Marketing for core acquisition and remarketing of remanufactured products

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Abstract

Purpose – Remanufacturing industry includes intriguing applications of marketing where it deals with both input (core acquisition) and output (remarketing) of the business process. This paper aims at providing a framework of roles which marketing can play in remanufacturing. The role of marketing in supply process has been studied from the relationship marketing perspective. However, this paper intend to expand the role of marketing in supply process where it can directly influence the level of supply. This paper also aims at proposing core acquisition and remarketing strategies for remanufacturers according to their types.
Design/methodology/approach – This conceptual paper is based on literature review and case studies conducted by early scholars on remanufacturing.
Research limitations/implications – The framework is mostly based on conducted case studies and given examples in previous research, therefore the theory should be supported by further empirical research for its generalizability.
Practical implications –This study sheds light on marketing practice adopted by remanufacturers. It will give insights to practitioners interested in remanufacturing.
Originality/value –This paper is one of the first holistic conceptualization of marketing practice in remanufacturing industry. Especially the unique role of marketing during the supply process of remanufacturing will contribute to the marketing theory.
Key words –Remanufacturing, remarketing, core acquisition
Paper type –Conceptual paper

1.Introduction

Remanufacturing is an industrial process which includes activities aiming at converting used products (or cores) into like-new condition products which satisfy the same quality standards as new products (Lund, 1984). While intensiveness and variety of the activities depend on the type of product, inspection, disassembly, part reprocessing, reassembly and testing are typically carried out during the remanufacturing process (Andrew-Munot, Ibrahim and Junaidi, 2015).

Although remanufacturing initially caught academic attention in 1976, industrial remanufacturing practice could be traced back to late 1920s (McConacha and Speh, 1991). Today, the remanufacturing industry constitutes significant portion of the global economy. For instance, the world's largest and still growing U.S. remanufacturing market reached $43.5 billion in 2011 (United Sates International Trade Commission 2012). With regard to EU, it could be said that the size of remanufactured products market is considerable as well. For example, EU market for remanufactured toner cartridges is around $1.6 billion (United Sates International Trade Commission 2012). Auto parts, tyres, furniture, laser toner cartridges, computers and electric equipment are some of the prominent examples of product categories where remanufacturing practice has been applied (Parker, 2007). Table I lists examples of products and companies which conduct remanufacturing activities.

Table I. Examples of remanufacturers

Product	**Company**
Forklift trucks	BT Industries (Östlin *et al* ., 2009)
Engines	Volvo Parts (Östlin *et al* ., 2009)
Single-use cameras	Fuji Film Co (Matsumoto and Umeda, 2011)
Printer ink cartridges	Ecorica Inc.(Matsumoto and Umeda, 2011)
Photocopiers	Xerox (Atasu *et al* ., 2010)
Power turbines	Alstom (Parker and Butler, 2007)
Defense equipment	Vickers, ABRO (Parker and Butler, 2007)
Computer and telecomms equipment	Sony, Solectron (Parker and Butler, 2007)

Remanufacturing was first suggested by Lund and Denney (1978) as an alternative way of extending product lifespan. In contrast to remanufacturing, the planned obsolescence strategy has been adopted by firms in order to increase demand by designing less durable products. However, such a life extension may serve several benefits to business enterprises, the workforce, consumers and society (Lund and Denney (1978), McConacha and Speh (1991), Giuntini and Gaudette (2003)). Remanufacturing may lower materials cost and remarketing of remanufactured products may generate extra profit for companies. Labour-intensive remanufacturing operations (such as disassembly and reassembly) generate new jobs. Remanufactured products are often sold at lower prices compared to new ones. Consequently, consumers may pay less. Remanufacturing activities recover value embedded (raw material, labour and energy) in used products therefore remanufacturing increases economic productivity (Giuntini and Gaudette, (2003). Most importantly, waste disposal into environment can be lessened by remanufacturing. However, many firms are reluctant to adopt remanufacturing strategy because of cannibalization concerns (Atasu, Guide and Wassenhove, 2010). Indeed, serving cheap remanufactured version of a new product to the same market may give rise to decline in demand for new products.

In addition to remanufacturing, refurbishing and repairing are also possible product recovery options. Briefly, in repairing, broken parts of a used product are fixed. In refurbishing process, all critical parts of a product inspected and fixed or replaced (Thierry *et al.,* 1995). Remanufacturing process, however, entails complete inspection of all parts of a product (Thierry *et al.,* 1995). Therefore, remanufacturing activities are usually more complex and intensive than other product recovery options.

The case of remanufacturing provides intriguing examples of marketing practice. First of all, customers are the main suppliers of used products. In order to obtain used products from customers, remanufacturers have adopted several marketing strategies such as trade-in campaigns, leasing and deposit systems. Therefore, the role of marketing in the remanufacturing industry covers supply side of the business process. With regard to marketing theory, the role of marketing in supply process has been studied from the relationship marketing perspective. For instance, Blenkhorn and Banting (1991) propose reverse marketing concept in the form of supplier development activities (Choi, 1999). In the case of remanufacturing, suppliers of used products are customers, therefore reverse marketing concept does not adequately depict the phenomenon.

Although remanufactured products are in like-new condition and often sold with a price lower than new products, marketing remanufactured products to customers may create bottleneck in the remanufacturing system. Moreover, selling remanufactured products can cannibalize new product sales and deteriorate brand image. Therefore, developing an appropriate remarketing strategy is vital for remanufacturers.

In this study we will attempt to develop a conceptual framework for roles of marketing in the remanufacturing system. In our framework, marketing strategy not only influences input (marketing for core acquisition) of the remanufacturing system but also output (remarketing of remanufactured products). In addition, we suggest available marketing strategies for remanufacturers according to their type.

2. Literature review

Although literature about remanufacturing goes beyond the1980s, marketing focus has been neglected. Much of the attention has been given on the subject of operations management and related areas. It could be said that until the late 2000s scholars mostly attempted to conceptualize marketing related managerial issues on the subject of remanufacturing. In the early 2010s behavioural studies concerning remanufacturing began to emerge. In this part of the paper we will briefly summarize marketing related studies on remanufacturing in their historical order.

One of the earliest work regarding marketing and remanufacturing comes from Lund and Denney (1978). Their article focuses on consequences of extending product life for consumers, companies and society where remanufacturing is given as an extension alternative. McConacha and Speh (1991) take the remanufacturing option more strategically and define marketing opportunities that a remanufacturer may take. Guide and Jayaraman (2000) mention an unusual role for marketing in used product acquisition. In order to provide input for remanufacturing process, used products must be collected. Trade-in campaigns and leasing strategy could be used so as to reduce uncertainties in supply and regulate used product acquisition rate. Later, Guide and Wassenhove (2001) suggest that two fundamental system (waste stream and market-driven) can be used for used product acquisition. Waste stream system imposes collection of discarded products on firms by law. In market-driven system, however, firms use financial incentives (deposits, credits etc.) to collect waste from end-users. Market-driven system enables remanufacturing companies to strengthen their ability to control quality of used products acquired from end-users which in turn may reduce remanufacturing costs whereas in waste stream system firms passively accept all product returns (Guide and Wassenhove, 2001).

Atasu, Sarvary and Wassenhove (2008) conceptualize remanufacturing as a marketing strategy. Atasu *et al*. (2008) suggest that profitability of a remanufacturing strategy depends on green segment size, growth rate of market and consumers value evaluation concerning remanufactured product. One of the earliest relationship marketing approach is taken by Östlin, Sundin and Björkman (2008) on the subject of remanufacturing. Multiple case study research conducted on Swedish remanufacturing companies shows that remanufacturing companies build seven types (ownership-based, service-contract, direct-order, deposit-based, credit-based, buy-back, voluntary-based) of relationship structures with their customers (Östlin *et al*., 2008). In addition, Östlin, Sundin and Björkman (2009) propose appropriate remanufacturing strategies for each product life-cyle stages of a product. Atasu, Guide and Wassenhove (2010) assert cannibalization concern of firms for adopting remanufacturing option and their study provides a framework for situations when cannibalization loses its effect on firm profits. In their conceptual work Sharma *et al*. (2010) expand the role of marketing in environmental sustainability by means of remanufacturing and other product recovery options.

Guide and Li (2010) explain cannibalization effect of remanufactured products on new products by using willingness to pay (WTP) concept. Their empirical study show that in B2C products risk of cannibalization is low whereas in B2B products there is a serious cannibalization risk. As well as Guide and Li (2010), Michaud and Llerena (2011) apply WTP concept to assess the effect of green aspects of remanufactured products. Michaud and Llerena (2011) show that consumers value higher new products than remanufactured versions when they are not informed about green aspects of remanufactured products. With the presence of such information, consumers tend to decrease WTP for new product. However, Michaud and Llerena (2011)'s study does not support the relationship between greenness of remanufactured products and WTP for them. Ovchinnikov (2011) discusses appropriateness of WTP concept in forming pricing strategies for remanufactured products. Ovchinnikov (2011) concludes that owing to invert-U shape of consumers switching behaviour between new and remanufactured products, for more realistic pricing decision WTP concept is invalid. Hazen *et al*. (2012) build a model for explaining the relationship between consumers' WTP for

remanufactured products, ambiguity tolerance and perceived quality. Their findings suggest that consumers' ambiguity tolerance positively effects their perceived quality and WTP for remanufactured products.

Wang *et al*. (2013) analyse consumer low intention towards purchasing remanufactured products based on the theory of planned behaviour proposed by Ajzen (1991). Their study shows that consumer purchase intention is influenced by their attitude towards buying remanufactured products and perceived behavioural control. In addition, perceived risk, perceived benefit and product knowledge are found to influence consumer attitudes towards purchasing remanufactured products. Similarly, Jimenez-Parra, Rubio and Vicente-Molina (2013) show that consumers' intention to buy remanufactured products is influenced by their attitudes towards remanufactured products, subjective norms and motives.

Agrawal *et al*. (2015) conduct experiments in order to show influence of remanufacturer identity and market presence of remanufactured product on new products. Their study indicates that perceived value of new products is negatively influenced when remanufacturing operations are known to be performed by an OEM. However, if the remanufacturer is a third party, perceived value is influenced positively.

Abbey *et al.* (2015) investigate consumer perception of remanufactured products and common assumptions held by previous researchers about marketing remanufactured products. Their study highlights negative attributes (such as disgust) of remanufactured products. Besides, price discounts on remanufactured products are shown to linearly effect product attractiveness whereas brand equity has no regular pattern (Abbey *et al*., 2015). Gaur *et al.* (2015) adopt a qualitative approach to explain drivers of consumer intention to purchase remanufactured products. Their study conceptualizes consumer decision making process regarding remanufactured products. Table II summarizes marketing related studies conducted on remanufacturing.

Table II. Marketing related studies on remanufacturing

Authors	**Marketing Related Area**	**Methodology**
Lund and Denney (1978)	Expanding product life	Conceptual
McConacha and Speh (1991)	Marketing strategy	Conceptual
Guide and Jayaraman (2000)	Trade-ins, leasing	Conceptual
Guide and Wassenhove (2001)	Market-driven waste collection	Conceptual
Atasu *et al.* (2008)	Marketing strategy	Conceptual
Östlin *et al.* (2008)	Relationship marketing	Multiple case study
Östlin *et al.* (2009)	PLC implications	Multiple case study
Atasu *et al*. (2010)	Cannibalization	Conceptual
Sharma *et al*. (2010)	Sustainability	Conceptual
Guide and Li (2010)	Cannibalization and WTP	Experimental auctioning
Michaud and Llerena (2011)	Green consumer behaviour	Experimental auctioning
Hazen et al. (2012)	Ambuguity tolerance, percieved quality and WTP	Survey
Gallo, Romano and Santillo (2012)	Marketing strategy, value creation	Conceptual
Wang *et al*. (2013)	Purchase intention, TPB	Survey
Jimenez-Parra *et al*. (2013)	Purchase intention, TPB	Survey
Agrawal *et al.* (2013)	Remanufacturer identity	Experimental design
Abbey *et al*. (2014)	Disgust, brand equity, price discounts	Experimental design
Gaur *et al.* (2015)	Drivers of purchase intention	In-depth Interview

3. Classification of remanufacturers

Remanufacturers can be classified into three distinct categories (OEM, contract and independent) (Parker, 2007). Firms, which remanufacture its own products, are usually called OEMs (original equipment manufacturers). OEMs allocate company resources to both remanufacturing and normal manufacturing activities (Andrew-Munot, Ibrahim and Junaidi, 2015). Fuji Film (single-use cameras), Xerox (photocopiers) are often given as examples of OEMs (Matsumoto and Umeda, 2011). OEMs may have variety of motives for remanufacturing. For instance, in engine remanufacturing, securing spare parts supply, providing fast warranty engine replacements, protecting market share and brand image are shown to be main reasons for OEM remanufacturing (Seitz, 2007).

Instead of dedicating company resources to remanufacturing activities, OEMs may take into account outsourcing option (Gallo, Romano and Santillo, 2012). Thus, contract remanufacturers are permitted by an OEM to remanufacture certain types of OEM products. As well as the aim of resource savings, an OEM may use contract remanufacturers in order not to harm customer perception from its new products. Indeed, Agrawal *et al.* (2015) show that when an OEM remanufacture its own products, customer quality perception of its new products is lowered, whereas perceived quality is heightened when the remanufacturer is a third party. HP uses a product recovery network which consists of contract remanufacturers (Andrew-Munot, Ibrahim and Junaidi, 2015). HP imposes its quality standards to its contract remanufacturers and protects its brand name and intellectual property from improperly remanufactured products made by uncontrolled third party remanufacturers.

Third party remanufacturers can do business independently from OEMs. Without OEMs permission, third party remanufacturers may collect used products from market and perform remanufacturing operations. Such companies are often termed independent remanufacturers (Seitz, 2007). The vast majority of remanufacturers are said to be in independent remanufacturer category (Andrew-Munot, Ibrahim and Junaidi, 2015). For instance, in mobile phone and automotive parts remanufacturing industry, independent remanufacturers dominate the market (Bulumus, Zhu and Teunter, 2014).

In most cases, a remanufacturer falls into one of the categories above. However, it is possible for a remanufacturer to be in more than one category. For example, Swedish independent automotive component remanufacturer UBD Cleantech is contracted by an OEM (Östlin *et al*., 2009). In this case, UBD falls into both independent and contract remanufacturer categories.

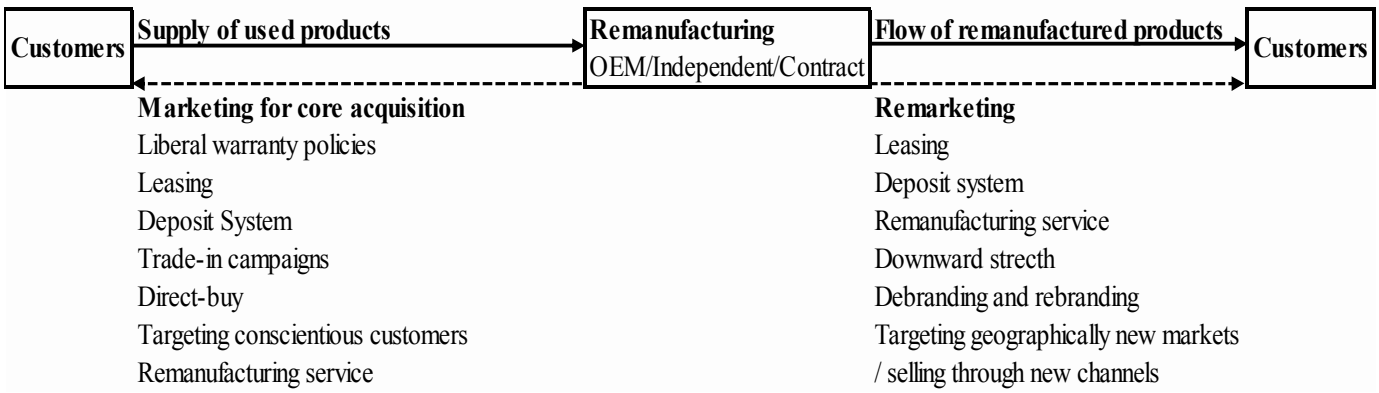
4. Roles of marketing in the remanufacturing system

Success of the remanufacturing system and its closed-loop supply chain is founded on three interrelated processes (Guide and Li, 2010). The first process, which is often termed core acquisition (Guide and Jayaraman, 2000), is to obtain used products from customers in order to supply remanufacturing process. The second process is the remanufacturing process in which used products are converted into remanufactured products. The third process consists of remarketing activities for remanufactured products. Customers have two potential roles in these processes (Gallo, Romano and Santillo, 2012). Because customers are the main source of used products, they are suppliers of the remanufacturing process. In other words, remanufacturers become customers of customers. Thus, in this case the role played by marketing covers supply aspects of the remanufacturing process. The second potential role of customers is to buy remanufactured products. As far as marketing is concerned, remarketing of remanufactured products to potential customers is critical. Remarketing

process is believed to create a bottle-neck in the remanufacturing system (Guide and Li, 2010). Therefore, many companies deter from remanufacturing because of their concern about remarketing process (Guide and Li, 2010).

In Figure 1 we attempt to conceptualize roles, which can be played by marketing, in the remanufacturing system. Although, in some situations (remanufacturing service and deposit system) there is a direct link between supply and marketing process, we deliberately divide marketing strategies for core acquisition and remarketing. For instance, Östlin *et al*. (2008) assume that all sorts of remanufacturer customer interaction forms a relationship. However, our literature review shows that there are cases (such as direct-buy) when exchange dominates relationship approach. Thus, a remanufacturer may adapt our framework to develop a suitable marketing strategy for its situation. In the next section of this paper, we will try to support our framework which is mainly based on examples given in recent study on remanufacturing. Moreover, we will try to divide marketing strategies according to the type of remanufacturers.

Figure 1. Roles of marketing in the remanufacturing system



4.1. Roles of marketing in supply process

Marketing plays diverse roles in core acquisition. In this part of the paper, we shall emphasize marketing's common practice in the remanufacturing industry for obtaining used products from customers. Whether a company is a remanufacturer or not, it often faces warranty returns. Warranty returns consist of used products which mostly come from dissatisfied customers (Nnorom and Osibanjo, 2010). To a certain extent, marketing can be responsible for warranty returns. For instance, in order to reach higher customer satisfaction, marketing efforts may compel companies to adopt more liberal return policies. In this case, even though marketing do not aim for more returns, it could be said that as a result of such liberal return policies the number of warranty returns will unavoidably increase. Remanufacturing would be a systematic approach to cope with warranty returns. Especially for OEMs and their contract remanufactures, return policies influenced by marketing would affect the supply of used products.

Leasing strategy can be used as an alternative way of obtaining used products. For instance, Xerox leases its high cost remanufactured and new products to its customers (Atasu *et al*, 2010). At the end of leasing period, end-of-lease products are acquired from customers and used in remanufacturing process. Therefore, companies, which adopt leasing strategy, benefit not only from selling remanufactured products but also from supplying used products. In most cases OEMs control leasing

strategy. However, contract remanufactures may acquire used products from OEMs as in the case of warranty returns. As a result, leasing strategy of OEMs may affect used product supply for both OEMs and their contract remanufacturers.

In order to obtain used products from customers, remanufacturers may provide various types of incentives. Products such as water (mostly in 19lt bottle), LPG are often sold in containers which can be refilled by using remanufacturing process. Such products are assumed to be perfect substitutes of new ones (Atasu *et al*., 2010). For core acquisition, remanufacturers may put a deposit on products to acquire refillable containers. In deposit system, when a customer returns empty container, he/she may get the deposit value or abstain from cost associated with container in the next purchase. Deposit system not only decreases remanufacturing costs, but may also increase customer loyalty (Lofthouse and Bharma, 2006). As well as products sold in refillable containers, deposit system is widely used in automotive industry (Östlin *et al*., 2008). Irrespective of remanufacturer type, deposit system can be utilized for obtaining used products. For example, independent and contract automotive component remanufacturer UBD Cleantech uses deposit system (Östlin *et al*., 2008).

In remanufacturing industry, trade-in campaigns are also used as a form of incentive mechanism to collect used products from customers and sell new ones (Guide and Jayaraman, 2000). For instance, Xerox offers up to 610$ discounts when customers trade in their eligible used products for a new Xerox printer. Several conceptual analytical models have been proposed to determine the amount of trade-in rebate (Ray, Boyaci and Aras (2005), Das and Dutta (2015)) for used products. Moreover, mental accounting theory (Thaler, 1985) has been adopted by scholars (Purohit (1995), Okada (2001), Park and Mowen (2007), Zhu *et al*. (2008)) to explain behavioural aspects of trade-in mechanism. Because the main aim of trade-in rebates is to boost new product sales, in most cases OEMs are expected to conduct such campaigns. For OEMs and their contract remanufacturers, trade-in campaigns will have a profound impact on the number of used products collected for remanufacturing.

Remanufacturers may also buy used products directly from customers. For example, in cartridge and toner remanufacturing industry in Turkey, independent remanufacturers often use web sites to buy used products. Remanufacturers also sell remanufactured toners and cartridges on their web sites. In direct-buy situation customers are not obliged to buy a product from remanufacturers and they can solely play the role of supplier, whereas incentive mechanisms such as deposit systems and trade-in campaigns aim to sell products to customers. Direct-buy can be utilized by all types of remanufacturers.

It is also possible to collect used products from customers without providing any sorts of incentives. For instance, in order to collect used products, remanufacturers can motivate conscientious customers who have ecological concerns. HP collects used products via its local outlets (Kumar and Putnam, 2008). Similarly, in 2008 independent toner and cartridge remanufacturer Ecorica placed 6000 collection boxes in retail stores in Japan with the purpose of collecting several brands of used products (Matsumoto and Umeda, 2011). Targeting conscientious customers for core acquisition could be adopted by all types of remanufacturers.

In some cases customers may actively seek remanufacturing service in order to extend the life of their worn-out products. For instance tyre-rethreading company TATKAP provide remanufacturing service for logistics companies in Turkey (Harsa, 2010). Similarly, printer and photocopier users often look for remanufacturers to have the life of their toner equipment extended. In this case, the role of marketing is to make potential customers aware of remanufacturing service (McConocha and Speh, 1991). With respect to core acquisition, remanufacturing service provide its own supply.

For core acquisition, a remanufacturer can adopt multiple marketing approaches. For example, a leasing strategy may enable a remanufacturer to obtain regular flow of used products whereas trade-in campaigns can be conducted for increasing the supply of used products periodically.

Table III. Cases when marketing may have an influence on the supply of used products	OEM	Contract remanufacturer	Independent remanufacturer
Warranty policies	X	X	N/A
Leasing	X	X	N/A
Trade-in campaigns	X	X	N/A
Deposit system	X	X	X
Direct-buy	X	X	X
Targeting conscientious customers	X	X	X
Remanufacturing service	X	X	X

To sum up, Table III shows cases when marketing may have an influence on core acquisition. Warranty policies, leasing strategy and trade-in campaigns controlled by an OEM will affect the supply of used products which can be remanufactured by either OEM or its contract remanufacturer. However, all types of remanufacturers can benefit from deposit system, direct-buy, targeting conscientious customers and remanufacturing service strategies.

4.2. Remarketing for the remanufactured products

Remarketing comprises marketing activities which aim at selling remanufactured products to customers. Leasing strategy, deposit system and remanufacturing service often include both core acquisition and remarketing simultaneously. In addition, companies may adopt several remarketing alternatives. In this part of the paper we shall give some examples of remarketing practice from recent literature.

OEMs can use remanufactured products for product line extension decisions (Guide and Li, 2010). In most cases, remanufactured products can be used as a line extension towards low-end market segments (downward stretch (Kotler *et al*., 2002)) because of having low price compared with functionally same new versions. For instance, in order to compete with inexpensive imports in low-end segments, Robert Bosch Tool sells remanufactured products at low prices (Atasu *et al*., 2010). In some cases, protecting OEM's brand image could be the chief reason for downward stretch (Atasu *et al*., 2010). For example, in cell phone and automotive remanufacturing industries, independent remanufacturers dominate the market (Bulumus, Zhu and Teunter, 2014) where an OEM may lose control of its brand owing to malpractice conducted by independent remanufacturers. A serious disadvantage of downward stretch is cannibalization of new product sales (Guide and Li, 2010). While an OEM's remanufactured products obtain market share from low-end competitors, such products may also cannibalize market share of OEM's new products.

Remanufactured products are often assumed to have a green image due to reducing the level of waste disposal to environment and being an effective product recovery option (Atasu *et al*., 2008). Such a green image can be a remarketing opportunity for remanufacturers. Atasu *et al*. (2008) assert that in some circumstances, customers may even value remanufactured products higher than new ones. Michaud and Llerena (2010), however, suggest that customers may not pay higher prices for the green image of remanufactured products. Instead, ecolabelling of remanufactured products may be used to influence classical decision making criteria of customers (such as quality, robustness etc.) (Michaud and Llerena, 2010).

In order to abstain from deterioration in brand image and cannibalizing new product sales, OEMs may consider debranding and rebranding strategies for remarketing activities. Debranding activity includes the process of replacing brand logo from remanufactured product (Gallo, Romano and Santillo, 2012). For instance, HP considers debranding strategy (Abbey *et al*. 2015). In rebranding strategy, OEMs may sometimes allow its marketing channel intermediaries to sell remanufactured

products with a brand different from original brand (McConocha and Speh, 1991). As well as OEMs, independent remanufacturers may adopt rebranding strategy by placing their own brand on remanufactured products (Atasu *et al*., 2010). For example, Kodak's single-use cameras were remanufactured by independent remanufacturers with their own brands (Atasu *et al*., 2010).

Another remarketing strategy, which can be adopted by remanufacturers, is to sell remanufactured products in markets where new products are unavailable or sold through different distribution channels. Geographically different markets can be targeted by OEMs in order to avoid cannibalization. For example, Nnorom and Osibanjo (2010) argue that used electronic products collected from developed countries can be remanufactured and used in developing African countries. In addition, remanufacturers may prefer to sell remanufactured products through distribution channels where new products are not sold. For instance, Dell markets its remanufactured computer and hardware equipment on a web site (www.delloutlet.com) which is specially designed for such products (Ovchinnikov, 2011).

Table IV. Remarketing activities	OEM	Contracted remanufacturer	Independent remanufacturer
Leasing business model	X	N/A	N/A
Downward stretch	X	N/A	N/A
Deposit system	X	X	X
Remanufacturing service	X	X	X
Ecolabelling	X	X	X
Debranding and Rebranding	X	X	X
Targeting geographically new markets/selling through new channels	X	X	X

Table IV summarizes remarketing activities which can be adopted by remanufacturers. Leasing, and downward stretch strategies seems to be suitable only for OEMs while rest of the remarketing options could be adopted by all types of remanufacturers. Moreover, remanufacturers may benefit from multiple remarketing strategies. For instance an OEM may prefer to sell its remanufactured products in geographically new markets with a different brand.

5. Discussion

Our framework tries to depict roles of marketing in remanufacturing industry. Theoretically, all products can be remanufactured. Moreover, underlying reasons for a company to remanufacture its products may vary (such as conform to environmental legislations, protect market share, initiate corporate social responsibility programme etc.). This study provides a holistic marketing framework for companies who intend to engage in remanufacturing activities. Although we develop our framework for remanufacturers, we believe that it will be beneficial to all companies which unavoidably receive warranty returns.

Our study also aims at expanding the role of marketing. We show that marketing may have an impact on supply process of a remanufacturer. Previous research on the role of marketing in the supply process focuses mainly on the relationship between suppliers and customers. The case of remanufacturing reveals how marketing directly influences supply level of used products. To a certain extent similar to purchasing, in remanufactured industry marketing takes responsibility for supplying business process. We believe this makes a substantial contribution to development of marketing theory.

Although some of the marketing strategies (deposit system and remanufacturing service) mostly deal with both supply and demand side of a closed loop supply chain simultaneously, in some cases a remanufacturer may use different marketing strategies for supply of cores (e.g. direct buy) and for

remarketing (e.g. rebranding). For this reason, in our framework, we separate supply and demand side marketing strategies for remanufacturing.

As McConocha and Speh (1991) classify remanufacturers and propose marketing opportunities in remanufacturing depending on remanufacturer type, we also do. However, in our classifications we further divide third party remanufacturers into two distinct categories. These are contracted remanufacturers and independent remanufacturers. Because contract remanufacturers collaborate with OEMs, they may have more options for core acquisition than independent remanufacturers.

Our conceptual framework may have several flaws. First of all, it is mostly based on conducted case studies and given examples in previous research. As a result, in order to understand and more completely depict the remanufacturing phenomenon, more work, particularly in the form of multiple case study research, should be done. Furthermore our framework should be supported by empirical research for its generalizability.

The remanufacturing case could also give fascinating insights into the consumer behaviour literature. For instance, emotion of disgust and its influence on consumer decision making process (such as perceived risk) will be well worth to considering. In addition, debranding and rebranding strategies developed for remarketing will also contribute to branding literature.

6. Conclusion

Remanufactured products range from simple products (such as 19lt bottled waters) to very complex products (such as engines). This variety in remanufacturing industry gives rise to various marketing practice within industry. Not only product type but also where marketing is used (whether supply or demand side) determines strategy which a remanufacturing company may adopt. Our framework sheds light on common marketing practice applied in the remanufacturing industry.

Remanufacturing industry is an intriguing case where marketing practice applied during the supply process. Therefore, we expand the role of marketing within a company through supply side. Remarketing is vital for remanufactured products. We also provide some remarketing alternatives for remanufacturers.

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