

# THE IMPACT OF SUSTAINABLE DEVELOPMENT ON A DISTRIBUTOR'S PURCHASING STRATEGY: TOWARDS NETWORK-BASED SUPPLY CHAIN MANAGEMENT

Competitive Paper

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**Key words:** Sustainable supply management, green purchasing, sustainable development, network-based purchasing.

## Abstract

This paper deals with the specific impact of sustainable development in purchasing and supply management. As a company “*is no more sustainable than its supply chain*” (Krause et al., 2009), the purchasing function plays a critical role in helping a firm reach its sustainable development objectives. However, green sourcing is not a straightforward task relying on marginal adaptations of existing purchasing practices and tools. The challenges introduced by sustainable development deeply affect purchasing and supply management strategies and practices and therefore foster a change in the firm's supply network (Pagell et al., 2010).

After a literature review on sustainable supply chain development and supply network strategies, this paper will present the result of a longitudinal exploratory case study (over 3 years) of a French gardening products distributor– BOTANIC® – which has decided to place sustainable development at the heart of its corporate strategy since 2005. From 2005 to 2008, the researchers observed the transformations implemented by the purchasing function: evolution of specifications, changes in the supplier portfolio content and structure, changes of purchasing processes...

The analysis of the case study reveals the various factors impacted by the introduction of sustainability goals in the firm's purchasing strategy and illustrates the specific challenges raised by the integration of new purchasing criteria (concerning the buyer's competences, the issue of product labelling, partnerships with new stakeholders etc.). It confirms that the traditional focus on the minimization of costs and risks based on purchasing portfolio models might be suboptimal when sustainability becomes a competitive priority (Krause et al., 2009). It highlights the relevance of a network approach to supply management in the context of sustainable development (Gadde & Hakansson, 2001).

Following Krause et al.'s recommendations (2009), the paper then draws the consequences of these preliminary findings on purchasing and supply management and addresses the issue of how purchasing can become sustainable supply management. The relevance of relationship-based sourcing strategies based on an extended sustainable supply network is then discussed.

## Introduction

Based on the Brundtland Commission's first definition, sustainable development is defined as development that "*meets the needs of the present without compromising the ability of future generations to meet their own needs*" (World Commission on Environment and Development, 1987: 8). In the field of business, it requires to conciliate profit objectives, respect for the environment (resource scarcity, carbon emission, pollution...), and the satisfaction of all the firm's stakeholders i.e. the actors affected by the activities of the organisation -customers, employees, suppliers, subcontractors and the local community (Carroll, 1989; Clarkson, & al., 1994; Freeman, 1984)-. Hence organisational sustainability consists of three components: the natural environment, society and economic performance (Carter & Rogers, 2008), known as the Triple Bottom Line (Elkington, 1998).

No company can nowadays avoid the issue of sustainable development. The pressure exerted by the general public as well as the current societal context push firms to position themselves towards social and environmental stakes. It is a question of legitimacy in Suchman's sense (Suchman, 1995). As mentioned by Savitz and Weber (2006:14): "*sustainability is now a fundamental principle of smart management*". In most sectors, the integration of sustainable development stakes calls for a deep change of practice in the supply chain relying more extensively on joint development activities, cooperation and innovation with suppliers and other external partners in a long term perspective<sup>1</sup>. This requires changes in the ways each firm's activities can be combined with those of its suppliers (Gadde & Hakansson, 2001). From a purchasing point of view, the integration of sustainable development actually calls for a network vision integrating suppliers, subcontractors and key other internal and external stakeholders in a firm's sustainable value creation process.

This is not an easy change and all firms do not respond similarly to the need for sustainable development. Several strategies can be identified (Handfield et al., 1997)<sup>2</sup> ranging from green washing or lobbying practices so as to build an image of conformity versus more in-depth practices based on stronger convictions and values. We can therefore distinguish between those firms that develop marginal sustainable practices at the fringe of their core activities and those firms that develop a global sustainable development strategy where environmental concerns are integrated in their everyday management concerns leading them to make substantial changes in their core business and supply practices (Winsemius & Guntram, 1992; Handfield et al., 1997). We will focus on this second type of strategies and more specifically on the transformations that these companies need to undertake in their daily purchasing operations to fully respect sustainable development principles.

The IMP school of thought stresses the importance of suppliers as providers of resources (Hakansson, 1987) and the increasing interdependence between suppliers and customers (Gadde & Hakansson, 2001). Similarly, Krause, Vachon and Klassen (2009) advocate that a firm's sustainability is strongly conditioned by that of its suppliers. They invite us to consider « *how sustainability goals within companies are affecting purchasing and supply chain*

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<sup>1</sup> A French governmental research project based on an international benchmark of best "green practices"(Prebat, 2007) has shown that short term practices consisting of simply adding environmental concerns to existing professional practices are unsatisfactory as they often generate high investments costs and low energy yields.

<sup>2</sup> Handfield et al. (1997) identify six response modes: resistant adaptation, embracing without innovating, reactive, receptive, constructive and proactive.

*managers in terms of setting strategies for the purchase of their inputs, and in managing the relationships and performance of their supplier”* (Krause et al, 2009: 22). The objective of the present paper is precisely to investigate the impact of sustainable development on the firm’s purchasing practices and on its supply network. Based on the analysis of several variables identified in the literature, the paper aims at identifying the main changes and evolutions generated by the implementation of a sustainable sourcing strategy.

After a literature review on supply chain management, purchasing portfolio models and sustainable sourcing, this paper will present the result of a longitudinal exploratory case study of a French gardening products distributor– BOTANIC® ranked n°3 in France– which has decided to place sustainable development at the heart of its corporate strategy since 2005. It presents and discusses the change implemented by the distributor in supply management. The paper then draws the consequences of these preliminary findings on purchasing criteria and models, as well as on supplier portfolio management systems. It addresses the relevance of relationship-based sourcing strategies and reinforces the need to complement the supply chain perspective with a network view so as to integrate new types of actors from the non business arena in the approach (Hakansson & Gadde, 2001). It concludes on the evolution of the purchasing function.

## **Literature review**

### *Supply chain management and purchasing portfolio models*

Over the last decades, the importance of purchasing as a field of strategic interest has been growing due to increased market globalization, escalation of purchasing costs and the growing role of suppliers in the firm’s value creation process (Dubois & Pedersen, 2002) associated with the growth of outsourcing strategies (McIvor, 2000). As a consequence, the traditional emphasis on optimizing single transactions has progressively shifted towards a long term view of procurement relying more heavily on suppliers as value generators able not only to provide resources and technology but also to grow the company’s revenues (Gadde & Hakansson, 2001). Forming close relationships with suppliers then became a means for a given company of gaining access to their suppliers’ resources so as to develop their activities. This renewed vision of purchasing has pushed IMP researchers to advocate that “*efficient and effective purchasing requires a supply network perspective*” which includes the involvement not only of the direct suppliers but also the suppliers of suppliers to avoid sub-optimization (Gadde & Hakansson, 2001: 16). This supply network vision has also been integrated in the concept of supply management which goes beyond direct suppliers to integrate subcontractors, sub-suppliers, and “*all the entities downstream from the firm that facilitate the transport of products and services to markets*” (Krause et al, 2009: 19).

In sum, the literature evolved from purchasing and procurement to supply chain management (Axelsson & Wynstra, 2002; Van Weele, 2005; Monczka et al., 2005) including various actions such as the development of suppliers’ capabilities, the formation of supplier structures or the improvement of administrative routines (Axellson et al., 2005).

Among the pioneers of this renewed purchasing vision, Kraljic (1983) is universally recognized for his purchasing portfolio model based on two criteria, the importance of purchasing and the complexity of the supply market. This model has been further developed

and refined by several authors since then (Olsen & Ellram, 1997; Gelderman & Van Weele, 2005), proving its recognition and appeal grounded in its simplicity and practical logic.

However, with the introduction of sustainability goals and its three dimensions of economic, environmental and social performance, these purchasing portfolio models are increasingly challenged. Firstly, the introduction of the environmental and social dimensions into purchasing decision often generates a new set of risks and trade-offs in the decision, complicating the purchasers' decision-making process with both quantitative and qualitative factors (Handfield, Walton et al., 2002; Carter, 2004). The literature highlights the need for purchasers to go beyond financial metrics and carefully monitor other risk factors such as security, pollution or waste of resources (Carter & Rogers, 2008). Hence, the traditional supplier evaluation systems advocated by portfolio models come across as being less useful as they can not cope with the numerous uncertainties related to a fastly changing environment with new dimensions, labels and criteria appearing in the market. Secondly, the implementation of a sustainable development sourcing strategy may go against the purchaser risk reduction principles advocated by Kraljic (1983). Pagell, Wu and Wasserman (2010) have actually shown that sustainable supply chain management means taking more risk for the purchaser (qualifying new and smaller suppliers whose prosperity is unsecure; accepting to pay a higher price for environmental-friendly products; signing long-term contracts instead of focusing on short-term, less committing transactions) and also involve decreasing the risks for the suppliers so as to encourage them to innovate and modify their offer and practices. Finally, Kraljic's model has also been criticized by IMP researchers for its overly simplistic approach which does not account for joint development strategies, or of customer-suppliers interdependencies linked to the mutual adjustments required to meet sustainability goals. As mentioned by Dubois and Pedersen (2002: 41), the focus of these models "*is on resource optimization or allocation and not on total cost considerations and joint value creation*". As a consequence, several authors stress the need to update, revise or even use other models for green sourcing purposes (Lamming et al., 1999; Dubois & Pedersen, 2002; Krause et al., 2009; Pagell et al., 2010). As mentioned by Millet and his co-authors (Millet et al., 2003: 156), a firm willing to actually contribute to sustainable development requires to enter in *«a conscious learning macro-process, aiming at profoundly modifying the manner in which the environment is dealt with and the industrial activity is designed»*. De Burgos Jinenez and Cespedes Lorente (2001) therefore suggest adding sustainable development to the firm's set of existing competitive priorities (e.g. quality, cost, delivery, flexibility and innovation).

### *Towards Sustainable Supply Chain Management: SSCM*

One of the first difficulties when implementing sustainable sourcing is to identify the various "*components of sustainability*" (Krause et al., 2009: 20). Based on the Bruntland Commission's initial definition, the factors of the Triple Bottom Line (Elkington, 1998) are now acknowledged in the literature:

- Environmental stewardship which relates to the preservation of natural resources, waste minimization, reduced emissions and has led to the concept of "green purchasing" (Handfield & Melnyk, 1996). It can be assessed both at the corporate level and at the product/service offer level (Handfield et al., 2002).
- Social equity which relates to the firm's purchasing social responsibility defined by Carter (2004) as a construct integrating five factors: cultural diversity, environment, human rights, philanthropy/community, and safety.

- Economic performance which is not a new purchasing dimension but “*assures that the economic needs of the company, workers and stakeholders are met*” (Krause et al., 2009: 20).

The integration of these three factors generates several difficulties as purchasers are faced with new trade-offs rendering the purchasing process much more complex and uncertain (Handfield et al., 2002). Handfield, Walton, Sroufe and Melnyk (2002) therefore suggest using an Analytical Hierarchy Process as a decision support model to help managers understand the trade-offs between the various environmental dimensions (assessing their relative importance and the performance of several suppliers on each of them). This model is however limited to environmentally conscious purchasing and as such not dealing with the social dimension of the triple bottom line.

The strong involvement of stakeholders in the sustainability approach seems required to support the improvement of supply chain processes (Carter & Rogers, 2008). In that case, a network approach to supply chain management is required enlarging the supply network not only to direct and indirect suppliers but also to non business actors such as local communities. This calls for more open-ended cooperation and transparency based on both vertical cooperation (Carter & Rogers, 2008) in the supply chain (suppliers, sub-suppliers, customers...) and horizontal coordination across the extended supply network.

Shrivastava (1995) also stresses the need to carefully integrate green practices in the firm’s corporate strategy rather than considering them as individual actions. This often goes with a change of the firm’s purchasing culture. The evolution of sourcing strategies thus requires a transitory period necessary for purchasers to change the focus of their actions:

- from a focus on profits and quality to a much larger focus based on the triple bottom line (De Burgos Jimenez and Cespedes Lorente, 2001; Pagell et al., 2010),
- from dominantly quantifiable and financial performance metrics to more qualitative metrics such as social welfare or working conditions (Linton et al., 2007; Carter & Rogers, 2008),
- from a dominant focus on the current price or cost of a product-service to a total cost of ownership focus including the effects of resource depletion and the generation of by-products such as pollutants and waste (Linton et al., 2007),
- from the procurement of standardized inputs to joint-value creation methodologies (Carter & Carter, 1998),
- from local optimization of purchasing factors to consideration of the entire supply network of actors involved during the production, consumption, customer service, and post-disposal of products (Linton et al., 2007),
- from a focus on products and suppliers to a focus on relationships and supplier networks (Gadde & Hakansson, 2001; Dubois & Pedersen, 2002) in a long-term perspective.

After the evolution from procurement and purchasing to supply chain management, the literature seems to converge to advocate for a next evolution towards sustainable supply chain management. As mentioned above, this new purchasing generation seems to rely on a network approach to purchasing calling not only for long term cooperative relationships in the supply chain (supplier, sub-suppliers, distributors, customers...) but also with new business or non business actors forming an extended supply network. Little work to date has however studied these changes and assumptions in depth, and there is therefore a strong need to empirically study the implications of the integration of a sustainable sourcing approach on the firm’s

practices (Linton et al., 1997). This is the objective of the next sections dedicated to the Botanic case study.

## **Research method**

The longitudinal study carried out at Botanic over a 3 years period has enabled us to follow the various stages of its implementation as well as its implications on its purchasing strategy and its relationships with its suppliers. This firm represents a very rich case for two main reasons. Firstly as a mass distributor, its sustainable development positioning directly depends on its purchasing strategy (no in-house production) to design the store product assortment. Secondly, Botanic presents an authentic sustainable development strategy (to the opposite of green washing tactics) which directly questions its core business and challenges its practices and habits.

The set of data that we have collected between 2004 and 2007 relies on 4 main sources:

- 12 semi-structured face-to-face interviews with sustainable development staff at Botanic including 6 purchasers.
- The study of more than 70 internal documents (memos, internal reports, communication tools, brochures...).
- The active contribution to 29 internal meetings for a total of 155 hours.
- The attendance to various internal meetings, seminars or conventions related to sustainable development which amount to 14 days of full immersion in the company: 10 work meetings (24 hours), two seminars (3 days) including a two-day seminar with the purchasers, an internal convention (2 days) and a business trip with the board of directors (9 days).

Appendix 1 details the actors interviewed about the purchasing strategy and its evolutions linked to Botanic sustainability goals. The interviews have been carried out in 2007 - almost 2 and a half year after the launch of the sustainable development strategy which enabled the interviewees to have some preliminary insights of its consequences on the purchasing function-.The semi-structured interviews revolved around 4 themes: the respondent's understanding and vision of Botanic sustainable development strategy, the interviewee's scope of action and responsibility, the political consequences of the strategy on its activities, and the main difficulties met.

Each interview was recorded and fully re-transcribed. The analysis aimed at identifying the main changes affecting the key purchasing variables identified in the literature i.e. product selection criteria, procurement policy, suppliers portfolio, working methods and procedures and network actors involved so as to identify themes and patterns from this data. The main goal was to obtain a thorough understanding of the change processes at play. We therefore focused our research on 4 product categories directly impacted by the implementation of a sustainable development strategy: chemical fertilizers, teak wood garden furniture, Christmas decoration imported from Asia and potted plants. For each category, we have followed the main transformations operated on the above mentioned variables.

## **The Botanic case study**

Created in 1995, Botanic is a gardening product distributor owning approximately 60 stores<sup>3</sup>, with more than 2000 employees and a turnover of 290 millions Euros in 2007. The firm is owned by two families of entrepreneurs coming from the horticultural milieu; two of them currently manage the company. Botanic is an independent firm, not present on the stock-exchange market. Since its origin Botanic exhibits the genes of sustainable development. In its founding charter, values for respect and positive contribution towards the nature and the social environment form the spin of the document. They lead to various initiatives favouring the preservation of nature (creation of a specific label “Let’s protect nature” placed on gardening products) or active involvement in local life (anchoring the firm in its territory, school workshops). But these actions are scattered and left to the individual initiative of the employees.

In 2004, the C.E.O -Luc Blanchet- decides to position sustainable development at the heart of their strategy to be in accordance with new societal expectations while reinforcing their founding values. The first step consists in a deeper understanding of sustainable development (seizing and integrating the concept) by the Board of Directors so as to define the main strategic orientations. All the activities and functions of the firm are screened through these new lenses and given new guidelines: purchasing, transportation, the store design and operations, customer information and ‘sensitization’, human resource management (November 2004).

In 2005, Luc Blanchet officially launches this new strategic orientation in an annual convention gathering store managers and corporate executives. In March 2005, a sustainable development manager is hired. Numerous reflections and implementations follow these early stages from 2005 to 2007. We will now focus on the implementation process of this strategy by the purchasing function.

### **The sustainable development purchasing strategy of Botanic**

The purchasing function plays a key role to make sustainable development come true. Buyers define the product assortment that customers can find at the stores -the spot where the distribution’s positioning is best expressed-.

#### *Definition of selection principles per product category*

This subject rapidly comes across as one of the first priorities in the implementation of the sustainable development strategy. It consists in “selecting and developing quality product offers which value know-how produced under conditions respecting the individuals and their natural environment and whose usage by the customer contributes to preserving the garden

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<sup>3</sup> Botanic stores are structured around several poles: home/interior plants, animals (living animals, food care products and equipments for animals), home and garden decoration, technical products for the gardener (grains, tools, fertilizers...), the flower market and the tree market.

ecosystem and to promoting healthier lifestyles for the people and the planet” (internal document - 16/12/04).

Based on these initial principles, a more specific framework for each product family has been established: vegetal products, living animals, inertial products from the animals department (food, aquarium), tooling (manual and motorized tools), home and garden decoration, technical products for the gardener (grains, fertilizers...). The sustainable development problems and issues soon come across as being different depending on each product family. Under sustainable development logic, products need to be examined through six set of criteria:

- Their utility: unnecessary products become irrelevant. But the need and necessity for a product is not so easy to determine and implies a value judgment that is not universally-accepted. Should dog toothpaste be withdrawn? Is it OK to sale a hamster?
- Their harmlessness in use: products should not be a source of pollution or harm their users.
- Their conditioning/packaging: the products need to minimize the necessary level of packaging and whenever possible to avoid any form of packaging. Packaging need to be reduced as much as possible, be recyclable or biodegradable.
- The environmental conditions of their production. Under the sustainable development logic, products should be made of natural, renewable or recyclable inputs. The production process in itself should limit energy consumption (water, fossil energy) and pollutions (greenhouse gas emissions, water or ground pollutions).
- The social conditions of their production. The objective is to control the social conditions in the supply chain.
- Their geographical proximity. Products should ideally be produced close to where they are consumed so as to limit their transportation and increase the control over social conditions of production. It also favours the local economy and contributes to a form of public spirit.

We will now analyze more specifically how these principles are implemented by Botanic purchasers and in what respect it affects their purchasing practices, through the detailed analysis of 4 product categories.

### *Analysis of 4 product categories*

The four product categories selected (chemical fertilizers, Christmas decoration, teak wood furniture, and potted plants) present different challenges and issues regarding sustainable development. For each product category, we will address the changes operated in the supplier portfolio, the evolutions of supplier relationships and the processes at play. Appendix 2 summarizes the data on these product categories.

#### **Chemical fertilizers**

The chemical fertilizers category probably represents the most emblematic example of Botanic’s commitment to sustainable development. According to the WWF, gardening represents 8% of the French total pesticide consumption and 25% of river pollutions. Contrarily to the farmers, non professional gardeners do not protect themselves and tend to overdose these products. Botanic therefore had to set these products as a priority for action. At the end of 2005, the person in charge of sustainable development orders a toxicological

study from MDRGF<sup>4</sup>, so as to obtain an objective assessment of the toxicity level of the fertilizers sold in their stores. 137 molecules are scanned through a research method approved by André Picot, a famous toxicologist from CNRS. The results are clear: 80% of the studied molecules are declared toxic (possibly carcinogen, toxic for the nerves, toxic for reproduction...). Soon after in March 2006, the CEO decides to definitely withdraw all these products from their store shelves. The purchasing manager in charge of this product category has the objective to transform the range according to new specifications requiring exclusively natural products. He is supported by an agricultural engineer specialised in ecological gardening as well as by an expert committee which not only bring their technical capabilities but also their guarantee (legitimacy).

As a consequence, the supplier portfolio evolves as follows:

- Dereferencing of major suppliers of well known products such as Destructor<sup>5</sup>, a chemical American weed, and Fertiline<sup>6</sup>, a very popular product in France massively advertised on TV during the spring. Such a decision involves major financial risks for the distributor.
- Reinforcement of the relationships with existing suppliers offering natural solutions.
- Referencing of new brands (and corresponding suppliers) such as Bionet offering natural products certified 'Nature and Progress' to replace chemical products. Suppliers having a wide range of products are given a priority so as to avoid having too many new suppliers. In this field of biological solutions, there is a multitude of small actors that represent a capacity risk for the distributor (60 stores to be delivered) as well as a reactivity risk (to rapidly restock the stores). Suppliers certified by a renowned label are also preferred as they ease up the purchaser's selection process.

This change process towards a fully ecological offer is also supported by a training programme for the salespeople as well as demo space and educational workshops in the stores for the customers.

### **Teak wood garden furniture**

At the environmental level, the exploitation of teak wood leads to the massive destruction of primitive forests generating climate change, loss of vegetal and animal biodiversity and endangering local people and communities depending on these resources to survive. But at the marketing level, this product meets a growing demand on the French market. At first, the purchaser in charge at Botanic does not really know how to handle this situation. What is the right label? Is it reliable? Can we import African wood? Are there any European woods that could replace teak?

The easiest solution was to use the FSC<sup>7</sup> label – a well respected label in the field of responsible forestry-. However, an important illegal traffic of FSC in Indonesia pushed the label to withdraw from the region. Indonesia however remains a key supplying region for Botanic. The distributor then decides to become a member of TFT<sup>8</sup>, which is less demanding

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<sup>4</sup> An activist association acting against the use of pesticides

<sup>5</sup> Fake name

<sup>6</sup> Fake name

<sup>7</sup> Forest Stewardship Council : FSC is a *certification system* that provides internationally recognized standard-setting, trademark assurance and *accreditation* services to companies, organisations and communities interested in responsible forestry.

<sup>8</sup> Tropical Forest Trust: a non-profit international organisation seeking to address the problem of deforestation by working with companies and communities and help them trade Forest Responsible Products (FSC). TFT does

but whose mission is precisely to help the FSC label revive. The identification process of this organisation can be assimilated to a form of referencing process. The manager in charge of sustainable development questioned other NGOs such as the WWF to make his opinion about its reliability and seriousness. The TFT label constitutes a short term solution but the long term goal is to reference European wood such as larch, locust, or chestnut wood. However, the corresponding supply chains of these woods are in a very bad financial state and Botanic needs to support their revival. With this solution, social benefits would cumulate with environmental benefits but to the costs of increased prices. Will the customers accept to pay this premium?

Another alternative consists in finding new materials. Synthetic rattan seems to present interesting features for its longevity but it does not fully fit with Botanic sustainability specs? Is a long life-cycle a sufficient reason to reference a product which is not natural? How can we find a universal formula to define the ecological footprint of a product for comparison purposes? The figures provided by the suppliers may not be reliable and are not calculated on the same base.

Today, purchasers have decided to only reference FSC wood. The label has become a veto criterion. The procurement has also diversified towards metal furniture, a recyclable and recycled material and synthetic rattan with a real commercial success.

### **Christmas decoration imported from Asia**

For these products, the main concern relates to social conditions. In 2005, Botanic lacks information on the production conditions of such products imported from Asia. In a sustainable logic, purchasers are now supposed to control social and environmental conditions of production and start visiting factories in China. They are then faced with situations that they can not assess. Is a wage of 100€/month sufficient in China? Is it a real plus to offer lodging facilities? Botanic is doing the best to audit the suppliers of all the upstream supply chain but it is not always possible given the large number of references of Christmas decoration (and the low relative volume of each).

They also try to detect French craft products. In 2007, sculpted wood edelweisses appear on the shelves for a price of 7 Euros side by side with Chinese-made products at a price of 50 cents. New issues arise: will the customers accept to pay the premium? Is the economic dimension of the triple bottom line in line with the social and environmental dimensions?

### **Potted plants**

Potted plants raise three main sustainability issues: their production conditions, their packaging into non recyclable plastic containers (pots), the relationships with horticulturist which are often close to bankruptcy. Botanic promotes ecological gardening but most of the plants sold in the stores (45% of its turnover) do not respect ecological production rules by far. To solve this problem, Botanic identifies and develops an exclusive partnership with a labelling organisation in the horticultural supply chain called MPS<sup>9</sup>. Their goal is that 100% of their plant suppliers be labelled at the highest level. The organisation had only gathered 32

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that by working in supply chains to set up traceability systems and assist producers towards sustainable forest management.

<sup>9</sup> Founded in 1995, MPS is a Dutch organisation delivering a label based on social and environmental criteria. In 2000, a French unit has been opened (32 members).

members in France since its creation 7 years before. The partnership with Botanic could generate 300 new members needing the label to remain in the distributor's supplier portfolio. Due to the exclusive agreement, Botanic competitors could not access the label for 2 years so as to leave enough time for the distributor to benefit from its new positioning.

The sustainable development approach also calls for the withdrawal of all plastic containers (pots) that can not be recycled. The purchaser explores several alternatives. He first looks for biodegradable natural material enabling the gardener to directly plant in the ground. But the technical solutions are not satisfactory: the new conditioning already deletes itself on the shelves. Over time, Botanic finally manages to co-develop a solution with its suppliers. For small plants, they revive an old technique based on compressed clods placed in wooden containers.

The horticultural supply chain raises specific relational issues with suppliers. The purchasing manager describes a very weak and fragile supply chain, slowly "drifting" with several suppliers close to bankruptcy and lacking the resources to innovate. Botanic's project can be a way towards an economic rebound. Botanic hence decides to develop closer links with the producers accepting to commit to sustainable development modes of farming (concerning the heating of wooden greenhouses, recuperating water, compressed clod farming...). Botanic accepts to give them volume and price guarantees to compensate for their specific efforts – a very unusual practice in the field -. With these small suppliers, Botanic clearly adopts a relational logic. However, with major industrial firms, the distributor continues to remain in a transactional logic, not hesitating to dereference large chemical suppliers.

The 4 product categories analysed exhibit a variety of purchase situations highlighting several changes in the supplier portfolio management approach:

- Transformation of the structure of the supplier portfolio,
- Development of partnerships so as to co-create solutions in line with sustainable development principles and accepting to support weaker actors in the supply chain ready to commit to Botanic's sustainable development approach,
- Identification of new actors and developments of new cooperation patterns that go beyond traditional supplier relationships (labelling organisations, experts, NGOs granting more legitimacy to the approach).

We will now further discuss these changes relating them with existing literature.

## **ANALYSIS AND KEY FINDINGS**

In order to implement its sustainability strategy, Botanic had to enter into a major change process where they had to make some significant modifications in their existing sourcing tools and process, in their supplier portfolio and in their supply network.

- Concerning criteria and trade-offs, purchasing managers were faced with more complex decisions relying on a new set of purchasing criteria pushing them to make unusual trade-offs that conventional tools and models do not handle properly.
- Concerning supplier portfolio management: to reach their objectives, purchasing managers had to modify the structure and the content of their supplier portfolio - developing new relationships or changing existing ones -.

- Concerning the supply network, Botanic had to modify its position in the supply network (Mattsson, 1984).

### *Towards renewed purchasing criteria and trade-offs*

#### **Different purchasing criteria and more complex trade-offs**

Adopting a sustainable sourcing strategy considerably enlarged the scope of the firm's purchasing criteria to integrate new criteria such as the type of materials used, their origin, working conditions of suppliers' employees (but also of other employees in the supply chain), product conditioning, transport conditions, product usage and product life cycle (in particular destruction). The purchaser's role thus needed to go much further than simply referencing suppliers and products based on price, quality/efficiency or availability criteria.

This enlarged scope generated more complex trade-offs between conflicting criteria pushing purchasers to modify their purchasing process (Handfield et al., 2002). When the three dimensions of the triple bottom line are not compatible, the question is which dimension should come first: economy, environment, or social equity? In other words, Botanic purchasers had new trade-offs and questions such as:

- meeting the demand (following fashionable trends, offering competitive prices) or being truly 'green'?
- developing a rational and efficient supply chain management (centralizing purchases, reducing the number of suppliers, grouping orders, reducing costs) versus integrating ecological criteria (referencing useful products with a low ecological footprint including their production, transportation, usage and disposal)?
- referencing a single sustainable supplier to reduce transaction costs or favouring local employment to avoid the risk of a local supplier's bankruptcy with its social implications?
- favouring decent working conditions and wages in the supply chain versus meeting the target price?

Faced with these complex dilemmas and trade-offs, purchasers had several difficulties:

- The lack of reliable and comparable data on the various supply chains and products to make an informed-decision (see the synthetic rattan example).
- The lack of expertise in fastly changing environments marked by uncertainties of different natures: technical (the ladybird example<sup>10</sup>) but also socio-economic (e.g. level of wages in China).
- The shortage of offers meeting Botanic sustainable development requirements and recognized as such by established labels.

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<sup>10</sup> At the beginning of the 80s, the French INRA (National Agronomical Research Institute) has introduced a new Asian ladybird –called Axyridis-. As this ladybird eats aphid in its regular diet, it was offered as a potential substitute to chemical insecticides. However once referenced by purchasers, it soon came across that the larva of this ladybird also eats the eggs and larvas of other ladybirds such as the European two-spotted Adilia bipunctata- and thus threatened its survival (risk of extinction).

- The lack of stability and continuity of some of these offers and labels (see the teak wood example and the impossibility to use the FSC label) hence, the strong uncertainty with the supply network based on the integration of new and unusual actors in the purchasing process.
- Ethical dilemmas that go beyond the strict scope of their domain of responsibilities. This type of dilemma is a strategic issue that involves top managers' responsibility and required purchasers to involve the CEO in the touchiest decisions.

### **Questioning compensatory purchasing models**

Moreover, the case study illustrates that Botanic purchasers could not -and did not- rely on traditional purchasing models such as the ones advocated by Kraljic. For example, Botanic accepted to pay a higher price for their Christmas decoration products and to work directly with upstream suppliers (instead of going through intermediaries) to meet their sustainability goals. This is a totally different practice than the one recommended for such commodity products with lots of substitutes (leverage items) advocating to purchase from multiple suppliers and to negotiate based on price and perhaps availability (Kraljic, 1983).

Handfield et al.'s alternative model (2002) to foster environmentally conscious purchasing also proves ill-adapted to the practice of a distributor like Botanic. Their model does integrate a new set of environmental criteria but still relies on the idea that there are several competitive offers to choose from based on their relative performance. Hence, a good grade on one criterion can compensate for a bad grade on another. But for Botanic, the goal is not to compare the relative performance of suppliers in terms of sustainability so as to choose the best one but to select suppliers and products that precisely meet their sustainable development positioning and goals. Green cotton must be green – there is no compromise to be made! Similarly, 100% of vegetal suppliers must be certified MPS in 2010, there should be Zero PVC in the conditioning and the food must be 100% organic.

Moreover, this model does not integrate social factors or the issue of geographical sourcing. This clearly confirms that such compensatory models and tools are only appropriate « *whenever a goal for a decision can be clearly stated, a set of relevant criteria can be determined and a set of alternatives can be described using these criteria* » (Handfield et al., 2002). This echoes the limits mentioned by Handfield et al. (2002) themselves who recognize that their supplier assessment tool is best adapted when the supplier is not “perfectly green”.

#### *An evolution of supplier portfolio management: changing position in the supply chain*

Dubois and Wynstra (2005) suggested four dimensions to assess change patterns in supplier relationships<sup>11</sup>: the continuity of the relationship, the sourcing policy (single or multiple sourcing), the posture of the relationship (degree of involvement) and the business volume with the supplier. Our case study enabled us to mostly collect data on the first 3 of these dimensions.

### **Continuity of the relationship: changes in the supplier portfolio structures**

Botanic progressively modified the structure of its supplier portfolio. The case has shown that the introduction of sustainable sourcing pushed Botanic to:

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<sup>11</sup> Based on a previous model from Gadde L.E. and Snehota I. (2000), “Making the most of supplier relationships”, *Industrial Marketing Management*, 29, 305-316.

- end some existing supplier relationships such as the relationship with the American supplier (and its chemical fertilizers Destructor) as they did not meet their new purchasing requirements (KPI);
- develop relationships with new suppliers meeting their new KPI requirements such as suppliers of biodegradable or re-usable pots for potted plants;
- maintain some existing relationships without any significant change (sometimes slightly changing the volume of business). Two main reasons were found for this situation. Firstly, the present supplier already met the new requirements and secondly, it was ethically delicate to exit the relationship as it would endanger the supplier's survival (risk of bankruptcy) due to a strong dependency on Botanic (n°3 in France).

### **Sourcing policy: single versus multiple sourcing**

The analysis of our case study reveals that the distributor's sustainable sourcing strategy goes against the mainstream models pushing for global sourcing and more purchase concentration (reduction of the number of references) so as to optimize purchasing prices and costs. In the current competitive battlefield, the predominant cost and price logic pushes firms to source standardized products manufactured at the other end of the globe in low labour costs countries. As illustrated by the Botanic case study, sustainable development actually calls for a different geographical market relocation and hence more diversity (and more references) and polyvalence of local territories to bring a maximum of local solutions to the end customers.

### **The posture of the relationship in the supplier portfolio: more partnerships**

Due to the lack of sufficient and adequate offers and to their refusal of developing an eco-design activity (after a short and unsuccessful experience), Botanic chose to develop close partnerships with suppliers willing to develop specific offers meeting their goals. A good illustration is given with the horticultural supply network. Botanic accepted to commit to certain prices and volume levels so as to encourage producers to cultivate plants in compressed clods which drastically reduce their conditioning and ensure a better revival of the plant in the garden. This finding clearly shows that Botanic adopts a relational orientation towards its suppliers, accepting to take more risks, to make unusual order commitments and to adapt its purchasing strategy to encourage its suppliers to make specific investments. In that case, we can talk about a true partnership as the customer accepts to take more risks so as to decrease the risk level of its suppliers related to asset-specific adjustments (change of their offer). This confirms the findings of previous authors such as Pagell et al. (2010: 66), or Dubois and Pedersen (2002) stating that relationship-based sustainable sourcing strategies might be driven by changes in relevant stakeholder weights (Freeman, 1984) granting more weight to suppliers' development. This clearly corresponds to the collaborative purchasing paradigm found in the IMP and supply chain literature (Chen and Paulraj, 2004).

#### *Introducing new actors in purchasing process: creating a new supply network*

Our case study suggests that the inevitable integration of sustainable development objectives into purchasing strategies might foster a change towards a network-based sourcing strategy relying on partnerships and joint value creation methodologies with business and non business actors. To achieve their goals, Botanic had to modify their existing position in the value chain (changing relationships with previous suppliers as described above) and to foster the development of an extended "supply network" with new organizations such as labels, associations, and non business experts. This initiative contributed to placing Botanic at the centre of a new sustainable supply network that it contributed to create. In fact Botanic

fostered the development of new relationships between actors from various origins and cultures that previously had no room for cooperation and exchange. These new cooperative relationships enabled Botanic to access the specific resources of these actors and indirectly of these actors' own network of resources (e.g. link with local producers in each country), which granted Botanic more legitimacy in the sustainable development arena.

### **Labels**

In order to cope with the lack of reliable supplier information, a solution adopted by Botanic was to find labels which could provide an acceptable level of guarantee in a context of high uncertainty (Handfield et al., 2002). It was actually unrealistic for their purchasing department to access all the information required to guarantee that the conditions under which each product was made met the sustainability requirements. In this context, labels came across as the most efficient solution. They communicate the distributor's commitment (increased legitimacy) while avoiding the required market research to obtain proofs. This can be assimilated to a transfer of responsibility from the distributor to the certification organisation. The easiest solution found was to rely on renowned and institutionalized labels such as AB in the field of organic food. However such labels could not always be found easily as they were not readily available on the market. As a pioneer, Botanic then had to carefully scrutinize and screen the environment to detect emergent private labels often created or supported by various not for profit organisations. It was not an easy task to identify the right partners in this jungle of possible actors and to assess their seriousness and reliability! Purchasers were faced with various questions: what are their performance evaluation criteria? Are they compatible with ours? How do they proceed to assess and certify a company? Are they serious? Is the label reliable? After suppliers, purchasers now had to source certification organisations.

By referencing such emergent labels, Botanic gave them increased visibility, which contributed to shaping the supply network. For example, when Botanic referenced MPS, it gave this fairly unknown label a strong visibility and increased market access. It is clear that the development of the relationship with Botanic helped them obtain a certain amount of control over resources (Hakansson, 1982) and to reduce uncertainty. But by the same token it also enabled Botanic to be more effective and efficient in its sourcing strategy by avoiding the lengthy and difficult task to directly reach each local producer in various parts of the planet. As it is difficult to develop too many high-involvement relationships with suppliers (Hakansson & Gadde, 2001), the label gave Botanic the opportunity to access the resources of their own network. This is a good illustration of a win-win situation.

### **“Committed experts”**

In order to integrate new purchasing criteria related to the production process used by their suppliers, Botanic purchasers would have needed a new set of competencies in scientific fields such as chemical molecules or green gardening ... It was however unrealistic to have purchasers with all these competencies, and the solution therefore consisted in finding them externally. Botanic created an expert committee made of experts from various non business origins - associations, NGOs and local governments -. They are all activists and renowned in the small ecological gardening milieu. The distributor's goal was then to be supported by the necessary expertise not only to design a product range compatible with ecological gardening but to legitimate their approach. They did not want to be accused of green washing, a very sensitive issue for the manager in charge of sustainable development. This clearly illustrates that Botanic adopted a network perspective to develop this expert committee. The relationship with the experts actually enabled them to access the expertise and legitimacy of these key “supply side partners” which in turn increased their efficiency. The experts gave them indirect

access to their own network of resources in the gardening milieu hence, decoupling their effectiveness. In that case, Botanic did not simply focus on a supply chain perspective as advocated by the traditional portfolio models but complemented it with a network view to fully adopt a supply network perspective (Gadde & Hakansson, 2001).

## **Conclusion and managerial implications**

### *The emergence of a renewed purchasing function*

During our data collection, we could clearly feel the increased pressure put on purchasers conscious of the importance of their function to meet their firm's sustainability positioning goals (a strategic move) while having a hard time coping with so many uncertainties and lack of adequate tools and methods. As an illustration, one of them even cried during the interviewing process afraid of not being able to meet the challenge. This confirms the increasing importance of the purchasing function in the implementation of a firm's sustainable development strategy (Krause et al., 2009).

Sustainable development actually calls for a change of the purchasers function and habits. While many of them (at least in standardized consumer goods purchases) were isolated from the rest of the company and even centralized in dedicated units at headquarters (Dubois & Pedersen, 2002), purchasers increasingly need to interact more widely and profoundly with suppliers. This paper has shown that they also need to interact with not-for-profit organisations which play a key role in the sustainable supply network such as labelling organisations, NGOs, or associations. This confirms the relevance of the network approach of purchasing integrating direct and indirect suppliers in the firm's value creation processes (Gadde & Hakansson, 2001; Krause et al., 2009) and extended it further to a whole set of new actors stemming from the non business arena (local communities, NGOs, associations,...). This leads us to introduce the notion of sustainable supply network to illustrate the integration of these new actors in the value creation process. This sustainable supply network strategy involves some adjustments to cooperate with new stakeholders with a totally different culture, different values and habits, speaking a totally different language and with different time perspectives. This is a key challenge as it requires time to build trust, learn to interact, and to make the necessary adjustments. The purchasing function will increasingly involve identifying potential stakeholders to work with in a relational logic, to select the appropriate partners in a supply network perspective, and to reconfigure the firm's purchasing and internal processes to be able to develop a fruitful partnership based on common value creation and risk-sharing.

This type of sourcing corresponds to the collaborative paradigm found in the IMP (Hakansson, 1982) and in the supply chain literature (Chen & Paulraj, 2004) based on the idea that organisations operate within a network of interdependent relationships developed and fostered through strategic integration (Vachon & Klassen, 2006). At this stage there is a cross functional approach to purchasing and total sustainable value considerations have replaced an exclusive focus on price. To be successful, this sourcing approach needs to be fully supported by the firm's top management and considered as a key lever of their new business model based on sustainability values. Our research thus confirms the findings of Bowen et al (2001: 187) showing that sustainable "*supply management capabilities are fostered by a proactive corporate environmental stance, and by a highly strategic purchasing and supply management process*".

In such a fastly changing environment, a more « entrepreneurial » mode of sourcing needs to be developed relying on new organisational capacities (Cohen & Levinthal, 1990; Teece & Pisano, 1994) and new processes (Ahmed & Wang, 2007). Purchasers will have to develop such dynamic capacities (Helfat, 1997; Teece, 2007) to evolve towards a true Sustainable Supply Chain Management.

#### *The limits of sustainable development: customer is king*

Contrarily to the results advocated by Klassen and McLaughlin (1996), the financial results of the firm analyzed in our case study seemed to be challenged by its strategic sustainable development positioning. This echoes more recent warnings found in the literature (Carter & Rogers, 2008). This phenomenon has been accelerated by the recent economic crisis which increased the price-sensitivity of their downstream market. As a consequence, the firm had to limit its ambitions and put its sourcing strategy on hold to ensure its survival and defend its short-term profitability. This finding tends to suggest that it seems difficult to adopt a high level of sustainability “alone” when the rest of the supply chain and network in which the firm is embedded has not made significant steps in that direction yet (in particular customers). The implementation of a sustainable development strategy therefore seems constrained by the right “time-to-market” and should best evolve with the level of maturity of the market. It calls for a step by step approach to give the supply network enough time to meet the constraints imposed by sustainable development as well as to enable the internal learning process. A transitory period seems required not only at the firm level (as advocated by Pagell et al., 2010) but also at the supply network level. In particular, customers need not only understand and support sustainability issues but they also need to substantially modify their consumption habits (including paying a premium) and practices (e.g. ecological gardening relies on very different practices than conventional gardening). We started our paper quoting Krause et al. (2009): “*a company is no more sustainable than its supply chain*”; after having modified its supplier portfolio and worked more closely with a renewed set of partners and stakeholders forming their supply network, the firm’s key challenge remains to manage its customer base (demand network) to obtain support for their sustainable positioning. Hence, the introduction of sustainable supply network management can be compared to an innovation process. It relies on a technical and social construction (Akrich et al., 1988) involving several stakeholders with different interests objectives and constraints.

#### *Limitations and further research*

The main limitation of our research lies on the fact that it is an exploratory study based on a single case study design. This case presents several specificities: a large gardening distributor which is not involved into any design or production activities and which mostly purchases standardized products for mass consumption markets. Hence, the conclusions of this research cannot be generalized even though some of them confirm previous findings. Moreover, this paper has focused on the upstream side of the supply chain (supply network). As recommended by Carter and Carter (1998), it is also important to analyze the downstream impact of sustainable development on the supply chain.

Further research could therefore test the validity of these preliminary findings and enrich them with field research on the downstream part of the supply chain (demand network). Other research projects could compare these preliminary findings with other firms truly engaged in sustainable development in other fields of activity (other distributors or other industrial firms).

## References

- Akrich M., Callon M., and Latour B. (1988), « A quoi tient le succès des innovations. Premier épisode : l'art de l'intéressement », *Annales des Mines*, Juin, 4-17.
- Ahmed K.P., and Wang C.L. (2007), Dynamic capabilities: A review and research agenda, *International Journal of Management Review*, 9: 1, 31-51.
- Axellson B., Rozemeijer F., and Wynstra F. (2005), *Developing Sourcing Capabilities - Creating strategic change in purchasing and supply management*, Chichester: John Wiley & Sons.
- Axelsson B., and Wynstra F. (2002), *Buying business services*, Chichester: John Wiley & Sons
- Capron M., and Quairel-Lanoizelée F. (2004), *Mythes et réalités de l'entreprise responsable. Acteurs-Enjeux-Stratégies*, La Découverte, Paris.
- Carter C.R. (2004), "Purchasing and social responsibility: a replication and extension", *The Journal of Supply Chain Management*, Fall, 40: 4; 4-16.
- Carter C.R., and Carter J.R. (1998), Interorganisational determinants of environmental purchasing: initial evidence from the consumer products industries", *Decision Sciences*, 29: 3, 659-684.
- Carter C., and Rogers D.S. (2008), "A framework of sustainable supply chain management: moving toward new theory", *International Journal of Physical Distribution & Logistics Management*, 38: 5, 360-387.
- Chen I.J., and Paulraj A. (2004), Towards a theory of supply chain management: the constructs and measurements", *Journal of Operations Management*, 22:2, 119-150.
- De Burgos Jimenez J., and Céspedes Lorente JJC. (2001), « Environmental performance as an operations objective », *International Journal of Operations and Production Management*, 21:12, 1553-1572.
- Dubois A., and Wynstra F. (2005), "Developing the supply base by changing supplier relationships", in B. Axellson B., F. Rozemeijer F., & F. Wynstra (Eds), *Developing Sourcing Capabilities - Creating strategic change in purchasing and supply management*, Chichester: John Wiley & Sons.
- Elkington J. (1998), *Cannibals with Forks: the Tripple Bottom Line of the 21<sup>st</sup> Century*, New Society Publishers, Stoney Creek, CT.
- Freeman R.E. (1984), *Strategic management, a stakeholder approach*, Pittman, Massachusetts.
- Gadde L.E., and Hakansson H. (2001), *Supply Network Strategies*, IMP Group, New York, John Wiley & Sons.
- Gelderman C.J., and Van Weele A.J. (2005), "Strategic direction through purchasing portfolio management: a case study", *Journal of Supply Chain Management*, 38:2, 30-39.

Hakansson H., Ed. (1982), *International Marketing & Purchasing of Industrial Goods: an Interaction Approach*, Chichester, UK: John Wiley.

Handfield R.B., and Melnyk S.A. (1996), "GreenSpeak", *Purchasing Today*, July, 32-36.

Handfield R., Walton S. V., Sroufe R., and Melnyk S. A. (2002), "Applying environmental criteria to supplier assessment : A study in the application of the Analytical Hierarchy Process", *European Journal of Operational Research*, 141, 70-87.

Klassen R.D., and McLaughlin C.P. (1996), The impact of environmental management on firm performance, *Management Science*, 42:8, 1199-1212.

Kraljic P., (1983), "Purchasing must become supply management", *Harvard Business review*, 61: 5, 1071-1074

Krause D. R., Vachon, S., and Klassen, R. D. (2009), "Special topic forum on sustainable supply chain management : Introduction and reflections on the role of purchasing management", *Journal of Supply Chain Management*, 45: 4, 18-24.

Linton J.D., Klassen R., and Jayaraman V. (2007), "Sustainable supply chains: an introduction", *Journal of Operations Management*, 25, 1075-1082.

Mattsson L.G. (1984), "An application of a network approach to marketing: defending and changing market positions", in N. Dholakia and J. Arndt (Eds), *Changing the Course of Marketing. Alternative Paradigms for Widening Marketing Theory*, Greenwich, Conn., JAI Press, Suppl. 2, 263-288.

McIvor R., (2000). A practical framework for understanding the outsourcing process, *Supply Chain Management: an International Journal*, 5 (1), 22-36.

Millet D., Bistagnino, L., Lanzavecchia C., and Camous, R. (2003), "L'entreprise face au développement durable : changement de paradigme et processus d'apprentissage", *Natures Sciences Sociétés*, 11, 146-157.

Monczka R., Trent R., and Handfield R. (2005), *Purchasing and supply management*, 3<sup>rd</sup> Ed., Cincinnati: Thomson Learning.

Olsen R.F. and Ellram L.M. (1997), "A portfolio approach to supplier relationships", *Industrial Marketing Management*, 26:2, 101-113.

Pagell M., Wu Z., and Wasserman M.E. (2010), Thinking differently about purchasing portfolios: an assessment of sustainable sourcing", *Journal of Supply Chain Management*", 46:1, 57-73.

Pullman M.E., Maloni M.J., and Carter C.R (2009), "Food for thought: social versus environmental sustainability practices and performance outcomes", *Journal of Supply Chain Management*", 45: 4, 38-54.

Rifkin, J. (2000.) Quand tout devient service. In *L'âge de l'accès : la révolution de la nouvelle économie* Paris: La Découverte.

Roy, R. (2000), "Sustainable product-service systems", *Futures*, 32, 289-299.

- Savitz A.W., and Weber K. (2006), *The Tripple Bottom Line*, Jossey-Bass, San Francisco, CA.
- Shrivastava P., and Hart, S. (1996), "Demain l'entreprise durable ?", *Revue Française de Gestion*, 108, 110-122.
- Stahel W. R. (1998), "De la notion de produits à celle de services : vendre des performances plutôt que des marchandises", *The IPTS Report*, 27, 39-47.
- Suchman M. C. (1995), "Managing legitimacy: strategic and institutional approaches", *Academy of Management Review*, 20: 3, 571-610.
- Teece DJ., G. Pisano G., and Shuen A. (1997), "Dynamic capabilities and Strategic Management", *Strategic Management Journal*, 18 (7).
- Teece D.J. (2007), "Explicating dynamic capabilities: the nature and micro-foundation of (sustainable) enterprise performance", *Strategic Management Journal*, 28: 13, December, 1319-1350
- Vachon S., and Klassen R.D. (2006), Extending green practices across the supply chain. The impact of upstream and downstream integration", *International Journal of Operations and Production Management*, 26:7, 795-821.
- Van Weele A.J., 2002. Purchasing & Supply Chain Management – Analysis, Planning & Practice, Thomson Learning, London.
- Winsemius P., and Guntram U. (1992), Responding to the environmental challenge. *Business Horizons*, 35:2, 12-20
- World Commission on Environment and Development (1987). *Our common future*, Oxford University Press, Oxford and New York.

### Appendix 1- The list of interviewees in 2007

Identification	Function
GP	Organisational consultant at CEO level
CV	CRM & Sustainable Development Manager
BM	Purchaser in charge of technical gardening products
Luc Blanchet	C.E.O
MP	Project Manager of « Live differently » project
JMR	Purchasing Manager
FM	Purchaser of the biological food category
MV	Concept and product design Manager
EB	C.O.O, Manager of the Information System, Supply Chain and Construction
CF	Purchaser in charge of gardening furniture, external decoration and Christmas products Categories
FF	Assistant to the Purchasing Manager, Manager of the vegetal products category
CQ	Assistant to the Purchasing Manager, Manager of the manufactured products category

Appendix 2: The evolution of purchasing practices for 5 product categories so as to integrate sustainable development objectives

<b>Product category</b>	<b>Sustainable development issues for Botanic</b>	<b>Botanic Sustainable development policy</b>	<b>Consequences on the purchasing strategy and practices</b>	<b>Difficulties met</b>	<b>Initial solutions found</b>	<b>Main sources of info. used</b>
Chemical fertilizers	How can we offer easy and efficient solutions that do not pollute the grounds and groundwater and that do not harm its user or its environment? 80% of the 137 molecules analyzed and sold in the stores are considered as toxic (internal study, March 2006)	Launch of an eco-gardening label to promote ecological gardening products: 725 references are concerned (March 2006) Withdrawal of chemical products from the self-service shelves and creation of an eco-gardening consulting service desk. The eco-gardening offer is developed: 1 000 references (March 2007) Definite withdrawal of all chemical products for the garden (March 2007)	New suppliers and products for an ecological gardening are referenced.  Progressive dereferencing of all chemical suppliers including a well-known American supplier and its famous brands -.  Complete restructuring of the fertilizers offer.	Level of knowledge and competences in chemical molecules and in ecological gardening.  Dereferencing of major suppliers sometimes requiring financial compensations.  No alternative solutions to chemical weeding.	Creation of an expert committee specialized in ecological gardening and in charge of supporting the purchasers in their product selection. It is made of : Rémy Bacher : editor of « Quatre saison du Jardinage de Terre Vivante » (4 seasons of Living Ground Gardening) Frederic Pautz, Ph-D in ecology, Director of the botanic garden of Lyon City. D.Pépin, Environmental Engineer and Agronomist, author of several books F.Veillerette, CEO of MDRGF and administrator of the PAN network (Pesticides Action Network), author of 2 books against the extensive usage of pesticides in France. <sup>12</sup>	Toxicological Study of the MDRGF (March 2006) Interview with CV, 16/03/07 Interview with BM, 15/04/07

<sup>12</sup> « Pesticides, le piège se referme » Terre Vivante Ed. (2002) – « Pesticides, révélations sur un scandale français » - éditions Fayard (2007)

<p><b>Teak wood garden furniture</b></p>	<p>How can we answer a growing demand on a booming market without jeopardizing the forest resource and contributing to the illegal wood traffic in Indonesia? With deforestation goes: climate change, loss of biodiversity, difficulties for the people depending from the forest resource to survive.</p>	<p>All the wood sold must come from sustainable lumbering firms and be guaranteed by the Forest Stewardship Council – FCS-label.</p>	<p>Select and purchase teak wood furniture with the FCS Label.</p> <p>Identify new sources of European wood supply exhibiting the same qualities of imputrescibility such as the larch or the locust woods.</p>	<p>An illegal traffic of FSC found in Indonesia pushed the organisation managing the label to dismantle. However, Botanic has no short term alternative to supply its stores. European wood supply chains are virtually inexistent; their products may not appeal to the market as they look different and are more expensive than the Asian ones.</p> <p>What should be done with the synthetic cane ‘Batilyne’ which looks great but is neither biodegradable nor recyclable. Lack of performance metrics (such as their ecological footprint) to compare the suppliers’ offers. The figures provided by the suppliers are not always comparable; or</p>	<p>Adoption of the TFT label, which is less demanding than the FSC label.</p> <p>Test of a new supply chain for locust wood.</p>	<p>Interview with CF, 19/04/07</p>
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				grounded on the same base.		
Christmas decoration imported from Asia	<p>How can we control the social conditions of production at the other end of the planet?</p> <p>How to develop an offer that respects the OIT principles while remaining competitive?</p>	<p>Only commercialize products for which production conditions respect OIT principles (no kids at work; decent level of wages; security ...).</p> <p>Develop an offer of French products.</p>	<p>Obtain some guarantees on production conditions through more upstream involvement in the supply chain: purchase directly from suppliers.</p> <p>Find new sources of supply in France</p>	<p>Lack of data to analyze production situations. Even site visits are not sufficient to develop a solid opinion. « Is a wage of 100€/month sufficient in China? » « Is it a real plus to offer lodging facilities? » (CF, le 19/04/07)</p> <p>The expensive prices of French made products raise a problem. For example, a star made-in-China costs 20 cents and 3€ in France.</p> <p>The French offer is not sufficient enough to replace the Asiatic offer.</p>	<p>Introduction of French products betting on the customer information and increased awareness to develop the acceptance of higher-priced products. The results show a limited success; the offer (in particular for Christmas decorations) only appeals to a small niche.</p>	<p>Interview with JMR, 6/04/07</p> <p>Interview with CF, 19/04/07</p>
Potted plants	<p>How can we remain consistent supplying ecologically-produced gardening plants but selling them in</p>	<p>Withdraw plastic pots</p> <p>Offer AB potherbs (vegetable plants) for ecological gardening.</p>	<p>Identify new suppliers of biodegradable or reusable pots.</p> <p>Develop partnerships with vegetable plant suppliers to test the</p>	<p>Several tests have proved necessary to reference biodegradable pots that can provide customer information on the plant, robust</p>	<p>Partnership with MPS, an organisation which grants an horticultural label based on environmental and social criteria. In the long run, Botanic 300 suppliers should obtain the most</p>	<p>Interview with FF, 20/04/07</p>

	<p>non-recyclable plastic pots?</p>	<p>Sell “ecologically-made plants ».</p>	<p>compressed clod farming.</p> <p>Identify new suppliers of AB vegetable seeds.</p> <p>Incite ornamentals suppliers to reduce their use of chemical fertilizers, water and energy.</p>	<p>enough to stay in the shelves, but that can delete once planted in the customer’s garden.</p> <p>Difficulty finding biodegradable inks resisting humidity.</p> <p>Difficulty finding bio-producers able to supply Botanic 60 stores. Most of them are small producers.</p> <p>Difficulty inciting suppliers to innovate in a declining horticultural supply chain (FF, 20/04/07).</p>	<p>demanding level of the label (4<sup>th</sup> level).</p> <p>Partnership with a national cooperative of bio-plants which modified its structure to meet Botanic demand.</p> <p>Partnership with several horticulturists ready to commit to a sustainable development approach: a price and volume guarantee granted at product launch.</p>	
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