume of production

Effective design is considered a starting point to reduce the environmental impact at any later stage, which is controlled through the “environment-wheel” which also constitutes a binding reference to the suppliers, whose cooperation is important for product innovation as well as to improve those products already in manufacture. The IKEA product range is, for the most part, acquired from almost 2000 suppliers spread across 55 countries (Figure 3), among whom Italy accounts for 8%.

The Italian suppliers are located almost throughout Italy (Figure 4) and, in particular, in Friuli Venezia Giulia illustrating the importance of FriuliIntagli (for cabinets and doors), in Puglia represented by Divani e Divani by Natuzzi (for sofas) and, in Basilicata, with the printers, Antezza Tipografi.

Within a reasonable time all suppliers must meet the international environmental certification ISO14001 or the European one, EMAS, the Eco Management Audit Scheme, or the British Standard BS7750.



Source: our analysis of IKEA’s data

Figures 4: Regional distribution of IKEA suppliers in Italy for production volume

4 A case study. The relationship between IKEA Italy and the printers Antezza Tipografi S.r.l.

Antezza Tipografi S.r.l, founded in the late 1980s in Matera, specializes in graphics and high definition printing. The production process, in which the customer is the initial input is carefully supervised, and divided into three phases:

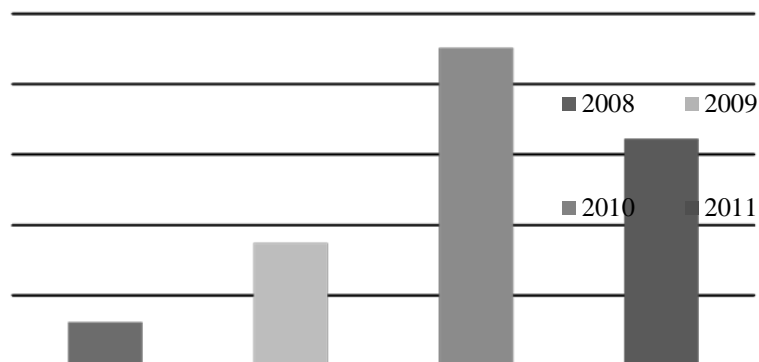
- The first, defined as the pre-printing area, sees the verification of the correctness of the supplied file. The gradient of the image and the shades of color are then defined through the use of most sophisticated graphics and work flow programmes;

- in the second phase, termed the plate, the acquired data is placed on the computer to plate (CTP) that is then transferred onto aluminum plates, each corresponding to a shade of color;
- the third phase, stampa in piana or flat printing, is suitable for the production of superior quality printing than that produced using rotary (or offset) methods, which is more automated, lends itself to any type of format and is particularly suitable for medium and high volumes, so as to satisfy any requirements.

To comply with IKEA's IWAY code of conduct Antezza Tipografi has reconfigured its entire production system, from its pre-press systems to those of the printing itself, in order to reduce the environmental impact (with reduced discards, CO₂, emissions and the use of energy resources) and is equipped with FSC (Forest Stewardship Council) certification, a rather long and complex process, accompanied by procedures for auditing by independent bodies and is supported by regional bodies prepared for them.

Antezza Tipografi also has other quality certifications, including UNI EN ISO 9001:2008 covering its quality management system of all the different stages of the production process, and EN ISO 14001:2004 for environmental certification, as well as those relating to international quality standards provided for under the terms of ISO 12647-2:2004 and specific to the graphic arts. To these are added the Certification of Control System of the chain of custody according to the FSC and PEFC (Pan-European Forest Certification Council) to guarantee the use of paper produced from forests managed in a sustainable and controlled fashion.

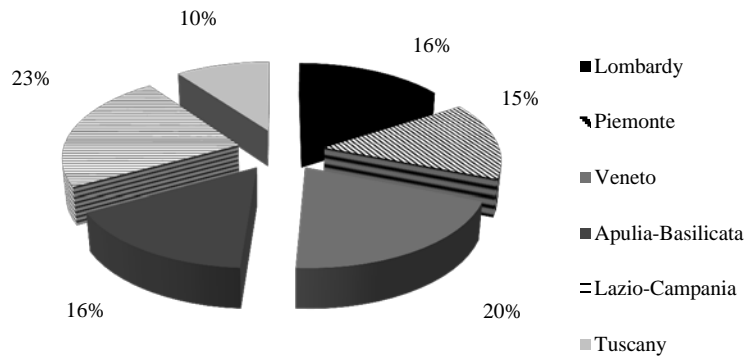
In 2011 Antezza Tipografi's production volumes amounted to more than 15 million "machine passes", of which 1,61% were sold to IKEA (Figure 5) in its stores located in Milan, Naples, Salerno, Bari and Catania.



Source: our analysis of Antezza's data

Figure 5: Antezza Tipografi's production volumes for IKEA as a proportion of total production as a percentage (rolls or machine passes)

In addition, Antezza has about 450 customers located throughout the country (Figure 6) and carries out its production with the help of 12 employees, in addition to those of its feeder businesses located in Matera, Santeramo and Cassano.



Source: our analysis of data from the questionnaire

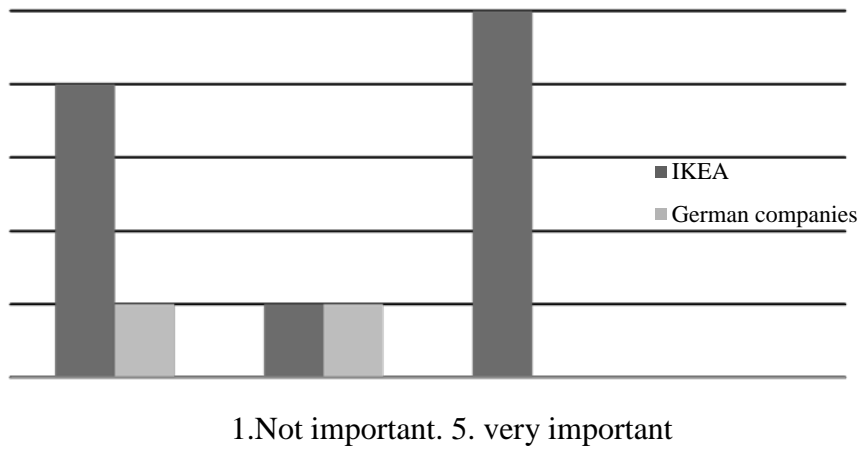
Figure 6: Regional distribution of Antezza's clients in Italy (% on the total production volume)

Antezza has amongst its German suppliers, the company Manroland, from which it purchases its printing presses. and HBER, for the raw materials, bought also, in part, by Kodak Italy.

4.1 The exchange of knowledge between IKEA Italy and Antezza Tipografi S.r.l.

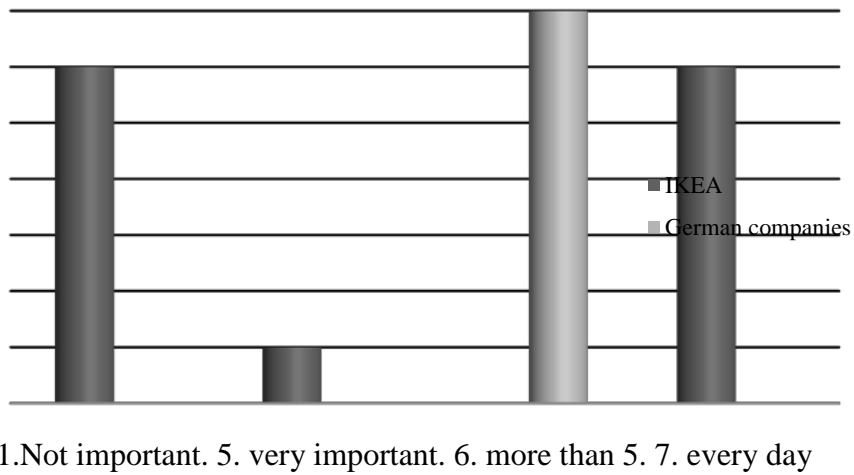
It is interesting to note the high intensity of informal relations that Antezza enjoys with the leaders of all the companies with whom it has established its partnership which is expressed in a continuous exchange of information and knowledge. Only with the suppliers Kodak and Manroland are the relationships of a formal nature also at a high intensity, an element that becomes almost nonexistent with regard to local contractors.

By adopting FSC certification, required only by IKEA, it has become the official supplier for the south of Italy, making such knowledge its own which is thus encoded, explicit, and transferred, requiring substantial investment in order to make this adjustment possible. Thus, its contacts with IKEA are continuous and in order to make the new IKEA technology accessible to staff at the same time, Antezza organized a graphics training course aimed at making the new software used in the production process known, thus improving the quality of the final



Source: our analysis of data from the questionnaire

Figure 8: Number of formal meetings with IKEA and German companies per month



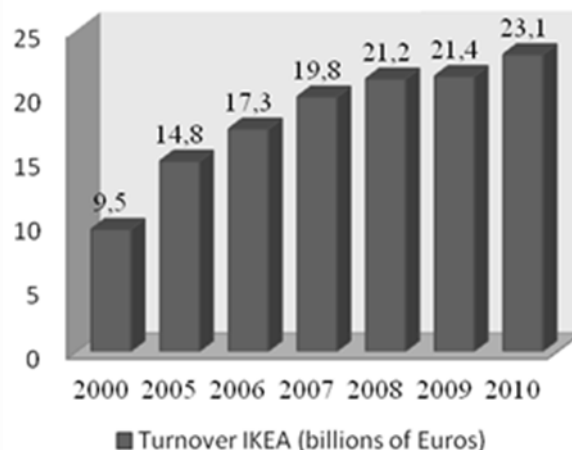
Source: our analysis of data from the questionnaire

Figure 9: Number of informal meetings with IKEA and German companies per month

Antezza adopts a considerable environmental strategy, following the requests of customers who are increasingly aware and sensitive to issues relating

to environmental sustainability. In addition, environmental strategies are pursued through the use of photovoltaic panels and at all stages of the production process a post-combustion plant is employed with which it is possible to eliminate 99% of toxic gases. The positive effects thus produced are a source of corporate pride and hopefully favors its entry into a select group of green companies. The social strategies pursued are important and consist of sound insulation of the walls to protect its employees and the periodic inspection of businesses in the supply chain, through to the creation of a pilot project green area in Matera as well as support for humanitarian and cultural associations. These social and environmental initiatives are promoted through the website, workshops with customers and suppliers, while the transfer of technology and know-how to the socio-environmental setting is achieved through participation in professional development and the product innovation process, development projects, agreements with research institutions and universities and the organization of environmental innovation initiatives together with the sharing of skills and goals with IKEA, suppliers and business partners.

It is difficult to assess the extent to which the strategies adopted by the IKEA Group, IKEA Italy and Antezza in terms of social and environmental protection, affect company turnover (Figures 10, 11, 12). One can only note that, in the crucial year of the recent crisis, i.e. 2009, the IKEA Group reported profits of 2.58 billion euros and IKEA Italy turnover remained stable. This data testifies that, despite the use of more expensive industrial strategies and even with more attention to social and environmental protection, the economic objectives of the company are being reached.



Source: our analysis of IKEA's data

Figure 10: Turnover IKEA Group 2000 - 2010



Source: our analysis of IKEA's data

Figure 11: Turnover IKEA Italia from 2004 - 2011



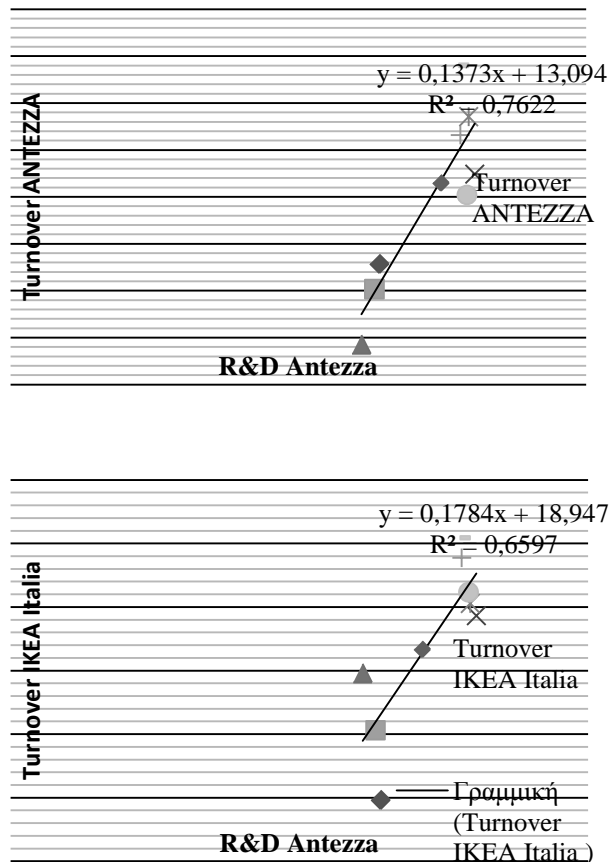
Source: our analysis of Antezza's data

Figure12: Turnover ANTEZZA TIPOGRAFI SRL 2004 - 2011

The turnover of Antezza Tipografi, however, is more characterized by ups and downs. Falling until 2006, it registered an increase of 11.5% in 2008, the start of its partnership with IKEA, but nevertheless it was affected by the crisis of 2009. The decline in sales compared to 2008 can probably be attributed to the collapse of orders from Natuzzi, one of its largest customers, as well as other local and Italian companies. Despite this, Antezza was able to cover its production costs, to make a profit and increase its business turnover in subsequent years.

5 Conclusion

The analysis performed shows that IKEA is able to pursue its goals of achieving an economic optimum, minimizing any environmental impact. In fact, already at the design stage IKEA adopts strategies aimed at sustainability, based on the life cycle of the piece of furniture, always made with renewable materials, either recyclable or recycled.



Source: our analysis of data from both Antezza and IKEA

Figure 13: Incidence of R&D activities on the turnover of Antezza and the turnover of IKEA Italia

Their design tool the eWheel - environment Wheel - which has neither a start nor an end, is perhaps the most appropriate image to illustrate how it is possible to protect the environment, as it simulates the life of the product from the selection of materials through to its manufacture, distribution and use, and subsequent withdrawal and recycling.

The company's mission, therefore, must take into account the social responsibility which has to be present at all stages of the production process and in all relationships that the company has with the various stakeholders. Among these an important role is played by suppliers, with whom the firms set themselves in a position of internal auditors, recognizing that the creation of knowledge also comes from cooperative behavior. Taken together, these relationships facilitate the diffusion of knowledge. Socialization involves the sharing of tacit knowledge through interactions and the diffusion of experience and mental models (Nonaka and Takeuchi, 1995, p.63). Through outsourcing, it reproduces and transforms itself in coded or explicit knowledge arising from research and a code of conduct. The empirical analysis shows that knowledge, embodied in R&D produces effects on the turnover of Antezza, accounting for 76% of the selected variable as well as for the turnover of IKEA Italy for which it explains as much as 60%. In both cases the elasticity is statistically significant (Figure 13). This line of action would seem to lead to sustainable development, balancing, harmonizing economics, social equity and the ecosystem. To make this possible it would be sufficient to correct any behaviors that, for their impact on the environment, lead to the collapse of the system.

References

- [1] W. Beckerman, Economic growth and the environment: whose growth? whose environment?, *World Development*, **20**, (1992), 481-496.
- [2] A.B. Carroll, A Three-Dimensional Conceptual Model of Corporate Social Performance, *Academy of Management Review*, **4**(4), (1979), 497-550.
- [3] IKEA Verso la sostenibilità, Report ambientale, sociale, risorse umane, Milano, (2009).
- [4] IKEA Verso la sostenibilità, Report ambientale, sociale, risorse umane, Milano(2010).
- [5] D.H. Meadows, D.L. Meadows, J. Randers and W.H. Behrens, *The Limits to the Growth*, New York, Universe Books, 1972.
- [6] M. Molteni and A. Todisco, *Responsabilità sociale di impresa, Il sole 24 ore*, Milano, 2008.
- [7] I. Nonaka and H. Takeuchi, *The knowledge – creating company*, Oxford University Press, 1995.
- [8] S. Nespore, *Il governo dell'ambiente. La politica e il diritto per il progresso sostenibile*, Milano, Garzanti, 2009.
- [9] M.E. Porter and F.L. Reihardt, Un approccio strategico al clima, *Harvard Business Review Italia*, (2007), 6-10.
- [10] J.L. Simon and H. Kahn (Eds.), *The resourceful Earth: a response to Global 2000*, New York, Blackwell, p. 595, 1984.
- [11] WCED, *Our Common Future*, Oxford University Press, Oxford, 1987.