"REVERSE LOGISTICS PRACTICES IN THE SPANISH SMEs CONTEXT"

Rocío Ruiz-Benítez
Universidad Pablo de Olavide
rruiben@upo.es

Jesús Cambra-Fierro
Universidad Pablo de Olavide
jjcamfie@upo.es

Abstract: Consumers and retailers return product to manufacturers due to a variety of reasons: the product does not meet customer expectation, the product is defective or there is excess inventory, among others. Therefore manufacturers need to handle the returned product in an effective way to improve customer's relationship and decrease its associated costs.

This paper describes the return processes of two Spanish companies, pertaining to the Small and Medium Enterprises (SMEs) group, focusing on the forward and reverse flows in the supply chain and highlighting the relevance of managing reverse supply chain issues efficiently. The methods used are interviews with the main managers at both companies. We have found that the main motivation of these companies to accept returns is to create a good company's image. Additionally, the same design of return processes and logistics networks has been identified in both companies, independently of the company's industry sector and the management qualification.

Key words: reverse supply chain, case study, SMEs

1. INTRODUCTION

In an increasingly dynamic and competitive business world, proper management of the supply chain is a key feature for promoting efficient management and for developing important competitive advantages (Rao et al., 2006; Andersen and Christensen, 2005; Quayle, 2003).

Products continuously flow in both the direct and the reverse direction in the supply chains, from manufacturers to consumers and from consumers to manufacturers. Many firms will accept almost anything sent back up the channel, regardless of reason or condition, if they perceive that doing so could benefit customer relationship (Merritt, 2001; Stock, 1998). Some studies show that up to 20% of all goods that are sold are returned to the vendor (Rogers and Tibben-Lembke, 1999; Lawton, 2008). Consequently, firms need to implement reverse logistics programs to handle the returned product.

Additionally, in competitive environments where most of the firms offer high quality products and customer service at the time of sale, new means of differentiation must be considered. The next step is the service management (Dennis and Kambil, 2003) which provides both competitive differentiation and at the same time an opportunity to increase profits. Service management is defined as all customer interactions that follow a product's sale, such as customer support, training, warranties, maintenance and repair, upgrades, product disposal and sale of complementary goods (Dennis and Kambil, 2003). Service management is a useful tool no only to increase profits but to also increase customer loyalty (Heskett et al., 1994).

Repair and disposal services are one of the activities included in service management and therefore managing those activities adequately can lead to increased customer loyalty. As a result, reverse logistics activities become essential when managing the supply chain and can also lead to a competitive advantage for the firm.

The vast majority of Spanish companies pertain to the group of Small and Medium Enterprises (SMEs).

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Reverse logistics activities and returns flows have been widely studied in the context of big companies (e.g., Rogers and Tibben-Lembke, 1999; Ferguson et. al, 2006; among others) but there still exists a significant gap with respect to returns handling in the case of SMEs.

In this paper we study the supply chain design of two different companies that incorporate reverse logistics activities to handle customer returns. Both companies are in the group of small and medium enterprises (SMEs) and have a different training level of their management core. Additionally both companies are certificated companies (ISO certifications and self-certification) and maintain high quality levels in their products (production process is designed to minimize the number of defective products). The analysis of the returned product allows the company to identify the cause of such return and avoid it in the future. Surprisingly, most of the cases the technical supervision of returned product identifies the cause of the return as a perception of the customer and not as a defect in the product itself (false failure return). Such returns have already been identified in the literature by Ferguson et al. (2006) in big companies such as HP and Bosch.

The key contribution of this study is to illustrate and discuss successful[2] strategies of reverse Supply Chain Management (SCM). The paper illustrates how managers with different training background end up following the same approach regarding the design of the supply chain. Additionally, it is shown that the main objective for these types of companies to implement reverse logistics processes is to improve customer satisfaction. Thus, improving operations management becomes a secondary aspect.

In the next section we reflect on the concepts that constitute the conceptual framework for our research: SCM and reverse SCM. The third section presents specific data related to methodology and case design, while the fourth section shows the results of a multiple case-study based on two companies belonging to different industries. In the final sections we discuss the key implications for both literature and practice and conclusions of our study.

2. LITERATURE REVIEW

The concept of SCM can be defined from different approaches. In order to achieve the objectives of our research we assume the definition proposed by the Council of Supply Chain Management Professionals (CSCMP): SCM encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes co-ordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies.

Companies have showed a growing interest in the adoption of sustainable practices in business operations using an integrated quality, environmental and safety management system (Ferrer, 2008). Recent studies such as the one by Dale et al. (2011) analyze the implementation of sustainability concepts. They focus on a region of Brazil to conclude that the economic aspect of sustainability is the most important one, followed by the environmental aspect, increasing in importance, and the social one, still incipient. Closely related with sustainable practices is the field of reverse logistics.

Effective reverse logistics focuses on the backward flow of materials from customers to suppliers (or alternate disposition) with the objective of maximizing value from the returned item and assuring its proper disposal (Rogers and Tibben-Lembke, 1999; Stock, 1998). This may include product returns, recycling, materials substitution, reuse of materials, waste disposal, refurbishing, repair, and remanufacturing (Stock, 1998). Consequently, reverse logistics research has emphasized the use of environmentally conscious logistics strategies, the so-called green logistics (Murray, 2000; van Hoek, 1999; Carter and Ellram, 1998; Green et al., 1998; Stock, 1998). Many firms recognize the economic impact of reverse logistics in addition to the environmental aspects (Klausner and Hendrickson, 2000; Ritchie et al., 2000). Additionally, some research suggests that companies can recapture value through an efficient and effective returns process (Ayres et al., 1997; Autry et al., 2001). Furthermore, Freires and Guedes (2008) show the existence of forward relation between trust among agents of the supply chain and effectiveness and efficiency of reverse logistics systems. Firms are willing to accept returns from customers since quick an efficient handling of returned product can also

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[2] In this study "successful" is considered as a multidimensional construct that considers cost efficiency of the process and customer service level.

be critical in sustaining relationships and creating repeat purchases. Therefore, reverse logistics allows companies an opportunity to differentiate themselves with respect to competitors, builds customer loyalty in the company brand, and positively influences customer satisfaction (Blumberg, 1999).

Large companies face higher rates of returns due to more lenient return policies and therefore, the returns problem is more acute in such companies. Many firms will accept almost anything sent back up the channel, regardless of reason or condition, if they perceive that it could benefit the customer relationship (Merrit, 2001; Stock, 1998). Therefore, if SMEs wish to remain competitive they need to do the same. Most of the literature focuses on the reverse logistics activities of large firms. Rogers and Tibben-Lembke (1999) carry out an extensive survey with the objective of identifying and describing current practices and trends of reverse logistics. Most of the firms included in the research were very large companies. Ferguson et al. (2006) also focus on the study of problems associated with returns, in this case the false failure returns, in large companies such as HP and Bosch. Nonetheless it is worth mentioning the study by Cespon et al. (2009) that identifies a generic configuration on reverse logistics strategies (recapturing value, environmental and commercial strategies) in manufacturing companies from the Cuban central area.

However, as previous research has shown (e.g., Richbell et al., 2006; Emiliani, 2000) SMEs present a different business profile to larger companies, with particular aspects that may influence their performance (e.g., fewer resources, management systems in which there is often no separation between ownership and management, the academic education of the manager not always meeting the real needs of the firm). It is possible that many of these firms (or some of their suppliers) may not always be able to take on the cost of introducing certain SCM systems or may be unable to manage them satisfactorily. For these reasons, the paper of Vaaland and Heide (2007) discusses the viability of SMEs in view of the new competitive framework of supply chains.

In any case, if SMEs want to increase competitiveness in the new scenario, they must make an effort to adopt new management trends, as efficient reverse supply chain systems are. However, managers must consider that some changes cannot be implemented immediately. For this reason, firms need to analyse their specific challenges, resources and capabilities before thinking about solutions and decisions, considering both the characteristics of the company and of the suppliers.

This article may help managers to reflect about reverse supply chain practices in the context of SMEs.

3. METHODOLOGY

The cases studied in the present work analyse reverse SCM practices in the Spanish SMEs context. The main objective of this paper is to illustrate and discuss successful strategies of reverse Supply Chain Management (SCM) trying to identify common trends and similarities in two different industry cases.

Following recommendations made by Yin (1994; chapter 2) for conducting successful case study research we first identified the key informants. Data has been triangulated by using several sources of information (i.e. direct observation, analysis of internal documents, secondary data) and therefore we assure construct validity. External validity is tested in accordance with the principles of analytic generalization, replicability and comparison between cases while internal validity was observed by checking possible pattern-matching between both cases. Reliability is ensured by establishing an initial protocol for procedure and elaborating a full database.

Yin (1994, chapter 1) classifies case studies in four different groups depending on its main purpose:

1) Explicative (to explain the casual links in real-life interventions that are too complex for the survey or experimental strategies),

2) Descriptive (to describe an intervention and the real-life context in which it occurred),

3) Illustrative (to illustrate certain topics within an evaluation), and

4) Explorative (to explore those situations in which the intervention has no clear outcome).

According to this classification, in this paper we present insights from illustrative and descriptive case studies. Two reference cases point out reverse logistics practices in two relatively different industries: a winery (agro-food industry) vs. a paint and solvent factory (chemical industry). Differences in managers' training and experience also reinforce the richness of the conclusions. These cases will be taken

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as basis for further discussion and for the assessment of the main implications of the study.

Data collection focused on the main managers of each company who were interviewed: the managing director in the case of *Bodegas Pirineos*, and the owner-manager in the case of *Pinturas Fierro*. Thus, in both cases we obtained a global vision of each company and their commercial, supply, production and quality policy.

The semi-structured interviews –following the structure that appears in Appendix A –50-60 minutes each, were conducted in Spanish, recorded and then transcribed for further analysis. During our visits we had access to several internal use documents and procedure manuals on which the companies are run. We were also given in situ explanations about supply, production and waste management procedures. Additionally, a variety of secondary sources were used as well: analysis of the firm's internal documents, press articles, etc. This allowed us to triangulate the data. We analysed the information using QSR NVivo, specialized software for the analysis of qualitative data. The use of specialised software for the analysis of qualitative data has been defended by Maclaran and Catterall (2002) and Catterall and Maclaran (1998). Once the information had been analysed, and using the terminology proposed by Yin (1994, chapter 1), two illustrative and descriptive cases were developed. The specialised literature offers similar research processes and work profiles, thus enhancing the validity of our study in reaching proposed objectives (e.g., Bordonaba and Cambra, 2009).

During all the process we interact with managers. We sent the notes from each interview session to key informants for subsequent discussion. Following this exchange, we provided informants with a brief summary of our main conclusions and—prior to more exhaustive analysis—asked for their opinion regarding the ideas we had formulated. This technique of sending interview notes to key informants for feedback is proposed by Miles and Huberman (1994, chapter 10) and Yin (1994, chapter 2), among others. As a consequence of such interaction we received valuable insight on our initial research, enabling us to correct erroneous interpretations. Our notes and preliminary conclusions were also reviewed by colleagues in an attempt to reduce bias as much as possible.

Moreover, it is worth mentioning that, according to the managers of both companies, some of the deci-

sions here described have been recently analysed by managers of several Spanish companies from different sectors through interviews and visits to both companies, and the implementation of similar systems (adapted to the needs of each particular company) is taking place in other companies with similar profiles to the ones studied here.

4. CASES

4.1. PINTURAS FIERRO, LTD

Background

Pinturas Fierro is a family company devoted to the production and distribution of paint for industry, the motor and the decoration industries, as well as solvents and other auxiliary products. The company was created in 1930 and has always been in the hands of the same family, except for a short period (between 1934 and 1940) in which, due to the political situation in Spain, it was collectivised. Today the third generation runs the company while the fourth one is training in the field of chemistry and business administration in order to take the control and manage the company in the future.

Since its creation the company has been characterised by great dynamism and eagerness to grow. Initially, the company was a small local shop that sold paint, varnish and accessories. When the founder's son took charge of the business, in 1943, the location changed to the city's commercial area and they established a provincial and regional network for the exclusive distribution of the most highly-reputed paint brands in Spain e.g., Titán, Valentine. This period was characterised by the region-wide consolidation of the company, the first small-scale incursions into the international market (south of France) and, above all, in the early 1980s, by the idea of investing in a paint, varnish and solvent factory. The first production activities coincided with the arrival of the third generation into the company's management in 1986. However, the contrast between high knowledge of chemistry and scarce training in business management put a brake on the company's development. The soundness of the commercial department, though, allowed them to maintain the production activity until, once that imbalance was corrected, the business began its national and international consolidation.

At present, the company is divided into two fundamental areas: 1) production and industrial distri-

bution/wholesaler and 2) commercial distribution/ wholesaler and retailer. The company has 16 employees: laboratory (3), production (6), administration and management (4), commercial (3), distributed into the areas above mentioned. Such division, however, affects the company's planning rather than the task assignment schedule. The sales figures in 2005 amounted to 4.5 million euros (last available data). They mainly operate in the Spanish market, especially in Aragón, Cataluña, industrial areas of Madrid, Valencia and Andalucía. They have an international presence through exclusive distributors in France, northern Italy and, on a smaller scale, in Portugal and Morocco.
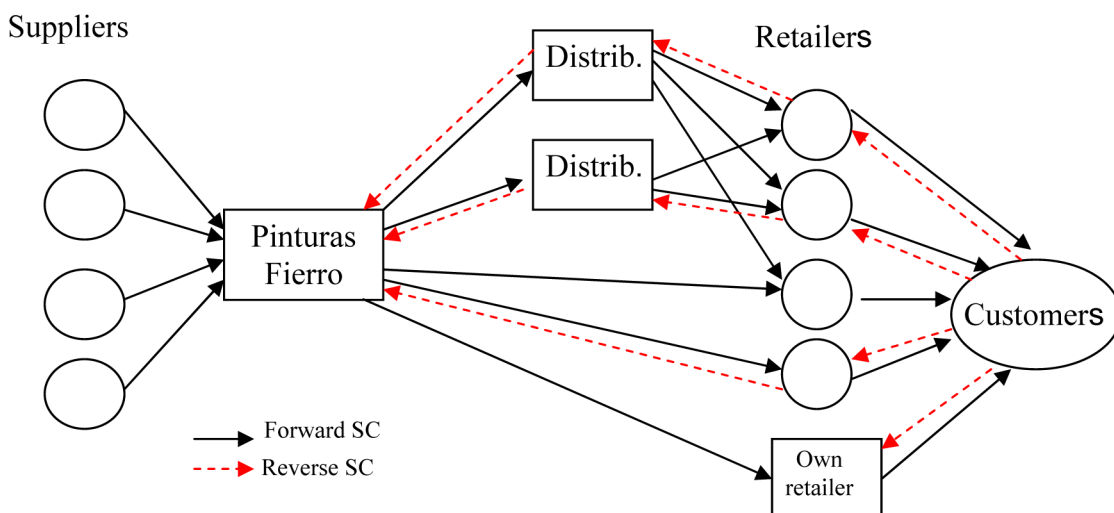
Description of Forward SC

We first start introducing the forward supply chain of Pinturas Fierro. We find two distribution channels, one direct channel and a second channel via distributor. In the present, Pinturas Fierro has two distributors, one per region of activity and around 55 to 60% of the total sales is done via distributor. The distributor can sell directly the company's product to its own portfolio of clients. In some other cases the distributor only stores product that the company directly sells to its own portfolio of clients, in which case the distributor obtains a commission for the volume sold. With the direct distribution the company acts as a wholesaler, selling directly to retailers or through a retailer store owned by the company. This retailer store is a family store that has been running since the creation of the company. Figure 1 shows all the flows of the forward supply chain.

Description of the Return Process

This company experiences certain percentage of products that is returned, due to a variety of reasons that we proceed to describe. The most common reason for returning a product is that the product is perceived as defective. However, returns due to real defective products are very infrequent, due to high quality standards and the self-certification process that the company goes through. Meanwhile false failure returns are the most frequent, due most of the time to incorrect application of the paint. In this case, the company assumes all the responsibility of the return in order to maintain a good corporate image. There is also a small percentage of returns due to excess of stock at retailers and, in this case, it is the retailer itself that assumes all the costs for those returns. Returns due to environmental issues are less frequent in this context, and the only returns due to this reason appear between the manufacturer, Pinturas Fierro, and its suppliers. Additionally, there is a difference between the type of client and the volume of the returned product. In the case of small volume of returns, generally from a particular customer, the product is not physically returned to the manufacturer. Instead, a discount for the next retailer's order is issued. In the case of professional customers and higher volume of returns, the procedure is different. The product is returned to the manufacturer who looks for a possible cause for the defective product. Distributors normally handle the returns occurred at their customers, while Pinturas Fierro directly handles the returns at its own clients. Therefore, there are two different returns channels depending on who is handling the sale. Figure 1 shows all the flows in the supply chain.

Figure 1: Flows in the PF's supply chain

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4.2. BODEGA PIRINEOS, LTD

Background

Wine production is one of the most dynamic activities in the present-day Spanish farming and foodstuff industry and it contributes to generating added value of extraordinary importance in the countryside.

Within this context Bodega Pirineos Ltd produces wine under the "Protected Geographical Indication" PDO Somontano. This is a wine-producing region formed by 44 municipalities located in north-eastern Spain. Its regulating authority has registered 22 wineries, 450 winegrowers and 4,326 hectares of vineyards. Its wines enjoy a high level of recognition in both the Spanish and international market, placing them amongst the best known wines in Spain, together with Rioja, Ribera del Duero, Navarra, Priorato and La-Mancha PDOs, amongst others.

Bodega Pirineos Ltd was one of the enterprises that promoted the creation of the Somontano PDO, and consequently was one of the first wineries to register in the protected designation of origin Somontano in 1984. Founded in 1964, the new legal composition of Bodega Pirineos was established in 1993. Its ownership structure is mixed, as it is shared by the partners of the former cooperative and private capital (Grupo Barbadillo). This situation could contribute to promoting objectives other than profits (eg. social responsibility, agricultures needs, environmental respect, sustainability, innovation).

The winery owns 80 hectares of vineyards and can also rely on the vineyards belonging to the partners of the cooperative, which are under an agreement to sell their production to the winery. Globally, this firm is responsible for more than 1,200 hectares (around 35% of the PDO). Its workforce is made of 53 employees distributed in the different areas into which the company is divided. With regard to the company's production and sales, in 2003 (last available data) it sold 2,520,000 bottles, which represents 27.4% of the total production of 9,197,145 bottles of Somontano PDO wine sold that year (data provided by the PDO Somontano Regulating Authority and Bodega Pirineos Ltd). For this reason Bodegas Pirineos is considered as one of the driving forces among the PDO Somontano wineries.

Additionally, BP has ISO 9001 and 14001 certifications and therefore high standards of quality are established.
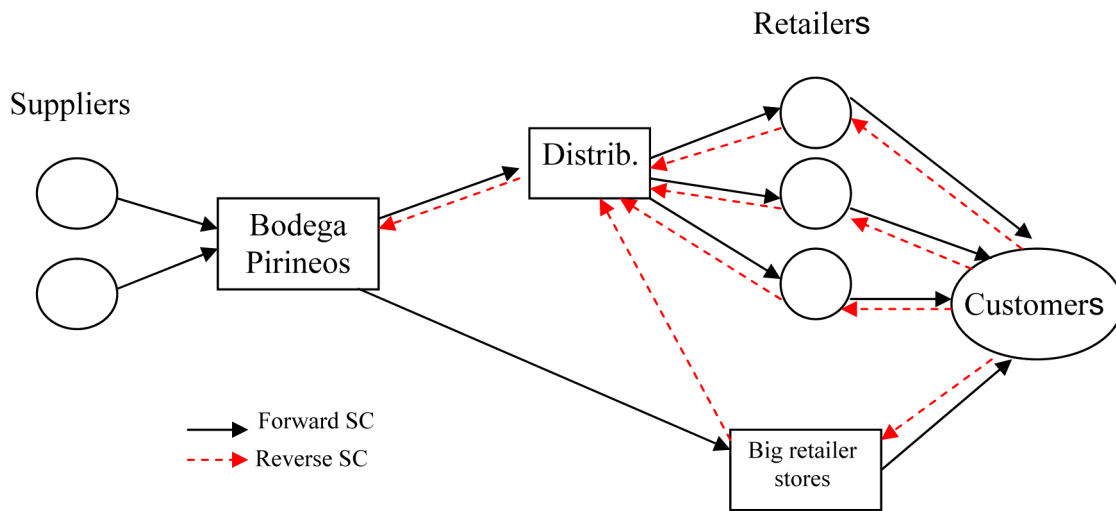
Description of Forward SC

We now introduce the forward supply chain of Bodegas Pirineos. We also find two distribution channels, one direct channel and a second channel via distributor. Direct distribution is normally made to big retailer stores. Distributors normally serve specialized stores and restaurants. They sometimes also carry the physical distribution to the big retailer stores obtaining a commission for all the processed deliveries. A representation of all the forward flows of the Supply Chain is in Figure 2.

Description of the Return Process

The most common reason for returning a product is that the product is perceived as defective. These products are either real defective, in which case the company searches for the source of the problem, or false defective, normally due to incorrect storage. Note that the incorrect storage can happen at the distributor or at the final customer. In either case, the company is the one that faces all the costs associated with the returns. There is another source of returns due to excess of stock. These returns are handled via distributor, going to secondary markets at a lower price or to company's employees, being this last option the most common one. In big retailer stores, the obsolete product is not physically returned. Instead, it is sold at a lower price, as a promotion, and Bodegas Pirineos gives the retailer a discount for the next order, which is a very common practice (Corbett and Savaskan, 2002). Figure 2 shows the forward and reverse flows of materials throughout the supply chain.

As mentioned above, Bodegas Pirineos has ISO 9001 and 14001 certifications which means that all processes are standardized and verified. Therefore, any product returned needs to be carefully inspected to find the cause of the defect. Most of the time, the problem is not the volume of returns received but instead the company has not enough human resources to identify the cause of the return and improve the relation with distributors and customers. This is a very competitive market and customers from specialized stores to restaurants are very sensitive to any flaw in the product. Therefore high investments in human resources need to be made in order to maintain a good relationship with distributors and customers.

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Figure 2: Flows in the BP's supply chain

5. CONCLUSIONS

In the previous section we have described the supply chain of two different Spanish companies from two different sectors. Therefore, with the objectives of this work in mind, we have defined and illustrated forward and reverse material flows in the supply chain for two different companies. We observe the following:

– One of the main distinctions between these two firms worth mentioning is the qualification of the personnel in charge of the management decisions and therefore of the design of the supply chain. PF is a family company created by professional chemists with no previous qualification in business management and therefore the management decisions are made in an intuitively manner. On the contrary, BP possesses qualified personnel in charge of the management of the company. However, *besides the differences in the management qualifications we observe that both supply chains are very similar* in certain aspects, as described in Figures 1 and 2. Both have two different ways to distribute to final customers: via distributors, and directly to retailer stores. Regarding the reverse flow, BP handles all the returns through the distributor. PF, however, uses the same path on the reverse direction as it did on the forward.

– Both companies use the same channels for forward and reverse flows and the existing infrastructure to handle returns. Additionally they personally take charge of handling returns in contrast with other companies (larger in general)

that use specialized third party logistics companies (such as GENCO) to handle their returns.

– It is surprising that in both cases the companies first objective is not to recover the returned product; therefore instead of sending back to the manufacturer the returned product at retailers and distributors, companies prefer to give discounts on future orders, saving on transportation and management of the returns and simplifying the return process. *Companies' main concern is not to get the product back*.

– Both companies are certified, BP externally certificated (with ISO 9001 and 14001) and PF self-certificated, and therefore high standards of quality are maintained for the final product. As a consequence, real defective products are rare. *Most of the returns observed are due to reasons out of the control of the company* (mostly incorrect storage and/or manipulation by customers). Therefore, it seems adequate for companies to invest in improving the handling information of the product given to customers. For example, companies may invest in additional training of the selling personnel to teach them how to correctly use the product, information that then is passed to the customers. Collaboration between companies and distributors/retailers becomes essential in order to avoid false failure returns and maintain a high customer satisfaction level.

– Both firms state that *the main reason to accept returns is to maintain a good relationship with customers and distributors* which creates a good corpo-

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rate image, critical factor in highly competitive environments. Therefore the main objective for both companies when handling returns is not the cost efficiency of the returns operations but learning from market and maintaining a good relationship with the customers.

– Therefore, the present study has yielded significant ideas which contribute to the literature and have implications for management of SMEs. This study stands out by employing a holistic approach to investigate a variety of factors with influence on the efficient management of reverse supply chains. Our research seems to confirm that implementing key variables is a gradual process requiring knowledge, coordination and commitment across all dimensions of the organizational structure.

Despite the relevance of our conclusions and the richness of implications for professional good practice and management, the following limitations are worthy of mention:

– Data collection is based on two respondents. However, the information gathered from managers is critical and relevant and allows us to illustrate and describe SMEs reverse logistics practices.

– Both cases are based on personal opinions as expressed in interviews. Hence, bias may occur both as a result of the particular image key informants wish to portray and due to inevitable idiosyncrasies in individual perceptions of key concepts. However we aim to diminish this limitation by triangulating data. For that purpose, we gather and compare the information obtained from different sources: 1) the interviews with main managers of the companies; 2) the visits to company's sites; and 3) internal documents and procedure manuals as well as secondary sources (press articles, etc.). We observe that all the information compiled is consistent with the main conclusions described in the paper.

– The study is subject to the inherent limitations of case study methodology. One should exercise caution, therefore, when attempting to extrapolate conclusions, as similarities and differences in economic and business environments must be thoroughly evaluated before any kind of analytical generalization can be carried out.

Proposals for future lines of research include repeating the study in different industries and/ or types of firms. The objective here would be to enrich findings and broaden the scope by including new factors in the discussion. Studies which account for the customer's perspective are needed as well, analysing how reverse supply chain practices may affect the customers' satisfaction. This could be achieved through an assessment of customer perceptions of complaints management and/ or reverse logistics activities in companies, and with an analysis of the possible repercussions of such perceptions on corporate image (e.g., by using as reference the service recovery literature).

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Appendix A

The following questions were used to open and guide the discussion regarding the design of the forward and reverse supply chains.

What is the structure of your forward supply chain? How many levels do you have? Do you sell directly to the customer or use a distributor or retailer store?

Does your company implement any quality standards?

Do you experience returns in any of your products? (If yes, we continue with the following questions)

Do you accept all returns? What are the conditions under which the company takes care of the returned product?

Why is the company accepting returns in such cases? What are the drivers to accept returns?

What is the structure for your reverse flow? Do you use the same channels for forward and return flow?

Is any inspection being made in the returned product to identify the cause? Is there any feedback from returns used by the company?

Ruiz-Benítez, R., Cambra-Fierro, J.: *"Reverse Logistics Practices In The Spanish Smes Context"*
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AUTHOR'S BIOGRAPHY

Rocío Ruiz-Benítez: Professor Rocío Ruiz-Benítez developed her doctoral program and research training at University of Massachusetts (USA). She is Senior Lecturer in Management at University Pablo de Olavide. Her research interests are related with different aspects of supply chain management and services marketing. She has published in journals such as Supply Chain Management: an International Journal, IIE Transactions, European Business Review and Journal of Business Economics and Management.

Jesús Cambra-Fierro: Professor Jesús Cambra-Fierro is head of the Department of Marketig. His research interests are related with Industrial Marketing and Supply Chain Management. He is currently also researching in Services Marketing and Business Ethics. He has published in journals such as Supply Chain Management: an International Journal, Industrial Marketing Management, Journal of Business and Industrial Marketing, Journal of Business Economics and Management, Journal of Business Ethics, etc