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Value Co-creation, Dynamic Capabilities and Customer Retention in Industrial Markets

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1. INTRODUCTION.

Dynamism, increasing complexity and great uncertainty are some of the characteristics that are repeated like a mantra in any event or document on today's competitive context. Both decision-makers and academics face a reality that requires far-reaching changes that directly affect the business mind-set in the way we understand industrial marketing. Industrial offers should change from the sale of products – or of products and services together – towards proposals that will provide valuable solutions to the market (Vargo and Lusch, 2004); this option is an important alternative for improving competitiveness and maintaining margins (Santos *et al.*, 2013, Cova and Salle, 2008, Sawhney, 2006). In such value proposals, customers and other stakeholders (e.g., suppliers, distributors and border agents) should adopt a key role through co-creation (Mezher *et al.*, 2005, Vargo and Lusch, 2004). The underlying idea is that complexity today is such that, in order to find solutions, it is necessary to establish collaborative interactions with partners that will allow mutually beneficial exchanges (Vargo *et al.*, 2008). Therefore, it is no longer possible the development of solutions and innovation to be the task of a single company (Chesbrough, 2003, Santos *et al.*, 2013); ideas and knowledge increasingly come from beyond organisational frontiers (Prahalad and Ramaswamy, 2004, Prahalad and Krishnan, 2008). To the extent that industrial competitiveness depends on all the agents in the value chain, cooperation offers an appropriate context for creating collective dynamic capabilities (Håkansson, *et al.* 2004, Cabanelas *et al.*, 2013, Wilkinson, 2008). Consequently, organizations need to take advantage of the involvement of customers and other stakeholders because they can offer new and unique resources, such as knowledge and experience (Ford, *et al.* 2011, Zhang and Chen, 2008).

However, although this is a very topical subject, there has been insufficient research in the field of industrial marketing on procedures and methods for establishing effective processes of co-creation to encourage innovation in the development of solutions and to promote customer retention (Barczak, 2012). This article aims to contribute to the debate by analysing how the co-creation of value can influence the generation of dynamic capabilities in companies and how it affects the retention of industrial customers. In particular, we aim to answer the following questions. How is it possible to create dynamic capabilities and retain customers through co-creation? Can a manufacturer have a positive influence on the retention of industrial customers by including them in an early stage of the search for solutions? What variables that are traditionally associated with customer retention are the most affected? In order to answer these questions, we use social exchange theory (SET in advance) and the theory of dynamic capabilities that grew out of the resource-based view (RBV), as well as the marketing approach called service-dominant logic (SD-L below). The combination of these approaches enables us to consider the dual challenge associated with the above questions – on the one hand encouraging cooperation and, on the other, managing relations to seek mutual benefit (Ford, *et al.* 2011).

With the above aim, we present a qualitative research carried out in four different countries (United Kingdom, Germany, Italy and Belgium) that analyses how the inclusion of customers in the development of a business solution promotes dynamic capabilities and value creation, which in turn result in the retention of the industrial customer. The framework of the research is the mobile crane business, a sector which has the characteristics of industrial markets (Hutt and Speh, 2010, Wilkinson, 2008) – organizational buying behaviour, the existence of derived demand, long

lasting relations, and interaction and professionalism in the purchase process. These characteristics make it possible for customers to participate as an active element in finding solutions. While customer retention is a priority for all businesses, those in the industrial market are more profit-sensitive to customer retention or loss because of the impact of a single customer in the firm turnover.

In order to achieve our objectives, the paper is organised as follows. First, we explain the theoretical background based on SET, RBV and SD-L approach to marketing. We then establish the key concepts for the research: value co-creation, dynamic capabilities and customer retention. Those concepts constitute the basis for the qualitative analysis, explained in the fourth section. We then discuss results and findings, and finally draw conclusions and suggest future lines of research.

2. Theoretical background

Management in industrial markets is such a complex subject that several theories are required to explain it (Narayandas and Rangan, 2004). The nature of this research (where cooperation and the combination of resources and capabilities play a key role in value creation), invites us to establish a theoretical framework dominated by SET (Thibaut and Kelley. 1959, Blau. 1964), and RBV with the emphasis on the role of dynamic capabilities (Teece *et al.*, 1997, Eisenhardt and Martin, 2000). We also aim to associate the application of these theories with a useful recent development in marketing, SD-L (Vargo and Lusch, 2004), which offers renovated insights to business management.

SET analyses exchanges and mutual behaviour in interpersonal relations between a minimum of two individuals (Thibaut and Kelley. 1959). This theory, which arose in the field of sociology, has also been applied to marketing exchange and to inter-organisational business relations. It proposes that participants in relations tend to evaluate costs and benefits so will commit to relations that bring them social and economic advantages (Briggs and Grisaffe, 2010). In the context of a business-to-business relationship, regular interaction leads to the development of standards and codes of conduct, creating a foreseeable relation with mutual obligations (Thibaut and Kelley. 1959). To the extent that codes of conduct regulate behaviour and expectations, the costs of interaction will decrease (Ramani and Kumar, 2008). SET, therefore, helps explain the development of long-term relations, processes that create value for the parties and their effects on customer retention (Reinecke and Hahn, 2003, Franke *et al.*, 2009). The basic premise is that successful interaction is only possible if the benefits created by and for the participants are significantly greater than the costs of creating value. For this purpose, it is essential to possess resources or capabilities that the other party wishes to have, as well as active, voluntary intervention by customers or other agents.

RBV, on the other hand, sustains that differences in performance can be attributed to the possession of a set of unique resources that are strategically valuable (Barney, 1991, Peteraf, 1993). In particular, cooperation through co-creation would facilitate access to new resources and intangible capabilities, innovation and greater adaptation to enormously dynamic environments. Such benefits would normally be very difficult for firms to obtain on their own (Gulati, 1999). Customers are increasingly perceived as an active resource that can help create value in processes by taking the role of contributor or creator (Tapscott and Williams. 2006, Zhang and Chen, 2006, O'Hern and Rindfleisch, 2010). Cooperation with the customer leads to a differential resource

called ‘customer knowledge’, which makes it possible to set up a virtuous circle, because contact promotes learning which allows demand to be anticipated and long-term relations to be established, resulting in retention because of mutual value creation (Mithas *et al.*, 2005, Prahalad and Krishnan. 2008). In this paper, resources and capabilities play a relevant role in the co-creation of value and in the generation of dynamic capabilities (Teece *et al.*, 1997, Eisenhardt and Martin, 2000).

However, applying these two theories to business management is very complex because of today’s competitive intensity. It has to go together with a change in business mind-set whereby firms no longer just sell products but, rather, offer value proposals to their customers through solutions (Sawhney, 2006, Cova and Salle, 2008). SD-L provides useful principles for achieving this change (Vargo and Lusch, 2004). It includes the role taken by customers and other stakeholders (suppliers, distributors, border agents) when drawing up solutions, called co-creation (Mezher *et al.*, 2005, Prahalad and Krishnan. 2008, Cabanelas *et al.*, 2013). The criterion behind this principle is that value is created collaboratively through mutual exchange interactions (Vargo *et al.*, 2008).

As a result, the combination of these SET and RBV with the SD-L premises provides an appropriate framework for understanding and studying the co-creation of value, and those processes where at least two agents combine resources and capabilities in order to obtain solutions that would otherwise be impossible. Since value creation arises out of the use or consumption of products or services, companies desiring to obtain value from their customers or partners should act as colleagues (Cova and Salle, 2008, Lusch *et al.*, 2010). So customers change from being a target to becoming necessary partners who collaborate and interact in the marketing process together with other organisations in the value chain (Lusch and Vargo. 2006, Ballantyne, *et al.* 2008). In fact, this transformation requires a new approach to marketing that affects the terminology (Lusch and Vargo, 2006, Cova and Salle, 2008). From the SD-L, instead of talking about features or attributes of products, we should speak about solutions; the concept value-added should be substituted by co-creation of value; the price is known as a value proposition; and the supply chain was transformed in a value-creation network. It is also striking authors in SD-L propose dialogue rather than promotion, a key concept in good-dominant logic. In this case, the terminology hide a profound change in the conceptualization of marketing, looking for complex solutions through the combination of competencies among organisations (Lusch and Vargo, 2006).

3. Co-creation of value, dynamic capabilities and retention.

3.1 Co-creation of value

Cooperative activities, including the exchange of resources, allow organisations to draw up solutions that would not otherwise be available (Freiling, 2004, Prahalad and Krishnan. 2008). This is an essential premise for defining value co-creation: “a cooperative (and voluntary) team process between producer and customer, which may focus on both operating activities and the development of solutions, and may be started by either the supplier or the customer” (Reichwald and Piller. 2006). This definition implies dialogue and interaction between customers, firms and other partners in the value chain during the exchange activity – design, production, distribution – but especially in the environment in which the solution is to be used (Payne *et al.*, 2008, Strandvik *et al.*, 2012). Value is therefore the consequence of sharing knowledge and experience in a

cooperative development among peers (Fang, 2008). This approximation, which has been on the rise in recent years, contradicts the basic principle of traditional economic theory that observes inter-dependence between customer and firm as a negative aspect of the relation (Prahalad and Ramaswamy, 2004, Simonson, 2005). But today's complexity shows that combining the heterogeneous resources and capabilities held by different agents makes it possible to visualise objectives that could not be achieved independently (Saarijärvi *et al.*, 2013); the multidisciplinary nature of value means that it has to be created through reciprocal, mutually beneficial relations (Vargo *et al.*, 2008).

This process of value co-creation can be summarised in four main phases (Prahalad and Ramaswamy, 2004). The first is dialogue, which allows the partners to provide and include their point of view in the process of drawing up a solution. The second is access to this process in which there must be a high level of mutual learning in order to ascertain the scope of the solution. The third is risk assessment, that is, evaluation of any possible damage to partner relations because of erroneous perceptions or attributions. The fourth is transparency, which should characterise interaction among the partners avoiding, for example, opacity or information asymmetry in prices and costs. However, in order for this process to achieve correctly its aim, the organisation as a whole should be committed to the culture of co-creation and the development of cooperative capabilities and innovations (Ramaswamy, 2009, Santos ~~Vijande~~ 2013). It therefore requires inter-departmental and inter-organisational interaction, implemented through working groups that adopt procedures agreed on in advance in order to achieve the objectives (Cabanelas *et al.*, 2013).

3.2 Dynamic capabilities

Teece *et al.* (1997, p.516) define dynamic capabilities as 'the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments'. Since the development of dynamic capabilities is a potential outcome of co-creation, it is a concept that perfectly ties with value co-creation. However, to address changing environment, requires the identification of strategic and organisational routines that allow the acquisition of new resources (Eisenhardt and Martin, 2000). Relations among industrial partners, and the merging of knowledge among them, help change routines and enhances immaterial advantages related to learning processes, the disclosure of knowledge and the raise of innovation (Omit *et al.*, 2011, Santos-Vijande *et al.*, 2012). Skill in cooperation and effectively combining different forms of knowledge among agents determines the development of dynamic capabilities in an inter-organisational context.

In order for this spiral of dynamic capabilities to work, mechanisms allowing for the integration of partners in the development of solutions are necessary. Those mechanism are especially important during the pre-combination of the solution – a first exchange of information is required to offer a solution –, and in the final stage –is advisable to discuss about the details of the solution developed (Corsten. 2001, Reichwald and Piller. 2006). Combining the external knowledge (those from customers or other partners) with the firm's capabilities is thus key for identifying expectations and adapting to requirements (Bendapudi and Leone, 2003, Fang, 2008). For this purpose, it is recommended the establishment of systems and procedures for compiling and assessing knowledge about each solution offered to market, based on heterogeneous criteria (technical, R&D, commercial, logistic, after sale service, and so on) which should cover and

combine different points of view (customer, distributor, supplier, and so on). The challenge is to involve all the participants in this win-win process. The value creation is the result of cooperation, social interaction and combination of resources and capabilities during different phases (Reichwald and Piller, 2006).

In this process of value co-creation, dialogue among the parties is fundamental. Once identified the need to include the partner in the development process, mechanisms and procedures must be established to promote dialogue and a shared vision (Cantù, 2010); partners need to be encouraged to share targets and values, and to join in the cooperative activities needed to achieve them. Moreover, this is the change of paradigm needed to further cooperative rather than autonomous value creation (Payne *et al.*, 2008). Nevertheless, this change, which may be complex and difficult, has the scientific community busy in the search for solutions.

3.3 Customer retention

While traditional economic theory rejects relations of inter-dependence because of criteria close to resource dependency (Prahalad and Ramaswamy, 2004), both SET and the RBV show that customer-supplier interaction brings economic and social advantages that may lead to customer retention (Briggs and Grisaffe, 2010, Fang, 2008). Nowadays, customer retention belongs to the key objectives of marketing (Gupta *et al.*, 2004, Meffert, *et al.* 2012). Consequently, much research has been carried out in the field of customer retention and the topic has been addressed by an enormous amount of publications (Boles *et al.*, 1997, Verhoef, 2003, Gustafsson *et al.*, 2005). This has essentially led to two different approaches to customer retention (Diller, 1996). On the one hand, customer retention can be understood as a marketing philosophy, e.g. as a strategic axiom of customer policy consubstantial with relationship marketing. On the other hand exists a narrower understanding of customer retention which directly links it to observable transaction characteristics of a business relationship (overt contact and buying behaviour) and which is used for operational purposes (see table 2).

The present research follows the the latter approach, where the focus lies on the operationalization of customer retention. In fact, it is possible to find in the literature an almost identical understanding of customer retention (Meyer and Overmann, 1995, Töpfer, 2000). According to this approach, customer retention is comprised of components related to previous behaviour and future perspectives. Previous behaviour is operationalized through purchases and recommendations made up to date and future perspectives are operationalized through repurchasing, recommendation behaviour, and potential cross-selling behaviour. Among these factors, the key driver to identify customer retention is repurchasing or respectively the intention to repurchase, as in reality the intention to repurchase a product or service not always leads to a purchasing decision (Töpfer, 2008). Whenever the intention to repurchase arises, customer retention then leads not only to additional turnover but also to a change in customer pricing perception that could generate additional revenues. Moreover, committed customers show a higher willingness to pay, and a lower price elasticity (Franke *et al.*, 2009). In order to analyse the effect of co-creation on customer retention, we use the three key factors of customer retention related to future behaviour of the customers: (1) intention to repurchase, (2) cross-selling (i.e. purchase of additional services) and (3) recommendation. Additionally we examine possible changes in the (4) price behaviour because of a repurchase decision.

4. Methodology

4.1 Research approach

This research adopts a qualitative method based on in-depth interviews with industrial customers that have participated in value co-creation activities in the mobile crane sector. The approach is based on the following reasons. First, the nature of the research questions requires a direct, extensive narrative from the participants in these activities, which would be difficult to obtain using quantitative techniques (Bansal and Corley, 2012). Second, this methodology allows for study of decision-making processes and the behaviour of the individuals involved in cooperative activities, which are essential in industrial marketing (Bennett and Elman, 2006, Woodside and Wilson, 2003). Our objective is to understand the reasons why and how firms can co-create value by including partners (Vargo *et al.*, 2008), while a quantitative strategy would be valid if the question were how often co-creation processes finish in solutions or how many companies in an industry perform co-creation activities (Eisenhardt and Graebner, 2007). Third, one of the researchers worked in the sector for ten years, which was an advantage in the interviews and for the technical discussion, as it shortened the cognitive gap on production techniques and products (Cantù, 2010). This circumstance also amounted to an exceptional opportunity for gaining key information for the research (Yin, 1994). Fourth, given the novelty and experimental nature of co-creation processes in this sector, and in order to enrich the research process in a field that to date remains rather unexplored, it is better to interpret events at first hand (Bizzi and Langley, 2012). Altogether, the methodology selected aims to provide new findings that will contribute to the theory based on the existing literature (Bansal and Corley, 2011, Meyer and Overmann, 1995).

The field work took place between June 2011 and July 2012, and covered the compilation of data from 29 semi-structured interviews with people holding high responsibility (owners, managers or area managers), who know their firms' processes and have details on, and know the results of co-creation. The interviews and meetings lasted between one and one-and-a-half hours and were structured on the basis of theoretical findings (Kumar, 2005). The main source of information were the transcriptions of the interviews and the content analysis of experiences. Table 1 offers details on the scope, industry, target organisation, interview format, and status and nationality of the interviewees. A script was used for the interviews covering the overall experience of co-creation, the processes involved and their effect on customer retention. This script was drawn up based on the literature review and formed the basis for the analysis described below (Bansal and Corley, 2012). We chose a deliberate non-probabilistic sample because the population small, so that the sample size should be the statistical population. Since it is nearly impossible to get access to all rental companies, this was the selected sampling procedure (Sekaran, 2000). In order to transmit maximum neutrality in the research, the authors express in the conclusions all points of view obtained from the content analysis. Only in those cases in which the answers were the same, the evaluations are summarised.

Table 1. Research details and organisation of interviews.

Scope	Value co-creation processes, development of dynamic capabilities and effect on retention
Industry	Mobile cranes
Target organisation	Rental companies participating in co-creation processes

Interview	Semi-structured, in-depth interviews with qualified personnel [Average duration 1 – 1½ hours]
Role/status in the buying centre [number]	Owners [9] Managers [15] Technical area managers [5] Total: 29
Nationality	German [9] Belgian [3] Italian [7] UK [10]
<i>Organisation of semi-structured interviews</i>	
Overall experience of co-creation	Discussion on the overall process of co-creation and the role played by the co-creator
Processes of value co-creation	How the exchange process was undertaken and what benefits were obtained for the customer
Retention and co-creation	<i>Sub-structure:</i> Effect on predisposition to buy Influence on recommendation habits Consequences on predisposition to buy other products of the same brand [cross-selling] Confidence in the manufacturer's price policy after the co-creation process

4.2 Characteristics of the mobile crane sector

The mobile crane sector in Europe (lifting cranes and maintenance) has a turnover of US\$20.4 billion (World Market Intelligence, 2011), which amounts to 23.3% of the world market. This turnover shrank by 39.3% during 2008 and 2009, but then grew again in 2010 by 2%. Among the European countries, Germany is the leader in terms of production and consumption, reaching 32.2% of total regional consumption (US\$6.6 billion). Italy is the second largest market in terms of consumption, with 14.4%. Its market decreased by 5% in 2010, but prospects for coming years are positive. The UK is another large market but it, too, has seen a marked reduction domestically during the period 2006-2010. Finally, Belgium, a smaller market with less than a 5% of market share, was also included in the research.

A small number of manufacturers dominates this industrial activity, whose main function is to offer vertical and horizontal transport solutions to its industrial customers like construction companies. The sector has the classic characteristics of industrial markets: derived demand, an extensive, more formalized and rational evaluation process in buying centres, a high degree of personal interaction, long-term relationships with the customers and global markets. One characteristic specific to this sector is that the cranes, in 95% of all cases belong to rental companies that rent out their fleet to power plants or construction companies (both for public or private tasks). The manufacturer is therefore interested in knowing the experience of the rental company, which usually has a broader view than the industrial end-user does. The rental companies are the catalyst that combines knowledge from several applications to an overall solution requirement. For example, load expectations in the wind industry or heavy industry as refineries, logistic experiences resulting of transport responsibilities (i.e. cost and effort depends on the location of the jobsite) and understanding of territorial regulation (i.e. emission regulations in town centres or weight restrictions for bridges add obstacles to the job). This means rental companies are in a favourable position to determine and influence in the selection of heavy mobile solutions that can add most value. In particular, the conclusions obtained by this study may be especially valuable bearing in mind the contingencies of the mobile crane sector.

5. Results and discussion

Inclusion of customers in value co-creation is a challenge for both firms and customers. The effect of this participation in the development of dynamic capabilities in the mobile crane industry and its consequences on key parameters for assessing customer retention are analysed in this section. To facilitate understanding, we follow the interview process as laid down in Table 2. We start with the overall experience of co-creation, then analyse in detail the processes and mechanisms established in co-creation and close with the effect on customer retention.

It must first be stressed that all the interviewees have collaborated in co-creation processes and that practically all of them, with one exception, would be happy to participate again. One of the first discoveries in the interviews was that cooperation allows for in-depth knowledge of the solution, to the extent that interviewees remembered the models on which they had participated as well as their own specific proposals¹. “*I remember that I specified 54 positions to optimize the CoA 800 model*”, “*We worked on the City Class model then bought it*”, “*The ‘spacer’ option was my idea*”, “*The idea of using the same components on 100L and 095 was ours. Today we are using the 095 as the taxi crane*”, “*We bought the 1200 after working on the development with CoC*”; “*We bought a CoD after contributing to its development, and now it’s a good machine; we also modified the 4080 with CoB, and we now have it in our fleet*”. As a result, there is a widespread perception that higher value is obtained from participating in co-creation that even results in a bond with the solution and brand. Only one of the interviewees rejected participating in future co-creation processes because he considered this was the job of the manufacturer: “*...the manufacturer has to come along with new products without involving the companies*”, because “*If we participate... this will affect our neutrality when we have to choose the best option for the company*”. Apart from this conflicting opinion, the comments stressed the need of offering their insights: “*There is one bad example that does not consider customers in its development processes so there is no bond*”. The answers received and the consensus lead us to make the following proposal:

Proposal 1. Customer participation promotes value creation and a link with the final solution.

Second, co-creation of value requires the agents involved to establish routines to promote the development of dynamic capabilities. Such routines can be associated with (1) adaptation or personalisation of the solution, (2) learning, innovation or knowledge, or (3) relationship management. After analysing the interviews, it is possible to identify evidence on each of these aspects. It should first be stressed that adaptability in finding a solution is a priority for some interviewees: “*Our requirements are specific for the wind energy industry, so an appropriate solution for us will lead to a long-term relationship with the supplier*”, or “*My decision largely depends on the crane meeting my requirements*”. Another key point was the mutual knowledge and learning that led companies to participate in co-creation and the acquisition of solutions: “*Of course we asked for the model we had worked on because we knew it, it met our requirements and we knew it fits in with our product portfolio*”, “*After cooperating on the MTK, I now think the CoE technical staff works very hard on finding solutions*”, and “*The work we did together allowed us to get to know the people participating and the solution created, leading to greater confidence in the manufacturer*”. For generating learning, innovation and knowledge routines, the technical department has an essential role. “*I trust a company more if I know the people and what it is we worked on together*”, “*Better contact with the engineering team and especially direct information during co-creation make it possible to reach better solutions*”, “*The engineering staff have a key influence for understanding the product, for developing it and for the company’s image*”, and “*We have established a special relationship with CoF because of the magnificent way their engineers behaved*”. So inter-organisational cooperation (especially technical) were stressed key in co-creation to the extent that one customer offered to participate in a specific development, “*We*

¹ We have omitted the name of brands for reasons of confidentiality, are named CoA, CoB, and so on.

asked CoB about the possibility of participating in the CoB-400 project because it is a type of crane that would meet our needs". This is a clear example of the mutual benefit that can be achieved from co-creation. Finally, the interviewees also stressed relationship management as a routine that allows a company to stand out in the co-creation process. "Working in close contact with the sales staff strengthened our relationship with CoA", "Contact with the sales staff has led to a special bond", "To a large extent, our decisions were the result of good work by the sales staff", and "The CoD sales representative had a great influence on participation in co-creation and on the link with the company". The above evidence leads to a second proposal:

Proposal 2. Co-creation of value promotes the creation of dynamic capabilities associated with adaptation, innovation and knowledge and with relationship management.

Thirdly, we analysed the direct effect of co-creation on customer retention. This was made using four variables to explain customer retention: predisposition to buy, recommendation, cross-selling and price tolerance.

Since the very beginning of interviews, interviewees showed a predisposition to buy the solution developed through co-creation activities. For example, "After cooperation we came to the time for purchase", "We did it with the M40 that we co-designed", "For example with the 1000", "I would like to buy the 8-9 axle CoB when it is available". Seventeen interviewees made similar statements. However, in accordance with literature, there was a difference between expected and real purchasing behaviour. Besides co-creation the research identified three additional factors that influence purchase intention: service, availability and price.

We could not find sufficient evidence for the second criterion, recommendation. The only interviewees who stressed a relationship between co-creation and recommendation stated, "The fact that we better know the solution does not mean we will automatically recommend it" or "Although co-creation is a reason, there are other factors that carry greater weight such as the relation and experience with the sales staff". We perceived a clear reluctance to recommend brands indeed. Six of the interviewees rejected recommendations outright, either because "They do not want to give an advantage to the competition", or because "We want to keep the good products for ourselves", or simply because "We have a bad relationship with the competitors". In one extreme case commented, "When we give advice, we try to take our competitors along the wrong track". However, many interviewees stressed the importance of information exchange, both from positive and negative experiences, because "It is very difficult to know everything and we try to communicate this information to our partners". The information exchanged is usually of a technical nature and take place in specialist meetings such as "the BSK congress" (a yearly convention in the crane industry). So, manufacturers can manage it, and get benefit from information exchange, "There are many projects in which we work with other rental companies so inevitably we talk about the positive and negative factors", "When we talk informally, information is passed on passively", "The better I know a manufacturer, the better my recommendations will be". Finally, although the relationship between co-creation and recommendation is not clear, we should mention that three interviewees recommended specific brands after co-creation processes: "I participated in a promotional video for CoE", "From my experience with them I always recommend CoC and their service" or "I have had a very positive influence on the image of CoD".

The third criterion for retention is related to cross-selling, that is, the predisposition to buy other complementary solutions from the organisation (customer share). A strong association between co-creation and cross-selling was identified. In terms of retention to a brand (and to its different solutions), the "knowledge on other products obtained during cooperation" positively influence its acquisition. Many of the interviewees stated, "We bought prototypes such as the CoB-6250 because we trust the company", "As a result of co-creation, we have learnt about other solutions such as tower cranes and crawler cranes", "Our successful work has put us in contact with other solutions offered by the manufacturer such as city class cranes, crawler cranes, etc." "I only

wanted a CoB-4100 but during the co-creation they convinced me and I also bought the 5-axle crane”; “Since we work on a daily basis with manufacturers and get to know them, we often purchase prototypes (Co-C350, CoA-1000, CoB-1100)”. In some cases, this even extends to personal life “I have two Co-C fridges at home because I’m committed to their project”. However, some of the interviewees said, “This would only happen when there is demand from our customers because we would never set up a new business line ourselves”. In some cases, they went further and stated that they had rushed into a decision: “I bought the CoA-1000-3 even though I didn’t really know the product well, today I realise that some of its characteristics are already outside the market so I would like to sell it fast” or “we bought the CoC-150 without knowing or understanding it well, and now we realise it is not as good as the CoB-130 so we’ve decided to sell it and buy a CoB”. These perhaps are the result of the emotional attachment created in a project of this type.

Finally, when the interviewees were asked about price, as usually, most considered that the prices are very high (with the exception of one interviewee who considered them correct). “The rates are very high”, “prices are very high for getting a good ROP”, “prices cannot be passed on to the end customer because of the competitive pressure”, “The strong competition among rental companies should lead manufacturers to prepare products more focused on price”, or “rental prices do not rise at the same rate as the prices of solutions”. However, they were open to improving price receptiveness providing there is greater transparency. “Information is key”, and “costs should be clear if there is to be greater confidence in the fixing of prices and margins”. Some respondents claimed, “Participating in co-creation will not change ideas about price increases”, because “After participating in the development of two solutions, prices are still very high”, and perhaps “It might be necessary to offer fewer functionalities in order to bring down prices”. A last group of interviewees insisted that they did not understand the price policy and the difference between large and small rental companies; “I do not agree on this”, or “there’s a wide gap between the two groups”.

Our third proposal is that processes of value co-creation predispose customers to buy both the co-created solution and others offered by the company. However, this proposal does not apply to recommendation behaviour or price tolerance, either because the interviewees showed great reluctance, because they were afraid of benefiting their competition or because they did not want to show excessive dependence on the manufacturers. The proposal is as follows:

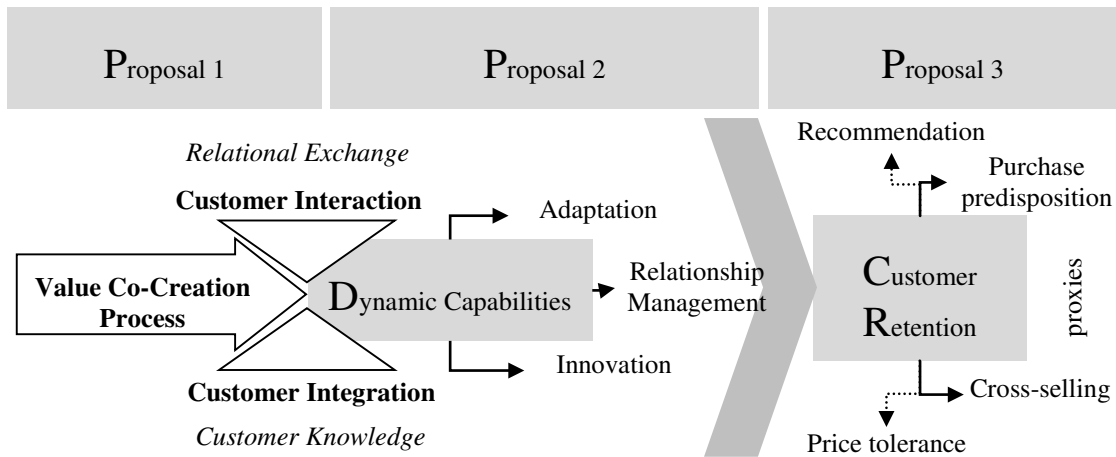
Proposal 3: Value co-creation has a positive effect on customer retention due to purchase intention and cross-selling

5.2 Discussion

The results obtained show that a force that is traditionally uncontrollable in marketing, namely the customer, becomes a key resource for developing dynamic capabilities, especially through innovative, personalised solutions. The customer and partners in the value chain become resource integrators and form an essential component in the process of value creation (Tapscott and Williams. 2006). In a more detailed analysis, the results reinforce the positive values of including the customer/partner in the creation of solutions because this allows a link to be established based on mutual benefit which promotes adaptation, innovation and relationship (and even emotions) management in the exchange. These three aspects – exchange-adaptation, relation-knowledge-innovation and interpersonal relationships – are fundamentals that industrial organisations can use to create value. The results show that, even though the predisposition of partners to recommend or to accept higher price tolerance is low, many customers bought solutions in which they had participated, and even others of a different type from the same manufacturer. This difference may stem from fear of diluting an important characteristic of the purchasing process in

industrial markets, professionalised purchasing behaviour. This reflection is included in Figure 1, which gives a diagram of value co-creation based on SET and on RBV for the generation of dynamic capabilities. These lead to greater customer retention in terms of predisposition to buy and cross-selling.

Figure 1. Proposed model based on the research.



Based on our experience and from the point of view of SET, after analysing successful cases we propose a different process from that suggested for co-creation by Prahalad and Ramaswamy (2004). The first phase would be evaluation, with examination of interdependence, rules for usage, expectations and risks. The second would involve dialogue to establish starting proposals and compare the benefits of using the solution. The third would be articulation. During this phase, transparency is fundamental in both the pre-combination and the final combination of the solution. The process would finish with monitoring by both parties to verify functioning. Each of the phases would be characterised by the relevance of different types of process stemming from social exchange and dynamic capabilities theory, giving rise to routines to promote the development of a joint solution among the parties (Table 2).

Table 2. Proposed sequence for a process of co-creation

Stage	SET	Key dynamic capability	Processes
Evaluation	Cost-benefit analysis	Relational	The parties explore a relation because they expect compensation and to achieve shared objectives Keys: interdependence, rules, expectations and risks
Dialogue	Obligations and standards	Adaptation	Involving the partners and mutual knowledge is necessary. Working groups should be set up to reduce the cognitive gap between the parties and to offer a space for discussion. Keys: involvement, communication, knowledge and experience
Articulation	Transparency in the solution	Innovation	Creation and integration of a multi-disciplinary solution. Keys: capabilities and resources of the organisation that serves as a catalyst for the solution
Monitoring	Review of expected costs and benefits	Relational	Overall evaluation of the process, benefits obtained and included in the solution, and cost in terms of time and money. Keys: transparency and reflection

Finally, even though co-creation has resulted in positive evidence, there were also some negative experiences. In addition to those partners who are not prepared to get involved in competencies that they consider are not their responsibility, there were cases in which customers made proposals that were not included. This circumstance negatively affected their expectations on co-creation: *“I think the manufacturers are not interested in our opinion; they asked us, but they offered no feedback so we forgot the solution”*. This is a delicate matter, because value co-creation generates expectations and an effort that should show some compensation. Finally, although this research focused on co-creation, some of the interviewees stated that other factors had a greater influence on the purchase decision (e.g. availability or service).

6. Conclusions

The way in which marketing, in general, and industrial marketing, in particular, are implemented and seen has been changing in recent years. These changes stem from a transformation in business mentality with a new focus on cooperation and value-creation based on the resources and capabilities that various organisations possess. A new approach called service-dominant logic has been built up and, amongst other postulates, emphasises the relevance of value co-creation among different agents so that the solutions provided to the market better meet needs making them more valuable for their use. This research contributes to the literature by analysing the effect of value co-creation on the development of dynamic capabilities and on the retention of industrial customers, measured through their predisposition to buy, recommendation behaviour, cross-selling and price tolerance.

Findings in the mobile crane sector confirm that co-creation helps generate bonds among partners in the process, and promotes the generation of dynamic capabilities linked to adaptation, knowledge, innovation, and relationship management. Close contact with customers, and the availability of their knowledge and experience mean that solutions can be found that meet their needs. In addition, the cognitive gap that often exists between partners can be shortened. Regarding customer retention, the evidence obtained shows that there is a link between the process of co-creation, the customer's predisposition to buy and the customer share.

The main implications for management are, first, that it is advisable to include industrial customers in the co-creation of solutions. Mainly, because can provide knowledge companies often lack, enhancing the value in-use of solutions. Furthermore, in an increasingly multi-disciplinary world, it is important to be receptive to new observations or nuances that enrich value proposals. Second, the whole process of co-creation requires the establishment of mutual feedback systems in which transparency is key for a greater involvement in the project. Otherwise, parties might feel frustrated due to not meeting expectations. Third, the management of interaction with co-creators may benefit from the development of systems; those should identify contributions, relevant facts and performance of the project (including solutions and costs) defined collaboratively. Fourth, is required a change in business mind-set that accepts cooperation, a multidisciplinary approach and service orientation that will encourage participation by many agents having different knowledge bases and shared interests.

Finally, this paper has a number of limitations. First, the sampling is deliberate so we should be cautious with results. Second, the sector chosen for analysis has some very particular characteristics so the conclusions may be limited to the capital goods market. However, the strong exploratory and applied component in this research should lead the way to future research. For example, quantitative research could aim to find support for the findings, and to extend the scope of this research to other sectors. It would be also of interest to consider in greater depth different types of behaviour in different institutional environments; that is, co-creation in different countries. This would allow for proposals regarding different markets. Another possible line of research, related to an aspect stressed by the interviewees, is the high value they place on the link with sales teams; this could lead to a very interesting field of work regarding the relationship

between internal marketing and the involvement of customers in the process of developing solutions.

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