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## Sustainable supply chain management: theoretical literature overview

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SUSTAINABLE SUPPLY CHAIN MANAGEMENT:  
THEORETICAL LITERATURE OVERVIEW

**IIIEE WORKING PAPER 2012: 1**

**CHKANIKOVA OLGA**

## TABLE OF CONTENTS

1.	Introduction .....	3
2.	Research gaps .....	3
3.	Aims and objectives of the paper .....	5
4.	Research design and methodology .....	5
5.	Defining sustainability in supply chain management .....	5
6.	Theoretical overview.....	7
6.1	Managing material flows .....	7
6.1.1	Conceptualization of green supply .....	7
6.1.2.	Green purchasing strategies .....	9
6.1.3	The role of supply management capabilities in implementation of green supply .....	11
6.1.4	Purchasing portfolios and green supply.....	12
6.2	Relationship management .....	18
6.2.1	'Collaborative' paradigm.....	18
6.2.2	The power concept .....	19
6.2.3	Buy-grid framework .....	21
6.2.4	The concept of trust.....	22
6.2.5	Relationship norms .....	23
6.2	Managing information flows.....	25
7	Conclusions .....	25
8	References .....	25

## 1. INTRODUCTION

The markets of fast-moving consumer goods (FMCG) with short product life-cycles create specific implications for the way companies are organized and function. The shift from the traditional mass production practices to counteract uncertainties of demand fluctuations to markets of high variability and efficient customer response imposes a difficult managerial task for companies to reorganize their supply chain to avoid “stock-out events, with prompt response to market fluctuations” (Emberson and Storey 2006). Due to growing competition, companies also implement global sourcing initiatives what substantially increased amount of organizations involved into supply chain and therefore operational complexity (Seuring and Muller 2008). In addition to these developments which increase the complexity of supply chains and therefore managerial challenges, there is “the paradigm shift from firm-level to supply-chain level competition and the challenge of incorporating comprehensive sustainability goals into corporate behavior due to worldwide growing environmental and ethical awareness” (Gold, Seuring et al. 2010: p.238-239). Evidence are occurring that the field of supply chain management has achieved a critical point where wide implementation of sustainable business-to-business purchasing might become a dominant approach in company’s strategies and tactics (Jayaraman, Linton et al. 2005; Cruz 2008; Pagell, Wu et al. 2010).

In exploring contribution of supply chain management function to sustainability, Preuss (2005) referred to recent transformation of this function from simple clerical role of ensuring good price and continuity of supply towards strategic role of contributing to organizational competitive advantage. As supply chain function is responsible for outsourcing the external inputs, it is important in guaranteeing the supply quality, including compliance with sustainability criteria. “Seen from a life-cycle perspective, environmental initiatives are impossible without involvement of the supply chain management function” (Preuss 2005: p.124).

In the light of the aforementioned changes and increased importance of supply chain management function in regard to environmental protection, effective and efficient management of firm’s relationships up- and down-stream supply chain, with focus on green practices, represents a significant challenge and recently starts receiving attention among researches (Bowen, Cousins et al. 2001; Vachon and Klassen 2006; Seuring and Muller 2008; Pagell, Wu et al. 2010). For instance, based on the literature overview Seuring and Muller (2008) have concluded that in recent years “academic and corporate interest in sustainable supply chain management has risen considerably” (p. 1699).

## 2. RESEARCH GAPS

However, available to date research on sustainable supply chain management (SSCM) is still at the development stage. Gold et.al. (2010) referred that “literature on SSCM is still limited, and literature reviews are scant” (p.231), with only nine comprehensive literature review papers on SSCM are available today. Seuring and Muller (2008) have also concluded that SSCM “literature is still limited in quantity, and no major reviews of the field has been conducted” (p. 1699). As part of their vast

scan of 191 papers written in period of 1994-2007 on SSCM, only seven encompassing literature review articles were identified.

One of deficiencies of existing research in SSCM is Inconsistency in understanding sustainability. Carter and Rogers (2008) have demonstrated the inconsistency of defining sustainability in vast scope of organizational, operational and supply chain management literature. According to their findings, substantial body of SSCM literature is restricted to specific environmental issues as green product development, logistics, waste treatment, human rights etc. and therefore provides narrow perspective on what SSCM represents. Different environmental issues are addressed “in a standalone fashion, without consideration of the potential interrelationships” between environmental, social and economic issues (Carter and Rogers 2008: p.360). Seuring and Muller (2008) have also highlighted that research in SSCM “is still dominated by green/environmental issues” (p. 1699), with “a clear deficit in supply chain management and purchasing literature on ... the amalgamation of all three dimensions of sustainable development” (p. 1702). Social issues and sustainability as integration of economic, environmental and social concerns are still rarely addressed. Interestingly, integration of three aspects of sustainability in academic literature has generally occurred since 2002 (Seuring and Muller 2008).

Together with inconsistency in defining sustainability, the level of theory development in SSCM field can be defined as immature. “Despite numerous calls for more theory development in supply chain management research, there has been, respectively, little theory building research appearing within the broad of supply chain management to date” (Carter and Rogers 2008: p.362). Seuring and Muller (2008) have also concluded that “there is a deficit in the take-up of theoretical background, both from within supply chain or operations management, as well as from a wider perspective, such as new institutional economics or strategic management” (p.1706). Authors have also argued that empirical research “needs to build on a stronger theoretical basis” (p.1706), although case studies and surveys themselves represent opportunity for theoretical development (Seuring and Muller 2008).

While most of the literature reviews elaborate on the conceptualization of available to date literature in the field of SSCM (Carter and Rogers 2008; Seuring and Muller 2008; Gold, Seuring et al. 2010), conceptual theory building is considered as pre-theory (middle level of theoretical development), requiring further testing against reality in case specific contexts towards further theorizing (Carter and Rogers 2008).

Moreover, paradigm shift in supply chain management towards sustainable sourcing initiatives has resulted in the consequent change of the business behavior in regard to purchasing strategies and relationships with suppliers. As result, traditional theories (e.g. resource-based view of the firm (RBV), transaction cost economics (TCE), Kraljic purchasing portfolios etc.) fail to provide a comprehensive explanation of corporate behavior and business strategies when it comes to managing sustainability issues in supply chain. For instance, according to the literature review

conducted by Pagell, Wu et al. (2010: p. 58) “the current theory in supply chain management may neither adequately explain nor predict the behavior observed with respect to sustainable sourcing”.

### 3. AIMS AND OBJECTIVES OF THE PAPER

As have been highlighted in section 2, current research in SSCM lacks consistency in defining sustainability and uptake of the theoretical background. Therefore, the aim of this paper is twofold:

1. To provide a comprehensive understanding of SSCM and green supply
2. To explore on relevant concepts, models and theories in the field of supply chain management and buyer-seller relationships.

This paper represents the literature overview of relevant concept and theories in the field of sustainable supply chain management and contributes to framework development for further research.

### 4. RESEARCH DESIGN AND METHODOLOGY

With purpose to achieve aforementioned goals, literature review of academic papers from international peer-reviewed journals, reports and books has been conducted. Literature review method allows identification and evaluation of existing academic research and therefore could be perceived as initial stage of theory building process (Mentzer and Kahn 1995).

Academic articles for review were collected by use of LibHub (former ELIN) university library catalogues, Ebsco database (Academic Search Complete and GreenFile) and Google scholar portal. Information search strategy include following key-words: (1) sustainable supply chain; (2) sustainable supply management; (3) sustainable/green sourcing/purchasing; (4) buyer-seller relationships. Identified scholarly works were scanned on the basis of context analysis to select research of particular relevance to SSCM. Also, cross reference method (pearl growing technique) for paper collection was employed, e.g. references used in collected articles were reviewed for further search of relevant information sources. Following types of articles has been reviewed: comprehensive literature reviews, case studies and surveys, theoretical and conceptual works.

### 5. DEFINING SUSTAINABILITY IN SUPPLY CHAIN MANAGEMENT

To address inconsistent definitions of sustainability in existing literature of supply chain management, Carter and Rogers (2008) came up with the concept of ‘true sustainability’. They argued that consideration of environmental and social issues should be “coupled with economic objectives” (p.371) and incorporated in company’s strategic long-term planning (Carter and Rogers 2008). Such definition of sustainability is though not new and based on the well-known idea of triple bottom line (TBL) perspective. Seuring and Muller (2008) have also noticed high diversity of

sustainability comprehension in supply chain management and referred to “the triple bottom line approach, where a minimum performance is to be achieved in the environmental, economic and social dimensions. This can be comprehended as being in line with the notion of order qualifiers a company has to fulfill before it is able to even compete for orders” (p.1700).

Such explicit aligning of economic goals and sustainability concerns creates a business case for acceptance and adoption of SSCM practices (Carter and Rogers 2008). In literature review carried out by Seuring and Muller (2008), majority of revised papers also refer to the win-win situations of SSCM implementation. However, other 72 publications in the same literature analysis share lots of criticism, pointing out on variety of tensions occurring between three aspects of TBL. For instance, Newton and Harte (1997) argued that ‘easy wins’ stressed in the literature should not be misperceived as long-term outcomes. Yet, studies pointing out on long-term positive correlation between environmental and economic performance are not available (Seuring and Muller 2008). On the opposite, Gold *et al.* (2010) granted their votes for sustainability in supply chain to be source of inter-organizational competitive advantage.

Trying to incorporate the notion of sustainability based on the TBL concept into supply chain management practices, Carter and Rogers (2008) provided the following definition of SSCM as “*the strategic, transparent integration and achievement of an organization’s social, environmental, and economic goals in the systemic coordination of key interorganizational business processes for improving the long-term economic performance of the individual company and its supply chains*” (p. 368).

Similar definition proposed by Seuring and Muller (2008: p.1700) where SSCM is defined as “*the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements*. In sustainable supply chains, environmental and social criteria need to be fulfilled by the members to remain within the supply chain, while it is expected that competitiveness would be maintained through meeting customer needs and related economic criteria” (p.1700).

Close to aforementioned comprehension of sustainability in supply chain management practices is also suggested by Pagell, Wu et al (2010) (Figure 1).

The provided definitions of SSCM are wide-encompassing, with environmental management of suppliers representing only one of the aspects within broad SSCM frames. An integrative approach in defining sustainability on the basis of TBL concept is applied, as well as the concept of sustainability is broadened from organization to inter-organizational supply chain level. According to Carter and Rogers (2008), such distinctive features of SSCM require alternative rather than conventional managerial practices.

Interesting distinction between three interrelated elements of supply chain is highlighted by Preuss (2005), e.g. flow of goods and materials, information flow and supply chain relationships. Thus to achieve SSCM practices, optimal level of sustainability performance should be attained in managing all of these three constituent elements of supply chain. Preuss (2005) concluded that while companies are increasingly referring to sustainability improvements along supply chain in

environmental policy documents, the reality revealed suboptimal level of performance in regard to sustainable supply chain management, “namely in the management of the transformation of materials, the management of information flows and the management of supply chain relationships” (Preuss 2005: p.128). Yet, the increased economic and strategic importance of supply chain management function does not contribute relatively to sustainability.

Definitions		
Term	Definition	Possible Synonyms
Sustainable supply chain management (SSCM)	To be <i>truly</i> sustainable a supply chain would at worst do no net harm to natural or social systems while still producing a profit over an extended period of time; a truly sustainable supply chain could, customers willing, continue to do business forever (Pagell and Wu 2009).	Green supply chain management, responsible supply chain management
Triple bottom line (Elkington 1999)	A measure of supply chain performance that addresses not just profits, but also supply chain impacts on social and environmental systems; a measure of the chain’s impacts on people, profits and the planet (e.g., Kleindorfer et al. 2005). The triple bottom line is then a measure of sustainability performance (Pagell and Wu 2009).	Corporate social responsibility (CSR), corporate social performance (CSP), sustainability performance
Sustainable sourcing	Managing all aspects of the upstream component of the supply chain to maximize triple bottom line performance.	Sustainable purchasing, green purchasing, responsible purchasing, ethical purchasing

Figure 1. Definition of SSCM, TBL and sustainable sourcing. Source: (Pagell, Wu et al. 2010)

## 6. THEORETICAL OVERVIEW

This section aims to provide the theoretical overview of existing concepts and theories in supply chain management and buyer-seller relationships literature, which might be of particular relevance to SSCM. Theoretical overview is conducted in regard to three constituent elements of supply chain management highlighted by Preuss (2005), namely managing material flows, relationship management and managing information flows.

### 6.1 MANAGING MATERIAL FLOWS

#### 6.1.1 CONCEPTUALIZATION OF GREEN SUPPLY

Based on variety of studies providing conceptual insights in what green supply is (Russel 1998; New, Green et al. 2000; Bowen, Cousins et al. 2001; Sarkis 2001; Preuss 2005; Seuring and Muller 2008), it can be referred to (Figure 2):

- *Ensuring sustainability of purchased products.* In this case the buying firm could require compliance with standards in regard to sourced materials or components. Environmental requirements therefore could relate not only for finished products, but to ingredients used, e.g. free of artificial flavors, GMOS etc. Additionally, activities to green product-based supply could focus on by-products, e.g. decreasing the amount of product packaging.



- *Ensuring sustainability of manufacturing processes.* In this regard, purchasing firms might require suppliers to introduce environmental policy and obtain environmental management standards (official accreditation like ISO 140001 or EMAS, or internally developed systems).

Ensuring sustainability of purchased products and manufacturing processes “may also operate in a less direct fashion, where a certain minimum threshold in terms of environmental performance is a precondition for being awarded a contract in the first place. The same principle can periodically be applied to existing suppliers in the awarding of repeat business” (Preuss 2005).

- *Developing product-based supply* (managing green supply offers). This avenue towards sustainable sourcing implies supplier assessment based on variety of sustainability criteria. As it is highly unrealistic that companies would award business contracts based exclusively on environmental performance, purchasing decision-making would involve number of trade-offs. Obviously, in some situations better quality/price ratio would be offered by one supplier, while better compliance with environmental standards by the other. To resolve this type of tensions, the dialogue between purchasing and selling companies would be required to discuss opportunities of providing better matches between conventional and environmental/social criteria.
- *Developing process-based supply* (Influencing consideration of environmental concerns within supplier company). With this purpose buying companies might become involved in supplier’s internal environmental initiatives, e.g. eco-design programs, product take-back infrastructure for further recycling and recovery of wastes. In logistics, measures to align own and supplier distribution networks could improve transportation/load efficiency and associated environmental performance. Described initiatives would obviously require high level of trust and greater effort to tackle organizational barriers, but might result in substantial sustainability improvements in supply chain (Forum for the Future 2008).
- *Developing well-functioning relationships with suppliers.* Improvements in buyer-supplier relationships might not only contribute to better production practices and lowering supply/sales risks, but also to successful treating of environmental/social issues. Well-functioned relationships could help to overcome variety of organizational barriers and develop internal technical capabilities in ensuring/developing green supply.

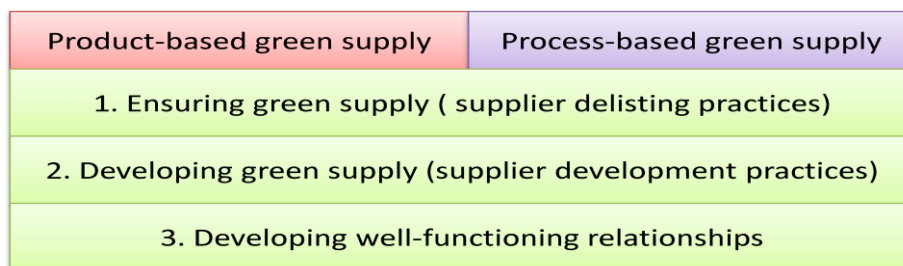


Figure 2 . Conceptualization of the green supply. Created on the basis of (Russel 1998; New, Green et al. 2000; Bowen, Cousins et al. 2001; Sarkis 2001; Preuss 2005; Seuring and Muller 2008).

Some authors, referred to green supply chain initiatives as 'green multiplier effect' (Ytterhus, Arnestad et al. 1999; Preuss 2005). Their suggestion stems from idea that as outsourcing firm is interwoven into complex structure of business networks, its supply chain management function might bring environmental improvements beyond own supply chain. In certain situation of market power regimes (Cox 2001), supply chain managers might be able to initiate sustainability improvements "more thoroughly than any other agent in the whole organization" (Preuss 2005: p.126).

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### 6.1.2. GREEN PURCHASING STRATEGIES

Variety of green purchasing strategies/practices derives from aforementioned conceptualization of green supply and differs according to the level of their advancement.

Very generalized typology for green purchasing is proposed by Lloyd (1994), where he differentiated between two basic approaches: questionnaire and audit schemes, and supplier external certification. Lamming and Hampson (1996) elaborated on 5 basic strategies: use of questionnaire, use of environmental management systems, life-cycle assessment, product stewardship and collaborative relationships.

In the literature review conducted by Seuring and Muller (2008), authors related to use of *environmental management systems* as a purchasing strategy. For instance, buying companies might require official accreditation with environmental management standards like ISO 14001 or social accountability standard as SA 8000, with yet social issues in the supply chain has not been addressed to the same extent as environmental aspects. Purchasing companies also develop *codes of conduct* as part of supply management strategies. Additionally, *supplier evaluation schemes* might be employed to assess environmental and social performance of suppliers. In some situations, supplier self evaluation might be required when outsourcing companies have to display already available performance criteria in regard to sustainability issues. Other approaches to supply management strategies mentioned by Seuring and Muller (2008) are *monitoring, reporting and enforcement sanctions*, e.g. supplier delisting.

Global environmental management initiative (GEMI) offers four-level classification of sustainable sourcing strategies/performance, from simple compliance with minimum standards to assigning green purchasing to strategic corporate function (Hamner 2006):

- *Level 1: Compliance.* In this case, buying firms verify supplier's performance based on compliance with environmental, health and safety regulations and grant preference to those sourcing companies that better match purchaser's own environmental policies and related standards.
- *Level 2: Systems Development and Implementation.* At this level of development, purchasing strategy is based on well developed systems of supplier evaluation. Delisting of suppliers is implemented in regard to those companies that do not comply with purchaser's environmental requirements.
- *Level 3: Integration into Core Corporate Function.* At third level, environmental evaluation model is integrated with supplier selection models. This coordinated scheme of supplier

evaluation is applied at all business units (not only by environmental managers, but supply management, purchasing and marketing departments etc.)

- *Level 4: Total Quality approach.* In this case only those suppliers are granted with purchasing contracts who have implemented integrated sustainability approaches in managerial practices. Supplier’s environmental management and quality improvement systems are continuously monitored and evaluated to check consistencies with corporate environmental policies. Collaborative relationships with suppliers are developed to reveal and implement synergies for further sustainability improvements both in purchasing and selling companies.

In the aforementioned classification of green supply strategies, one can observe differences in the effect of these strategies on the outcomes of supplier sustainable behavior. Advanced green purchasing strategies resulted in substantial improvements of supplier’s environmental performance. Figure 3 reveals effect of different green purchasing strategies on the outcomes of supplier sustainable behavior.

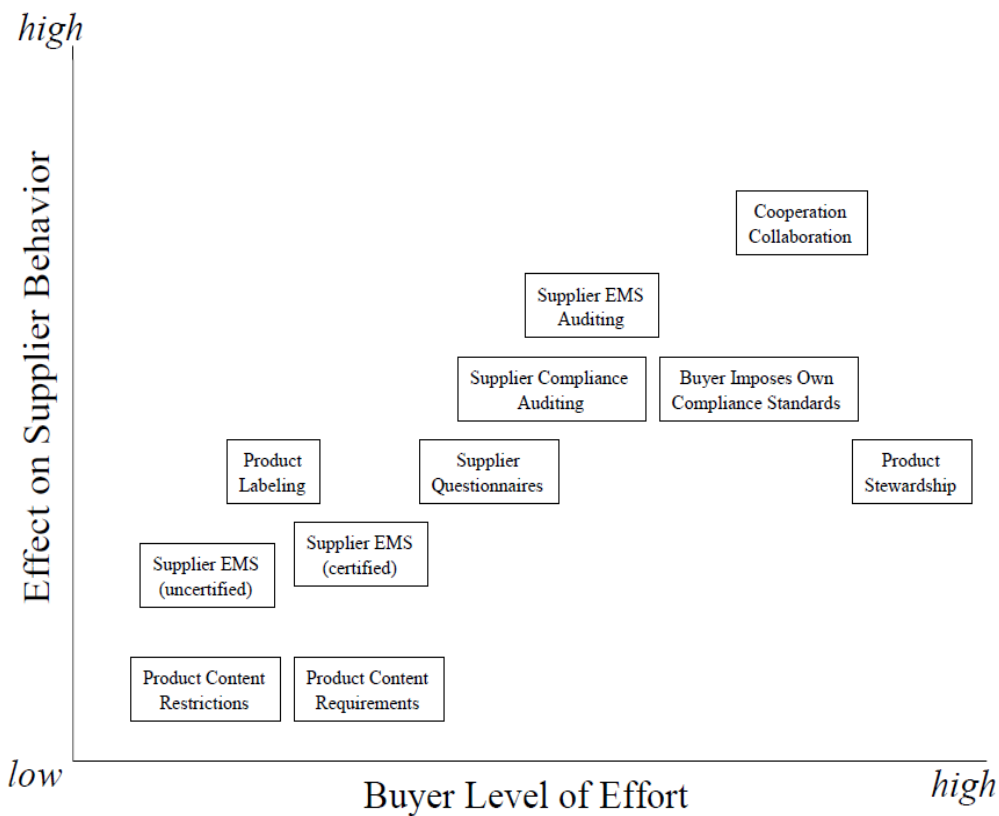


Figure 3 . Effects of green purchasing strategies on supplier sustainable behavior. Source: (Hamner 2006).

As has been observed from the Figure 3, as well as from GEMI classification, the most advanced purchasing strategies imply development of collaborative relationships with suppliers. Seuring and Muller (2008) pointed out that “ensuring the quality of the product and the performance of the operational process might be as much of an issue as building partnerships for new product introductions” (p. 1705). British study dedicated to involvement of major corporations to SSCM practices (Charter, Kielkiewicz-Young et al. 2001) has also revealed that most impact on the

supplier's sustainable behavior were observed when purchasing companies were committed to dedicate significant efforts to develop collaborative relationships with their suppliers. At the same time, Charter, Kielkiewicz-Young et al. (2001) reported that development of such practices very much depends on the company's possession of relative power over supply chain and a number of business risks that drive organization to manage down these risks in their supply chains. The issues of power and collaborative relationships with suppliers will be further discussed in the subsequent sections.

Altering supplier's behavior is a matter of particular concern in situation of international purchasing. Often environmental regulations in the third world countries are weak and unenforced, with standard levels below optimal. Suppliers in these countries lack of drivers, financial opportunities and information to improve their company's sustainability performance. As Hamner (2006: p.34-35) reflected : "My experience visiting manufacturing companies in South-East Asia has revealed numerous examples of companies that have changed their product contents to meet Western buyer requirements, but the companies have not adopted environmental management practices or in some cases have not even installed pollution control systems necessary to meet local environmental protection standards". In this regard, assumption that purchasing strategies dedicated exclusively to ensure green product-based supply will contribute to better SSCM practices is doubtful.

Some studies refer to necessity of supplier development before selling companies were actually able to provide buying firms with desired sustainable products. For instance, in textile industry retailers were required to make sure that suppliers of organic cotton are available on the market before they could include related products in their assortment (Seuring and Muller 2008). "This triggered considerable investments at partner locations to develop this supply structure and to help improve their production facilities and processes, and was required before they could meet the set environmental standards for the production processes as well as the final product" (Seuring and Muller 2008: p. 1705).

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### 6.1.3 THE ROLE OF SUPPLY MANAGEMENT CAPABILITIES IN IMPLEMENTATION OF GREEN SUPPLY

In order to implement SSCM, necessary inter-firm supply management capabilities should be developed. According to Gold, Seuring et al. (2010) these capabilities "crucially define the status-quo of what is feasible for individual firms or whole supply chains when intending to conceive and implement sustainable sourcing strategies" (p.238). As inter-firm relations has unique history of formation, inter-firm green supply capabilities are not easily to imitate by competitors and therefore represent potential source of inter-organizational competitive advantage (Teece, Pisano et al. 1997).

The framework which articulates the role of company's internal supply management capabilities in implementation of green supply has been developed by Bowen, Cousins et al. (2001) (Figure 4). Key supply chain capabilities include: (1) liaison between purchasing and other business units ( e.g. cross-functional collaboration through working together with environmental, supply management and marketing departments, executive boards etc.); (2) detailed purchasing policies (e.g. well established sustainable purchasing programs and green supply strategies as supplier evaluation schemes etc.) (3)

collaborative relations with sourcing organizations, (4) technical competences of purchasing professionals (e.g. use of IT technologies as Electronic Points of Sales systems which allow fast and convenient way of sharing transaction related information between companies); (5) advanced understanding of sustainability concerns among purchasing employees.

According to the model proposed by Bowen, Cousins et al. (2001), strategic purchasing and corporate environmental pro-activity positively contributes to development of supply management capabilities, which in turn are prerequisites for successful greening of supply (Figure 4).

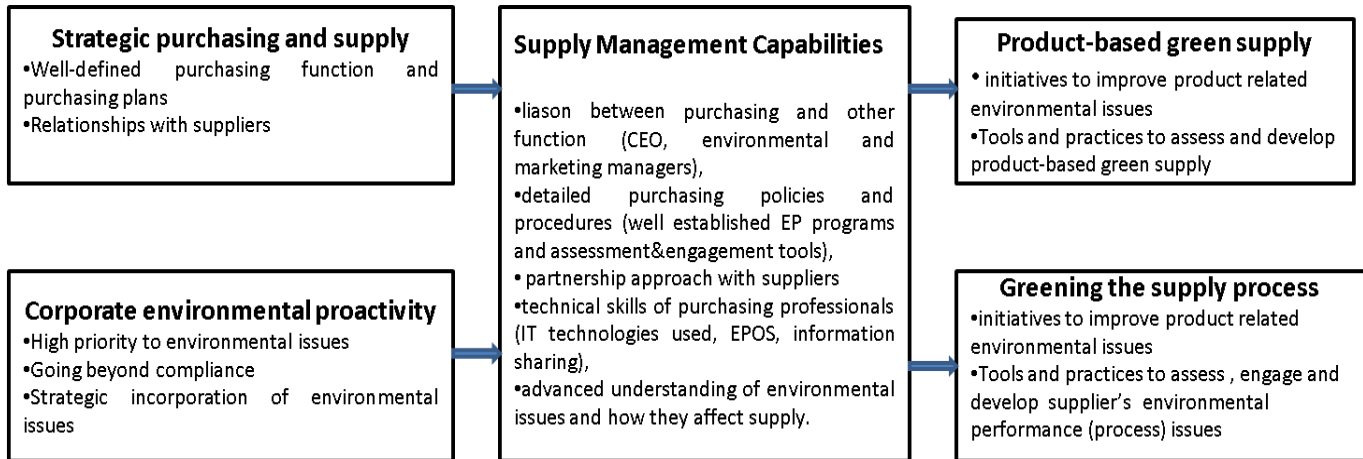


Figure 4. The role of supply management capabilities in implementation of green supply. Adapted from (Bowen, Cousins et al. 2001).

#### 6.1.4 PURCHASING PORTFOLIOS AND GREEN SUPPLY

Kraljic’s concept of purchasing portfolios (Kraljic 1983) is nowadays widely recognized among researches and supply chain practitioners as effective tool for managing business relations with suppliers (Olsen and Ellram 1997; Gelderman and Van Weele 2003; Pagell, Wu et al. 2010).

However, recently conducted study (Pagell, Wu et al. 2010) has revealed interesting phenomenen how environmentally proactive companies are developing purchasing portfolios. Suppliers that are suggested by Kraljic to be leveraged on the price basis are treated in the manner more applicable for strategic suppliers. Moreover, companies that do so were rather prospering despite of opting for supposedly expensive sourcing strategies.

Also, Haake and Seuring (2009) have noticed some deficiencies of the Kraljic model in regard to SSCM. They argued that in some situations so called non-critical items to which companies do not usually pay much of attention might have significant environmental/social impact and therefore should be managed differently than suggested by Kraljic portfolios. “When avoiding the risks associated with sourcing in global supply chain, focal companies might find themselves in a situation, where they must spend more attention on the sourcing of minor components” (Seuring and Muller 2008: p. 1705).

According to observations made, the field of supply management faces new and sometimes unexpected realities of SSCM, and modification of the Krajlic concept is required to help companies meeting associated challenges and elaborating on better strategies to organize sustainable purchasing portfolios (Pagell, Wu et al. 2010).

#### 6.1.4.1 KRAJLIC'S MODEL OF PURCHASING PORTFOLIOS

Kraljic's model is based on the assumption that in most companies purchasing resources are restricted. Therefore, different kinds of sourcing activities require different types of relationships. For companies outsourcing variety of inputs, limited resources of purchasing function should be wisely allocated. When limited resources are optimized in the proper way, the purchasing performance improves. (Pagell, Wu et al. 2010).

In Kraljic's model four purchasing portfolios are presented, that is for strategic, bottleneck, non-critic and leveraged items. The differentiation is made on the basis of supply risk assessment and profitability (Figure 5):

Figure 1: Product Purchasing Classification Matrix

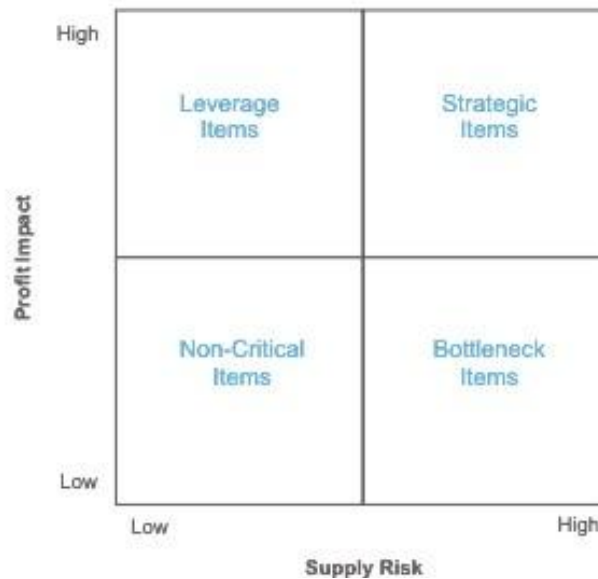


Figure 5. Kraljic's model of purchasing portfolios<sup>1</sup>. Source: (Kraljic 1983)

- *Leverage Items*. Multiple suppliers of commodities that have little to differentiate except of price and delivery date (identical quality and performance or homogeneous market), should be leveraged on a transaction-by-transaction basis to increase returns on invested resources. Thus for leveraged products category, cost minimization strategy is pursued by

<sup>1</sup> Picture from [http://www.mindtools.com/pages/article/newSTR\\_49.htm](http://www.mindtools.com/pages/article/newSTR_49.htm)

the purchasing function. (Pagell, Wu et al. 2010). That is in line with governance structure proposed by transaction-cost economics (TCE) (Williamson 1979).

- *Strategic Items*. For strategic items long-term lasting and close relationships with small number of suppliers should be cultivated, with focus on high level of trust and commitment. The selection of sourcing options should be based on total costs assessment rather than price per input basis.
- *Non-Critical Items*. For noncritical (nonstrategic) inputs, purchasing strategy to source from multiple suppliers on the price basis and in transaction-by-transaction manner is suggested.
- *Bottleneck items*. Bottleneck products represent non-strategic supply of high risk, when one/few suppliers are available on the market. To mitigate the supply risk and transaction costs, contracting relationships with suppliers should be developed, with particular focus on inventory and safety stock strategies.

#### 6.1.4.2 MOVING TOWARDS SUSTAINABLE PURCHASING PORTFOLIOS

According to study by Pagell, Wu et al. (2010), supply managers in some of observed organizations instead of experiencing relative power were investing in building collaborative relationships with commodity-type suppliers. The commitment was made to pay product price premium, provide long-term contracts and support for supplier development. As few as possible number of suppliers was kept. As supposed by Kraljic (1983), due to misallocated resources and incurred supply risks, company should be experiencing suboptimal economic performance. However, companies involved in applying SSCM were rather thriving and prosperous, performing pretty well economically with revenue growth above industry average (Pagell, Wu et al. 2010).

Six out of ten observed organizations were involved in creating 'supply-base continuity', "a practice that appears counter to the existing theory and seemingly vital to SSCM" (Pagell, Wu et al. 2010). The idea behind 'supply-base continuity' is ensuring common prosperity of all actors involved in the value chain, including supplier's employees and local communities. "The basic aim of supply-base continuity is to ensure that all members of the chain not only stay in business but also that they do so in a manner that allows them to thrive, reinvest, innovate and grow" (Pagell, Wu et al. 2010: p. 62-63). High value was placed on both social and environmental aspects of supply, as well as notion of sustainability were extended beyond first-tier suppliers.

Ensuring sustainability of inputs and common prosperity of actors in supply chain does not imply establishing partnerships with every supplier, due to limitability of purchasing resources mentioned above. However, the leverage products category is put into question (Pagell, Wu et al. 2010). Following practices related to the notion of 'supply-base continuity' were observed: decommoditization, traditional supplier development, reducing supplier risk and transparency improvements (Figure 6) (Pagell, Wu et al. 2010)

Elements of Supply-Base Continuity

Element of Continuity	Description	Number Involved (Out of Six)
Decommoditization	Explicitly treating a supplier and/or entire chain that provides a commodity (lots of substitutes/competition mainly on price) as if it supplied a rare/strategic input. Buyers give long-term contracts and pay above market prices for items that are usually bought on a transaction-by-transaction basis for the lowest possible price.	6
Traditional supplier development	Training suppliers to be better suppliers for the focal firm. Benefits accrue to both the buyer and the supplier.	5
Reducing supplier risk	Helping suppliers to mitigate some or all of the risk associated in making supplier's products and/or processes more sustainable.	4
Nontraditional supplier development	Training suppliers to be better suppliers to other customers. Benefits directly accrue to supplier and perhaps competitors.	3
Transparency	All chain members provide full accounting of flows of money to origins.	2

Figure 6. Elements of supply-base continuity. Source: (Pagell, Wu et al. 2010)

To conclude on the findings revealed by Pagell, Wu et al. (2010), it is important to mention that the aforementioned practices were engaged in regard to those suppliers that could be easily replaced and leveraged on the price basis, what was actually done by competitors of observed buying companies. The phenomenon in regard to observed sustainable sourcing is that buying companies were intentionally granting power to the sourcing companies (investing in relationships and therefore increasing buyer costs) to achieve the common prosperity. That is in contradiction with suggestion made by Williamson (2008), that if suppliers can, they are tending to experience power over suppliers in the manner of outright bullying. According to Pagell, Wu et al. (2010: p. 65), “we are aware of no literature that specifically says to willingly give power and the associated benefits to these types of suppliers, and this behavior certainly seems to contradict the goal of maximizing shareholder wealth”.

Based on the observations of aforementioned phenomenon in the purchasing strategies, implications for sustainable purchasing portfolios were developed by Pagell, Wu et al. (2010) using ‘hybrid’ explanation from the other theories as transaction cost economics (TCE), resource-based view (RBV) of firms and stakeholder theory. According to TCE, roots of observed phenomenon in the buyer’s behavior are information asymmetries. Developing strategic partnerships with leveraged suppliers is thus short-term until the issue of information asymmetry will be resolved. However, this is in case if supplier’s performance on TBL is pretty similar. When supplier’s performance on TBL differs substantially, than relationships investments would result in furthering these differences in the long run. In this regard, according to RBV of the firm, investments in building long-term relationships with leveraged suppliers could eventually result in sustainable competitive advantage. The key focus here is to wisely differentiate between situations as wrong choices might lead to asset specificity trap of being locked into particular suppliers and as result lowering company margins due to suboptimal level of purchasing performance. If one day the markets were strategic relationship-based contracts were developed will again become a commodity one, than purchasing managers have to be prepared to alter their sourcing strategies back to leveraged transactions (Pagell, Wu et al. 2010)



Thus, theories of TCE and RBV of firms shed light on how organizational purchasing behaviors should be adjusted in regard to SSCM. At the same time, stakeholder theory help to rationalize in what situation one of the theoretical approaches should be exploited in practice. When stakeholder expectations in regard to supply attribute are changing drastically, the transitional situation occurs (Pagell, Wu et al. 2010) .

Sustainable purchasing portfolios model suggested by Pagell, Wu et al. (2010) (Figure 7, Figure 8) incorporates consideration of three-dimensional performance (TBL) and divides product category of the leveraged goods into three following subcategories: strategic commodity, transitional commodity and true commodity. This division occurs into so-called transition period, when company decides to optimize supply chain performance based on TBL. In regard to strategic items, the change is small but significant, e.g. managers must account not only for profitability, rather for risks associated with TBL. While the range of risks to consider has been widened, general recommendations for relationship management with strategic suppliers remain the same. Other product categories (bottleneck and non-critical inputs) and related purchasing strategies also remain untouched (Pagell, Wu et al. 2010).

*True commodities* mainly retain characteristics of the leveraged items, where supply risk is described as low and high impact exists only within one aspect of the TBL. In this case it would be easy to switch towards other suppliers and differentiation would be applied in regard to one issue, that is in regard to sustainable sourcing is environmental impact within same price range (Pagell, Wu et al. 2010).

Commodity would be considered as *transitional* in the short-term situation of information asymmetries. While supply risk is considered as high, relationship-based investments would be made in regard to inputs previously treated as commodity-type products. However, later on, with decrease in information asymmetries and increase in the number of suppliers complied with stakeholder's expectations, supply risk would be lowered. Consequently, purchasing tactics will be changed back to the true commodity strategy (Pagell, Wu et al. 2010). "In the short term, this may be the most difficult category to manage.... Recognizing the transition will be the key to avoiding either unnecessary costs or risks" (Pagell, Wu et al. 2010: p. 69).

Commodity starts to be treated as *strategic* to help companies achieve strong competitive advantage in the long-term perspective. Managing commodity-type inputs in strategic manner is beyond accounts of simple market economics, where buying firms are supposed to downgrade suppliers towards lower risk category. On the opposite, supply risk in case of strategic commodity is consciously increased, with expectations that it would contribute to high level of TBL performance on variety of dimensions. Improvements on multiple aspects of TBL distinguish strategic commodity from true and transitional commodities (where differentiation exists only on one dimension, e.g. price or social, or environmental impacts) and make asset specific investments worth it overtime (Pagell, Wu et al. 2010)

The Sustainable Purchasing Portfolio Matrix

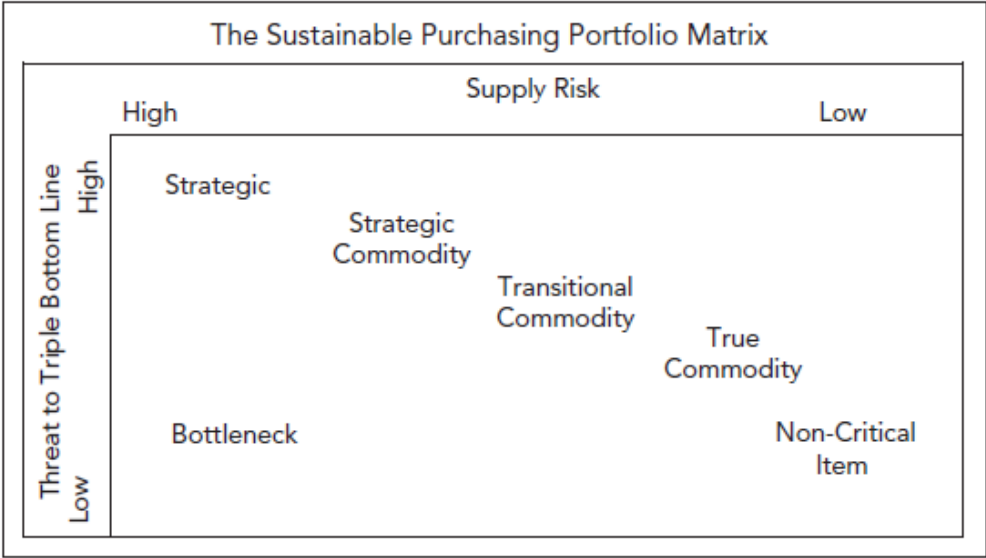


Figure 7. Sustainable Purchasing Portfolios. Source: (Pagell, Wu et al. 2010)

Revised Purchasing Portfolio Categories

Kraljic Category	New Category	Supply Risk	Risk to Profits, the Environment and/or Society	Short-Term State?
Strategic	Strategic	High	At least one is high	No
Bottleneck	Bottleneck	High	All low	No
Noncritical item	Noncritical item	Low	All low	No
Leveraged	True Commodity	Low	One is high, others low	No
Leveraged	Transitional commodity	Presently high due to information asymmetry — will return to low	One is high, others low	Yes
Leveraged	Strategic Commodity	Buyer moves from Low to high	At least one is high	No

Figure 8. Revised product categories of purchasing portfolios in regard to SSCM. Source: (Pagell, Wu et al. 2010)

Elaborating on aforementioned model of sustainable purchasing portfolios, Pagell, Wu et al. (2010) have although recognized, that according to their research design only profitable companies were included in the studied sample. Thus their profitability might imply that buying companies have enough resources to engage in sustainable sourcing, while other companies might lack these resources at their disposal. Therefore authors called for further research in the area of sustainable purchasing where broader sample of organizations is considered, including not very profitable ones. Also, research has yielded evidences that four companies which were not directly involved in ensuring ‘supply-base continuity’ has displayed outlined in the model transitional behaviors, implying that there are various ways to green company’s supply. Therefore, suggested model of

revised purchasing portfolios can be considered as robust. However, further research to gain better and deeper understanding of associated practices is required (Pagell, Wu et al. 2010).

## 6.2 RELATIONSHIP MANAGEMENT

Relationship management represents one of constituent elements of supply chain management. As has been observed so far, most of the theories point out the necessity of development collaborative relationships with suppliers to ensure and develop green supply. This section will touch upon the issues of collaboration and its benefits ('collaborative paradigm'), exploring on when such collaboration is possible/impossible (power concept) as well as outline the general process of formation buyer-seller relationships (buy-grid framework). Additionally, the concepts of trust and relationships norms is presented.

### 6.2.1 'COLLABORATIVE' PARADIGM

Resource-based view (RBV) of the firm (Wernerfelt 1984; Barney 1991) explains organizational competitive advantage as possession of unique resources and capabilities. Nowadays, with outsourcing of non-core components and competences, "resources of two or more organizations are combined through interaction" (Gold, Seuring et al. 2010: p.232). The resources created through integration in supply chain are of higher value than individual firm's resources. Therefore companies involved in resource integration are granted with more benefits (Haakansson and Snehota 1995; Halldorsson, Kotzab et al. 2007). In regard to these deliberations, the 'collaborative paradigm'/relational view (RV) of firms (Dyer and Singh 1998; Duschek 2004) complements the RBV by advocating that "critical resources are not solely housed within a single firm, but may span firm boundaries and be embedded in the inter-firm routines and processes, in the other words, the supply chain" (Gold, Seuring et al. 2010: p. 231). Nowadays, when sustainability has shifted from organizational to supply chain level, it becomes one of the critical resources that cannot be created solely by the efforts of individual company. Inter-firm collaborative relationships help companies creating sustainability resources and competences that otherwise would not be possible to acquire (e.g. sustainability related knowledge via inter-organizational learning, joint environmental solutions as product and process design etc.). Due to unique history and context specificity of relationship development process, created sustainability related resources and competences are not easy for competitors to imitate and thus become a source of inter-organizational competitive advantage (Gold, Seuring et al. 2010).

Based on the premises of 'collaborative' paradigm, Seuring and Muller (2008) referred to "a much increased need for cooperation among partnering companies in sustainable supply chain management" (p. 1706). Although the topic of collaborative relationships (with focus on close and long-term partnerships) are frequently discussed in the buyer-supplier literature (Pagell, Wu et al. 2010) and could be considered as hot topic in SSCM (Seuring and Muller 2008), some empirical evidences demonstrate limited possibilities for integration (Frohlich and Westbrook 2001; Fawcett and Magnan 2002). Bensaou (1999) pointed out that to build and maintain such partnerships is costly and risky. According to Williamson (2008), the benefits of such collaboration are rarely higher than associated transaction costs. Among the barriers mentioned are considerable investment costs

into partnership development, complexity of coordination effort and insufficient communication among supply chain actors (Seuring and Muller 2008). “Several case studies have outlined how far the cooperation has to reach and how much effort focal companies have to invest before they can make the supply chains operational” (Seuring and Muller 2008: p. 1706).

As inter-firm interaction is characterized by social and cultural complexity, and constantly evolving over time, it is highly unpredictable and hard to manage. Therefore, it is difficult to provide easy recommendations how collaboration between companies should be established (Gold, Seuring et al. 2010). However, some research suggests that implementation of business partnerships in strategic purchasing positively affect green supply management capabilities (Bowen, Cousins et al. 2001).

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### 6.2.2 THE POWER CONCEPT

The power concept shed light to what extent sustainable supply chain management could be realized by focal companies and in which cases so much desired collaborative approach of working with suppliers is possible. As Lamming, Cousins et al. (2001: p. 45) highlighted, in some cases “the sourcing decision . . . may simply leave the supply manager with the lesser of two evils”.

According to Cox (2001c: p. 46): “Most failures in proactive supply development appear to occur due to a failure by practitioners to understand that there must be an appropriate power circumstance in place for innovations to be made to work. Only when the buyer is in a position of dominance over the supplier and capable of leading innovation, or there is an interdependence of power in which a mutual coincidence of interest encourages joint learning, can this approach be made to work. When the supplier dominates the power relationship, or there is buyer-supplier independence, it is unlikely that suppliers will have any real incentive to undertake specific innovations for any one customer”.

The power concept (Cox 2001; Cox 2001a; Cox 2001c) contributes to understanding of power circumstances between buyers and suppliers in specific business contexts (Figure 9) and thus a number of available relationship management choices (Figure 10). After correct positioning of company in the power matrix, the potential avenues of moving towards more favorable power circumstances could be explored (Cox 2001c).

More specifically, contextual analysis based on power and relationship management matrixes (Figure 9 and Figure 10) allows answering following questions:

- What are the power attributes of buyers and suppliers and what power regime does it imply (Figure 9)? Thorough analysis of the power attributes need to be made, as its role can be double-edged. Understanding of objective power situation would in turn contribute to revealing factors that impact the outsourcing decisions of supply managers (resource values as price and quality, transaction costs of switching to other suppliers etc.) and what problems they potentially could face in regard to sustainable sourcing.
- How the relationships between purchasing companies and suppliers are managed? Is the nature of relationship adversarial, collaborative or ‘arm’s length’ approach (Figure 10)?
- How companies could manage power relationships with sourcing companies towards exercising the positive influence over suppliers (for instance towards sustainability

improvements)? Cox (2001c) proposed power management strategies that place companies into more favorable power regimes, elaborating on different routes for repositioning buyer leverage in the power matrix. At the same time, suppliers are always undertaking the countervailing strategies, so-called ‘caveat emptor (buyer beware) routes’ (Cox 2001c). “It is key to competence that buyers constantly seek to block attempts by suppliers to move them into the supplier dominance box, and to ensure that, whenever possible, they operate in the circumstances that are more conducive to the buyer” (Cox 2001c: p. 45).

According to (Cox 2001c), the food retailing supply chain power regimes are conducive to proactive supplier development as its extended networks of relationships is structured of *buyer dominance* or *buyer-supplier interdependence*. This supports the statement that retailers can become a ‘green link’ in making supply chain practices more sustainable.

THE ATTRIBUTES OF BUYER AND SUPPLIER POWER

ATTRIBUTES OF BUYER POWER RELATIVE TO SUPPLIER	HIGH	<b>BUYER DOMINANCE</b>	<b>INTERDEPENDENCE</b>	
		<ul style="list-style-type: none"> <li>• Few buyers/many suppliers</li> <li>• Buyer has high % share of total market for supplier</li> <li>• Supplier is highly dependent on buyer for revenue with limited alternatives</li> <li>• Supplier switching costs are high</li> <li>• Buyers switching costs are low</li> <li>• Buyers account is attractive to supplier</li> <li>• Supplier offerings are commoditised and standardised</li> <li>• Buyer search costs are low</li> <li>• Supplier has no information asymmetry advantages over buyer</li> </ul>	<ul style="list-style-type: none"> <li>• Few buyers/few suppliers</li> <li>• Buyer has relatively high % share of total market for supplier</li> <li>• Supplier is highly dependent on buyer for revenue with few alternatives</li> <li>• Suppliers switching costs are high</li> <li>• Buyer switching costs are high</li> <li>• Buyers account is attractive to supplier</li> <li>• Supplier offerings are not commoditised and customised</li> <li>• Buyer search costs are high</li> <li>• Supplier has significant information asymmetry advantages over buyer</li> </ul>	
		<b>INDEPENDENCE</b>	<b>SUPPLIER DOMINANCE</b>	
	LOW	<ul style="list-style-type: none"> <li>• Many buyers/many suppliers</li> <li>• Buyer has relatively low % share of total market for supplier</li> <li>• Supplier is not dependent on buyer for revenue and has many alternatives</li> <li>• Supplier switching costs are low</li> <li>• Buyers switching costs are low</li> <li>• Buyers account is not particularly attractive to supplier</li> <li>• Supplier offerings are commoditised and standardised</li> <li>• Buyer search costs are relatively low</li> <li>• Supplier has only limited information asymmetry advantage over buyer</li> </ul>	<ul style="list-style-type: none"> <li>• Many buyers/few suppliers</li> <li>• Buyer has low % share of total market for supplier</li> <li>• Supplier is not at all dependent on the buyer for revenue and has many alternatives</li> <li>• Supplier switching costs are low</li> <li>• Buyer switching costs are high</li> <li>• Buyers account is not attractive to the supplier</li> <li>• Supplier offerings are not commoditised and customised</li> <li>• Buyer search costs are very high</li> <li>• Supplier has high information asymmetry advantages over buyer</li> </ul>	
	LOW	<b>ATTRIBUTES OF SUPPLIER POWER RELATIVE TO BUYER</b>		HIGH

Figure 9. Understanding Buyer and Supplier Power: A Framework for procurement and Supply Competence. Source: (Cox 2001).

### A PORTFOLIO OF BUYER AND SELLER RELATIONSHIP MANAGEMENT CHOICES

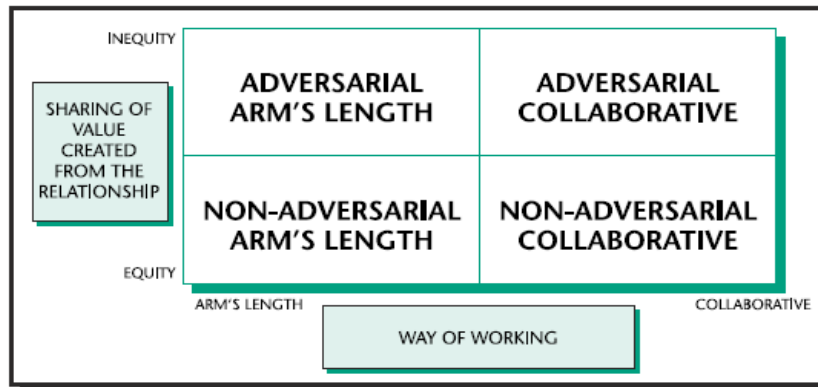


Figure 10. A portfolio of buyer and seller relationship management choices. Source: (Cox 2001a)

#### 6.2.3 BUY-GRID FRAMEWORK

The buy-grid framework (Robinson, Faris et al. 1967) addresses different stages of relationship development between buyer and seller from immature to 'robust and iterative' make-buy methodology (Proven Models 2011). It focuses on the process of working with suppliers: how relationships are structured and developed, what problems and opportunities do business partners perceive at every relationship stage.

Buy-grid framework and the concept of power regimes might be supplementary to each other, as at each step of establishing relationships (whether it is pre- or post-contractual stage), the power allocation can be changed either in favour of buyer or supplier dominance. For instance, (Lonsdale 2001) described the case of post-contractual buyer dependency (the issues of business opportunistic behavior and information asymmetry are discussed).

The buy-grid framework model (Figure 11) outlines following 8 buy- phases of establishing relationships between buyer and seller: (1) need recognition, (2) need determination (determination of characteristics, e.g. quality, quantity etc.), (3) solution specification (more specified description of input characteristics), (4) supplier identification (search for and qualification of potential sources), (5) proposal solicitation (acquisition and analysis of proposals), (6) proposal evaluation/vendor selection (supplier selection), (7) order routine selection, (8) performance review (feedback and evaluation) (Proven Models 2011).

At each buy-phase, specific difficulties and opportunities, power circumstances and relationship expectations might occur; therefore it is important to differentiate between different stages of buyer-seller relationships. Moreover, the buy-grid model differentiate between novelty level of the task, so-called three buy-classes: new tasks (when buyer first time explores on information for alternative purchasing solutions), modified re-buy (modification of product specification), straight rebuy (the buyer routinely reorder the product as long as it is satisfied with performance, new suppliers are considered only when satisfaction criteria are not met). Depending on the type of the

buy-classes (task novelty), certain buy-phases (stages of relationship development) are becoming more or less critical/complicated (Figure 11) (Proven Models 2011).

buy phase		new task	modified rebuy	straight rebuy
1	need recognition	○		
2	need definition	○		
3	solution specification	○	○	○
4	supplier identification		○	○
5	proposal solicitation			○
6	proposal evaluation & vendor selection			
7	order routine selection			
8	performance review			

○ : most critical phase(s) of buyclass

Figure 11. Buy-grid framework. Source: (Proven Models 2011)

#### 6.2.4 THE CONCEPT OF TRUST

The collaboration between companies obviously requires high level of trust and an effort to overcome the organizational barriers, but eventual result of environmental improvements through distribution synergies could be substantial (Forum for the Future 2008).

The trust concept might be referred to the same group of concepts as the “collaborative” paradigm. These concepts are tight together by idea that interactions between companies help them to acquire inter-organizational resources that creates sustainable competitive advantage over rivals. (Skjoett-Larsen (1999) and Spekman, Kamauff et al. (1998) referred to trust as example of inter-firm resource developed through the process of inter-organizational interaction. It can change over time and could not be purchased at the market place, being embedded in relationships in the form of intangible asset. Trust could be perceived as source of competitive advantage as it is very difficult to imitate by competing organizations. Interestingly, while on the one hand trust is perceived as prerequisite that companies in supply chain would participate in inter-firm collaboration (Spekman, Kamauff et al. 1998; Welford and Frost 2006), on the other hand it is a result of close inter-organizational interactions (Gold, Seuring et al. 2010).

According to Wilson (1995), trust is one of the fundamental blocks in business relationships and involves the belief that one relationship partner will act in the best interests of the other partner. The concept of trust refers to confidence and credibility, competence in fulfilling obligations and

reliability of promises. Trust can be also perceived as not developing relationships with competing organizations.

Trust contributes to commitment and common vision between supply chain actors, as well as facilitates information sharing and inter-organizational learning in supply chain (Gulati 1999). It prepares ground for collaborative efforts between business partners and therefore “gains particular importance” (p. 238) in buyer-seller relationships (Gold, Seuring et al. 2010).

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#### 6.2.5 RELATIONSHIP NORMS

*Relationship norms/expectations* framework (Figure 12) highlights the importance of behavioral aspects, depicting “a particular subset of the complex network of attitudes and beliefs that make up manager’s perceptions” (Andersen, Christensen et al. 2009). “There are interesting routes to pursue in showing how relationship norms impact on the initiation and further development of business relationships” (Andersen, Christensen et al. 2009: p. 822). Buyer-supplier interactions are based on the norms of business ethics/culture, which differs between either different firms or countries (e.g. accounting for local/global sourcing context). The higher the divergence of buyer-seller expectations in regards to ‘green’ deals, the lower the environmental performance and party’s satisfaction of sustainable sourcing.

A critical lesson to be learned from the study on diverging expectations in buyer-seller relationships (Andersen, Christensen et al. 2009) is importance of understanding the role of relationship norms in particular business environment. Unveiling relationship norms contribute to manager’s realization of motives and beliefs that assist their business partners and thus help establishing well-functioning relationships. According to Andersen, Christensen et al. (2009: p. 822), “in order to accommodate with relationship expectations in new institutional settings, managers must be aware of their predispositions and learn to challenge these adequately”. For successful development of sourcing competences, the issues of behavioral norms in intercultural and inter-organizational communication are of crucial importance, affecting how the messages exchanged between the business partners are perceived by each party. “Rather than trying to ‘domesticate’ a supplier or a buyer to adopt one’s own standard, a smart move may be to realize how leverage can be achieved based on the strengths of the particular exchange partner in question” (Andersen, Christensen et al. 2009: p. 822).

According to relationship norms framework, if failure occurs in one of the field of relationship expectations, this might incur additional difficulties for companies to green product sourcing activities. Four areas of relationship expectations outlined by Andersen, Christensen et al. (2009) (Figure 12) are presented below, with suggestions of what each category could potentially include in regard to supply greening:

- **Quality, frequency, scope of communication** (in regard to supply greening, it can be information-sharing about product’s sustainability impact from different life-cycle stages, sustainability reporting schemes). Interestingly, Wilson (1995) argued that intensity of communication required to increase product quality and ensure just-in-time deliveries could



not be attained by working with multiple suppliers. Developing single source suppliers reduce inventory and time to market.

- **Role specification and coordination of work** (green codes of conducts, type of contracts and how they are perceived by two parties, who is the main decision-maker and taking responsibility for environmental improvements). According to Andersen, Christensen et al. (2009) while buyer can see the competence of supplier in opportunity to fulfill the specified demand and rules, suppliers might disregard the written in contracts issues if they don't understand it, expecting buyers to be supportive and attentive to details and take responsibility in decision-making.
- **Nature of planning horizons** (acting on the spot or long-term production schedules). The example referred to by Andersen, Christensen et al. (2009) is Danish SMEs sourcing from China. While Danish companies used to act on "short term delivery basis to ensure flexibility toward their customers, in the spirit of lean manufacturing principles, the business logic of the Chinese supplier was considerably different", aiming for the growth of sales and operating on the basis of "fixed mass production schedule" (Andersen, Christensen et al. 2009: p. 821). The key focus of Chinese suppliers "was to identify customers with a need for large volume production of identical part so that they were able to structure their production schedules on the long-term basis" (Andersen, Christensen et al. 2009: p. 821).
- **Trustworthiness.** "Trustworthiness constitutes an important regulatory mechanism in buyer-supplier relationships" (Andersen, Christensen et al. 2009: p. 821), but the conceptions of trust might differ among organizations (e.g. goodwill trust – not behaving opportunistically, or competence-based trust as capability to comply with performance standards and solve problems, assessed on the basis of past dealings). "There is an important issue concerning the role of written, formalized contracts as a protective device to support trust-building efforts. Danish suppliers expect contracts to be important documents, signifying the agreements made between companies, which have a binding quality as they can be reinforced by law. Chinese suppliers, however, view a contract as a statement of expectations, like a marriage certificate – and see it as a vantage point for starting negotiations" (Andersen, Christensen et al. 2009: p. 821).

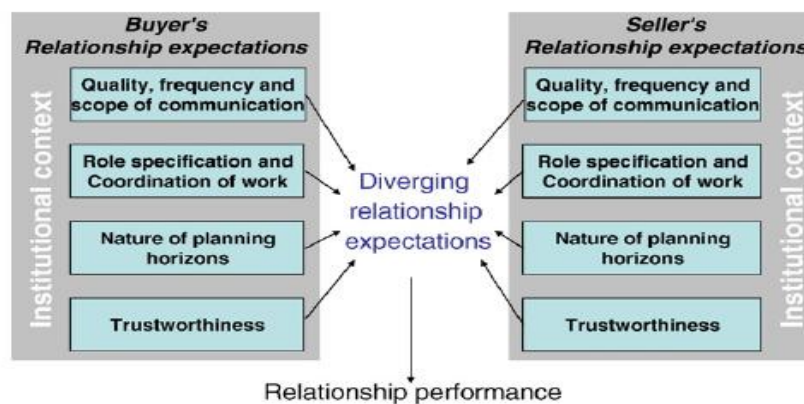


Fig. 1. Institutional contexts and relationship norms.

Figure 12. Framework of relationship norms. Source: (Andersen, Christensen et al. 2009).

## 6.2 MANAGING INFORMATION FLOWS

In SSCM, information access in regard to environmental/social impacts from product's life-cycle stages is of particular importance. "Before the purchase, supply chain managers need to evaluate the potential danger of an incoming material to employees, potential customers and the natural environment. Equally, the implications of its disposal after use need to be considered before purchase" (Preuss 2005: p. 132). Access by supply chain managers to such type of information would obviously require "much 'deeper' information flows along the supply chain" (Seuring and Muller 2008: p. 1705). At the same time, insufficient communication between supply chain members is referred as one of barriers to implementation of SSCM (Seuring and Muller 2008).

Grant (1996) refers to knowledge as highly valuable organizational resource, while Gulati (1999) describe information access as one of important drivers for companies to engage in collaborative relationships with suppliers. According to Gold, Seuring et al. (2010), access to partner's information facilitates the process of inter-organizational learning leading to creation of inter-firm competitive advantage. Information-sharing realized through partnership-focused approach with suppliers contributes to development of company's supply management capabilities to implement green supply (Bowen, Cousins et al. 2001).

## 7 CONCLUSIONS

Overview of conceptual and theoretical approaches contributes to understanding of a range of important factors that exist in the business context between purchasing companies and their suppliers. Based on the combination of overviewed approaches, the multi-dimensional framework for analysis of sustainable sourcing practices might be established. Such integrated model might account for a number of variables: (1) type of power regimes; (2) relationships norms; (3) type of buy-classes and critical buy-phases; (4) trust issues; (5) purchasing strategies and supplier management tools; (6) level of information sharing/communication scope; (7) level of development of internal supply management capabilities. However, we are fully aware of a caution, that while theory integration might be useful method to contribute to comprehensive analysis and understanding of observed phenomenon, divergent theories might provide contradictory explanations and guidelines (McIvor 2009).

The next step of research will be inductive theoretical development, where explanations observed in the theories will be tested against their suitability in particular context of food retail industry in Sweden. This will be achieved by assessment of available background market information (industry reports and academic papers on sustainability initiatives in food retailing) and via pilot interviews with Swedish retailers.

## 8 REFERENCES

Andersen, P., P. Christensen, et al. (2009). "Diverging expectations in buyer-seller relationships: Institutional contexts and relationship norms." *Industrial Marketing Management* **38**(7): 814-814.

- Barney, J. (1991). "Firm Resources and Sustained Competitive Advantage." Journal of Management **17**(1): 99-120.
- Bensaou, M. (1999). "Portfolios of Buyer-Supplier Relationships." Sloan Management Review **40**(4): 35-44.
- Bowen, F., P. Cousins, et al. (2001). "The role of supply management capabilities in green supply." Production and Operations Management **10**(2): 174-189.
- Carter, C. R. and D. S. Rogers (2008). "A framework of sustainable supply chain management: moving toward new theory." International Journal of Physical Distribution & Logistics Management **38**(5): 360-387.
- Charter, M., A. Kielkiewicz-Young, et al. (2001). Supply Chain Strategy and Evaluation. London, Centre for Sustainable Design, University College.
- Cox, A. (2001). "Understanding Buyer and Supplier Power: A Framework for Procurement and Supply Competence." Journal of Supply Chain Management: A Global Review of Purchasing & Supply **37**(2): 8-16.
- Cox, A. (2001a). "The power perspective in procurement and supply management." Journal of Supply Chain Management **37**(2): 4-7.
- Cox, A. (2001c). "Managing with power: Strategies for improving value appropriation from supply relationships." Journal of Supply Chain Management **37**(2): 42-47.
- Cruz, J. M. (2008). "Dynamics of supply chain networks with corporate social responsibility through integrated environmental decision-making." European Journal of Operational Research **184**(3): 1005-1031.
- Duschek, S. (2004). "Inter-firm resources and sustained competitive advantage." Management Revue **15**(1): 53-73.
- Dyer, J. and H. Singh (1998). "The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage." Academy of Management Review **23**(4): 660-679.
- Emberson, C. and J. Storey (2006). "Buyer-supplier collaborative relationships: Beyond the normative accounts." Journal of Purchasing and Supply Management **12**(5): 236-245.
- Fawcett, S. E. and G. M. Magnan (2002). "The rhetoric and reality of supply chain integration." International Journal of Physical Distribution & Logistics Management **32**(5): 339-361.
- Forum for the Future (2008). Retail leadership. What are the hallmarks of a sustainable retail business? London, Forum for the Future: 42.
- Frohlich, M. T. and R. Westbrook (2001). "Arcs of integration: an international study of supply chain strategies." Journal of Operations Management **19**(2): 185-200.
- Gelderman, C. and A. Van Weele (2003). "Handling Measurement Issues and Strategic Directions in Kraljic's Purchasing Portfolio Model." Journal of Purchasing and Supply Management **9**(5-6): 207-216.

- Gold, S., S. Seuring, et al. (2010). "Sustainable supply chain management and inter-organizational resources: a literature review." Corporate Social Responsibility and Environmental Management **17**(4): 230-245.
- Grant, R. (1996). "Towards a knowledge based theory of the firm." Strategic Management Journal **17**(Winter Special Issue): 109-122.
- Gulati, R. (1999). "Network location and learning: the influence of network resources and firm capabilities on alliance formation." Strategic Management Journal **20**(5): 397-420.
- Haakansson, H. and I. Snehota (1995). Developing Relationships in Business Networks. London, Routledge.
- Haake, H. and S. Seuring (2009). "Sustainable procurement of minor items - exploring limits to sustainability." Sustainable Development **17**(5): 284-294.
- Halldorsson, A., H. Kotzab, et al. (2007). "Complementary theories to supply chain management." Supply Chain Management: An International Journal **12**(4): 284-296.
- Hamner, B. (2006). Effects of Green Purchasing Strategies on Supplier Behaviour. J. Sarkis. Germany, Springer-Verlag London Limited: 25-39.
- Jayaraman, V., J. Linton, et al. (2005). "A Supply Chain Management in a Sustainable Environment." Journal of Operations Management **23**(1): 103-105.
- Kraljic, P. (1983). "Purchasing Must Become Supply Management." Harvard Business Review **61**(5): 109-117.
- Lamming, R., P. Cousins, et al. (2001). A comprehensive conceptual model for managing environmental impacts, costs and risks in supply chains. Best Practice Procurement: Public and Private Sector Perspective. A. Erridge, R. Fee and McIlroy. Aldershot, Gower: 42-29.
- Lamming, R. and J. Hampson (1996). "The Environmental as a Supply Chain Management Issue." British Journal of Management **7**(Special Issue, March 1996): 45-62.
- Lloyd, M. (1994). "How Green Are My Suppliers? Buying Environmental Risk." Purchasing and Supply Management **October 1994**: 36-39.
- Lonsdale, C. (2001). "Locked-in to supplier dominance: On the dangers of asset specificity for the outsourcing decision." Journal of Supply Chain Management **37**(2): 22-27.
- McIvor, R. (2009). "How the Transaction Cost and Resource-Based Theories of the Firm Inform Outsourcing." Journal of Management **27**: 45-63.
- Mentzer, J. and K. Kahn (1995). "A framework of logistics research." Journal of Business Logistics **16**(1): 231-251.
- New, S., K. Green, et al. (2000). Buying the environment: the multiple meanings of green supply. The Business of Greening. S. Fineman. London, Routledge: 35-53.
- Newton, T. and G. Harte (1997). "Green Business: Technician Kitsch?" Journal of Management Studies **34**(1): 75-98.

- Olsen, R. F. and L. M. Ellram (1997). "A Portfolio Approach to Supplier Relationships." Industrial Marketing Management **26**(2): 101-113.
- Pagell, M., Z. Wu, et al. (2010). "THINKING DIFFERENTLY ABOUT PURCHASING PORTFOLIOS: AN ASSESSMENT OF SUSTAINABLE SOURCING." Journal of Supply Chain Management **46**(1): 57-73.
- Preuss, L. (2005). "Rhetoric and reality of corporate greening: a view from the supply chain management function." Business Strategy and the Environment **14**(2): 123-139.
- Proven Models. (2011). "ProvenModels' web based library of management models." Retrieved February, 14, 2011, from <http://www.provenmodels.com/549/buygrid-framework/c-w-faris--patrick-robinson--yoram-wind>.
- Robinson, P., C. Faris, et al. (1967). Industrial buying and creative marketing Boston, Allyn & Bacon
- Russel, T. (1998). Green Purchasing: Opportunities and Innovations. Greenleaf, Sheffield.
- Sarkis, J. (2001). "Introduction to GMI theme issue." Greener Management International **35**: 21-25.
- Seuring, S. and M. Muller (2008). "From a literature review to a conceptual framework for sustainable supply chain management." Journal of Cleaner Production **16**(15): 1699-1710.
- Skjoett-Larsen, T. (1999). "Supply Chain Management: A New Challenge for Researchers and Managers in Logistics." International Journal of Logistics Management **10**(2): 41-54.
- Spekman, R. E., J. Kamauff, et al. (1998). "An empirical investigation into supply chain management: A perspective on partnerships." International Journal of Physical Distribution & Logistics Management **28**(8): 630-650.
- Teece, D., J., G. Pisano, et al. (1997). "Dynamic Capabilities and Strategic Management." Strategic Management Journal **18**(7): 509-533.
- Vachon, S. and R. D. Klassen (2006). "Extending green practices across the supply chain: The impact of upstream and downstream integration." International Journal of Operations & Production Management **26**(7): 795-821.
- Welford, R. and S. Frost (2006). "Corporate social responsibility in Asian supply chains." Corporate Social Responsibility and Environmental Management **13**(3): 166-176.
- Wernerfelt, B. (1984). "A Resource-Based View of the Firm." Strategic Management Journal **5**(2): 171-180.
- Williamson, O. (1979). "Transaction-Cost Economics: The Governance of Contractual Relations." Journal of Law and Economics **22**(2): 233-261.
- Williamson, O. (2008). "OUTSOURCING: TRANSACTION COST ECONOMICS AND SUPPLY CHAIN MANAGEMENT." Journal of Supply Chain Management **44**(2): 5-16.
- Wilson, D. (1995). "An integrated model of buyer-seller relationships." Academy of Marketing Science. Journal **23**(4): 335-346.
- Ytterhus, B. E., P. Arnestad, et al. (1999). "Environmental initiatives in the retailing sector: an analysis of supply chain pressures and partnerships." Eco-Management and Auditing **6**(4): 181-188.

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