

UNIVERSIDADE DE LISBOA
Instituto Superior de Economia e Gestão



LISBON
SCHOOL OF
ECONOMICS &
MANAGEMENT
UNIVERSIDADE DE LISBOA

The role of reference marketing in capital buying decisions:
Evidence from the Portuguese electric power industry

André Telmo Pires de Vilares Morgado

Orientador: Professor Doutor Luís Manuel Mota de Castro

Tese especialmente elaborada para a obtenção do grau de Doutor em Gestão

2017

UNIVERSIDADE DE LISBOA
Instituto Superior de Economia e Gestão



LISBON
SCHOOL OF
ECONOMICS &
MANAGEMENT
UNIVERSIDADE DE LISBOA

The role of reference marketing in capital buying decisions:
Evidence from the Portuguese electric power industry

André Telmo Pires de Vilares Morgado

Tese especialmente elaborada para a obtenção do grau de Doutor em Gestão

Júri

Presidente:

- Doutor Manuel Fernando Cília de Mira Godinho, Professor Catedrático e Presidente do Conselho Científico do Instituto Superior de Economia e Gestão da Universidade de Lisboa

Vogais:

- Doutor João Manuel de Frias Viegas Proença, Professor Catedrático da Faculdade de Economia da Universidade do Porto

- Doutor Vasco Duarte Eiriz de Sousa, Professor Associado com Agregação da Escola de Economia e Gestão da Universidade do Minho

- Doutora Maria Margarida de Melo Coelho Duarte, Professora Associada do Instituto Superior de Economia e Gestão da Universidade de Lisboa

- Doutor Luís Manuel Mota de Castro (Orientador), Professor Associado do Instituto Superior de Economia e Gestão da Universidade de Lisboa

- Doutor Luís Miguel Domingues Fernandes Ferreira, Professor Auxiliar da Faculdade de Ciências e Tecnologia da Universidade de Coimbra

- Doutora Maria Cristina de Assis Sales Pinto Baptista, Professora Auxiliar do Instituto Superior de Economia e Gestão da Universidade de Lisboa

2017

*para a
Maria João*

*«eu colho onde não plantei e
(...) recolho onde não semeei»
(Mateus 25:26)*

ABSTRACT

In marketing reference processes, existing customers act as advocates for firms. With their enthusiasm, they provide testimonials, receive visits from potential customers, and contribute information on adopted solutions and their performance. This activity is highly valuable for firms insofar as it helps them to acquire strategic assets that allow for profitable marketing action, either by increasing credibility and reputation or by reducing the perceived risks associated with the purchasing of services or products from a particular supplier. In this study, I suggest that the literature on organizational buying behaviour lacks the empirical input necessary for a theory of customer referencing. In particular, I argue that studies of customer referencing practice do not give sufficient attention to the potential customer's point of view. Instead, empirical research has favoured the supplier as its unit of analysis and has ignored the other two constituents of the reference triad: the reference customer and the potential customer. Empirical work featuring the potential customer as its unit of observation is therefore a promising area of research for those who wish to gain a deeper understanding of customer referencing and its influence on the buying behaviour of industrial firms. This study aims to contribute to filling this gap by considering the following question: "How does reference marketing influence capital buying decisions?" I respond to this question by collecting data from firms in the Portuguese energy industry, with a view to creating a multiple case study. This empirical work, which adopts a critical realist approach, grounds a new theoretical model for describing the causal mechanism that connects reference marketing to its outcomes. By identifying this causal mechanism, I aim to deepen our understanding of the role played by customer referencing in capital equipment buying decisions. In addition, this research identifies a new form of reference practice and two new referencing effects not yet described in the literature on referencing.

KEYWORDS

Capital equipment; case study; critical realism; customer references;
electrical power industry; industrial marketing; organizational buying behaviour.

RESUMO

No marketing de referências, os clientes de uma empresa agem como seus embaixadores. Com o seu entusiasmo, fornecem depoimentos e testemunhos, recebem visitas de potenciais clientes e contribuem com informações sobre as características das soluções adoptadas e do seu desempenho. Esta actividade é muito valiosa para as empresas, pois ajuda-as a adquirir activos estratégicos que permitem uma acção de marketing rentável, quer através do aumento da credibilidade e reputação, como reduzindo os riscos associados à compra de produtos ou serviços de um fornecedor. Neste estudo sugiro que a literatura sobre o comportamento de compra organizacional tem falta do *input* empírico necessário para uma teoria de referenciação de clientes. Em particular, argumento que os estudos da prática da gestão de referenciação de clientes não dão a devida atenção ao ponto de vista que versa o potencial cliente. Em vez disso, a pesquisa empírica tem favorecido o fornecedor como a sua unidade de análise e ignorado os outros dois componentes da tríade: o cliente de referência e o potencial cliente. O trabalho empírico que contempla o potencial cliente como sua unidade de observação é, portanto, uma área de pesquisa promissora para aqueles que desejam obter uma compreensão mais profunda da referenciação de clientes e da sua influência sobre o comportamento de compra de empresas industriais. Este estudo pretende contribuir para o preenchimento desta lacuna, considerando a seguinte pergunta: "Como é que o marketing de referências de clientes influencia as decisões de compra de bens de capital?" Eu procuro responder a esta pergunta através da recolha de dados de empresas que estão presentes na indústria Portuguesa de energia, com vista à criação de um caso de estudo múltiplo. Este trabalho empírico, que adopta uma abordagem assente no realismo crítico, fundamenta um novo modelo teórico para descrever o mecanismo causal entre o marketing de referências de clientes e os seus resultados. A identificação deste mecanismo causal aprofunda a compreensão do papel desempenhado pela referenciação de clientes nas decisões de compra de bens de capital. Além disso, esta pesquisa identifica uma nova prática de referenciação de clientes e dois novos efeitos da referenciação de clientes que ainda não foram descritos na literatura sobre referenciação de clientes.

PALAVRAS CHAVE

Bens de capital; caso de estudo; comportamento de compra organizacional; indústria de energia eléctrica; marketing industrial; realismo crítico; referenciação de clientes.

ACKNOWLEDGMENTS

I would first like to thank Professor Luis Mota de Castro, from whom I learned a great deal during this challenging but rewarding journey. I benefited greatly from his supervision, guidance and trust, and I am deeply honoured to have had this unique opportunity. It was not always easy to live up to Professor Luis Mota de Castro's ethos of perfection. I have always admired his academic path and achievements, and as a result of embarking on this fruitful relationship my respect for his pedagogical abilities has grown even more. I will carry his advice with me for the rest of my academic career.

I would also like to recognize the invaluable support I received from other members of the ISEG faculty, including Professor João Mota, Professor Cristina Sales Baptista, Professor Amélia Bastos, and Professor Jorge Gomes, as well as from my Ph.D. classmates, Dr. José Novais Magalhães Santos, Mário Porfírio, and Vírgílio Lima.

Over the years it took me to complete this project, my faculty colleagues from the AESE Business School were highly supportive. I gratefully acknowledge the help I received from: Professor Adrián Caldart; Professor Teresa Correia de Barros; my mentor Professor Ramiro Martins; Professor Agostinho Abrunhosa; Professor Jorge Ribeirinho Machado; Professor Ramalho Fontes and Professor Eugénio Viassa Monteiro. From this list, special mention goes to the help I received from Professor Adrián Caldart, who supported my research with many resources and much feedback.

The AESE Business School sponsored my attendance at two IMP conventions, where I was able to present my work, debate with other researchers, and

receive feedback. Attending the IMP congresses was instrumental to the development of my skills as an academic researcher. Regarding the IMP community/experience, I want to express my appreciation to Professor Jari Ruokolainen who read the manuscript and provided important feedback and comments. Thanks also to Professor Per Vagn Freytag, Professor Marlina Ingemansson Havenvid, Mikko Illi, and Otto Rosendahl, who also contributed greatly to my academic development.

Since 2010, I have received many useful and valuable comments from many scholars. These include, but are not limited to: Professor Maria João Mayer Branco from Universidade Nova de Lisboa; Professor J. Inacio Canales from Adam Smith Business School; Professor Punyaslok Dhall from Xavier Institute of Management, Bhubaneswar (comments from FIOM 2015); Professor Alessandro Ancarani from the University of Catania (reviewer at the *Journal of Purchasing and Supply Management*); Professor Miguel Rocha de Sousa; Professor Andreia Dionísio; Professor Jacinto Vidigal Silva from Évora University; and two anonymous reviewers from the *Journal of Strategic Contracting and Negotiation*.

The field research presented in this work was undertaken with unlimited support from employees at four firms: Tejo Energia, PEGOP, REN, and EDP. I would like to express my gratitude to Beatriz Milne and Paulo Almirante from Tejo Energia and João Melancia and Fernando Mata from PEGOP. I wish to express my appreciation to Alexandra Reis and Nuno Ribeiro from REN. I am also thankful to Luis Marques Ferreira, Jorge Mayer, Filipe Duarte, and Mário Camacho from EDP.

Because my command of English is limited, Silvia Eccles reviewed the text, and Dr Carolyn Benson edited the final version of the manuscript. I thank them both for their hard work. I also greatly appreciate the support I received from Eliana Lucas, Júlia

Côrte-Real, António Vaz, Jorge Silva and Paula Henriques Loureiro, who helped me with many operational details. I also appreciate the welcome help I received from friends, including António Nunes da Silva from Évora University and Professor Rui de Brito from IDEFE (ISEG).

Finally, I express my gratitude both to Professor Vasco Eiriz de Sousa from Minho University, and Professor Cristina Sales Baptista from ISEG, for the worthy remarks provided, which helped me to improve this last version of the thesis.

TABLE OF CONTENTS (OVERVIEW)

1. INTRODUCTION	1
2. LITERATURE REVIEW	24
3. CONCEPTUAL FRAMEWORK	72
4. METHODOLOGY	86
5. EMPIRICAL WORK.....	117
6. FINDINGS	160
7. CONCLUSION	191
REFERENCES	204
APPENDIX 1 — CASE PROTOCOLS	222
APPENDIX 2 — LETTERS OF ACCEPTANCE	225
APPENDIX 3 — CASE STUDIES VALIDATION	228
APPENDIX 4 — INTERVIEW TRANSCRIPTS.....	231
APPENDIX 5 — ORIGINAL CODING SCHEME	257
APPENDIX 6 — CODED SEGMENTS	259

TABLE OF CONTENTS (DETAILED)

<i>ABSTRACT</i>	v
<i>RESUMO</i>	vi
<i>ACKNOWLEDGMENTS</i>	vii
<i>TABLE OF CONTENTS (OVERVIEW)</i>	x
<i>TABLE OF CONTENTS (DETAILED)</i>	xi
<i>LIST OF FIGURES</i>	xiv
<i>LIST OF TABLES</i>	xv
<i>LIST OF ABBREVIATIONS</i>	xvii
1. INTRODUCTION	1
<i>1.1. THE RESEARCH TOPIC</i>	2
<i>1.1.1. Vendors striving to obtain references from their customers</i>	3
<i>1.1.2. Customers participating in referencing activities and reference marketing programs</i>	5
<i>1.1.3. Vendors' use of customer references</i>	6
<i>1.1.4. Vendor communication of reference content</i>	9
<i>1.1.5. The research problem</i>	15
<i>1.2. RESEARCH OBJECTIVES AND GUIDING QUESTIONS</i>	19
<i>1.2.1. Theoretical boundaries</i>	20
<i>1.3. RESEARCH OUTLINE</i>	22
2. LITERATURE REVIEW	24
<i>2.1. BUYING BEHAVIOUR</i>	24
<i>2.1.1. The buying centre</i>	25
<i>2.1.2. Organizational buying behaviour</i>	28
<i>2.1.3. Discussion</i>	33
<i>2.2. BUSINESS RELATIONSHIPS</i>	35
<i>2.2.1. The Interaction Model</i>	35
<i>2.2.2. The ARA Model</i>	39
<i>2.2.3. The 4R Model</i>	42
<i>2.2.4. The Role Played by Marketing within the Interaction and Networks Approach</i>	44
<i>2.2.5. Discussion</i>	45
<i>2.3. CUSTOMER REFERENCE MARKETING</i>	46
<i>2.3.1. In search of a definition of 'customer reference'</i>	50
<i>2.3.2. Customer referencing taxonomy</i>	53
<i>2.3.3. Studies featuring the customer referencing practice</i>	61
<i>2.4. RESEARCH STRATEGIES AND TOOLS USED IN PREVIOUS LITERATURE</i>	67

3. CONCEPTUAL FRAMEWORK	72
3.1. LITERATURE GAP	72
3.2. RESEARCH QUESTIONS	77
3.2.1. Research question #1	78
3.2.2. Research question #2	79
3.2.3. Research question #3	79
3.2.4. Research question #4	80
3.2.5. Research question #5	80
3.3. EX-ANTE CONCEPTUAL FRAMEWORK.....	81
4. METHODOLOGY	86
4.1. PARADIGMS OF INQUIRY	89
4.1.1. The ontological perspective	96
4.2. THE ADOPTED RESEARCH DESIGN.....	98
4.2.1. The buying of capital goods in the energy industry	102
4.2.2. Data collection strategy.....	105
4.2.3. Data analysis	111
4.2.4. Quality criteria	113
5. EMPIRICAL WORK.....	117
5.1. THE CASE OF TEJO ENERGIA	121
5.1.1. Buying behaviour.....	124
5.1.2. The handling of customer references	126
5.1.3. The FGD/ESP purchase.....	128
5.2. THE CASE OF REN	132
5.2.1. Buying behaviour.....	133
5.2.2. The acquisition of two transformer units	139
5.2.3. The handling of customer references	142
5.3. THE CASE OF EDP	145
5.3.1. Standard buying behaviour.....	145
5.3.2. Generic approach to customer references	149
5.3.3. Boosting the Venda Nova Power Station	150
5.3.4. The adopted solution.....	151
5.3.5. The decision process.....	153
5.3.6. The role played by references	156
6. FINDINGS	160
6.1. WITHIN CASE ANALYSIS.....	160
6.1.1. The Case of Tejo Energia	160
6.1.2. The Case of REN.....	165

6.1.3. <i>The Case of EDP</i>	169
6.2. <i>CROSS CASE ANALYSIS</i>	175
6.3. <i>ANSWERING THE RESEARCH QUESTIONS</i>	188
6.3.1. <i>RQ1: How does reference marketing influence the various members of the buying centre?</i>	189
6.3.2. <i>RQ2: How do the various customer reference discourses influence the buying behaviour of potential customers?</i>	189
6.3.3. <i>RQ3: How do the identified reference practices influence the buying behaviour of potential customers?</i>	189
6.3.4. <i>RQ4: How does the potential customer benefit from vendor references?</i>	190
6.3.5. <i>RQ5: What facts and circumstances affect customer referencing practice?</i>	190
7. CONCLUSION	191
7.1. <i>THEORETICAL IMPLICATIONS</i>	194
7.2. <i>MANAGERIAL IMPLICATIONS</i>	198
7.3. <i>LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH</i>	201
REFERENCES	204
APPENDIX 1 — CASE PROTOCOLS	222
APPENDIX 2 — LETTERS OF ACCEPTANCE	225
APPENDIX 3 — CASE STUDIES VALIDATION	228
APPENDIX 4 — INTERVIEW TRANSCRIPTS	231
APPENDIX 5 — ORIGINAL CODING SCHEME	257
APPENDIX 6 — CODED SEGMENTS	259

LIST OF FIGURES

FIGURE 1.1 — Research outline	23
FIGURE 2.1 — Robinson et al. BuyGrid model.....	29
FIGURE 2.2 — Webster and Wind’s model of organizational buying behaviour (abridged).....	31
FIGURE 2.3 — Håkansson’s illustration of the Interaction Model (abridged).....	39
FIGURE 2.4 — Scientific publications featuring the topic of customer referencing	47
FIGURE 3.1 — <i>Ex-ante</i> Conceptual framework	85
FIGURE 4.1 — The research ‘onion’	87
FIGURE 4.2 — The critical realist view of causation	95
FIGURE 5.1 — Portuguese power generation mix (from 2008 to 2014).	120
FIGURE 5.2 — Project finance framework for Tejo Energia.....	123
FIGURE 5.3 — Procurement process at REN.....	137
FIGURE 5.4 — The supplier qualification system at REN	138
FIGURE 5.5 — Risk levels	138
FIGURE 6.1 — Visualization of the Case Tejo Energia	165
FIGURE 6.2 — Visualization of the Case REN	169
FIGURE 6.3 — Visualization of the Case EDP.....	174
FIGURE 6.4 — Visualization of the <i>ex-post</i> theoretical model	178

LIST OF TABLES

TABLE 1.1 — Salminen and Möller’s account of the features of reference practice, as presented in marketing textbooks	4
TABLE 1.2 — Modes of reference usage by vendors in business marketing, as proposed by Salminen and Möller	8
TABLE 1.3 — Identified discourses and the elements that structure them, by Jalkala and Salminen	10
TABLE 1.4 — Customer references in the context of several research traditions	12
TABLE 2.1 — Organizational buying behaviour concepts, according to Webster and Wind	32
TABLE 2.2 — Scientific articles on customer referencing (2001-2015)	48
TABLE 2.3 — Contributions to a definition of ‘customer reference’	52
TABLE 2.4 — Reference practice: related concepts	57
TABLE 2.5 — Customer references: taxonomy	58
TABLE 2.6 — List of customer referencing concepts	60
TABLE 2.7 — The value of a reference visit for the parties of the visit, as identified by Salminen .	65
TABLE 2.8 — Aarikka-Stenroos and Jalkala’s insights into reference networks.....	66
TABLE 3.1 — Published research on customer references according to the unit of empirical observation.....	74
TABLE 3.2 — Summary of the five detailed questions.....	81
TABLE 3.3 — Theoretical concepts adopted in the conceptual framework	83
TABLE 3.4 — Variables adopted in the conceptual framework.....	84
TABLE 4.1 — Synthesis of research features and adopted methodological path	88
TABLE 4.2 — Inquiry paradigm questions	92
TABLE 4.3 — Alternative inquiry paradigms.....	93
TABLE 4.4 — Report of interviews and interactions	109
TABLE 4.5 — Theoretical views on key quality criteria	114
TABLE 5.1 — Exame’s ranking of the top 500 firms (selection of firms operating in the energy sector)	118
TABLE 6.1 — Modified coding scheme	177
TABLE 6.2 — The literature on the outcomes of references.....	187

TABLE 6.3 — Data accounting sheet: research questions vs. data sources 188

LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Expression / Designation</u>
CapEx	Capital expenditure
cf.	Compare with
e.g.	For example
Eds.	Editors
EPC	Engineering, Procurement, and Construction
GW	Gigawatt
i.e.	In other words
MVA	Megavolt ampere
MW	Megawatt
N.a.	Not applicable
OpEx	Operational expenditure
TSO	Transmission System Operator
Vol.	Volume

1. INTRODUCTION

This research aims to understand customer referencing and how it influences the buying behaviour of potential customers. Put differently, the purpose of this study is to contribute to the literature on organizational buying behaviour by describing customer referencing practice and exploring its implementation. Jalkala and Salminen (2010) define customer references as the customer relationships and related value-creation activities that a firm leverages externally or internally in its marketing efforts. In the same way, these authors also view customer reference marketing as a way to demonstrate a solution's potential value and the business benefits that a supplier can deliver.

Reference marketing is important in business markets (Kumar, Petersen, & Leone, 2013; Rese, Pick, & Maiwald, 2012). The literature on organizational buying behaviour suggests that customer references have a positive impact on vendors' reputations (Helm & Salminen, 2010; Salminen, 1997; Salminen & Möller, 2003, 2006). It also presents customer references as a source of competitive advantage and as a foundation for firms' competitiveness (Jalkala & Salminen, 2010). Accordingly, customer references play an important role in increasing vendors' credibility and brand equity by raising their perceived competence. At the same time, they decrease buyers' uncertainty and perceived risk.

Nevertheless, empirical studies that could support a comprehensive theory of customer referencing have yet to be undertaken. The existing research is insufficient to the extent that the empirical work thus far has focused on the supplier as the main unit of empirical observation and has ignored the other two constituents of the reference triad: the referencing customer and the potential customer. Empirical work that features the potential customer as the unit of observation therefore represents an open

opportunity for research into organizational buying behaviour and, more specifically, into the ways in which supplier reference marketing influences capital buying decisions.

This work selects a subset of the reference triad as the object of empirical observation by positioning the potential customer as the unit of analysis. The research problem is addressed by collecting empirical data that supports a multiple case study from firms from the Portuguese energy industry. Semi-structured interviews follow a generic predefined outline, which is supported by an open questionnaire. Snowball techniques were used to recruit employees from the buying centres of the targeted companies.

1.1. THE RESEARCH TOPIC

In customer reference marketing processes, existing customers act as advocates for the firm. Existing customers provide testimonials, receive visits from potential customers, and yield information on the characteristics of the adopted solutions and their performance. According to Johnston and Lewin (1996, p. 10), “awarding the contract to a seller whose products and services have a proven intraorganizational track record helps reduce the perceived risk associated with an important purchase”. The relationships established with these customers can be considered a marketing asset, which points to a resource-based perspective (Barney, 1986, 1991; Wernerfelt, 1984, 1995) as a valid framework of analysis (Jalkala & Salminen, 2008; Salminen & Möller, 2006). In this way, firms are able to build strategic assets, either by increasing credibility and reputation or by reducing the perceived risk associated with the purchasing of services and products from a particular supplier.

In this context, the topics regarding ‘drivers of action’ of the interest parties (e.g. vendors and customers) are described next, in the following four sub-sections.

1.1.1. Vendors striving to obtain references from their customers

Customer references showcase suppliers' capabilities (in addition to other features they may have) (Jalkala & Salminen, 2009). They function as indirect pieces of evidence of a supplier's ability to provide a product, service or solution (Salminen & Möller, 2006). Salminen (2001) argues that references exhibit a supplier's relationship with a customer, such that the former can be evaluated by prospective customers on the axes of product performance, management and cooperation.

For Helm and Salminen (2010), reputation and customer references serve the same purpose and are highly effective tools both for attracting new customers and for creating strong links with existing customers. On their view, firms operating in industrial markets should invest in reputation building, not only within the market segments they target but also in the eyes of their various stakeholders. They suggest that existing relationships, the features of which are communicated via customer references, are solid foundations that facilitate this crucial reputation building. The need for customer referrals is especially high in companies seeking entry into new markets, where their reputations have yet to be established (Jalkala & Salminen, 2009). Suppliers also seek to demonstrate their ability to build strong relationships with their customers.

Customer references play various roles, including reducing the potential buyer's perceived risk and signalling the supplier's credibility (Helm & Salminen, 2010; Jalkala & Salminen, 2009; Salminen, 2001). Salminen and Möller (2006) also highlight the contribution of customer references to the creation and sustaining of confidence in existing relationships. Table 1.1 shows Salminen and Möller's (2004) compilation of the general understanding of reference practice at play in mainstream marketing manuals.

TABLE 1.1 — Salminen and Möller’s account of the features of reference practice, as presented in marketing textbooks

GOALS	PRACTICES	DESIRABLE OUTCOMES
<ul style="list-style-type: none"> • Pursue new customers • Sell more or new products to existing customers • Focus offers in promising markets 	<ul style="list-style-type: none"> • Reference lists • Articles • Press releases • Reference visits • Promotional material • Seminars 	<ul style="list-style-type: none"> • Establish reputation • Establish credibility • Convince customer of firm’s competence • Reduce perceived risk

Source: Salminen & Möller, 2004, p. 137.

Jalkala and Salminen (2010) outline several functions and practices in the context of customer referencing. They also suggest that it be classified as a critical marketing asset. For these authors (Jalkala & Salminen, 2010), the external benefits of customer references include: (i) the growth of a firm’s status via its relationship with reputable customers; (ii) the signalling and strengthening of suppliers’ positions in the market; (iii) the presentation and demonstration of suppliers’ offers; and, finally, (iv) confirmation of a firm’s experience, past performance, functionality, technology and customer value delivery. The internal benefits of customer referencing include: (i) the facilitation of organizational learning; (ii) the deepening of the firm’s understanding of customer needs, relating them to internal skills; (iii) the advancement of a firm’s portfolio development; and finally, (iv) the motivation and training of employees through the sharing of success stories.

Status transfer is one of the three mechanisms of customer reference marketing (Jalkala, 2009). The effects of status transference are greater in smaller companies and in firms that have more recently entered the market than in larger companies with more solid reputations (Jalkala & Salminen, 2010). A vendor can close a deal with low to no margin in anticipation of gaining a valuable customer reference (Helm & Salminen, 2010; Ruokolainen, 2008a). First customer references are especially important for start-up technology companies seeking to enter new markets (Gomez-Arias & Montermoso, 2007; Ruokolainen, 2003, 2005a, 2005b, 2007, 2008a, 2008b; Ruokolainen & Igel, 2004; Ruokolainen & Mäkelä, 2006, 2007).

1.1.2. Customers participating in referencing activities and reference marketing programs

Jalkala and Salminen (2010) note that customer reference marketing takes place at the relationship level as vendors use their relationships with reference customers as a marketing device. At the relationship level, the reference-creation process starts by assessing how both actors benefit from being associated with each other. Helm and Salminen (2010) argue that vendors select references from customers that: (i) are satisfied with their products and services; (ii) have needs similar to the potential customer's needs; and (iii) are easily accessible to potential customers.

Salminen (2001) argues that the reference customer benefits from a reference visit on two levels of value. The first concerns benefits for the customer manager, who facilitates the reference. These include the opportunity to discuss equipment and production processes. The second concerns benefits for the company more broadly and includes: (i) receiving a good service from the supplier (if it proves a useful reference site); (ii) a potential discount on unpaid spare part invoices; and/or (iii)

a “free” service visit before the reference visit. Salminen’s study does not target the referencing customer, however, and instead derives these conclusions by interviewing the supplier. The reference customer is thus rendered inert: a passive element in the author’s analysis rather than an active voice from which insights are to be gleaned.

In more recent research Aarikka-Stenroos (2009) identifies four categories in terms of which we can classify previous customers’ motivations for participating as a reference in a customer reference process: (i) social dynamics or reciprocity effect; (ii) satisfaction with the acquired offer; (iii) self-confirming effect; and finally, (iv) motivation derived from the halo effect. The author also argues that the use of monetary compensation to acquire customer references destroys the credibility of the practice, undermining its positive effects. These recommendations are consistent with the work of Olaru, Purchase, and Peterson (2008), who suggest that reference customers should be included in joint communication strategies such as: (i) referencing; (ii) presenting joint papers at industry conferences; (iii) publishing joint articles in the industry media and standard academic journals; and (iv) developing case studies for use in marketing campaigns.

1.1.3. Vendors’ use of customer references

The practices by which the references are acted upon include visits, lists, and brochures on reference cases, as well as suppliers’ corporate websites (Jalkala & Salminen, 2009). In addition, customer references are used in: (i) seminars; (ii) articles in trade journals; (iii) press releases; and (iv) promotional material (Salminen, 2001). Table 1.2 presents the several distinct ways in which references are used in business marketing, as identified by Salminen and Möller (2003).

Romanainen and Salminen (2008) highlight the importance of customer references to the promotion of “industrial innovations” and suggest a framework for building customer reference portfolios in this area. A portfolio of customer references is an important asset to the extent that it demonstrates the value delivered to the customer and forms the basis for the development of credible value propositions (Jalkala & Salminen, 2008). Jalkala and Salminen (2008) suggest that an important competence for an industrial supplier is the ability systematically to build, manage and use the company’s portfolio of customer references. These authors go on to identify several routines that can be adopted for this purpose. These routines are not the sole responsibility of the marketing department, since they should operate across various different functional areas of the firm. Finally, managers should not forget that in order for references to be effective, the referred customer should be relevantly similar to the potential customer (Dean & Biswas, 2001).

TABLE 1.2 — Modes of reference usage by vendors in business marketing, as proposed by Salminen and Möller

GROWTH AREA SPECIFIC PURPOSE	UNIVERSAL TASKS	GROWTH AREA SPECIFIC TASKS	PRACTICES
Retaining current and attracting new customers (in current markets with current products)	<ul style="list-style-type: none"> • being shortlisted • ultimately being selected • winning new customers • undermining the competition's relationships with suppliers • breaking into new project markets 		<ul style="list-style-type: none"> • visits / demonstrations in reference sites • articles in trade journals
Ensuring as effective a start for entry processes as possible (with present products)	<ul style="list-style-type: none"> • re-establishing credibility among old customers • serving as a strategic criterion in bidding decisions • signalling service quality • verifying (to the supplier) the technology's functionality • verifying (to the buyer) the technology's functionality 	<p>Using domestic customers to facilitate entry.</p> <p>Creating strong entry customer relationships, facilitating further actor contacts.</p>	<ul style="list-style-type: none"> • press releases • reference lists • detailed descriptions of similar contracts • promotional material
Accelerating innovation (in present markets with new products)	<ul style="list-style-type: none"> • overcoming buyer's high switching costs • enhancing source credibility to convince a buyer about the product and supplier performance • improving sales force performance • developing supplier's image • gaining access to new market segments 	<p>Speeding up the diffusion process of a new product/technology via the "launching" [pilot] customer</p> <p>Legitimizing new technology by demonstrating superiority and attacking the industry's existing [legacy] technology paradigm.</p>	<ul style="list-style-type: none"> • seminars and conferences • requests for reference customers to promote their supplier relationship • internet

Source: Salminen & Möller, 2003, p. 32.

1.1.4. Vendor communication of reference content

Jalkala and Salminen (2005) observe that firms are able to use reference descriptions to build different organizational images. Based on empirical research, these authors (Jalkala & Salminen, 2005, 2009) identify three main discourses that structure the reference relationship: (i) the “discourse of benefits”, which concerns the positive effects of the practice for businesses; (ii) the “discourse of commitment”, which concerns the supplier’s ability to develop partnerships with and commitments to the customer through strong relationships; and iii) the “discourse of technological expertise”, which concerns the supplier’s expertise in the field. These three discourses, their associated themes, and their impact on the reference relationship are summarized in Table 1.3. I credit the discourse of benefits as being more relevant. This is due to my previous professional experience but also to the buyer’s perspective I’m aiming to capture by this research.

Kilian, Greuling, and Hennigs (2013) developed the original research by Jalkala and Salminen (2009a) on websites by further analysing the intended effects of reference content on potential customers. In this new research, the authors interview representatives from German mechanical engineering firms in order to “obtain insights into the assumed effects of the references” (Kilian et al., 2013, p. 66). This research identifies three categories of reference description but also departs in certain ways from the insights of Jalkala and Salminen (2009a) to the extent that many of the reference descriptions they consider focus predominantly on technical arguments. However, research on reference discourses (Jalkala & Salminen, 2005, 2009) remains theoretically relevant to that extent as it is possible to position each of the customer reference discourses in the context of several research traditions. Table 1.4 illustrates this idea.

TABLE 1.3 — Identified discourses and the elements that structure them, by Jalkala and Salminen

	DISCOURSE OF BENEFITS	DISCOURSE OF COMMITMENT	DISCOURSE OF TECHNOLOGICAL EXPERTISE
Main themes	Cost savings Time savings Increased efficiency Increased productivity Improved quality Context-specific benefits Benefits to the end-user Benefits to society	Closeness Commitment Cooperation Partnership Interaction / communication Sharing knowledge Shared goals Support Customer orientation Familiarity with customers' businesses Meeting the customers' business needs Customization Flexibility Trustworthiness Reliability Keeping promises Responsibility Long-term relationship History of the relationships Developing relationships Future of the relationship	Professionalism Expertise Experience Capability Competence Delivery details Transferring details Technological leadership
Reference relationship	Source of business benefits	Long-term, close relationship based on trust and commitment	Access to external expertise and leading technologies
Subject position of the supplier	Key actor in customer's success	Committed and reliable partner	Professional and experienced expert
Subject position of the customer	Important and satisfied customer	Important and satisfied customer	Important and satisfied customer

Source: Jalkala & Salminen, 2005, p. 173.

These research traditions provide a useful theoretical background, not only to the extent that they help us to understand the general theory of the firm but also

insofar as they allow us to put the three customer reference discourses identified above into context. The theory of perfect competition (Ricardo, 1817) had a profound impact on the theory of the firm to the extent that it emphasized that firms maximize profits. According to several authors (Anderson, 1982; Dickson, 1992; Holmstrom & Tirole, 1989; Hunt & Morgan, 1995), the classical theory of perfect competition is limited in its ability to contribute to the theory of the firm. Cyert and March (1963) challenge this view by offering a “behavioural” approach, according to which firms are not able to maximize profit levels because of “the multiple dimensions over which [they] operate” (Robertson & Caldart, 2009, p. 19).

According to *The Theory of the Growth of the Firm* (Penrose, 1959), firms are defined in terms of resources rather than the products they offer to the market. The author claims that firms are bundles of productive resources that are combined under an “authoritative communication” to be sold for profit.

Transaction Cost Economics (Williamson, 1975, 1985) focuses on efficiency issues and has its foundations in a seminal work by Coase (1937), who advanced the idea that the main reason for the existence of the firm is transaction cost economizing. It also borrows from the influential work of Homans (1958, 1961), which was followed by key studies by Blau (1964) and Emerson (1962, 1972a, 1972b). Also relevant was the contribution of Thibaut and Kelley (1959), who first introduced the concept of a ‘dyad’ to the scientific literature, although Blau’s (1964) work was the first to reveal structures of association beyond the dyad.

TABLE 1.4 — Customer references in the context of several research traditions

<i>Research Tradition</i>	<i>Identified discourses</i>		
	DISCOURSE OF BENEFITS	DISCOURSE OF COMMITMENT	DISCOURSE OF TECHNOLOGICAL EXPERTISE
Transaction Cost Approach	<ul style="list-style-type: none"> • Emphasizes the cost/benefit ratio of the relationship • Focuses mainly on individual solutions and only to a lesser extent the customer-supplier relationship 		
Social Exchange Theory		<ul style="list-style-type: none"> • Builds from the ‘relationship as a marriage’ metaphor • Focuses on the closeness and long-term dimension of the relationship • Signals the importance of commitment and trust associated with effective cooperation and relationships 	
Resource Dependency Approach			<ul style="list-style-type: none"> • Views the relationship as a way to access external expertise via suppliers’ capabilities and competences
Dynamic Capabilities View			<ul style="list-style-type: none"> • Interprets the business relationship as a mechanism for integrating internal and external competences

Source: author, based on Jalkala and Salminen (2005).

The Resource Dependence Theory (Pfeffer & Salancik, 1978) considers the impact of external factors on firms and the way in which, “although constrained by their context, managers can act to reduce environmental uncertainty and dependence”

(Hillman, Withers, & Collins, 2009, p. 1404). According to this view, the interpretation of the firm takes place in a context where the ecology of the organization helps us to understand its behaviour (Pfeffer & Salancik, 1978). Additionally, on this view there is a link between, on one hand, organizational behaviour and management decisions, and, on the other hand, power and control over critical resources.

The Resource-Based Theory of the Firm sets a firm's resources as the unit of analysis while attempting to explain the phenomenon of sustainable superior firm performance (Barney & Arikan, 2001). The term "resource-based view" was coined by Wernerfelt (1984) in his seminal article "A Resource-Based View of the Firm", where he explores "the usefulness of analysing firms from the resource side rather than from the product side" (p. 171) in order to "identify types of resources which can lead to high profits" (p. 172).

As outlined in Table 1.4, each customer reference discourse is associated with a research tradition. Nevertheless, Jalkala and Salminen (2005) identify the discourse of benefits as that which is most used. An implicit emphasis is therefore given to the transaction cost approach (Williamson, 1975, 1985), although each listed tradition is valuable when it comes to understanding the customer referencing phenomenon. The dominance of the benefits discourse can be justified by its ability to communicate the value of the existing relationship in a credible manner. This sort of credibility is especially relevant in complex projects, where the supplier's capacity to generate customer value is critical. The authors claim that "concrete benefits, such as the estimated amount of cost savings, are an efficient way of communicating the value of the relationship in a way that can be easily evaluated by the potential customer" (Jalkala & Salminen, 2005, p. 177). In addition, reference customers are effective tools for

reducing ambiguity about the value promised by a supplier's offer (Anderson & Wynstra, 2010). Thanks to this kind of content, the customer is able to estimate the benefits but also the associated costs when making a decision about whether or not to invest in the 'offered' or 'proposed' relationship. By contrast, Kilian *et al.* (2013) contend that the consequences of reference behaviour have not been given adequate attention and recommend further investigation into the effects of references on potential customers, namely by considering how references are handled in buying centres.

Anderson, Kumar, and Narus (2007) view "customer value calculators" and "value case histories" as extremely effective sales tools. The authors argue that these tools must provide evidence to potential customers of the superior value of the vendor's offer. This evidence should be factual and based on the real benefits (e.g. total cost of ownership) that other customers already received from what they offer. As a result, the most adopted forms of customer reference marketing within the discourse of benefits are: (i) case studies; (ii) customer cases; and (iii) success stories (Jalkala & Salminen, 2009). These forms involve the description of the problem a customer faces, the solution generated by the vendor, and the customer's assessment of the outcome or customer value.

Customer references also play an important role in heavy equipment or capital equipment purchasing (Salminen, 2001). In this context, the characteristics of good customer reference communication were investigated by Salminen, Janos, Pekkarinen, Jalkala, and Mirola (2008). This research recommends the adoption of the characteristics reference model, which highlights four relevant factors in good customer reference communication. In order of importance, they are as follows: (i) the degree of similarity with regards to the application and desired benefits; (ii) the supplier's

expertise, reputation and credibility; (iii) relationship longevity, commitment and trust; and (iv) the degree of similarity between the customer that provides the reference and the potential customer. In another direction, Ruokolainen and Aarikka-Stenroos (2015) suggest that start-ups struggling with market entry should develop persuasive reference content by adopting rhetorical principles – that is to say, by taking into account different dimensions of the information, including its rationality, emotionality, and credibility. According to these authors, customer references establish (i) the credibility of a firm’s character and abilities (ethos); (ii) trust and other positive emotions (pathos); and (iii) the prospects of realizing the relevant benefits (logos).

1.1.5. The research problem

As we have seen, several authors treat the topic of customer referencing. Different dimensions of this marketing practice have been studied, e.g. different practices for promoting customer references and their key messages.

One of the interesting facets of the research thus far concerns the triadic relationship (Helm & Salminen, 2010; Salminen, 2001; Salminen & Möller, 2006) established during the generation, development and promotion of customer references. This particular triadic unity – also referred to as the “reference triad” – involves three actors: (i) the reference customer; (ii) the potential customer; and (iii) the supplier. This relationship benefits each actor (Helm & Salminen, 2010). If this were not so, customer referencing would not be practiced, assuming that its reputational effect stems from the fact that all three actors freely agree to participate in it. If the different levels of bargaining power held by each actor were to conceal non-explicit forms of persuasion, the credibility of the reference would thereby be jeopardised to the extent that the dyadic relationship established between the potential customer and the reference

customer would reveal vulnerabilities in the relationship between the vendor and the reference customer. Thus the triadic setting only obtains when all parties freely participate in the referencing network. According to Helm and Salminen (2010), the reference relationship requires significant relationship-specific adaptations on the part of both companies. In the literature on customer referencing, however, nothing is written about the potential customer and the adaptations it might undertake as a result of being a member of the reference triad.

The vendor's motivation for using customer referencing is well documented in the referencing literature, as outlined above (Helm & Salminen, 2010; Salminen, 2001; Salminen & Möller, 2006). The reference customer's motivation for participating in customer referencing is also identified in the literature, although one might question whether the real motivations for this involvement have all been identified. For instance, one motivational pull not yet discussed is the corporate and individual pride that comes with engaging in a reference success story. Another attraction is the reference customer's investment in the established relationship with a vendor. This is probably the main source of motivation for reference customers with regards to publically disclosing relevant business information associated with the value they have received from the acquired products or services. The self-confirming effect is also stated as a strong motivation for participating in customer referencing activities. This may have to do with the necessity of reassurance by communicating internally (i.e. within the reference customer organization) the suitability and the benefits of the buying decision that has been taken.

According to Salminen (2001), the potential customer benefits from referencing to the extent that the latter: (i) provides an opportunity to see and try out a

supplier's equipment in real working circumstances; (ii) facilitates the closing of deals; (iii) facilitates the evaluation of suppliers; (iv) builds trust between a company's own personnel and the supplier's; and (v) makes it possible to meet supplier's personnel during the visit. Nevertheless, this list of benefits was developed on the basis of research that does not specifically target the potential customer. To the extent that this is so, some of these benefits, while making sense from the vendor's point of view, may not adequately capture the potential customer's perspective. This is the case with benefits (ii), (iv), and (v). The benefits that are relevant to the potential customer include being able to observe a supplier's equipment in real working circumstances and being able to evaluate a supplier, especially if a customer value assessment takes place as a result of having gained access to unbiased technical and business data of the sort the reference customer is able to provide.

Unfortunately, there is no current research on what takes place following the collection of unbiased technical and business data. Just how and in what circumstances the potential customer uses this data is therefore unclear, as is the extent to which the resulting insights are considered in buying decision processes. Moreover, due to this lack of field research, it is possible to question the existence of the reference triad. We simply do not have real evidence of this. As a result, one might claim that customer references do not contribute to a firm's competitiveness. By contrast, evidence for the existence of the other two dyads does exist and is well documented in the literature on customer referencing.

As noted above, the existence of the reference triad presupposes that some level of relationship adaptation occurs with regards to all of its members. Unfortunately, however, we do not yet have a firm understanding of the adaptation that takes place on

the side of the potential customer. In order to be effective, this relationship-specific adaptation should take place at the level of the potential customer's buying centre, and new research should be able to capture it by describing the buying process of capital goods. If the persuasion capability of the 'benefits discourse' is in fact strong, it should have some degree of influence on the potential customer, and specifically on its buying behaviour. This effect should also be mirrored in the relationship established between the potential customer and the reference customer.

Research into referencing should aim not only to describe and understand the extent to which the practice influences buying decisions but also to reveal the internal processes and events involved, especially at the level of the potential customer. New research should aim to locate those elements of the buying centre that deal with reference data analysis, and therefore how this data is gathered and analysed. In addition, new research should aim to identify and understand the potential customer's motivations for establishing a dyadic relationship with the reference customer. A deeper understanding of this mechanism would be highly useful for managers striving to use references as marketing and purchasing tools. Further research should also aim to generate insights into who from the buying centre is exposed to reference marketing, since not all members are engaged in the same way. Furthermore, insights into the influence of each of the three discourses by members of the buying centre would also be relevant for managerial purposes. The same applies to the diverse reference practices.

With this said, we must also consider the possibility of finding low levels of relationship adaptation in the dyadic function established between the potential customer and the reference customer. In this case, a different set of questions should be raised in order to help us understand why this takes place. In particular, research should

aim to explore the nature of the reference discourse and its utility in solving potential customers' problems and buying decisions. A different possibility might be realized not because of utility but because of the credibility of the source of the message. In this case, the practices used for customer referencing should also be assessed, as some will most likely be more effective than others. In this respect, establishing direct contact with the reference customer would probably be more effective. Therefore, research should aim to study this possibility and to observe the ways in which it is managed.

As the above illustrates, this study assumes an (albeit implicit) framework. Because of this, it is necessary for us to consider the literature on organizational buying behaviour, for it is crucial to situate this implicit framework in the context of a broader theory. Close attention to the background literature not only brings this framework to light but also increases the theoretical robustness of the present research.

1.2. RESEARCH OBJECTIVES AND GUIDING QUESTIONS

The available literature on buying behaviour does not clarify the role played by customer references in potential customers' decision-making. In addition, the facts and circumstances associated with the influence of reference marketing have yet to be determined. The purpose of this research is thus to study organizational buying behaviour and relationship formation in interactions between customers and suppliers of capital equipment and the role played by customer references in this context.

Case studies featuring referencing relationships in the Portuguese energy industry are used to illustrate different buying processes adopted by organizations. The findings of the study confirm that customer references play a critical role in capital equipment acquisition. A deeper understanding of this phenomenon will allow suppliers to pursue strategies based on efficient reference marketing programs.

By focusing on the relevance of customer referencing to industrial buying behaviour, this study aims to offer new perspectives on how and under what circumstances customer-buyer relationships can be leveraged in industrial markets. It thus aims to deepen our understanding of this phenomenon and to contribute to the literature on customer referencing and industrial marketing.

By reviewing the literature on organizational buying behaviour, we can glean some understanding of the extent of the role played by customer referencing in a firm's growth. Nevertheless, this literature is silent on the facts and circumstances within the potential customer organization. Given this gap in the literature, this research aims to investigate the role played by supplier reference marketing in the buying behaviour of the potential customer. It aims to answer not only the above (broadly formulated) research question but also the following more specific questions: (i) How does reference marketing influence the various members of the buying centre? (ii) How do the various customer reference discourses influence the buying behaviour of a potential customer? (iii) How do the identified reference practices influence the buying behaviour of potential customers? (iv) How does the potential customer benefit from vendors references? (v) What facts and circumstances affect customer referencing practice?

1.2.1. Theoretical boundaries

In this work, I do not consider word of mouth and referrals. Customer referencing and word of mouth address different concerns, and distinguishing between them helps to clarify the boundaries of this research. According to Jalkala and Salminen (2010), word of mouth is an informal interaction that takes place between customers. Word of mouth operates outside of the control of marketing managers, where customers

informally communicate with each other about a supplier and its products and performance (Jalkala & Salminen, 2009). Reference marketing concerns supplier-initiated activities undertaken with the aim of leveraging customer relationships and previous deliveries. Jalkala and Salminen (2010) also add that reference utilization concerns a supplier's actively utilizing its portfolio of previous and existing customers in its marketing activities. This often includes interaction between the existing and the potential customer.

In this sense, word of mouth can be understood as an interaction that takes place beyond the control of marketers, where customers communicate with each other about a supplier, its products and their performance. In this work, I do not consider word of mouth because of its informality – a feature that contrasts with the practice under study: customer referencing.

The concept of a 'customer reference' should also not be confused with a 'referral', even within the context of industrial marketing. Many authors (Helm, 2003; Herriott, 1992; Johnson, Zinkhan, & Ayala, 1998; Kumar, Petersen, & Leone, 2010; Ryu & Feick, 2007; Schmitt, Skiera, & Bulte, 2011; Walsh & Elsner, 2012; Wheeler, 1987) talk about referrals as a form of sales technique. While Wheeler (1987, p. 191) argues that referrals are a "dominant source of information for buyers of professional services", Salminen (2001) distinguishes between these two concepts by pointing out that a 'referral' implies a sales context where a current customer is used to introduce the vendor to a prospective customer. I share this view, and by adopting customer referencing as the main focus of my research I will thus exclude referrals.

1.3. RESEARCH OUTLINE

The outline of this research is represented in Figure 1.1 and is structured as follows. In the first chapter, I introduce the study and I state its purpose. In the second chapter, I present the literature associated with the research topic and the background from which it emerges. I then consider the theoretical standpoints and frameworks that support this study whilst also offering a discussion of the main relevant lines of thought in order to establish a useful context for debate. I review topics such as industrial buying behaviour (Sheth, 1973; Wind & Webster, 1972), industrial networks (Axelsson & Easton, 1992; Håkansson, 1982; Håkansson & Snehota, 1995; Turnbull & Valla, 1986), and the theory of referencing (Salminen & Möller, 2006). I also offer a taxonomy for the topic of customer references, which is followed by a discussion of customer-reference-based marketing and triadic value creation (Aarikka-Stenroos & Jalkala, 2012). The foundations of the Industrial Marketing and Purchasing Group are introduced by reviewing markets-as-networks theory, along with its cornerstone models, including: the interaction model (Håkansson, 1982); the ARA model (Håkansson & Snehota, 1995); and the 4R model (Håkansson & Waluszewski, 2002). The outcome of this theoretical research is the identification of gaps in the literature on customer referencing, which will feature in the third chapter. These identified gaps set the stage for broad and detailed research questions, along with suggestions for how this research process should proceed.

In the fourth chapter, I explain my methodology. I begin by debating the epistemological and ontological approaches taken in this research. Critical realism (Archer, Bhaskar, Collier, Lawson, & Norrie, 1998; Easton, 2002; Sayer, 1997, 2000) is a fundamental theme in this study. This discussion takes a critical perspective on research in marketing and a retrospective stance on organisational buying research. This

study takes an abductive approach based on a multiple case study design. This discussion is followed by critical consideration of my research approach and the methods I rely on in data collection and analysis. A detailed case protocol is also introduced.

The following discussion features three case studies: REN, the Pego power plant, and EDP. In the last part of this work, I discuss my key findings and their theoretical and managerial implications, along with their limitations, and offer suggestions for future research.

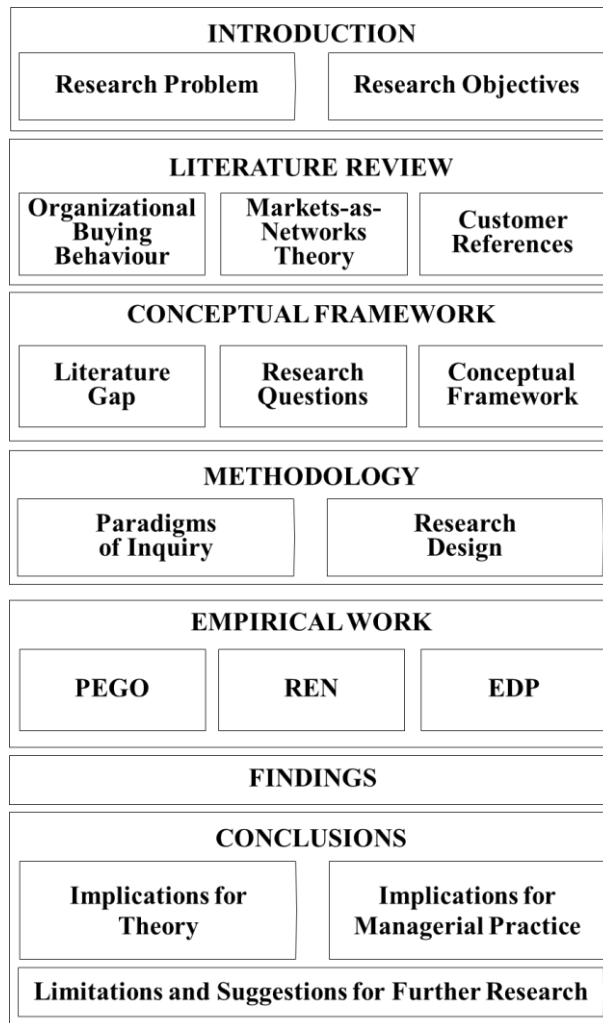


FIGURE 1.1 — Research outline

Source: author.

2. LITERATURE REVIEW

The broad research topic for this project is organizational buying behaviour (Wind, 1978). I approach this from a specific point of view: the “customer relationship and the related value-creation activities that a firm leverages externally or internally in its marketing efforts” (Jalkala & Salminen, 2010, p. 976). This specific perspective is often characterized as ‘customer references’ or ‘customer referencing’ and is used in the context of both business-to-business and business-to-consumer marketing. This work focuses on customer referencing in the context of organizational buying behaviour, but not in the context of consumer behaviour. The latter involves individual buying decisions, whereas I intend to address more complex buying decisions in a move towards organizational buying.

2.1. BUYING BEHAVIOUR

Organizational buying and purchasing behaviour has been a key issue in industrial marketing theory (Levitt, 1967; Robinson, Faris, & Wind, 1967). Wind and Webster (1972, p. 411) define organizational buying behaviour as an integral part of market research, where “systematic model building, data gathering, analysis and interpretation” takes place for the purposes of improving decision-making in industrial marketing. Empirical research featuring industrial purchasing behaviour can be traced back to the sixties (Cardozo & Feldman, 1969; Levitt, 1965, 1967; Webster, 1965; Wind, 1966, 1967). The most active field of research on organizational buying behaviour is decision-making in purchasing processes, i.e. the development of “a descriptive model of how industrial buyers make buying decisions and supplier selection” (Sheth, 1996, p. 7). This activity is intimately related to the need to identify “the locus of buying responsibility and the nature of the buying process within potential

customer organizations” (Kennedy, 1983, p. 45). Johnston and Lewin (1996, p. 1) framed this purpose as follows: “in order to succeed in business-to-business markets, selling firms must possess an understanding of customer firms’ buying behavior”.

As early as the seventies, Webster and Wind (1972) claimed that research findings on consumer behaviour are rarely useful to B2B marketing managers. They clarified the challenges and differences between research on organizational buying behaviour and the study of household behaviour. They argued that observing the organizational buying process is not a straightforward task; interpersonal relationships are highly significant and cannot be explicitly observed. Moreover, activities relating to the buying decision are likely to occur simultaneously at diverse locations, making it difficult for the outside researcher to understand what he observes.

In short, the authors contended that industrial and consumer marketing were different and suggested that, as in consumer marketing, a model for organizational decision processes related to industrial buying was needed when it came to designing industrial marketing strategies.

2.1.1. The buying centre

According to Wind and Thomas (1980, p. 240), organizational buying behaviour research concerns one of the following research subjects: “the buying centre, the organisational buying process, or the factors affecting the buying centre and process”. The concept of a buying centre was introduced by Robinson *et al.* (1967) and further developed by Webster and Wind (1972) as a distinct feature of organizational buying behaviour (compared to consumer behaviour) because of the necessity of interviewing more than one person (since most purchases involve a group of people). The concept of a buying centre in organizational buying behaviour played an important

role in the literature on marketing at least until the mid-eighties, when firms began to concentrate on their core businesses and to outsource many of their activities, often to international firms.

Johnston and Bonoma (1981, p. 143) suggest that the buying centre “has been one of the most important conceptual contributions made in the study of industrial buying behavior”. The buying centre includes a social dimension given the complexity of the buying decision unit (where this complexity is itself attributable to the five different roles its members might adopt): (i) users; (ii) buyers; (iii) influencers; (iv) deciders; and (v) gatekeepers. Webster and Wind (1972) shed some light on this topic by noting that the buying centre can be viewed as a subset of the “organizational actors” since those involved in the buying centre operate as part of the overall organization. Accordingly, the behaviour of buying centre members reveals the influence of others, the effect of the buying task, the organizational structure, and the targeted technology.

Additional work by Johnston and Bonoma (1981) identifies five dimensions that, along which the uniqueness of the buying centre, can be measured: (i) vertical involvement (relates to the number of hierarchical levels that exert influence on the buying centre); (ii) lateral involvement (relates to the number of departments that exert influence in the buying centre); (iii) extensiveness (relates to the total number of individuals involved in the buying centre); (iv) connectedness (the extent to which the members of the buying centre are connected to each other); and (v) centrality (the degree of the purchasing manager’s influence on the network).

Spekman and Stern (1979, p. 54) claimed that “there is a noticeable increase in research reflecting the dynamics and complexities of multi-person decision processes” as organizational buying behaviour theory continued to develop. Moreover,

other traits of the buying centre present additional challenges to the study of organizational buying behaviour, such as the fact that it changes over time. According to Kennedy (1983), the buying centre can be seen as a temporary organization unit, where purchase decisions are made incrementally. Field research featuring the purchase of steel plates led her to conclude that at each stage of the buying process the buying centre changes, and the locus of responsibility varies accordingly:

“[B]uying group membership appears to evolve during the procurement process and is a function of the information requirements and needs of a particular buying context. (...) When the purchase decision involved is concerned with a reorder to maintain stock levels, the buying group is relatively small. However, when the purchasing decision is concerned with the purchase of special steel plate, the buying group dilates to include members of the Engineering, Production, and Quality Control Departments. (...) The decisions that are made by members of the buying center in the early part of the buying process inevitably limit and shape the decision-making activities for buying centers involved in the later stages of the process.” (Kennedy, 1983, p. 55)

Another distinctive feature of organizational buying behaviour is the degree of loyalty that exists between the buyer and the seller. This topic has served as the basis for research (Wind, 1966, 1970). Nevertheless, based on empirical research, Cunningham and White (1974) assert that the low level of search behaviour of buyers is due to the high risk involved in the purchase decision, among other factors such as inertia and repetition of past experiences. According to Johnston and Lewin (1996), purchase risk is a function of: (i) the importance of a particular purchase; (ii) its complexity; (iii) the uncertainty of the purchase outcome; and/or (iv) the need to reach a decision quickly (time pressure). The authors argue that the complexity of organizational purchases increases as buying centres become larger. Where this is so, participants in the relevant decision-making typically have greater levels of experience and more education. Sellers who offer proven products and solutions are favoured. There is an active search for information, and a wide variety of information sources are used to mediate purchase decision conflicts between buying centre participants. It may

be difficult to use formalized decision-making guidelines and purchase control mechanisms. Role stress increases, and buyer-seller communication networks and relationships become even more important.

2.1.2. Organizational buying behaviour

In the quest for a deeper understanding of organizational buying behaviour, a number of empirically based models have been presented to the scientific community. Sheth (1996) and Johnston and Lewin (1996) identify three conceptual models that they take to be seminal to the literature on organizational buying behaviour, namely those presented by Robinson *et al.* (1967), Webster and Wind (1972), and Sheth (1973). According to Johnston and Lewin (1996), these three models provided a conceptual foundation for the study of organizational buying behaviour, and over the years many conceptual and empirical articles have either tested or extended them. Johnston and Lewin (1996) claim that nine concepts (environment, organization, group, participant, purchase, seller, conflict/negotiation, information, and stages in the buying process) significantly affect organizational buying behaviour and can be found in all three models. Following the collection of evidence from diverse research publications based on several years of empirical testing, they conclude that these three models are correct to highlight these nine concepts.

Figure 2.1 shows the BuyGrid model developed by Robinson *et al.* (1967). According to Wind and Thomas (1996), the BuyGrid model has had considerable success as an organizational buying behaviour framework over the past 30 years. This model increases our understanding of the following three dimensions related to buying behaviour: (i) the buying situation (the purchase status is one of the following: new task, a straight rebuy, or a modified rebuy); (ii) the buying process (the phases along which

the process takes place); and (iii) the buying centre (those involved in the buying process). Although this model emerges from exploratory field research, it combines these three major dimensions in order to serve as a normative framework. The buying situation is represented by the “buy classes”, the buying process is represented by the “buy phases”, and the buying centre is implicit in the “buying influences”.

BUY PHASES	BUY CLASSES		
	New Task	Modified Rebuy	Straight Rebuy
1. Anticipation or Recognition of a Problem (need) and a General Solution			
2. Determination of Characteristics and Quantity of Needed Item			
3. Description of Characteristics and Quantity of Need Item			
4. Search for Qualification of Potential Sources			
5. Acquisition and Analysis of Proposals			
6. Evaluation of Proposals and Selection of Supplier(s)			
7. Selection of an Order Routine			
8. Performance Feedback and Evaluation			




FIGURE 2.1 — Robinson et al. BuyGrid model
Source: Adapted from Robinson et al., 1967.

According to Baptista (2001, p. 69), the BuyGrid model has proven a useful analytical tool and is a valuable resource for practitioners. Managers adopted this model in the past because of its simplicity and generic field of application, although it is no

longer used as a business-to-business marketing framework. In any case, two concepts from this model continue to play a key role in studies of organizational buying behaviour: (i) buy phases; and (ii) buy classes. This model introduced these concepts, and to this extent it remains significant.

A second and subsequent model mentioned above was developed by Webster and Wind (1972), which is shown in Figure 2.2. Cunningham and White (1974) suggest that the model proposed by Webster and Wind (1972) treats organizational buying behaviour as “a decision-making process carried out by individuals through interaction with other people within a formal company organizational structure, which is itself set in the context of a number of external environmental influences” (Cunningham & White, 1974, p. 117).

Webster and Wind (1972) attempt to include all elements that might impact or influence a buying decision and organize them into four major dimensions: (i) the environment; (ii) the organization; (iii) the buying centre; and (iv) the individual participants. Due to its complexity, the model seems not to have been adopted by practitioners. Nevertheless, in connection with this model the authors contribute a vast number of relevant, clearly-described concepts to the literature on organizational buying behaviour. These notions continue to play a central role in the literature on organizational buying behaviour. Table 2.1 presents an overview of these concepts.

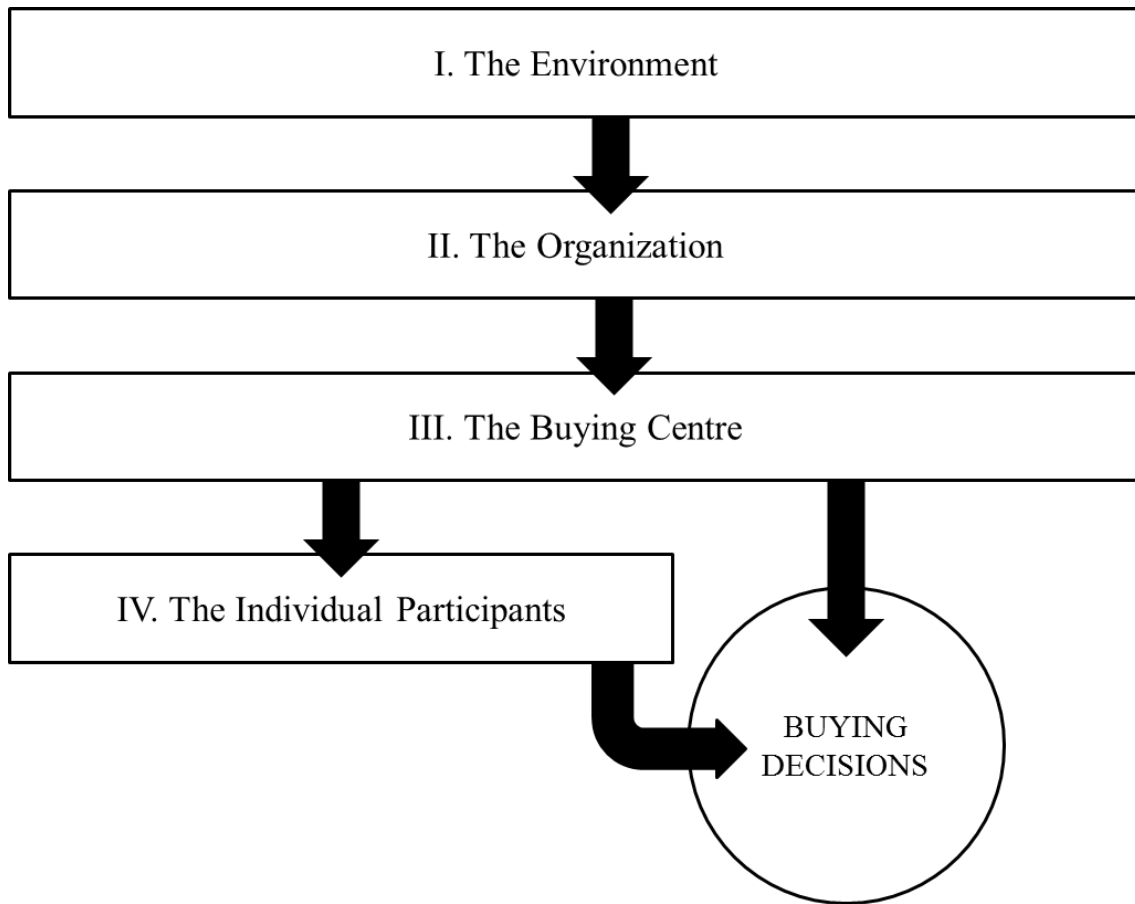


FIGURE 2.2 — Webster and Wind’s model of organizational buying behaviour (abridged)
Source Adapted from: Webster & Wind, 1972, fig. 1.

Finally, Sheth (1973) aims to develop an “integrative model of industrial buyer behavior” by integrating existing knowledge into a descriptive or general model capable of explaining all types of industrial buying decisions and of aiding in industrial market research. Sheth acknowledges the complexity of the proposed model and justifies it by citing “the large number of variables and complicated relationships among them” (Sheth, 1973, p. 51). He also recognizes the influence of a previous model from consumer behaviour theory – the theory of buyer behaviour (Howard & Sheth, 1969) – while nonetheless acknowledging the main differences between the two approaches. Sheth (1973) claims that organizational buyer behaviour consists of three distinct

features. The first is the subjective world of the actors involved in organizational buying decisions. The second is the conditions that allow for combined decisions among these actors. The third feature is the process of combined decision-making, along with the conflicts that take place between actors and their solutions via diverse tactics.

TABLE 2.1 — Organizational buying behaviour concepts, according to Webster and Wind

CONCEPT	QUOTE	SUGGESTED DEFINITION
Organizational buying	“a decision-making process carried out by individuals, in interaction with other people, in the context of a formal organization” (p. 13)	The decision-making process carried out by individuals, in interaction with other people, in the context of a formal organization.
Organizational buying process	“a form of problem-solving, and a buying situation is created when someone in the organization perceives a problem – a discrepancy between a desired outcome and the present situation – that can potentially be solved through some buying action” (p. 14)	A form of problem-solving that takes place when someone in the organization perceives a problem that can potentially be solved through some buying action.
Organizational buying behaviour	“includes all activities of organizational members as they define a buying situation and identify, evaluate, and choose among alternative brands and suppliers” (p. 14)	All activities carried out by organizational members as they define a buying situation and identify, evaluate, and choose among alternative brands and suppliers.
Buying centre	“The buying center includes all members of the organization who are involved in that process [organizational buying process]” (p. 14)	Those members of an organization who are involved in the organizational buying process.
Buying tasks	“a subset of organizational tasks and goals that evolves from the definition of a buying situation. These are pure task variables by definition. The specific tasks that must be performed to solve the buying problem can be defined as five stages in the buying decision process: (1) Identification of need; (2) establishment of specifications; (3) identification of alternatives; (4) evaluation of alternatives; and (5) selection of suppliers.” (p. 16)	The specific tasks that must be performed to solve the buying problem.

Source: author based on Webster & Wind, 1972.

In addition to the three organizational buying behaviour models already presented, there are others that are not based on theoretical concerns and that have instead been developed from the standpoint of management. The normative framework presented by Anderson *et al.* (2007), *Superior Value in Business Markets*, serves as an example. This framework addresses the topic of customer value management and is in line with previous works by different authors (Anderson & Narus, 1998, 1999; Anderson, Narus, & Rossum, 2006). The interesting feature of this work in the context of the present study lies in the importance the authors give to customer referencing. Concepts like ‘reference customer’, ‘success stories’, ‘value case histories’, ‘customer value assessment tools’ or ‘value calculators’, ‘value documenters’, and ‘customer value management’ are used as cornerstones for their prescriptive framework. A view of the buyer as an entity able freely to choose from alternative suppliers is implicit in this framework; interaction between the buyer and the seller is considered an ‘atomistic’ relation, where short-term gain is both parties’ main objective. This idea is also at work in a study by Kumar (2004), where customer value is discussed through the lens of a transactional relation.

2.1.3. Discussion

In the literature reviewed thus far, the firm is perceived as the major focus of analysis. Within the firm, researchers focus on organizational buying behaviour. The authors consider individual, isolated and transactional episodes that are later related to topics such as buying behaviour information, decision criteria, and influence structures in buying centres. Nevertheless, the reciprocal nature and two-sided influence structure of exchanges are not considered, which undermines the accuracy of these studies. This literature views the customer as autonomous and insignificant, part of a faceless market

that responds to vendors' offers in the absence of complex interaction, rendering each transaction an isolated event.

All three of the above models ignore the long-term relationships between buyers and sellers. In contrast to this, a new perspective emerged in the mid-seventies in the European research community, which began to explore the implications of continued and stable relationships for industrial markets. The Industrial Marketing and Purchasing Group's perspective on business-to-business marketing was founded on the proposition that business is not an isolated activity that occurs between independent organizations. On the contrary, it is established in the interaction process that takes place among interdependent companies, be they customers, suppliers, business partners, or competitors. Several authors and lines of research have contributed to building this perspective. Araujo and Easton (1996) point out that its antecedents date back to studies on interaction and relationships in industrial markets, research on distribution channels, and theories of firm internationalization.

In conclusion, the literature thus far offers concepts and models that are part of a body of knowledge that aims to explain the phenomenon of organizational buying behaviour. A theory of industrial marketing has thus been established, and the knowledge it contributes is highly valuable to the study of customer referencing practice. Nevertheless, this stream of thought is deeply associated with the North American business context inasmuch as it has mostly been developed by academics who conduct research in this geographic area. In the context of the present research, theories based on data from other geographical areas are highly relevant and thus in need of further consideration. In particular, this research also considers markets-as-networks theory, which was developed in the context of Northern European academic

research. Both these two streams of thought are seen as traditions that do not conflict but rather complement each other, allowing for a comprehensive view on the topic of organizational buying behaviour. The Northern European stream of thought is described next.

2.2. BUSINESS RELATIONSHIPS

Over the years, a dense body of knowledge has been generated by the researchers from the Industrial Marketing and Purchasing Group, which has contributed greatly to marketing science. Sousa and Castro (2006) identify five core elements within markets-as-networks theory: (i) an emphasis on business relationships, as well as their connectedness and uniqueness; (ii) a conception of business relationships as a third type of governance structure in contrast to hierarchies and markets; (iii) a view of knowledge development as furthered by business relationships; (iv) a conception of firm performance as explained by both internal operations and exchange processes; and (v) an emphasis on the significance of business relationships to the focal firm (or “relationship significance”).

The remainder of this section highlights the most relevant theoretical contributions from the Industrial Marketing and Purchasing Group. These three models (and their core concepts), which act as cornerstones of the industrial networks perspective, are: (i) the interaction model; (ii) the ARA (activity-resource-actor) model; and (iii) the 4R (four resources) model.

2.2.1. The Interaction Model

Useful information about organizational buying behaviour has been gleaned by studying the purchasing manager as an individual (Johnston & Bonoma, 1981).

Johnston and Bonoma (1981) contend that most researchers are unable to “capture the real life complexity of the buying interactions that occur in a company, much less the influences coming from selling representatives and the environment (competitors, government)” (Johnston & Bonoma, 1981, p. 144). According to these authors, the chief obstacle in this regard is the absence of a suitable interaction theory which could help to spell out the “involvement and interaction of organizational members in the buying decision process, information transmission and processing in the buying center” (Johnston & Bonoma, 1981, p. 144).

The interaction model is the outcome of the first research project promoted by the Industrial Marketing and Purchasing Group and features a book entitled *International Marketing and Purchasing of Industrial Goods: An interaction approach* (Håkansson, 1982). This first research programme was carried out in five countries (France, Germany, Italy, Sweden and the United Kingdom), where more than 800 interviews (based on the same questionnaire) were conducted.

This research was triggered by the recognition that empirical observations did not correspond to mainstream theories about ‘atomistic’ behaviour in business markets, which focused on observations of single, discrete transactions. Turnbull, Ford, and Cunningham (1996) observe that in those markets the majority of companies had a small number of suppliers and customers who were individually accountable for considerable amounts of their purchases and sales. They also recognized that the relationships between these firms and their customers and suppliers tended to be “close, complex and long term, with extensive contact patterns between many individuals from each company and significant mutual adaptation by both parties” (Turnbull et al., 1996, p. 45). This did not align with previous research, which viewed markets as atomistic,

consisting of large numbers of nameless customers with whom firms dealt from a distance.

Zaltman and Bonoma (1977) also debate the need to overcome research difficulties and improve the methodologies associated with the study of this phenomenon. For instance, the authors claim that in the study of organizational buying behaviour, the researcher faces two options regarding the selection of the unit of analysis. The first option is to take the individual into consideration. This might be the individual purchasing agent or the vice-president of procurement. The second option is “to start with an individual while taking into account relevant other individuals within and without the firm” (Zaltman & Bonoma, 1977, p. 59). They consider the second option (which includes a view on interactions between individuals) more appropriate. From their perspective, this option is more meaningful, albeit more difficult from a methodological point of view. Therefore, these authors argue that in order to treat a firm’s buying centre as the unit of analysis (rather than individuals) one must develop innovative research methodologies.

To overcome this constraint, relationships, rather than individuals or single transactions, were treated as the unit of theoretical analysis. According to Håkansson (1982, p. 14), industrial markets feature stability and long-lasting relationships rather than rapid change and quick business transactions. Buying and purchasing behaviour seems to be more stable and is associated with long-term relationships, where firms replace traditional marketing mix approaches with processes that more actively involve both sides:

“Our approach to industrial markets (...) is based on (...) a number of factors which our earlier empirical studies indicate are important in industrial markets and which appear to have been largely neglected in previous research:

FIRSTLY, that both buyer and seller are active participants in the market. Each may engage in the search to find a suitable buyer or seller, to prepare specifications of

requirements or offerings and to manipulate or attempt to control the transaction process. SECONDLY, the relationship between buyer and seller is frequently long term, close and involving a complex pattern of interaction between and within each company. The marketers' and buyers' task in this case may have more to do with maintaining these relationships than with making a straightforward sale or purchase. THIRDLY, the links between buyer and seller often become institutionalized into a set of roles that each party expects the other to perform, for example the division of product development responsibility, or the decision as to who should carry inventory and test products. These processes may require significant adaptations in organization or operation by either or both companies. FOURTHLY, close relationships are often considered in the context of continuous raw material or component supply.” (Håkansson, 1982, p. 22)

According to Sousa (2010), two relevant empirical findings emerged from this first research project. The first is that industrial purchasing and marketing must be seen not simply as market transactions but as part of a lasting pattern of interaction between active buyers and sellers. The second is that business-to-business markets are “neither faceless nor atomistic, often including close and long-standing business relationships” (Sousa, 2010, p. 417).

The result of this seminal work was a dynamic model of buyer-supplier relationships. The model is based on the idea that buyers and sellers maintain stable and complex relationships where the generation of the products and services exchanged by both parties is interactive.

Håkansson (1982) asserts that the obstacles to changing providers severely restricts the applicability of the concept of free movement within business markets, which is a key aspect of traditional economic theory. He claims that stability, source loyalty and inertia are natural outcomes of the learning process that buyers and sellers face in their relationship, specifically due to its technical, commercial and social dimensions. These benefits of stability are also known as ‘the bias towards incumbents’.

The interaction model considers and relates four types or groups of variables that describe the interaction that takes place between two firms – or even within the context of a multi-party relationship (Håkansson, 1982, p. 23): (i) the interaction

process and associated elements; (ii) the parties involved in the interaction process; (iii) the environment within which interaction takes place; and (iv) the atmosphere that both affects and is affected by the interaction. Figure 2.3 represents the interaction model, which contains a detailed sketch of these four elements, their components, and how they relate.

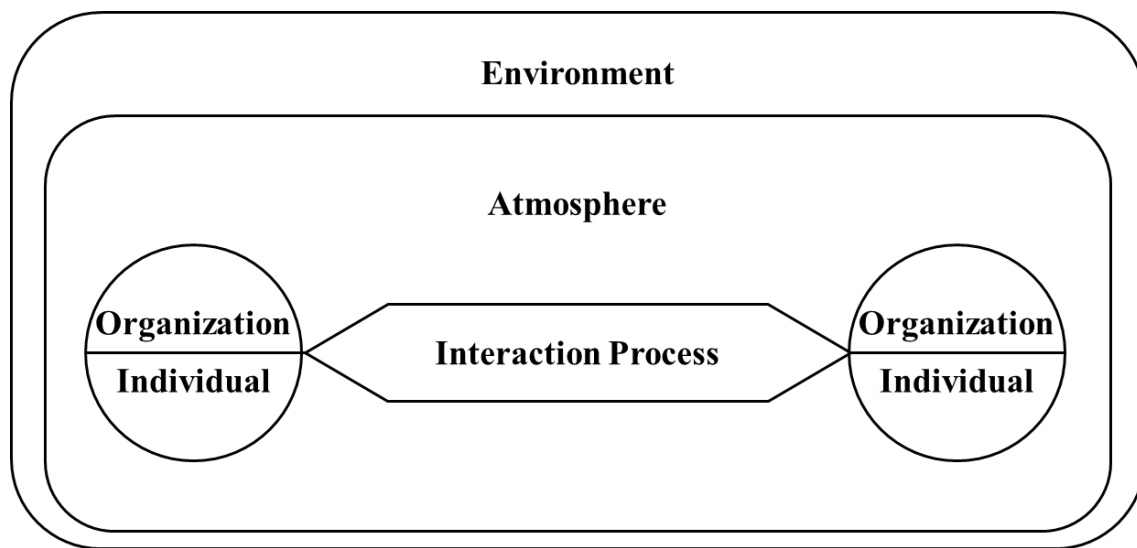


FIGURE 2.3 — Håkansson's illustration of the Interaction Model (abridged)
Source: Adapted from Håkansson, 1982, fig. 2.2.

2.2.2. The ARA Model

The outcomes of the second research project promoted by the Industrial Marketing and Purchasing Group were published in the manuscript *Developing Relationships in Business Networks* (Håkansson & Snehota, 1995). The three major goals of this research project were: (i) to gain additional insight into business relationships and networks; (ii) to outline the processes that occur within them; and (iii) to understand how individual companies act in these circumstances. As a result, a new dynamic model was developed. Sousa (2010) lists as the principal outputs of this second

research: (i) a comprehensive database of business relationships; (ii) diverse exhaustive case studies; and, above all, (iii) the actors-resources-activities model.

Although this new model was developed as the result of a second research project, it was built on the seminal work of Håkansson (1982), which featured the interaction approach. Relationships can be understood as the outcome of the interaction process by which connections are established between actors that “produce a mutual orientation and commitment” (Håkansson & Snehota, 1995, p. 26). According to Sousa (2010), the interdependences among business relationships observed in the first project prompted researchers to undertake a second venture, which began in 1986. While the first project focuses on buyer-seller relationships, the second focuses on the complex networks formed by these relationships. The second project was similar to the first from a methodological point of view, namely due to its intensive adoption of case research.

The ARA model hypothesizes that business relationships are constituted by three different dimensions, or layers, where activities are performed by actors who have access to resources. A definition of each of the constituent elements of this model is offered by Håkansson and Snehota (1995):

“Activity links regard technical, administrative, commercial and other activities of a company that can be connected in different ways to those of another company as a relationship develops. Resource ties connect various resource elements (technological, material, knowledge resources and other intangibles) of two companies. Resource ties result from how the relationship has developed and represents in itself a resource for a company. Actor bonds connect actors and influence how the two actors perceive each other and form their identities in relation to each other. Bonds become established in interaction and reflect the interaction process.” (pp. 26–27)

A business relationship connects activities that relate to the various internal activities of both entities. Additionally, relationships merge resources from both parties. A relationship makes diverse resource elements available to the two firms and is therefore available as an important resource. Actors become more connected as the

business relationship grows. These bonds affect the way actors perceive, evaluate and treat each other.

Another central element of this second research project is the dyad (Thibaut & Kelley, 1959). The dyad originates in the conjunction of the two companies. Nevertheless, as a theoretical concept, the dyad is not new to the literature on organizational buying behaviour. Webster and Wind (1972, p. 17) relate it to the “interpersonal (...) interaction between persons in the buying center and between members of the buying center and ‘outsiders’ such as vendors’ salesmen”.

According to Anderson, Håkansson, and Johanson (1994), special attention should be given to the context in which the dyadic relationship takes place, and thus a comprehensive understanding of business relationships is required. The dyad is deeply connected to the three layers that constitute the business relationship. A business relationship develops as the two companies establish connections at the activity, resource and actor layers. The activities, resources and actors of the two firms are merged together in a unique way. The essence of the dyad consists in: (i) the activity links; (ii) resource ties; and (iii) actor bonds. The dyad is not simply the sum of what the two parties offer each other; it is something qualitatively different. This relationship is a ‘quasi-organization’; its value increases above the sum of its basic elements thanks to existing bonds, links and ties.

Together, the two firms are able to exploit resources and execute activities that are not achievable in separation. As the relationship develops, the number of benefits available to firms increases, allowing them to realize new possibilities, including gaining access to additional relationships from companies to which they are not directly related. The outcome of a single relationship can therefore affect and is

affected by other relationships involving other participants in the network. Håkansson and Snehota (1995, p. 27) state that the effects on “third parties and from third parties and their relationships on the relationship in any of the three layers of substance depend on how tight the connectedness of relationships is in the overall network”. The original interpretation of the dyad – from the seminal interaction approach – has been widened to accommodate the network in which it is located. This phenomenon has already been described by Håkansson (1987), who contends that single dyadic relationships are interrelated in wider structures.

2.2.3. The 4R Model

Following the completion of the two initial research projects, new challenges and ideas emerged as themes to be developed in future initiatives. The third research project promoted by the Industrial Marketing and Purchasing Group aimed to analyse interaction among business resources. The 4R model emerges as an answer to this challenge and is the underlying concept portrayed in the manuscript *Managing Technological Development: IKEA, the environment and technology* (Håkansson & Waluszewski, 2002).

The 4R model (Håkansson & Waluszewski, 2002) is based on four main categories of resources. The first category is ‘products’, or objects exchanged between economic actors. The second category is ‘production facilities’, which includes, for example, equipment and facilities used to create or transform products. The third category is ‘business units’. A department or a division within a company may be conceived as a business unit, but in this particular case the authors (Håkansson & Waluszewski, 2002) explicitly intend to refer to the organizational structure, competence and personnel skills that characterize different companies. The fourth

category is 'business relationships': the links, ties and bonds derived from the interaction between the two parts.

Products and production facilities are considered 'physical resources', while business units and business relationships are designated as 'organizational resources'. Business units and business relationships are social resource elements that organize the physical facilities where products and production take place. Social exchange involves the adaptation of the exchanged products. Therefore, it influences both the requirements and the products offered. In this sense, exchanged products are not given but are the outcome of the interaction process. Business relationships are resources that generate value for the involved firms. Business relationships can be considered relevant assets or tools since they allow firms to achieve strategic goals.

The 4R model derives from the presumption of "resource heterogeneity" (Penrose, 1959), which states that the value of a resource is given not by the resource itself but by being combined with others. Håkansson and Waluszewski (2002) introduce the notions of "resource interaction" and "resource embeddedness". These concepts suggest that interaction in business networks also concerns physical, technical, and economic elements. Firms do not interact in a void. Rather, resources interact in the context of business networks. To better understand the value of a specific resource, one must understand how it relates to the others with which it interacts. This can be achieved by deepening our understanding of 'resource embeddedness'. Minde (2007) sheds light on this concept by explaining that resource embeddedness arises from the fact that resources are always surrounded by other resources. Hence, a resource cannot be considered an isolated element; other relevant neighbouring resources should also be taken into consideration. The author concludes that thanks to the interactions that take

place at the social, technical, and economical levels, these neighbouring resources jointly define each other's value.

To conclude, the value of a resource cannot be assessed independently; it must be assessed alongside the network of other resources with which it interacts.

2.2.4. The Role Played by Marketing within the Interaction and Networks

Approach

Mattsson (2000) highlights the role of marketing in establishing, maintaining, developing and, when necessary, ending relationships in the network. He observes that competitors strive to develop their own networks. In this sense, this effort acts as a force that dynamically changes the properties of an existing network. Thus, forces of stability and change, such as cooperation and competition, are important aspects of change and network dynamics.

According to the same author, a firm occupies a specific position in the network, which will change over time. This position describes who the company relates to and the content of the established relationships. The position that the company occupies in the network is therefore a reflection of its marketing activities, cumulated over time. However, it also reflects the behaviour of its peers, that is, other actors that are present in the network of relationships that integrates the company. Ford, Gadde, Håkansson, and Snehota (2002) defend this idea. They argued that a firm's position in the network is based on the total set of relationships and changes through the process of interaction that takes place with other companies that occupy different places on the network.

Mattsson (2000) suggests that marketing should be viewed as an investment process that seeks to build, develop and maintain exchange relationships with customers

and intermediaries. The company therefore seeks to develop its position in the network with a long-term view. Marketing's role is to focus on the selection and handling of relationships that the company establishes with its peers, and a crucial choice for management is to decide what relationships the company wants to establish and develop. In the same way, Ford *et al.* (2002) point out that the outcome of a firm's actions will be heavily influenced by the attitudes and actions of those with whom it establishes relationships.

2.2.5. Discussion

Despite the importance of the literature on industrial networks and the theoretical relevance of the work carried out by the Industrial Marketing and Purchasing Group, the North American approach to organizational buying behaviour still attracts the attention of many researchers around the globe. One feature that divides these two streams of thought concerns the role and importance that researchers give to the buying centre. In the North American literature, it is a nuclear element without which we cannot understand organizational buying behaviour. From the other perspective – the European literature – it is not even mentioned most of the time. One possible explanation for this might be the different dimensions and complexity levels of the firms under study in these two geographic regions. The North American scientific tradition features larger, more complex firms (GE being a paramount example) than those studied by the European literature.

As noted above, I consider these two views complementary rather than conflicting. I believe that, taken together, they allow for a more complete understanding of the phenomenon under study. Contributions to customer referencing theory come from several authors but primarily from within the Industrial Marketing and Purchasing

Group. This means that the European tradition is predominant in the literature on customer referencing. In this research, I will consider the buying centre as an essential element in organizational buying. By doing this, I aim to further establish the originality and relevance of the present research.

2.3. CUSTOMER REFERENCE MARKETING

Customer referencing has been the focus of several scholars for same time. Nevertheless, this topic has yet to become a mainstream research subject due to the small number of published peer-reviewed articles on it. In the course of the present theoretical research, I came across 20 conference proceedings, 17 peer-reviewed articles, and three doctoral dissertations (Jalkala, 2009; Ruokolainen, 2008b; Salminen, 1997). Scientific publication on this topic has spanned two decades, peaking in 2008 (see Figure 2.4).

In addition, I came across several industry reports, a book chapter (Rese et al., 2012), and teaching material (Godes, 2008; Ruokolainen, Kauranen, & Igel, 2005) featuring customer referencing. Table 2.2 provides an overview of the existing literature in peer-review journals that contributes to the body of knowledge on customer referencing in the context of organizational buying behaviour.

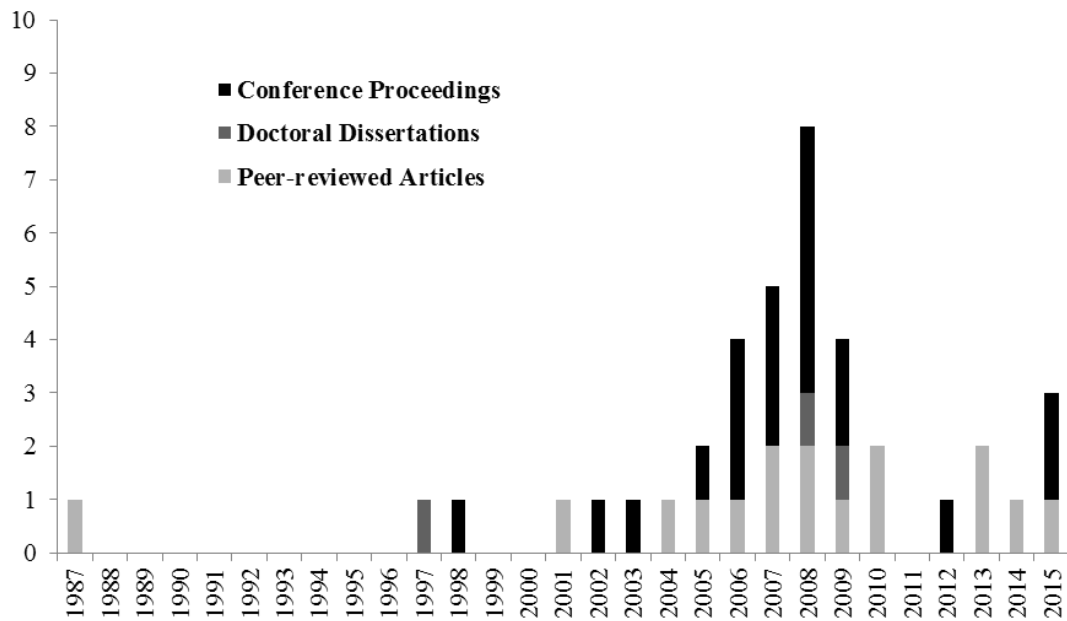


FIGURE 2.4 — Scientific publications featuring the topic of customer referencing
Source: author.

The body of research on referencing originates from two different geographical regions, which adopt opposing research strategies. In a general sense, European authors put their fieldwork toward the generation of case studies, while North American authors apply a more positivist approach. As it turns out, contributions from regions outside of Europe are scarce. Indeed, this research topic has been dominated by authors belonging to the Northern European stream, specifically scholars from Finland. This fact confirms the importance of empirical research from other countries, such as Portugal (e.g. the present study). Because of this, I restrict my research to firms operating in Portugal. The firms I have selected as case studies are EDP, REN and Tejo Energia, all of which have agreed to participate in this research (letters confirming this are attached as Appendix 2).

TABLE 2.2 — Scientific articles on customer referencing (2001-2015)

AUTHOR(S)	TITLE	JOURNAL	PURPOSE	TYPE	RESEARCH STRATEGY
Salminen (2001)	Success factors of a reference visit: a single case study	Journal of Business & Industrial Marketing	“to describe the total process of a reference visit and through key considerations of a reference visit to develop success factors from that description” (p. 502)	Empirical	Single Case Study / Decision Systems Analysis
Salminen and Möller (2004)	Use of references in industrial bidding – a decision process analysis	Journal of Marketing Management	“to describe and analyse the use of written reference information in an industrial bidding process” (p. 133)	Empirical	Single Case Study / Decision Systems Analysis
Jalkala and Salminen (2005)	Customer references as marketing practice in company web sites – content and discourse analysis	Frontiers of e-business research	“to identify the main themes and discourses in companies reference descriptions and explore how the reference relationship and the subject positions of the supplier and the customer are constructed in the texts” (p. 176)	Empirical	Content and Discourse Analysis
Salminen and Möller (2006)	Role of references in business marketing – towards a normative theory of referencing	Journal of Business-to-Business Marketing	“to propose a preliminary theory of business marketers’ referencing behavior” (...) “we propose (...) a conceptual framework for a model of suppliers’ referencing behavior, which defines the tasks assigned to references and the kind of contexts they are primarily employed in” (p. 2-6)	Conceptual	N.a.
Ruokolainen and Mäkelä (2007)	Constructing a market domain model for start-up software technology companies: a case study	Journal of Engineering and Technology Management	“to introduce a domain model that describes the key concepts [that are central to customer references from the viewpoint of the start-up technology companies] and the relationships between them” (p. 186)	Empirical	Single Case Study / Domain Model
Gomez-Arias and Montermoso (2007)	Initial reference customer selection for high technology products	Management Decision	“to show that high technology companies often find it challenging to select their first reference customer” (p. 982)	Conceptual	Illustrated with a Case Study
Ruokolainen (2008a)	Constructing the first customer reference to support the growth of a start-up software technology company	European Journal of Innovation Management	“to explore the important and distinctly under-researched topic of first customer references, for which a basic descriptive framework is created” (p. 282)	Empirical	Longitudinal Case Study / Pattern-matching Logic and Time-series Analyses

AUTHOR(S)	TITLE	JOURNAL	PURPOSE	TYPE	RESEARCH STRATEGY
Olaru <i>et al.</i> (2008)	From customer value to repurchase intentions and recommendations	Journal of Business & Industrial Marketing	“to fill a gap in the literature in relation to the determinants of customer value within the research and development (R&D) industry and word-of-mouth” (p. 554)	Empirical	Survey / Structural Equation Modelling
Jalkala and Salminen (2009)	Communicating customer references on industrial companies’ web sites	Industrial Marketing Management	“to explore the themes and discourses embedded in these descriptions [customer reference descriptions in industrial suppliers’ Web sites] and to analyse how suppliers present themselves and their references through these texts” (p. 826)	Empirical	Exploratory Case Study / Content and Discourse Analysis
Jalkala and Salminen (2010)	Practices and functions of customer reference marketing — leveraging customer references as marketing assets	Industrial Marketing Management	“to identify and analyze the various practices and functions of customer reference marketing and to explore the ways in which customer references can be leveraged as marketing assets” (p. 975)	Empirical	Multiple-case Study
Helm and Salminen (2010)	Basking in reflected glory: using customer reference relationships to build reputation in industrial markets	Industrial Marketing Management	“to combine the concepts of reputation management and reference relationships in order to facilitate further conceptual and empirical investigations” (p. 737-738)	Conceptual	N.a.
Godes (2012)	The strategic impact of references in business markets	Marketing Science	To understand “when and, especially, why a firm should announce a ‘reference program’”. (p. 258)	Empirical	Model
Kumar <i>et al.</i> (2013)	Defining, Measuring, and Managing Business Reference Value	Journal of Marketing	To understand “the role and value of client references, specifically in a B2B selling context” (p. 68)	Empirical	Multi-methods (survey, data collection and interviews)
Kilian <i>et al.</i> (2013)	Communicating competency in references: a qualitative analysis of the utilization of references in mechanical engineering	Journal of Business-to-Business Marketing	To extend “Jalkala and Salminen’s research approach” by concentrating “on the intended effects on potential customers”. (p. 65)	Empirical	Qualitative research (semi-structured interviews)

AUTHOR(S)	TITLE	JOURNAL	PURPOSE	TYPE	RESEARCH STRATEGY
Aarikka-Stenroos and Makkonen (2014)	Industrial buyers' use of references, word-of-mouth and reputation in complex buying situation	Journal of Business & Industrial Marketing	To understand "how the buyer can mobilize experience-based information scattered around the business network, by means of customer references, word-of-mouth and reputation, and how this facilitates the buying process" (p. 344)	Empirical	Multiple-case Study
Ruokolainen and Aarikka-Stenroos (2015)	Rhetoric in customer referencing: fortifying sales arguments in two start-up companies	Industrial Marketing Management	To investigate "how start-up companies can strengthen their argumentation power and the persuasiveness of their scarce customer references by applying the principles of rhetoric in the business-to-business (B2B) context." (p. 188)	Empirical	Two longitudinal cases using a constructive research approach

Source: author.

2.3.1. In search of a definition of 'customer reference'

Customer referencing has been the focus of several authors who use different research strategies. The body of knowledge outlined above offers various definitions of 'customer reference'. To my knowledge, it was Salminen (1997) who first defined the concept of a 'customer reference':

"A reference is the supplier's relationship to his existing/former customer that might be evaluated by that customer in terms of the supplier's product/service, management, and cooperation performance." (p. 311)

He suggests that a customer reference is a customer-vendor relationship that can be evaluated by prospective customers. Building on Salminen's definition, Salminen and Möller (2006) also propose a formal definition of 'customer reference'. They argue that a customer reference is a piece of evidence of a supplier's capability to deliver a product, service or system:

“An indirect proof, based on some practical or concrete evidence, like product, service or systems delivery, of a supplier’s capability of delivery” (Salminen & Möller, 2006, p. 5)

Nevertheless, Ruokolainen (2008b) disputes Salminen’s (1997) proposal by contending that his definition relates two entities that should not be combined: the customer relationship and the supplier’s performance. According to Ruokolainen (2008b, p. 25), “[t]he former can tell something about the latter but in other cases it also tells nothing about the latter”. Instead, Ruokolainen (2008b) adopts the Wordnet definition (Princeton University, 2004): “A reference is a formal recommendation by a former employer to a potential future employer describing the person’s qualifications and dependability”, extending it to include the reference business case associated with the vendor’s product or services portfolio:

“The customer reference consists of a supplier’s commercial product or services and the reference business case of the product or services.” (Ruokolainen & Mäkelä, 2007, p. 169)

In order to define ‘customer reference’, Jalkala and Salminen (2010) invoke the idea of customer relationships and relate it to the marketing efforts of the firm:

“[A] customer relationship and the related value-creation activities that a firm leverages externally or internally in its marketing efforts” (p. 976)

Apart from these definitions, many authors offer different contributions to our understanding of customer references. Table 2.3 lists these contributions. The majority of them refer to customer references as either marketing tools or marketing assets that emerge from a customer relationship. This is interesting to the extent that they are both causes and consequences of marketing efforts. The definition of customer reference proposed by Jalkala and Salminen (2010) captures this dual quality.

TABLE 2.3 — Contributions to a definition of ‘customer reference’

SOURCE	QUOTE	SUGGESTED CONTRIBUTION
Salminen and Möller (2006)	“major deliveries are often considered as references in business marketing practice” (p. 2)	The outcome of a major delivery.
Ruokolainen and Mäkelä (2007)	“In the practice of industrial marketing, customer references are often needed for convincing potential customers to purchase products or services from a supplier.” (p. 186)	An instrument of customer persuasion used in the practice of industrial marketing.
Ruokolainen and Mäkelä (2007)	“Customer references are needed in order to prove credibility.” (p. 196)	A source of credibility.
Jalkala and Salminen (2009a)	“In the process of customer reference utilization, existing customers typically work as important advocates and ‘enthusiasts’ for the supplier company (Osarenkhoe & Bennani, 2007), by giving testimonials, hosting reference visits, and providing information about the delivered solutions and their performance” (p. 285)	A way to use existing customers as advocates of the firm.
Jalkala (2009)	“The study suggests that customer references could be viewed as important marketing assets for industrial suppliers, and the ability to build, manage and leverage customer reference portfolios systematically constitutes a relevant marketing capability” (p. iv)	Marketing assets that constitute a relevant marketing capability.
Jalkala and Salminen (2010)	“customer references can be leveraged externally as marketing assets (...) Customer references can also be leveraged internally” (p. 983)	A marketing asset which is able to be leveraged both internally and externally.
Jalkala and Salminen (2010)	“From the resource-based perspective, customer references can be considered part of customer-based assets (Hooley, Möller & Broderick, 1998), which are accumulated through the relationships the firm has built with its customers and are often regarded as the most important type of marketing assets (Hooley et al., 1998).” (p. 975)	A customer-based asset which is accumulated through the relationships the firm has built with its customers.
Jalkala and Salminen (2010)	“industrial suppliers use their relationship with the reference customer as a marketing tool” (p. 976)	A marketing tool.
Jalkala and Salminen (2010)	“Through customer references, the supplier is able to provide indirect evidence of the functionality of the technology and thus reduce the perceived risk of a potential buyer and other stakeholders, such as project financiers.” (p. 979)	A means of providing indirect evidence of the functionality of the technology, thus reducing the perceived risk of a potential buyer and other stakeholders.
Jalkala and Salminen (2010)	“customer references lend credibility, as they provide indirect evidence about the supplier’s experience, previous performance, technological functionality, and ability to deliver customer value” (p. 980)	A source of indirect evidence of the supplier’s credibility.

SOURCE	QUOTE	SUGESTED CONTRIBUTION
Jalkala and Salminen (2010)	“the functions through which customer references work as a sales and promotional tool are various and not limited to the ‘referral effect’ of customer references (...) including status transfer and offering demonstration effects, as well as the indirect evidence that references provide about supplier’s experience and previous performance” (p. 982)	A source of indirect evidence of the supplier’s experience and previous performance.
Jalkala and Salminen (2010)	“customer references are critical marketing assets for industrial suppliers, not only because they serve as means of increasing the supplier’s market credibility through several functions, but also because they incorporate several internal functions that contribute to organizational learning and efficiency.” (p. 983)	A critical marketing asset for industrial supplier’s market credibility that contributes to organizational learning and efficiency.

Source: author.

In the context of my work, this definition also emerges as the most compelling and useful from the point of view of operational research. Hence, it offers a strong basis for this project, not least because it allows for a clear distinction between customer referencing and both ‘referrals’ and ‘word of mouth’. Although one might consider the latter two concepts marketing tools, they clearly do not share the dual nature of being marketing tools and marketing assets. Their only feature is their handiness as marketing practice tools that do not qualify as firm assets. Therefore, in the context of this work, I adopt the following definition: a customer reference is a customer relationship and the related value-creation activities that a firm leverages externally or internally in its marketing efforts.

2.3.2. Customer referencing taxonomy

Zikmund (2003, p. 40) defines the term ‘concept’ as a “generalized idea about a class of objects, attributes, occurrences, or processes that has been given a name”. On this view, concepts are theoretical building blocks (or basic units) for theory

development that abstract from reality. Dominant concepts are defined vaguely in the literature on customer referencing. Thus the systematization of the associated terms is of great importance in the context of the present research.

Jalkala and Salminen (2010) refer to customer reference marketing as the leveraging of existing customers and delivered customer solutions in the company's marketing activities:

“Concepts such as ‘customer advocacy marketing’, ‘customer evidence marketing’, ‘customer testimonial marketing’ and ‘customer reference marketing’ overlap and are used among B-to-B marketing practitioners to refer to the phenomenon of leveraging existing customers and delivered customer solutions in the company’s marketing activities.” (p. 976)

In addition, the same authors (Jalkala & Salminen, 2010) note that customer reference marketing is a way to demonstrate and concretize the solution value and the business benefits that the supplier is able to deliver:

“[C]ustomer reference marketing plays a crucial role, not only in demonstrating and concretizing the solution, but also in demonstrating its value and the business benefits that the supplier has been able to deliver.” (p. 797)

We can extract the following definition of ‘reference marketing’ from these two quotes: it is the leveraging of existing customers and delivered customer solutions in the company's marketing activities to demonstrate and concretize the solution value and the business benefits the supplier is able to deliver. Most often, practitioners refer to their reference marketing activities as their ‘customer reference program’ or their ‘corporate customer reference program’.

A reference customer is a competitor who uses an higher value offer and who is available and willing to share their experience (J. Anderson & Wynstra, 2010). Helm and Salminen (2010) use the expression ‘reference customer relationship’ to refer to the relationship established between a supplier and a reference customer:

“The concept of reference customer relationship is an important network potential for suppliers and hence, is highly relevant to business marketing practice.” (p. 737)

Helm and Salminen (2010) also argue that a customer reference relationship allows suppliers to borrow their customers’ reputations:

“[I]t is possible for other actors to borrow reputation through reputational spillover effects, a phenomenon which is termed as reputation transfer. One such form of reputation transfer takes place when suppliers make use of reputable customer reference relationships” (p. 739)

Taking these two ideas into consideration, we can define a ‘customer reference relationship’ as a relationship established between a supplier and a reference customer that allows the supplier to borrow the customer’s reputation. This particular kind of business relationship needs to be tested by empirical work. In addition, its dimensions must be compared with business relations in general.

Jalkala and Salminen (2005) identify the concept of a reference description as the discourse on the reference relationship:

“[T]he reference relationship is discursively constructed in companies’ reference descriptions” (p. 168)

Moreover, Jalkala and Salminen (2009) argue that reference descriptions also involve a description of the customer’s problem and the supplier’s solution, as well as testimonials from the reference customer:

“This kind of material can be often found in suppliers’ Web sites in the form of ‘case studies’, ‘success stories’, and ‘customer cases’. Typically these texts involve a description of the customer’s problem and a description of the supplier’s solution, as well as testimonials from the reference customer.” (p.825)

This analysis supports the following definition of a ‘reference description’: it is a discourse on the reference relationship that involves the description of a

customer's problem and the supplier's implemented solution, as well as testimonials from the reference customer.

Table 2.4 contains a list of quotes that are useful when defining the concepts of a reference practice and a reference visit.

We can therefore define a 'reference practice' as the format a company selects to present a customer reference, which, depending on the situation, may include reference lists, articles in trade journals, press releases, reference visits, promotional material, seminars, and brochures of customer cases or success stories.

The definition of a 'reference visit' also emerges from the same source: it is a visit that a potential customer makes to the site (or plant) of a supplier's satisfied customer with the aim of verifying the previously sourced reference description.

Table 2.5 presents several additional definitions in relation to key concepts in the literature on referencing: customer referencing, reference business case, customer case descriptions, reference information, and referencing. The literature on customer referencing is rich and has developed many concepts that aim to capture the phenomenon under study.

TABLE 2.4 — Reference practice: related concepts

CONCEPT	SOURCE	QUOTE	ILLUSTRATION
Reference Practice	Jalkala and Salminen (2009a)	“An increasingly important practice for utilizing customer references is to present them in the form of ‘success stories’, ‘customer cases’, or ‘case studies’ on companies’ Web sites.” (p. 827)	The format a company selects to present a customer reference.
Reference Practices	Salminen and Möller (2004)	“The practices through which a supplier can use references are various and depend on the situation: reference lists (McKenna 1986, 77; Fisher 1986, 52; Maister 1996, 255; Usunier 1996, 507); articles in trade journals (Jackson 1985, 111; Smilor 1989, 142; Brierty et al. 1998, 445); press releases (Bradley 1995, 504); reference sites or visits (Jackson 1985, 111; Cavusgil and Ghauri 1990, 49; Hutt and Speh 1992, 117; Ford et al. 1998, 199); promotional material (McDonald 1988, 120; Hutt and Speh 1992, 348; Hanan 1995, 69); and seminars (Hutt and Speh 1992, 348).” (p. 136)	Depending on the situation, a supplier can use the following reference practices: reference lists, articles in trade journals, press releases, reference sites or visits, promotional material, and/or seminars.
Reference Practices	Jalkala and Salminen (2005)	“the practices through which references are utilized are various. These include reference visits, reference lists, and brochures of customer cases handed together with an offer, as well as communicating references through the Internet.” (p. 167)	Marketing practices, which include reference visits, reference lists, and brochures of customer cases.
Reference Visit	Salminen (2001)	“The visit that a potential customer makes to the site (or plant) of a potential supplier’s existing, satisfied customer may be called a reference visit.” (p. 488)	The visit that a potential customer makes to the site (or plant) of a potential supplier’s existing, satisfied customer.
Reference Visit	Ruokolainen and Mäkelä (2007)	“The reason for site visits is that a potential customer can verify the customer reference with his or her own eyes, and not just be dependent on recommendations coming from the supplier, reference customer, etc.” (p. 191)	Allows a potential customer to verify the customer reference without being solely dependent on the supplier’s information.

Source: author.

TABLE 2.5 — Customer references: taxonomy

CONCEPT	SOURCE	QUOTE	REFORMULATED DEFINITION
Customer Referencing	Aarikka-Stenroos and Jalkala (2012)	“Customer referencing is conceptualized as a triadic interaction through a reference network: it involves the supplier, the reference customer and the potential customer, emphasizes interactive information sharing through the network relations, and creates value for all involved actors” (p. 6)	The triadic interaction that takes place through a reference network and creates value for all involved actors via the sharing of information.
Reference Business Case	Ruokolainen and Mäkelä (2007)	“A reference business case comprises those verified sales arguments that are assumed to match the supplier’s next potential customers’ business case. A reference business case can consist of sales arguments relating to return of investment and cost and benefit analyses.” (p. 196)	The verified sales arguments relating to return of investment and cost-benefit analyses.
Customer Case Descriptions	Jalkala and Salminen (2010)	“customer case descriptions [such as success stories and case reports] are instrumental in making abstract and complex offerings more concrete, as they provide real-life examples of implemented solutions. Thus, an important function of customer reference marketing practiced through reference descriptions is to demonstrate and concretize the supplier’s solution.” (p. 979)	A means of demonstrating and concretizing the supplier’s solution by making abstract and complex offerings more concrete, i.e. through real examples of implemented solutions.
Reference Information	Salminen and Möller (2004)	“Evaluations in the written or oral form about the supplier’s performance from its existing or former customer’s viewpoint may be called reference information.” (p. 135)	The (existing or former) customer’s assessment of the supplier’s performance.
Referencing	Olaru <i>et al.</i> (2008)	“Referencing is when suppliers provide new customers a list of previous customers with whom they can contact as a tool to reduce the perceived risk in dealing with the service provider (...) Referencing improves the supplier’s credibility and image by convincing new customers that the supplier has the technical competence to perform the tasks required” (p. 556)	The act of using customer references as a marketing tool.

CONCEPT	SOURCE	QUOTE	REFORMULATED DEFINITION
Reference Program	Godes (2012)	“A typical reference program consists of the centralized management of reference relationships in which the marketing organization recruits customers to become members of the program. Salespeople and other members of the marketing organization are then provided access to these references for use, for example, in closing deals, recruiting speakers for conferences, and producing advertisements featuring satisfied customers.” (p. 258)	The centralized management of reference relationships for marketing purposes.
Business Reference Value	Kumar <i>et al.</i> (2013)	“the ability of a client’s reference to provide value to the seller firm and the degree to which it does so by influencing a prospect to adopt.” (p. 82)	N.a.

Source: author.

Finally, Table 2.6 provides a list of existing customer referencing concepts. In the next section, I give an overview of the models and concepts contained in the literature on industrial marketing that are meant to explain and describe the customer referencing practice.

TABLE 2.6 — List of customer referencing concepts

CONCEPT	DEFINITION
Business reference value	The ability of a client's reference to provide value to the seller's firm and the degree to which it does so by influencing decision-making.
Buying centre	The members of the organization who are involved in the organizational buying process.
Buying tasks	A subset of organizational tasks that evolves from the definition of a buying situation, members of which must be performed in order to solve the buying problem.
Customer case descriptions	A means of demonstrating and concretizing the supplier's solution by making abstract and complex offerings more concrete, i.e. through real examples of implemented solutions.
Customer reference	A customer relationship and the related value-creation activities that a firm leverages externally or internally in its marketing efforts.
Customer referencing	The triadic interaction that takes place through a reference network and that creates value for all involved actors via the sharing of information.
Organizational buying behaviour	All activities carried out by organizational members as they define a buying situation and identify, evaluate, and choose among alternative brands and suppliers.
Organizational buying process	A form of problem-solving that takes place when someone in the organization perceives a problem that can potentially be solved via a given buying action.
Organizational buying	The decision-making process carried out by individuals, in interaction with other people, in the context of a formal organization.
Reference business case	The verified sales arguments relating to return of investment and cost-benefit analyses.
Reference business	A market where the existence of customer references is emphasized by potential customers due to the high complexity of the exchanged goods.
Reference customer relationship	The relationship a supplier establishes with a reference customer, which allows it to borrow its customers' reputations.
Reference descriptions	The discourse on the reference relationship that involves the description of a customer's problem and the supplier's implemented solution, as well as testimonials from the reference customer.
Reference information	The (existing or former) customer's assessment of the supplier's performance.

CONCEPT	DEFINITION
Reference network	A network that includes at least three actors (sellers, potential buyers, and reference customers) who create value for each other and that enables interaction through the co-creation of marketing messages that resonate with customer's problems and needs.
Reference program	The centralized management of reference relationships for marketing purposes.
Reference practice	The format a company selects for the presentation of a customer reference, which, depending on the situation, may include reference lists, articles in trade journals, press releases, reference visits, promotional material, seminars, and brochures of customer cases or success stories.
Reference visit	The visit that a potential customer makes to the site (or plant) of a supplier's satisfied customer with the aim of verifying the previously sourced reference description.
Reference	A way to promote the credibility of the supplier based on a successful delivery of equipment, services, or projects to customers. It helps to reduce the perceived risk that a potential buyer faces when choosing a new supplier or product by allowing the buyer to evaluate the supplier's relationship with its existing customers.
Referencing	The act of using customer references as a marketing tool.
Referral	A sales technique in which a current customer is used to introduce the vendor to a prospective customer.
Success stories	A particular form of marketing customer reference that involves the description of the problem a customer has faced, the solution generated by the vendor, and the customer's assessment of the outcome.
Reference marketing	The leveraging of existing customers and delivered solutions in the company's marketing activities to demonstrate and concretize the solution value and the business benefits it is able to deliver.
Triadic reference network	The extensive reference network that includes actors other than the focal triad actors.
Triadic relationship setting	A phenomenon that exists at the firm level between three actors, consisting of three independent actors (firms) that are connected to each other, either directly or indirectly, for the purposes of doing business.

Source: author.

2.3.3. Studies featuring the customer referencing practice

There is a considerable body of knowledge on customer referencing practice. Contributions to this theory come from several authors from the Industrial

Marketing and Purchasing Group (Axelsson & Easton, 1992; Ford et al., 2003; Håkansson, 1982; Håkansson & Snehota, 1995; Turnbull & Valla, 1986). The concept of relationships lies at the heart of these author's works.

'Customer reference' is a concept seldom used in the literature on business-to-business marketing (Jalkala & Salminen, 2009, 2010; Salminen & Möller, 2006). However, customer referencing is an important component of marketing practice, recognized as such by practitioners and managers (Jalkala & Salminen, 2009). Salminen and Möller (2006) argue that this practice is theoretically understudied, despite its relevance to management practice. Consequently, the authors present a theory that aims at a better understanding of the behaviour surrounding customer references, which they call the 'normative theory of referencing' (Salminen & Möller, 2006). The authors propose a conceptual framework which identifies the key ways in which references are used in industrial marketing and the factors that influence the need for referencing and its relevance. The framework also attempts to define the tasks assigned to reference building and the business contexts in which they are primarily employed. The normative theory of referencing (Salminen & Möller, 2006) is now the major stream of thought on customer referencing – an approach to which other authors continue to contribute new ideas, thus furthering our understanding.

The communication of customer references is a marketing activity in which relationships are of fundamental importance; the communicated message is based on the portfolio of the relationships the company has established with its customers (Jalkala & Salminen, 2009). Such relationships involve at least three actors: the supplier, the reference customer, and the existing customer. This is why the theory of referencing established the notion of triadic value creation, which is central to my research.

The seminal study on triads took place within the field of sociology (Thibaut & Kelley, 1959) and was adopted into the fields of management and marketing. Holma (2009, p. 2) writes that a “triadic business relationship setting consists of three dyadic relationships, i.e. relationships between actors A, B, and C. Adaptations occur in the dyadic relationships A-B, B-C, and A-C, which are interconnected, either directly or indirectly”. According to Holma, a ‘triadic relationship setting’ consists of three actors that may have both direct and indirect connections. In the context of this work, let us define a ‘triadic relationship setting’ as a phenomenon that exists at the firm level and that consists of three independent actors (firms) that are connected to each other, either directly or indirectly, for the purposes of doing business.

Holma stresses that a triadic setting exists between three independent actors who share the goal of doing business. Co-operation among actors is therefore a voluntary and intentional action. That is to say, this action is designed deliberately to meet specific purposes, and it is not the outcome of any coercion to which firms may have been exposed.

Helm and Salminen (2010, p. 742) note that “a purely dyadic supplier-buyer perspective no longer serves the needs of firms embedded in network structures”. The additional relationship with the reference customer comes into play – especially in so-called ‘reference business’ – and generates a new construct: the reference triad. In short, the reference relationship constitutes a reference triad. A concrete example of a reference triad was studied by Salminen (2001), for instance, who identifies the value of a reference visit for each element of the analysed triad. Table 2.7 provides an overview of the value attained by each party. The author argues that although the value gained by the potential customer is similar to that gained by the supplier, the value gained by the

reference customer might be more difficult to anticipate. In this work, I shall define a ‘reference business’ as a market where customer references are relied on by potential customers due to the high complexity of the exchanged goods.

Helm and Salminen (2010) present a framework that aims to integrate customer referencing relationships and reputation building. That is to say, it describes the process of reputation building based on reference relationships within a reference triad. Despite its simplicity, this work is consistent and coincides with the model proposed by Salminen and Möller (2006) since it includes and incorporates the three elements present in the foundational model. Moreover, it considers the established relationships among these three actors, and its focus is not the supplier but the established network in which all actors are present. Yet, this is a conceptual work without empirical research (see Table 2.2).

The reference triad is a small network “in which three dyadic business relationships are embedded” (Helm & Salminen, 2010, p. 739). The relationship that takes place between the seller and its reference customer is therefore a foundation for reputation building. Still, the reputational effect only becomes effective when the relationship between the potential customer and the reference customer is established. Additionally, it takes several deals with different customers to reach credibility and build a reputation.

According to Helm and Salminen (2010), in reference triads dense reputation transfer takes place in three distinct domains. The first domain is the individual features of the three actors of the reference triad. The second domain is the factors that affect the relationship between the three actors. The last domain is the market determinants of reference-driven reputation formation.

TABLE 2.7 — The value of a reference visit for the parties of the visit, as identified by Salminen

SUPPLIER	REFERENCE CUSTOMER	POTENTIAL CUSTOMER
<ul style="list-style-type: none"> • Opportunity to demonstrate one’s own equipment functioning in real work circumstances • Opportunity to close a deal • Opportunity to become qualified as a supplier • Trust building between one’s own personnel and the potential customer • Opportunity to also present one’s own production plants to the potential customer 	<p>Personal value:</p> <ul style="list-style-type: none"> • Business gifts from the potential customer and/or supplier • Opportunity to discuss the equipment and development of production processes with colleagues <p>Company value:</p> <ul style="list-style-type: none"> • Good service from the supplier if it proves to be a useful reference site for the supplier • Discount on the yet unpaid spare part invoice • A “free” service visit before the reference visit 	<ul style="list-style-type: none"> • Opportunity to see and try a supplier’s equipment in real working circumstances • Opportunity to close a deal • Opportunity to evaluate a supplier • Trust building between one’s own personnel and the supplier • Opportunity to also conduct a supplier visit to a supplier’s plant during the same trip

Source: Salminen, 2001, p. 503.

Aarikka-Stenroos and Jalkala (2012) argue that customer references are active network actors, not elements of the marketers’ toolkits. The authors claim that value is generated reciprocally among all actors present in the network. This means that if it is true that reference customers create value for new customers and for the seller, it is also true that new customers and the seller generate value for the reference customers. Therefore, triadic value is created as a result in such conditions. This work offers useful insights that help to define the concept of a reference network. These are summarized in Table 2.8.

A reference network is therefore a network that includes at least three actors (sellers, potential buyers, and reference customers) who create value for each other and that enables interaction through the co-creation of marketing messages that resonate with customer’s problems and needs.

TABLE 2.8 — Aarikka-Stenroos and Jalkala’s insights into reference networks

QUOTE	INSIGHT
“Reference networks consist of sellers, buyers, and reference customers.” (p. 1)	A network comprising sellers, potential buyers, and reference customers.
“through reference networks parties together co-create marketing messages that resonate with potential customer’s problems and needs” (p. 13)	A network that helps parties to co-create marketing messages that resonate with customer’s problems and needs.
“the concept of a reference network, referring to a network that includes at least three actors (the seller, buyer and reference customer) and enables interaction and value-creation through customer referencing.” (p. 2)	A network that includes at least three actors (seller, buyer and reference customer) and enables interaction and value creation through customer referencing.
“the actors of a reference network are able to create value for each other: reference customers co-create the supplier’s marketing activities and thus create value for the supplier; at the same time they generate value for potential customers, too, and through interaction they perceive value themselves as well” (p. 2)	A network of actors who create value for each other.

Source: author based on Aarikka-Stenroos and Jalkala (2012).

Aarikka-Stenroos and Jalkala (2012) describe what potential customers, reference customers and suppliers experience as the ‘co-created value outputs’ of a reference network. They argue that reference customers provide credible data on the acquired solution. This information is evidence of the realized value-in-use. It demonstrates and concretizes the content of the solution and its benefits to potential customers. According to these authors, reference networks allow for the co-creation of

powerful marketing messages since they resonate with potential customer's problems and needs.

The theoretical framework presented above highlights a body of knowledge that deals with customer referencing practice. This is known as the "theory of customer referencing", and it provides not only a description but also an explanation of this phenomenon. The core models and concepts in this theory are the normative theory of referencing, the reference model, the reference customer, the potential customer, the reference triad, and the reference network. These models and concepts are the cornerstones of this research.

2.4. RESEARCH STRATEGIES AND TOOLS USED IN PREVIOUS LITERATURE

Webster (1965) acknowledged the existence of a research tradition based on the use of case studies in industrial marketing and observed that the majority of industrial buying studies were descriptive, based on case-study research. This was confirmed by Wind and Webster (1972), who observed that research on organizational buying behaviour was often undertaken via methods that did not include statistical techniques.

Wind (1970) addresses the loyalty of industrial buyers via quantitative research that featured the purchase of industrial components and the various factors that influence source loyalty. Multiple regression and discriminant analysis were used as analytical tools. The author concluded that his research provided evidence of the existence of source loyalty in the purchasing of industrial components. In addition to these conclusions, he also suggested recommendations for future research in industrial marketing. For instance, he claimed that multiple regression and discriminant analyses

could be adopted in the study of organizational buying behaviour. Moreover, he claimed that there was no need to limit the study of industrial buying to descriptive studies, which avoided quantitative techniques like multivariate statistics. In parallel, additional quantitative research featuring organizational buying behaviour was being published, including, for instance, work by Wilson (1971), which explored the choice patterns of individual purchasing agents, and work by Håkansson and Wootz (1975), which considered the influence of the supplier's location.

According to Wind and Webster (1972), not only are more advanced research methods and procedures already in use in research on consumer behaviour – including analysis of variance, multivariate statistics, and multidimensional scaling – applicable to organizational buying experiments, but they should be utilized in organizational buying behaviour. The authors strongly believed that future research on industrial buying would utilize these research procedures, coupled with the construction of models featuring industrial buying systems.

Kennedy (1983) applied a diverse range of methodological techniques – including content analysis, open-ended interviews, both participant and nonparticipant observation, and protocol analysis – to the study of organizational buying behaviour in order to diversify the data collection methods (in order to achieve a more accurate measurement of the purchasing function) while permitting direct observation of the decision processes. She acknowledged possible limitations stemming from her chosen methodology but defended her decision by arguing that the extent to which these 'novel' methodologies were applicable to external field settings had not yet been determined. She contended that the use of these methodologies would enhance the value

of buyer behaviour models by developing measures by which systematic description and comparison of decisions processes would be possible.

Sousa (2010) argued that markets-as-networks theory is mainly inductively developed from qualitative research and is largely descriptive (that is to say, it is not prescriptive). The majority of authors from the Industrial Marketing and Purchasing Group embrace qualitative research. This research stream is generally supported by in-depth case studies rather than other methods, such as quantitative research or even mixed methods. This is the case with regards to the first research project promoted by the Industrial Marketing and Purchasing Group, where Håkansson (1982) portrayed how case studies were used for research purposes. Here, cases dealt with facets of inter-organizational relationships relevant to one firm. They allowed for comparisons to be made between different relationships within a single company and with customers and suppliers. Other cases examined distinct categories of relationships with several partners. Others still focused on a single relationship that was considered important or interesting.

Since the inception of the Industrial Marketing and Purchasing Group, cases have been used with the aim of building theory. On Håkansson's view (1982), research objectives are both empirical and theoretical. The theoretical objective is to test the relevance of the interaction approach to international relationships. With this said, the objective is to test not only a specified theory or hypothesis but also the practicality of the entire approach. Theory development is therefore critical to achieving the research objectives. Håkansson also highlights the inductive nature of the process by which cases are analysed:

“The case analyses are carried out from raw and interpreted data. (...) The analysis of cases serves two purposes; first, each case can lead to the generation of hypotheses and ideas for subsequent examination of data about other relationships recorded in the data bank. Second, case studies can be chosen which represent relationships encountered in each cell of the choice matrix and which cover various products and production technologies. This may lead to an improved [richer] model (or models) of interaction” (Håkansson, 1982, pp. 55–56)

It is possible to question the influence of this first project, and in particular its research methods, on the future activity of the Industrial Marketing and Purchasing Group. It is highly probable that it had a major impact on subsequent literature produced by this research group. However, Sheth (1996) argues that business-to-business marketing must adopt a more positivist approach to research if it is to become more robust, especially when compared to other areas of marketing such as brand equity, product life cycle, and advertising. These areas utilize econometric and mathematical modelling as well as analytical tools to improve scientific knowledge and respectability.

The first research project in which the interaction approach was used can almost be viewed as having taken a positivist approach. According to Håkansson (1982, p. 36), the research team performed more than 800 interviews, using questionnaires and subsequent data analysis. Nevertheless, this misunderstanding can be corrected by noting that “no claim is made that a statistically significant sample of firms from within this population was aimed for” (Håkansson, 1982, p. 42).

Wind and Thomas (1980) identify several constraints for the adoption of more robust research techniques in industrial marketing. The inability to select an individual respondent as an independent unit results in a key sample problem. In addition, statistical techniques are not used due to the sample size of the majority of organisational buying research. The authors also claim that the complexity of the sampling issues is increased by the high cost of data collection.

In brief, the literature on organizational buying behaviour and the Industrial Marketing and Purchasing Group are both part of a tradition of qualitative research that is based on case studies. Until now, this has served the Industrial Marketing and Purchasing Group community as an inductive method for developing markets-as-networks theory, and this despite the fact that several authors have criticized its robustness, instead insisting on the adoption of quantitative methods. By adopting a postpositivist paradigm (Guba & Lincoln, 1994; Lincoln & Guba, 2005), I am breaking from the research tradition relied on by the Industrial Marketing and Purchasing Group. Of course, case studies can be performed using a positivist perspective (Eisenhardt, 1989b); my aim, however, is to increase research robustness without using quantitative methods.

3. CONCEPTUAL FRAMEWORK

3.1. LITERATURE GAP

Although the theory of customer referencing is conceptually valuable, empirical work supporting a comprehensive theory of customer referencing remains scarce (Morgado & de Castro, 2015b). Table 3.1 shows the disparity in numbers between research that situates the supplier as the unit of empirical observation and research that situates the reference customer or the potential customer as its focus. Three exceptions should be considered. The first is work by Ruokolainen and Mäkelä (2007), where the perspective of the potential customer is indeed taken into account. However, it is not a core element in this research and is not as significant as the view of the supplier.

The second is a study by Ruokolainen (2008a), which includes the perspective of the potential customer as a way of gaining a better understanding of the meaning of customer references. Ruokolainen interviews the “[h]uman resource manager of the potential customer” (Ruokolainen, 2008a, p. 290). This is a highly questionable research decision; in the majority of firms, it is not common to consider the human resources manager a member of the buying centre. An exception to this circumstance is products and services that deal with specific human resources buying needs. Unfortunately, this was not the topic addressed in Ruokolainen’s study (2008a).

The third exception is work by Aarikka-Stenroos and Makkonen (2014). This is the most interesting study, as it isolates the potential customer as the single unit of analysis. The authors argue that “instead of learning only from mere customer references, suppliers also need to employ other means in order to reveal more relevant experience-based information” (Aarikka-Stenroos & Makkonen, 2014, p. 351). This research deals with three different concepts at the same time, bundling them under the

term “experience-based information”: customer references, referrals and word of mouth. Unfortunately, this study does not succeed in providing a comprehensive understanding of the role played by customer references in buying decisions. This is because it deals with these three elements simultaneously. Although the authors claim to make a contribution to the literature on industrial marketing (by empirically examining references from the buyer’s perspective), the work does not offer an explanation of the influence of customer referencing in buying decisions. By combining three dimensions under the same umbrella, this research prevents the reader from isolating the contributions of each to the resolution of the presented “complex buying decisions”.

It is therefore possible to confirm the suggestion offered by Jalkala and Salminen (2010), who recommend that we shift the focus of research into this area away from the seller and towards the perspectives of potential customers and reference customers. As mentioned above, Kilian *et al.* (2013) recommend that we investigate the effects of references on potential customers, namely by understanding how references are handled in buying centres. These authors also recommended that researchers conduct further empirical studies in different industrial settings. They also claim that it is possible to generate valuable insights by studying the actual effects of references on potential customers. To achieve this end, they propose that interviews be conducted with the aim of identifying the current procedures followed by purchasing units to evaluate reference descriptions.

TABLE 3.1 — Published research on customer references according to the unit of empirical observation

SOURCE	QUOTE	UNIT OF EMPIRICAL OBSERVATION		
		Supplier	Reference customer	Potential customer
Salminen (2001)	“The selected company has a goal of 20 percent increase in sales. To reach this goal the company needs to pursue new customers and thus to utilize its references.” (p. 492)	X		
Salminen and Möller (2004)	“The ultimate idea was to use such criteria so that the use of reference information would be as important as possible for the selected company and that it would have a relatively long and widespread experience of using references.” (...) “The vice president/marketing manager, two SBA managers, four area sales managers, and one marketing communications manager of the company were interviewed during the study.” (p. 139)	X		
Jalkala and Salminen (2005)	“This paper reports on a study which explores how companies communicate about their customer references on their Web sites and how the reference relationship is discursively constructed in these descriptions (...) The data consists of 140 reference descriptions gathered from three case companies’ Web sites.” (p. 165)	X		
Ruokolainen and Mäkelä (2007)	“This case study concentrates on evaluating concepts that are central to customer references from the viewpoint of the start-up technology companies.” (p. 186) (...) “The first customer was willing to act as a test site, thus, helping to verify the functionality of the new software.” (p. 189)		X	
Ruokolainen (2008a)	“The present work is an embedded single longitudinal case study with two levels of analysis units: the company and its customers. Pattern-matching” (p. 282) (...)	X		X
	“In order to gain a better understanding of the meaning of the customer reference, one of the potential customers was also interviewed.” (...) “Human resources manager of the potential customer” (p. 290)			
Jalkala and Salminen (2009)	“This paper reports on an exploratory case study examining how six industrial companies communicate about their customer references on their Web sites” (p. 825)	X		
Jalkala and Salminen (2010)	“This multiple-case study focuses on the practices and functions of customer reference marketing and on the ways through which customer references can be deployed as marketing assets. Analysis of 38 interviews with managers in four case companies provides a “(...) a holistic perspective on each case company’s customer reference practices” (p. 982)	X		

SOURCE	QUOTE	UNIT OF EMPIRICAL OBSERVATION		
		Supplier	Reference customer	Potential customer
Kilian <i>et al.</i> (2013)	“[S]emistructured interviews with firm representatives [from suppliers] were conducted to gain insights into the assumed effects of references. Third, based on the collected data, they established research propositions that incorporate prominent features of the reference descriptions and the assumed effects on customers.” (p. 65)	X		
Aarikka-Stenroos & Makkonen (2014)	“This study generates new understanding on how buyers gather and use experience-based information to solve complex problems in buying. It contributes by merging references, word-of-mouth, collegial social networks, and reputation as sources of experience-based information” (p. 350)			X
Ruokolainen and Aarikka-Stenroos (2015)	“[W]e investigate how the key principles of rhetoric improve start-ups’ customer referencing and enable more persuasive and fortified customer references.” (p. 189)		X	

Source: author.

Aarikka-Stenroos (2009) has already tackled the reference customer’s perspective by identifying four factors that motivate customers to participate in customer reference processes: (i) motivation to develop markets: keeping competition sharp, facilitating entry into new markets with new offerings; (ii) relational motivation: satisfaction, advocacy, goodwill, partnership; (iii) collective motivation: social control, reciprocity, social reward, mentoring, involvement in the common topic, liking, duty to help peers; and (iv) individual, self-interested motivation: indirect monetary rewards, halo effect, self-confirmation. Empirical work to confirm these hypotheses is therefore also an open research opportunity.

Moreover, relationships emerging from reference networks should also be studied, because they contribute to our understanding of customer referencing practice. Salminen and Möller (2006) recommend the creation of case studies featuring

companies that represent best practices in referencing behaviour as a way to gain deeper knowledge in this area. According to these authors, this research should be done from the networks perspective promoted by the Industrial Marketing and Purchasing Group. They also highlight the importance of quantifying the number of strong and weak ties between the actors in order to evaluate the influence of the relative value of the references. They also emphasize the need for additional empirical research in this area.

From the Industrial Marketing and Purchasing Group's perspective, it is suggested that the use of references allows a firm to secure a more favourable trading position. Håkansson and Snehota (1995, p. 18) state, for instance, that "[o]ne of the most common ways of evaluating a new partner is through references, i.e. by investigating how it has handled earlier relationships". Within the automotive industry, these authors identify the facts and circumstances associated with the use of customer references:

"To demonstrate one's capabilities as an equipment supplier it is in fact equally effective to refer to installations with other customers than to projects within the same company. Due to the possibility of the aforementioned tensions and rivalries it is a very precarious business to use internal references in trying to convince a customer. It can even backfire, as in the case mentioned above. When using references from other car manufacturers there is no internal competition which can negatively influence the discussion, and customers are highly interested in suppliers' experiences at other factories. Equipment suppliers have seen many more different car factories than people at one single automotive company, and that is something automotive customers gladly profit from. Inteq people can tell customers, for example, how certain problems have been solved at plants in Germany, or in Spain, and they can give their opinion on what they think to be the best course. That kind of knowledge and experience is exactly what customers are looking for. Except for issues related to the design and launching dates of new car models, the information on equipment installations is usually not confidential." (p. 309)

Other scholars (Helm & Salminen, 2010; Jalkala & Salminen, 2005, 2009, 2010; Ruokolainen, 2008a; Ruokolainen & Mäkelä, 2007; Salminen, 2001; Salminen & Möller, 2004, 2006) have also produced research on the topic of customer references. Nevertheless, the facts and circumstances associated with general customer reference practices that allow for the establishment of a successful customer-vendor relationship

have yet to be fully determined. In particular, the potential customer's perspective is still far from fully understood.

The detailed study of this phenomenon might contribute to the body of knowledge on the relationship between customers and vendors and the role that customer references play in firms. The present work contributes to both management practice and theory building. At a practitioner level, for example, a deeper knowledge of this practice would allow managers to pursue customer development strategies based on the efficient use of customer references.

3.2. RESEARCH QUESTIONS

The literature on customer referencing raises the hypothesis that customer references have a positive impact on vendors' marketing activity (Helm & Salminen, 2010; Jalkala & Salminen, 2005, 2009, 2010; Ruokolainen, 2008a; Ruokolainen & Mäkelä, 2007; Salminen, 2001; Salminen & Möller, 2004, 2006). Empirical work thus far has focused mainly on the supplier as the main unit of empirical observation and has ignored the other constituents of the reference triad: the reference customer and the potential customer.

Therefore, it remains unclear how reference marketing encourages the buying centre to acquire goods from a specific vendor. Accordingly, the purpose of this study is to contribute to the literature on organizational buying behaviour by describing the facts and circumstances associated with customer referencing and to explore its workings from the potential customer's point of view. The broad research question is therefore formulated as follows: "How does reference marketing influence capital buying decisions?"

According to Yin (2009), research can be associated with two different kinds of questions: ‘what’ questions and ‘how’ or ‘why’ questions. ‘How’ and ‘why’ questions are best addressed by the use of case studies, among other research methods like experiments and histories. By contrast, ‘what’ questions are best addressed via other methods, such as surveys. My research aims to provide a deeper understanding of the role played by customer references; it does not aim to define or in any way to provide the last word on this role. In truth, the initial formulation of the research question was the following: “How does customer reference marketing impact the buying behaviour of the potential customer?” The word “impact”, however, suggested an immediate, powerful and sharp effect, which is not accurate in the context of customer referencing. I therefore decided not to use it. Let us now consider the five detailed questions that emerge from the broad research question, in order to better understand this claim.

3.2.1. Research question #1

The first question raised in my research derives from the need to test proposition #1: ‘The influence of reference marketing varies according to the members of the buying centre it targets’. This initial proposition prompts several questions, including the following: Are all members of the buying centre exposed in the same way to reference marketing? Who are they? Are we able to identify a differentiated attitude towards reference descriptions? At what moment in the buying process is customer reference marketing more important to each of the members of the buying centre? Do members of the buying centre engage in conversation with the reference customer? If so, who, and what benefits derive from this conversation?

These questions can be synthesized into a first research question: ‘How does reference marketing influence the diverse members of the buying centre?’

3.2.2. Research question #2

Proposition #2 is the following: ‘Customer reference discourses impact the buying behaviour of potential customers in different ways’. This proposition also prompts a set of questions: How are the three customer reference discourses (the discourse of benefits, the discourse of commitment, and the discourse of technological expertise) assessed internally by the potential customer? Are they each equally relevant to all internal actors? If they are not equally relevant, are we able to understand why? Can we relate these discourses to a specific buying decision or situation? Do all three reference discourses motivate the potential customer to initiate conversation with the reference customer in the same way?

The second research question consolidates these ideas: ‘How do the various customer reference discourses influence the buying behaviour of a potential customer?’

3.2.3. Research question #3

Proposition #3 is the following: ‘Different reference practices have different impacts on the buying behaviour of potential customers’. This proposition gives rise to the following questions: Which reference practices (reference lists; press releases; promotional material; visits and demonstrations at reference sites; articles in trade journals; detailed descriptions of similar contracts; and seminars and conferences) are most useful to potential customers? How are they used, and how does the diffusion of these practices take place internally? Does someone from the buying centre take the

lead and promote these materials internally? If someone does take the lead, what forces drive his or her motivation to act as an internal promoter of reference information?

The third research question synthesises these questions: ‘How do the identified reference practices influence the buying behaviour of potential customers?’

3.2.4. Research question #4

The fourth proposition is the following: ‘Potential customers are aware of and understand how to benefit from reference information’. A list of questions follows from this proposition: What benefits does the potential customer extract from the vendor’s references? Is it possible to categorize them according to the following list: assess the vendor’s reputation; establish the vendor’s credibility; evaluate the supplier’s competence; reduce the risks associated with a buying decision; learn how to successfully deploy an innovative technology; forecast the return on investing on a new product/service? Are they each relevant in the same way? On whom from the buying centre do they impact the most?

The fourth research question is: ‘How does the potential customer benefit from vendor references?’

3.2.5. Research question #5

The last proposition is the following: ‘customer referencing practices are contingent on the nature of the buying processes’. A list of questions follows from this proposition: Are customer reference practices influenced by their external context? Is it possible to describe the facts and circumstances associated with customer referencing? In particular, how do these facts and circumstances influence a potential customer’s buying behaviour? What kinds of external forces influence customer referencing

practices? Do the buying situation and the buying context affect the outcome of customer referencing practices?

Finally, the last research question runs as follows: ‘What facts and circumstances affect customer referencing practice?’

Table 3.2 summarizes the five detailed research questions, relating each to a research proposition, as above.

TABLE 3.2 — Summary of the five detailed questions

PROPOSITION	RESEARCH QUESTION
The influence of reference marketing varies according to the members of the buying centre it targets.	How does reference marketing influence the various members of the buying centre?
Customer reference discourses impact the buying behaviour of potential customers in different ways.	How do the various customer reference discourses influence the buying behaviour of potential customers?
Different reference practices have different impacts on the buying behaviour of potential customers.	How do the identified reference practices influence the buying behaviour of potential customers?
Potential customers are aware of and understand how to benefit from reference information.	How does the potential customer benefit from vendor references?
Customer referencing practices are contingent on the nature of the buying processes.	What are the facts and circumstances that affect customer referencing practices?

Source: author.

3.3. EX-ANTE CONCEPTUAL FRAMEWORK

This work studies customer referencing in the context of capital goods purchasing. Its tentative conceptual framework is grounded in the literature review

presented above (cf. chapter 2) – which is to say, it is theory driven – and focuses on eight variables, which are combined in the following three theoretical concepts: (i) buying behaviour; (ii) reference marketing; and (iii) referencing outcomes (from the buyer’s perspective). Miles and Huberman (1994, p. 20) argue that “[c]onceptual frameworks are simply the current version of the researcher’s map of the territory being investigated”.

Theoretical concepts (see Table 3.3) and variables (see Table 3.4) were selected during the literature review process, according to their perceived potential to help answering the research questions presented above. Research questions may proceed or follow the elaboration of the theoretical model (Miles & Huberman, 1994, p. 23). Miles and Huberman (1994, p. 18) assert that a “conceptual framework explains, either graphically or in narrative form, the main things to be studied – the key factors, constructs or variables – and the presumed relationships among them”.

The first two theoretical concepts (buying behaviour and reference marketing) affect the dyadic reference relationship established between the reference customer and the potential customer. This temporary adaptation (Helm & Salminen, 2010; Holma, 2009) allows the active buying organization to benefit from customer referencing. This benefit is generated by the extent to which customer referencing allows a firm: (i) to assess the vendor’s reputation; (ii) to establish the vendor’s credibility; (iii) to evaluate the supplier’s competence; (iv) to reduce the risks associated with a buying decision; (v) to learn how to successfully deploy an innovative technology; and (vi) to forecast the return on investing in a new product or service. These capabilities are temporary since they relate to the relationship established with a single provider. Nevertheless, in the context of capital goods acquisition, they might

promote superior business performance on the part of the buying organization by helping it to avoid making the wrong decision when it comes to vendors and solutions.

TABLE 3.3 — Theoretical concepts adopted in the conceptual framework

CONCEPT	DEFINITION
Buying Behaviour	All activities carried out by organizational members as they define a buying situation and identify, evaluate, and choose among alternative brands and suppliers.
Reference Marketing (or customer referencing)	The leveraging of existing customers and delivered customer solutions in the company's marketing activities to demonstrate and concretize the solution's value and the business benefits the supplier is able to deliver.
Referencing Outcomes	The consequence of being exposed to reference marketing.

Source: author.

According to Holma (2009) and Helm and Salminen (2010), adaptation is a central feature of reference relationships. We can understand reference relationships by observing the involvement of the various actors, and in particular the behaviour of buying centre members who establish a conversation with the reference customer. Buying centre members who actively promote customer reference materials and their analysis share the same motivation, and this motivation acts as a driving force, inspiring members to engage in reference analysis and the internal promotion of reference information. If this relationship does not obtain, it is not possible to posit the existence

or benefits of a reference triadic network, as outlined in the literature on industrial marketing.

The above theoretical concepts and variables are detailed in Table 3.4.

TABLE 3.4 — Variables adopted in the conceptual framework

CONCEPTS	VARIABLES	DESCRIPTION
Buying Behaviour	Buying Centre Membership	The members of the organization who are involved in the organizational buying process.
	Exposition	Members of the buying centre who are exposed to reference marketing.
	Attitude	Buying centre members' individual attitudes toward reference marketing.
	Buying Phases	The phases in which the buying process takes place. A subset of organizational tasks that evolves from the definition of a buying situation, members of which must be performed to solve the buying problem.
	Buying Situation	The purchase status is one of the following: new task, a straight rebuy, or a modified rebuy.
Reference Marketing	Discourse	The key message is captured by one of the following: the discourse of benefits; the discourse of commitment; and the discourse of technological expertise.
	Practices	The reference practice is one of the following: reference lists; press releases; promotional material; visits and demonstrations in reference sites; articles in trade journals; detailed descriptions of similar contracts; and seminars and conferences.
Referencing Outcomes	Outcomes	Comprise the following: establish the vendor's reputation; establish the vendor's credibility; establish the supplier's competence; reduce the risks associated with the buying decision; provide information on how to successfully deploy an innovative technology; and/or forecast the return on investing on a new product/service.

Source: author.

Based on the above theoretical concepts and variables, the graphic representation below (Figure 3.1) outlines the tentative framework. Reference marketing affects reference outcomes. Reference outcomes in turn affect buying behaviour. An earlier version of this model was empirically tested in the energy industry (Morgado & de Castro, 2015a).

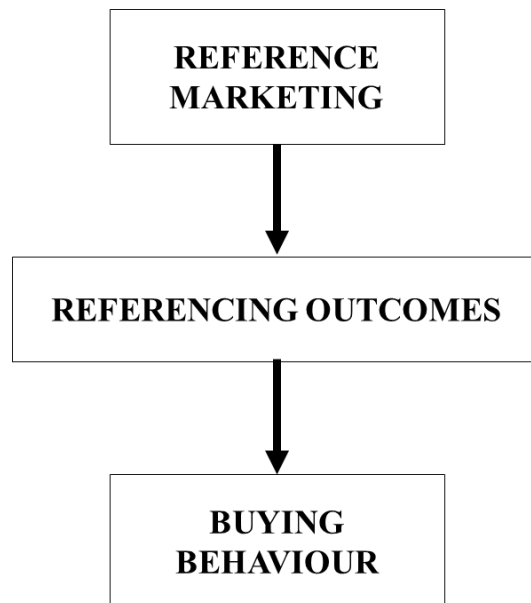


FIGURE 3.1 — *Ex-ante* Conceptual framework
Source: author.

4. METHODOLOGY

This study offers an original contribution to the field of customer referencing, not only to the extent that it addresses the knowledge gap outlined above but also to the extent that it situates a concrete transaction as the unit of analysis rather than an ideal hypothetical scenario or a conception of how things are ‘usually’ handled. As we saw above, Kilian *et al.* (2013) advocate investigating the effects of references on potential customers, namely by understanding how references are handled by buying centres. They also claim that it is possible to glean valuable insights by studying the ‘actual’ effects of references on potential customers. To achieve this aim, they suggest that interviews should be conducted with a view to identifying “the actual procedures that were followed by purchasing departments to compare reference descriptions” (Kilian *et al.*, 2013, p. 75).

A guiding assumption of this study is that focusing on a specific past transaction generates different findings than studies based on ideal scenarios. This corresponds, in a sense, to the goal of accurately capturing the features of an ‘actual’, real buying decision. My main concern during the process of case selection was therefore to press for a concrete transaction that can be described by interviewees and participants and that can serve as the subject of analysis. In sum, this research works from the hypothesis that a gap exists between the organizational discourse described in the literature on customer referencing and reality (regarding the corporate handling of customer references). In order to test this hypothesis, this study requires an appropriate methodological approach. Following the research ‘onion’, as developed Saunders, Lewis, & Thornhill (2007, p. 104), I position the present research in relation to several different possibilities (see Figure 4.1).

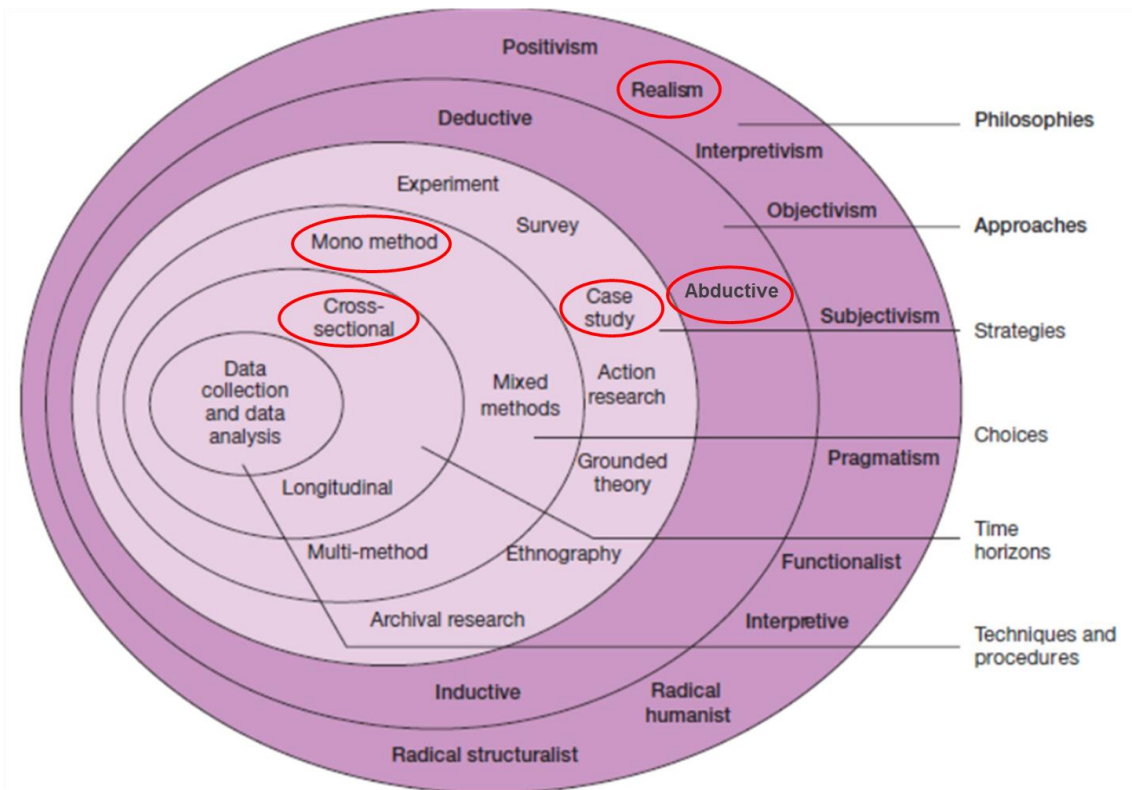


FIGURE 4.1 — The research ‘onion’
Source: adapted from Saunders et al. 2007, p.104.

Table 4.1 summarizes the main methodological choices made in the course of the present research, along with additional research traits.

TABLE 4.1 — Synthesis of research features and adopted methodological path

DIMENSION	DECISION
Title	The role of reference marketing in capital buying decisions: Evidence from the Portuguese electric power industry.
Key words	Capital equipment; case study; critical realism; customer references; electrical power industry; industrial marketing; organizational buying behaviour.
Streams of thought	Organizational buying behaviour/markets-as-networks theory/customer referencing.
State of the art	In marketing reference processes, existing customers act as advocates for the firm. They provide testimonials, receive visits from potential customers, and provide information on the characteristics of the adopted solutions and their performance. This activity is highly valuable to firms, allowing them to build strategic assets that promote profitable marketing action either by increasing credibility and reputation or by reducing the perceived risk associated with the purchasing of services or products from a particular supplier.
Research Gap	The mechanisms by which reference marketing encourages buying centres to acquire goods from specific vendors remain unclear.
Broad research Question	How does reference marketing influence capital buying decisions?
Research aim	Theory development.
Research purpose	Causality.
Nature of research	Abductive.
Ontology	Critical realism (“real” reality but only imperfectly and probabilistically apprehensible).
Epistemology	Postpositivism (findings probably true).
Research Strategy	Multiple case study – confirming and disconfirming cases (not pattern matching).
Research approach (according to the nature of the data)	Qualitative.
Data Collection Techniques	Interviews using case protocols and the collection of relevant documentation based on secondary data sources.

DIMENSION	DECISION
Data Analysis Techniques	Within case analysis, cross-case analysis and comparative analysis, based on a pre-defined conceptual framework.
Unit of Analysis	The transaction that takes place at the buying centre of the potential customer.
Sample selection	Judgmental (not random)
Sample	REN, EDP and Tejo Energia (Portuguese companies operating in the electric power sector).
Scientific Quality Criteria	Credibility, transferability, dependability (and verifiability).

Source: author.

4.1. PARADIGMS OF INQUIRY

Epistemology concerns what counts as adequate knowledge in a specific field of study (Saunders et al., 2007). When a researcher's philosophy is in agreement with the principles of positivism, she adopts a philosophical perspective akin to that of the natural scientist (Bryman & Bell, 2007; Saunders et al., 2007; Sayer, 2000). She embraces what is called the positivist position on the development of new knowledge and works on a social reality that can presumably be described by immutable laws and causal generalisations, similar to those offered in the natural sciences. She aims to prove causal connections by collecting data on repeated occurrences. The researcher attempts to take an objective view on social phenomena, and because of this the external validity of the data is of the utmost importance (Bryman & Bell, 2007). The quantifiable observation of behaviour makes room for statistical analysis, which lies at the centre of

scientific work, on this view of the social sciences. Researchers committed to a positivist stance are likely to adopt highly structured, well-defined methodologies for data collection and analysis in order to allow for the replication of their experiments by other members of the scientific community (Bryman & Bell, 2007). Guba and Lincoln (1994) note that the received view of science focuses on efforts to verify a priori hypotheses. These hypotheses are often stated in the form of precise mathematical formulas that express functional relations. The authors contend that this formulaic precision has substantial utility to the extent that the goal of science is the prediction and control of natural phenomena.

Some researchers take a critical attitude towards the positivist scientific tradition (Bryman & Bell, 2007; Saunders et al., 2007). In this opposite direction, we find researchers who adopt interpretivist perspectives. From this perspective, the subjective element appears, giving rise to an interpretation of the social world in which processes of social construction are explicitly recognized. Dealing with subjective realities raises many challenges. According to Saunders *et al.* (2007), for example, within the interpretivist epistemology the researcher must adopt an empathetic stance towards ‘meaning’. If social science is interpretative, then reality (and its meaning) must be understood and not counted or measured. The challenge is therefore to enter the social world of the research subject and understand that world from its point of view. The authors also mention that in this context “it is necessary for the researcher to understand differences between humans in our role as social actors” (Saunders et al., 2007, p. 106). In short, the subjective world is most accessible to researchers who adopt an interpretivist epistemology. In this context, Bhaskar (1979) frequently uses the German word *Verstehen* to designate the act of “interpretative understanding”. He asserts that

“[t]he hermeneutical tradition is correct to stress that social reality is pre-interpreted, so that *Verstehen* is a condition of social science” (Bhaskar, 1979, p. 175).

Discussion of these two opposing views belongs to the field of epistemology (Bryman & Bell, 2007; Saunders et al., 2007). Nevertheless, one additional epistemological position should also be considered, namely realism, which represents “a third way between empiricism and positivism” (Sayer, 2000, p. 2). Realism holds that objects and reality exist independently of the human mind (Saunders et al., 2007). It therefore holds that what is shown by the senses should not be considered reality.

The critical realist’s position assumes that the social world is constantly changing. According to Saunders *et al.* (2007), this philosophical perspective is more in line with the reality under study in management research. Moreover, critical realism adopts a scientific approach to the development of knowledge that in several ways is closer to positivism, for instance regarding the use of rigorous methods for data collection and analysis. The term critical realism was coined by Bhaskar (1975, 1979, 1989), who claimed that one is only able to access the social world by adopting the methods of the natural sciences. Bhaskar (1979) aimed to resolve an old question that still dominates philosophical debate on whether society can be studied in the same way as nature. Critical realism accepts that the “human sciences can be sciences in *exactly the same sense*, though not in *exactly the same way*, as the natural ones” (Bhaskar, 1979, p. 179).

Whereas epistemology is concerned with what constitutes acceptable knowledge, ontology is concerned with the nature of reality (Saunders et al., 2007). Ontology raises questions about the assumptions researchers make about the way the world operates and their commitment to particular views. Ontology can be observed

from two opposing perspectives: objectivism and subjectivism (Bryman & Bell, 2007). Objectivism is aligned with the idea that social entities exist in a reality that extends beyond the observation of social actors. By contrast, subjectivism holds that the perceptions and consequent actions of social actors create the social phenomena under examination. A continual process takes place in the latter case, and, through the process of social interaction, the social phenomenon is in a constant state of revision. In addition to objectivism and subjectivism, pragmatism offers a third ontological perspective. According to Saunders *et al.* (2007), pragmatism holds that the most relevant element when it comes to deciding which research approach is appropriate is the research question; one perspective might be more appropriate than another when it comes to answering a specific question.

Guba and Lincoln (1994) define a ‘paradigm’ as the basic belief system that drives the researcher in choices of method, ontology and epistemology. The authors argue that the worldview that characterizes each of the inquiry paradigms they identify can be determined by asking three key questions (see Table 4.2).

TABLE 4.2 — Inquiry paradigm questions

DIMENSION	QUESTION
Ontology	What is the form and nature of reality?
Epistemology	What can we know about reality? What is the relationship between the knower or would-be knower and what can be known?
Methodology	How can the inquirer (would-be knower) go about finding out what he or she believes can be known?

Source: author, based on Guba and Lincoln (1994).

On the basis of these three questions, the authors identify four alternative inquiry paradigms, the details of which are presented in Table 4.3.

TABLE 4.3 — Alternative inquiry paradigms

ISSUE	POSITIVISM	POSTPOSITIVISM	CRITICAL THEORY <i>et al.</i>	CONSTRUCTIVISM
The Nature of Knowledge	Verified hypotheses, established as facts or laws	Nonfalsified hypotheses that are probable facts or laws	Structural/historical insights	Individual reconstructions coalescing around consensus
Inquiry aim	Explanation: prediction and control		Critique and transformation; restitution and emancipation	Understanding; reconstruction
Goodness or quality criteria	Conventional benchmarks of “rigor”: internal and external validity, reliability, and objectivity		Historical situatedness; overcoming ignorance and misunderstanding; action stimulus	Trustworthiness and authenticity
Ontology	Naive realism – “real” reality but apprehensible	Critical realism – “real” reality but only imperfectly and probabilistically apprehensible	Historical realism – virtual reality shaped by social, political, cultural, economic, ethnic, and gender values crystallized over time	Relativism – local and specific constructed realities
Epistemology	Dualist/objectivist; findings true	Modified dualist/objectivist; critical tradition/community; findings probably true	Transactional/subjectivist; value mediated findings	Transactional/subjectivist; created findings
Methodology	Experimental/manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental/manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	Dialogic/dialectic	Hermeneutic/dialectic

Source: adapted from Lincoln and Guba (Guba & Lincoln, 1994; Lincoln & Guba, 2005).

The postpositivist paradigm grounds a critical realist approach to ontology. According to Sayer (2000), the essential characteristic of critical realism is the belief that there is a world that exists independently of our knowledge of it – that reality is what it is despite what we happen to think about it. Critical realism allows for the merging of naturalism and the necessity of interpreting meaning, challenging the traditional understanding of empirical causality, which is related to describing social reality in terms of laws similar to those of the natural sciences. This understanding of social science cannot accurately capture reality to the extent that social systems are open and evolve, thanks in part to people’s capacity to learn and change their behaviour. People have the ability to interpret the social world, and as a consequence they are not merely shaped by the situations in which they find themselves. On this topic, Sayer (2000) argues that, because people’s roles and identities are often internally related, what an institution or a person is depends on its/her relation to others. He claims, further, that “social phenomena rarely have the durability of many of the objects studied by natural science, such as minerals or species” (Sayer, 2000, p. 13). Therefore, one cannot expect the explanation of reality in the social sciences to remain unproblematic across space and time. Nevertheless, critical realists accept the need for causal explanations of the social world. Realism rejects natural science’s conception of causality as involving consistency among sequences of events, regular successions of events, or ‘cause-effect’ regularities. This is one of the most distinctive characteristics of critical realism (Sayer, 2000). This study therefore relies on a new and different view of causation, represented in Figure 4.2.

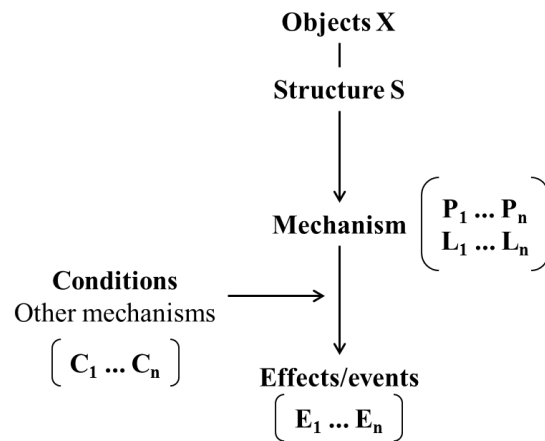


FIGURE 4.2 — The critical realist view of causation
Source: Adapted from Sayer 2000, p.15.

Critical realism draws a distinction between the real, the actual and the empirical. The real is the domain of objects, their structures, and causal powers – that is, their ability to behave in particular ways (Sayer, 2000, pp. 11–13). What happens when those powers are activated is an empirical matter and belongs to the domain of experience. Nevertheless, structures, along with other entities, may not be observable. The manifestation of causal powers depends on external conditions. When they are activated, the outcomes also depend on these conditions.

This ontological view also recognizes that powers can be “unexercised”. What is supposed to happen in a specific scientific observation does not exhaust what might happen. In critical realism, the structure of objects does not determine how they will behave (i.e. what will happen in the future). From a critical realist perspective, consistent and predictable behaviour only exists in closed systems, which only occur in very rare and specific circumstances. These conditions do not obtain spontaneously in the social world. Social reality is characterized by open systems, where different causal mechanisms can produce the same outcome and the same causal mechanism might

produce different results. Researchers working from a critical realist perspective therefore risk misattributing causality to a specific structure. The absence of regular cause-effect behaviour is to be expected due to the variety and changeability of social reality (Sayer, 2000, p. 14).

Explaining the social world depends on identifying causal mechanisms and understanding both how they work and whether (and under what conditions) they have been activated. The study of the social world involves discovering the nature of objects and structures that possesses specific causal powers. Building on the work of several authors (Easton, 2002, 2010; Sayer, 1984), we can say the following: from a critical realist perspective, an object X with structure S necessarily possesses causal powers (P_1 to P_n) and liabilities (L_1 to L_n) under specific conditions (C_1 to C_n), which produce changes of type (E_1 to E_n).

4.1.1. The ontological perspective

Questions about method are secondary to questions about epistemology and ontology since paradigm differences have significant implications at the practical level (Guba & Lincoln, 1994). Paradigm issues are essential; no researcher should start the labour of inquiry without a clear idea of which paradigm approach ought to guide her work. Therefore, before moving to the section on research design, I shall first clarify why the postpositivist paradigm (Guba & Lincoln, 1994; Lincoln & Guba, 2005) guides my approach to this research. A commitment to critical realism underlies my work (Archer et al., 1998; Easton, 2002; Sayer, 1997, 2000). This choice is justified by the complexity of the reality under study and the fact that buying decisions are open social systems. In addition, organizational behaviour is unique insofar as it is related to a particular set of circumstances and individuals. Valuable insights, relevant both to the

theory and to the practice of management, would be lost were such complexity and uniqueness to be reduced to a set of pure statistical generalisations. An ontological perspective featuring critical realism is highly appropriate to research that aims to capture the rich complexity of social situations (Sayer, 2000), such as research on organisational buying behaviour. In addition, theoretical conceptualization and abstraction is of crucial importance due to the fast pace of change in reference marketing.

The proposed research question expresses the aspiration to access the reality (the realm of objects, e.g. their structures and powers) that underlies the buying behaviour of firms. In order to capture this reality, I must consider the empirical elements that will help me to shape my understanding of the phenomena under study. To fulfil the aim of theory development within this research, I need to explore the shared interpretations of the socially constructed reality underlying the actions of the actors under study. As mentioned above, critical realism views reality as “real” despite being only imperfectly and probabilistically apprehensible (Guba & Lincoln, 1994). Diverse interpretations of reality are likely to affect actors’ actions and the nature of their social interaction with others. In this work, I try to uncover “causal mechanisms” (not causal relations) involving the members of the buying centre in order to make sense of their intentions and actions in a way that supports theory development.

To a certain extent, the reference triad is continually changing. In other words, one might argue that at no time is there a definitive entity called “a reference triad”. The reference triad is constantly being transformed, created and re-created as a result of the complexity of the social interactions between its members. It is therefore almost impossible to isolate and manipulate the reference triad, which lies at the heart of

the difficulty of understanding it as a social phenomenon. This is not a problem, however; following the realist approach, I aim to study reality as it is and as it continually changes. By adopting a postpositivist view, it is possible to view the reference triad as a subject that is independent of the social interaction that takes place between its three constitutive elements. It is therefore possible to study the causality mechanisms that affect organizational buying behaviour and its connection to reference marketing.

Taken together, these facts and ideas shape the belief system that defines my view on the relationship between theoretical knowledge and the processes by which it is achieved. With this research, my aim is to provide the literature on organizational buying behaviour with rich insights and relevant contextual information that sheds light on the social phenomena related to customer referencing. Although useful in other fields of organizational buying behaviour, plain statistical generalizations are not applicable to the present work. This research should therefore be evaluated according to the selected research paradigm rather than a positivist perspective (or any similar perspective). Even so, several theoretical propositions¹ are presented in this work, and these can be later tested in future research by quantitative methods.

4.2. THE ADOPTED RESEARCH DESIGN

Thus far, empirical work in the field of referencing has focused mainly on the supplier as the central unit of empirical observation and has ignored the other constituents of the reference triad (Helm & Salminen, 2010): the reference customer and the potential customer. Furthermore, Ruokolainen (2008b) and Salminen and Möller (2002) suggest that more theoretical models featuring customer references are needed.

¹ Cf. chapter “Theoretical Framework”.

Jalkala and Salminen (2006) and Salminen and Möller (2002, 2006) argue that future research on customer references should take place in the context of the industrial networks approach. There is also a need for additional qualitative research, especially case studies, to the degree that this increases our understanding of customer referencing and provides additional and far-reaching insights into the related variables (Ruokolainen & Mäkelä, 2007; Salminen & Möller, 2004, 2006). Contrary to this understanding, Ruokolainen and Mäkelä (2007), Ruokolainen (2008b), and Salminen and Möller (2004, 2006) argue that running large-scale statistical studies would play a significant role with regards to the prevalence of the conceptual frameworks associated with customer referencing.

Although my research is causal (Saunders et al., 2007; Zikmund, 2003), it does not present a deductive trait. Miles and Huberman (1994, p. 22) suggest that deductive research “starts with some orienting constructs, extracts the questions, and then starts to line up the questions with an appropriate sampling frame and methodology”. The effort to conceptualize complex phenomena like customer referencing involves a simplification or reduction of the reality under study, that is to say, in scientific research a trade-off takes place by retaining some aspects of reality while leaving others in the background. Therefore, I’m open to consider additional constructs that might be used later to fulfil the presented framework whilst letting go other less relevant variables. To fulfil this aim, I adopted a research approach suggested by Dubois and Gadde (2002) which is based on systematically combining grounded theory in an abductive logic. The authors stressed that theory development, rather than theory generation, should be the aim of systematic combining as it serves better for the

refinement of existing theories than creating new ones. In fact, this is the case of this research which aims at customer referencing theory development.

According to the authors, the distinctive feature of this approach is based on a continuous movement between the empirical reality and the theory, as the research issues and the analytical framework are reviewed in confrontation with the empirical world. This is a process where the conceptual framework, the empirical work, and the case analysis progress almost simultaneously due to the continuous interplay that takes place between the theory and the empirical observation. Dubois and Gadde (2002, p. 556) referred to systematic combining as the “nonlinear, path-dependent process of combining efforts with the ultimate objective of matching theory and reality”.

Systematic combining relies on two important processes. The first has to do with matching theory and reality and the second deals with research direction and redirection. ‘Matching’ concerns the “going back and forth between framework, data sources, and analysis” (Dubois & Gadde, 2002, p. 556) which constitutes the grounds for systematic combining. The authors claimed that these movements affect and are affected by the following issues: (i) the empirical reality; (ii) available theories; (iii) the case; and (iv) the analytical framework. The authors also claimed that as the empirical work progresses the identification of unexpected nonetheless related issues might happen. Those issues may be further explored by additional methods of data collection. This might result in the need for further redirecting the current theoretical framework by means of expansion or change.

In the systematic combining process the evolving analytical framework is a cornerstone of great importance as it directs the search for empirical data. During the research the framework should evolve because empirical observations motivate changes

of the view of theory and the other way around. Dubois and Gadde (2002) claimed that the role of the framework is strikingly different between deductive and inductive studies. In abductive studies the seminal framework is successively modified, anticipating empirical findings (or theoretical insights) acquired during the research process. The authors claimed that in these studies a fruitful cross-fertilization is generated. When confronted with reality new combinations are developed by blending existing theoretical models and new concepts.

The vital objective of research is to confront the theoretical world with the empirical reality as in this context theory cannot be understood without empirical observation and vice versa. By adopting a systematic combining approach, this confrontation is done in a continuous process throughout the entire research process.

My work adopts a research strategy that is based on case studies (Darke, Shanks, & Broadbent, 1998; Easton, 1998, 2010; Gummesson, 2007; Halinen & Törnroos, 2005; Patton & Appelbaum, 2003; Shanks, 2002; Stake, 1995; Woodside & Wilson, 2003; Yin, 2009). Several authors (Ruokolainen & Mäkelä, 2007; Salminen & Möller, 2004, 2006) recommend case studies as the main research strategy for research on customer references.

Building theory from case studies is a research strategy that uses empirical evidence from one or more cases to create “constructs”, or theoretical propositions (Eisenhardt, 1989b). Case studies are empirical descriptions of a particular phenomenon and are built using a variety of data sources (Yin, 2009).

Macpherson, Brooker, and Ainsworth (2000) highlight the ability of case studies to produce consistent data and deepen our understanding of rich social contexts. Along the same lines, Rowley (2002) highlights the most challenging aspect of case

studies, which concerns the elevation of the investigation from a purely descriptive stage to a higher level of contribution to a body of theoretical knowledge. Patton and Appelbaum (2003) suggest that case studies represent an important way to conduct scientific research in organizational sciences, not only as a method of generating hypotheses for quantitative studies but also as a way to generate and test theory. Eisenhardt and Graebner (2007) argue that one of the reasons for the growing popularity and relevance of case studies is their ability to establish links between qualitative evidence and mainstream research.

4.2.1. The buying of capital goods in the energy industry

I have selected the energy sector as the empirical focus of my research. In what follows, I study Portuguese firms from the energy sector. Jalkala and Salminen (2010) recommend that future research on referencing consider industry sectors that differ from those already considered in the literature. According to these authors, by following this recommendation it is possible to broaden the scope of the theory of referencing.

Ruokolainen and Mäkelä (2007) refer to the market for complex technology products as a “reference business” because in this setting references are relied on by corporate customers. In reference businesses, corporate customers typically buy complex, high-tech products and services. The energy industry has the features of a reference business, and it has yet to be the subject of customer referencing research. The energy industry is often thought to include all the firms involved in the production and sale of energy. In particular, this sector comprises petroleum, gas, coal, electrical power, nuclear power, and renewable energy.

According to Salminen (2001), customer references play an important role in heavy equipment and capital equipment businesses. This idea is also defended by Salminen and Möller (2004), who claim that references play a key role in capital equipment bidding processes. Additionally, Salminen and Möller (2006) describe the contextual factors that affect the importance of references. They argue that high-tech and market uncertainty increases the relevance of customer references by augmenting the potential customer's perceived risk. These uncertainties are in part influenced by the total amount of investment and by the innovation embedded in the offered product or system.

This is an interesting context because all players in the energy sector are committed to high capital investments. Unlike other industries, such as telecommunications, energy firms possess a broader scope of vendors with which to work, as the buying of capital goods is neither prearranged via a vendor's shortlist nor bound via "strategic partnerships". The buying of capital goods has already proved a fruitful field of research, as is evidenced by the work of Cunningham and White (1974), who identify key specificities regarding the output of the interaction process. These authors claim that the buying of capital goods such as machine tools is a negotiation process, where the formulation of the needs of the buyer is modified according to what is available in the market. Empirical study of capital equipment goods purchasing has also been undertaken in the metal mining industry. Baptista (2001, p. 280) observes that "metal mining companies [...] aspire to long-term relationships and to regard their capital equipment suppliers' as business partners". Research in the mining industry also concludes that "supplier-based adaptations occur more frequently than customer-based adaptations" (Baptista, 2013, p. 979) and that "the extent of supplier-based adaptations

and scope of after-sales agreements are core to relationship development and continuity” (Baptista, 2013, p. 969).

I restrict my research to firms operating in Portugal for two main reasons. The first is the lack of research on customer referencing as practiced in this country. The second is the privileged access granted to me by Portuguese energy firms. The actors (from within this industry) that matched the conditions for being selected as a research subject are identified in Table 4.4. The selection criteria were the following: (i) infrastructure possession (ownership); (ii) infrastructure management; and (iii) the existence of a formal purchasing department. These criteria help to identify firms that deal with capital equipment buying decisions. The following companies therefore serve as research subjects in this study: (i) EDA (Electricidade dos Açores); (ii) EDP (Energias de Portugal); (iii) EEM (Electricidade da Madeira); (iv) GALP Energia; (v) Tejo Energia, Produtora e Distribuidora de Energia Eléctrica; (vi) Turbogás, Produtora Energética; and (vii) REN (Redes Energéticas Nacionais). I exclude from this list (i) firms that do not have mainland operations (due to budgetary constraints) and (ii) firms that declined to participate in this research. A remaining set of three firms will provide the empirical data for this research and total the overall Portuguese electrical industry (mainland).

By contrasting three Portuguese cases, this study sheds light on the body of knowledge on customer referencing. The scale of wind and solar energy projects is small when compared with other energy market players, and therefore wind and solar projects do not serve as subjects in this research (in addition, these projects do not involve formal purchasing departments; instead, purchasing is most often managed by the financial department).

From the vendors' side, firms like ABB, Alstom, General Electric, Hitachi, Hyundai Heavy Industries, Schneider Electric, Siemens, and Toshiba strive to bring capital equipment, services and solutions to a multinational environment. To this end, all vendors have created dedicated sales organisations (account teams), which are responsible for achieving this goal. Nevertheless, the above listed firms are not the main subject of this research; my focus remains the potential customer rather than the seller or vendor.

Critical realism accommodates a wide range of research methods (Sayer, 2000). This study involved the collection of empirical data from firms in the Portuguese energy industry that supported the creation of a multiple case study (Bryman & Bell, 2007). A comparative case study design (Dubois & Araujo, 2007) was adopted as a complementary research strategy.

According to Miles & Huberman (1994, p. 28), the type of sampling adopted in this work is categorized as “confirming and disconfirming cases”, which involves looking out for exceptions and variations. Confirming and disconfirming cases serves the function of seeking exceptions and investigating variations.

4.2.2. Data collection strategy

The unit of analysis of this research is a capital equipment buying decision made by the buying centre of a potential customer, a subset of the reference triad (Helm & Salminen, 2010). Triads have also been studied by Holma (2009), who in her doctoral dissertation addresses the complexity of business relationships in a work that takes ‘adaptation’ as its main subject of investigation and the ‘triadic relationship setting’ as its structural context. According to Holma, the triadic approach to business relationships is relevant not only in situations where an intermediary is involved but also where the

three actors are directly connected to each other, as is the case with customer referencing. The focus of that study was triads in the context of corporate travel management. It integrated theories from the industrial network approach and theories from the sociological landscape, which were used to understand the triadic relationship setting. However, the author notes that only a few studies applied this approach due to its difficult application in research practice. This conclusion supports the argument presented in my work and the decision to focus on just one side of the reference triad.

The above-mentioned study (Holma, 2009) features a retrospective case study. The data was collected via in-depth interviews. It provided a framework for analysing adaptation in triadic business relationship settings and adopted a systematic combining approach, based on abductive logic (Dubois & Gadde, 2002).

The concept of a reference triad is based on the idea that interaction takes place between three key actors: the seller, the buyer and the reference customer (Helm & Salminen, 2010). The broad subject of theoretical inquiry in this research is therefore the reference triad, although I will study this subject through the lens of a specific actor: the potential customer. Fieldwork is carried out from the buyer's perspective, which means that the potential customer is the unique resource in data collection. In short, my research takes the buying behaviour of the potential customer as its unit of empirical observation. This decision might be questionable from the perspective of the Industrial Marketing and Purchasing Group. However, as Gemünden (1998) points out, authors who have contributed to developing theories about relationships focus on only one side of the dyad in their empirical research. The Industrial Marketing and Purchasing Group's framework therefore gives excessive attention to the relationship – rather than the buying behaviour – as its selected unit of analysis.

Operational restrictions and theoretical concerns have shaped this research decision insofar as I lack sufficient resources (e.g. time and access) to broaden the scope of my research (at least at present). From a theoretical point of view, I aim to integrate the North American perspective into this research, which means bringing the buying centre into a more visible position (a move that departs from the Northern European approach).

Primary data for the case creation process were gathered in semi-structured interviews that followed a generic predefined outline (supported by an open questionnaire or case protocol) (see Appendix 1). In my role as interviewer, my instincts sometimes directed me to add questions not present in the questionnaire as initially formulated. Side comments and additional relevant elements (e.g. reference material, brochures, press releases, web pages, etc.) given by respondents were also recorded as valued sources of secondary data. This approach is considered effective, especially when investigation into more subtle issues and longer answers are required in order to deeply understand the topics reported by respondents (Ackroyd & Hughes, 1992). Taken together, these elements served to build the case narratives featured in the present study.

One operational challenge faced by this research was gaining access to the buying centres of the case companies. According to Zikmund (2003), snowball sampling involves gaining access to additional respondents via information provided by initial respondents. By adopting the principles of snowball sampling (Bryman & Bell, 2007; Hughes, Bence, Grisoni, O'regan, & Wornham, 2011; Jalkala & Salminen, 2010; Johnston, Leach, & Liu, 1999; Saunders et al., 2007), it was possible to gain access to

and interview members of the buying centres of the companies selected as research subjects.

Relevant documents and other useful data were collected to the extent that they were judged to shed valuable light on the cases. It is the data gathered from the interviews, however, that provides the strong empirical foundation for the theoretical claims offered in this research. This work features a total of seven interviews. A total of nine hours and 45 minutes of recorded interviews were transcribed (see Appendix 4) and coded for further analysis. On average, the extent of each interview was one hour and 23 minutes. Once completed, all three cases were sent for review and approval by the formal interfaces of each firm (see Appendix 3). It became clear that all reviewers adopted a “softening” approach: that is to say, on several occasions they changed parts of sentences in order to soften their impact when it came to aspects previously described in stronger terms in the initial interviews.

In addition to interviewing those directly related to each one of the three cases, I also conducted three interviews, attended three meetings, performed four workshops, played four visits and went to one conference, in order to gain a better and more profound understanding of the Portuguese energy industry. Moreover, additional interviews and documents were also useful for building up the three cases. All these additional collected data was manually edited and classified, being the subject of a complementary and contextual analysis. Table 4.4 summarize the interviews and interactions that took place in the context of this research.

TABLE 4.4 — Report of interviews and interactions

CASE	INTERVIEWEE	COMPANY	ROLE	DATE	DURATION	OBS.
N.a.	Marco Santos	Grupel - Grupos Electrogéneos, S.A.	CEO	17-03-2014	02:32:52	Interview and guided visit to the factory plant.
N.a.	José Machado	Grupel - Grupos Electrogéneos, S.A.	Sales Director	17-03-2014	00:23:45	Joint meeting with sales team.
N.a.	Pedro Quelhas	Grupel - Grupos Electrogéneos, S.A.	International Sales Manager	17-03-2014	00:23:45	Join meeting with sales team.
EDP	Luis Marques Ferreira	EDP Valor - Gestão Integrada de Serviços, S.A.	Chief Procurement Officer	22-07-2014	03:05:00	Workshop to present EDP Procurement.
EDP	João Marques Almeida	EDP Valor - Gestão Integrada de Serviços, S.A.	Chief Procurement Officer	22-07-2014	03:05:00	Workshop to present EDP Procurement.
REN	Alexandra Reis	REN Serviços, S.A.	Procurement Director	06-03-2015	01:06:39	Interview (recorded). The interview protocol was adopted.
TEJO ENERGIA	João Melancia	PEGOP - Energia Eléctrica, S.A.	Procurement & Contract Manager	02-04-2015	02:21:41	Interview (recorded). The interview protocol was adopted.
TEJO ENERGIA	Fernando Mata	PEGOP - Energia Eléctrica, S.A.	Manager (Production Department)	02-04-2015	00:17:59	Interview (recorded) and guided visit to the power plant. The interview protocol was adopted.
N.a.	António Jerónimo	Galp Energia SGPS, S.A.	Office of the Presidency	08-05-2015	01:52:39	Workshop (recorded).
EDP	Luis Marques Ferreira	EDP Valor - Gestão Integrada de Serviços, S.A.	Chief Procurement Officer	22-05-2015	01:37:45	Interview (recorded). The interview protocol was adopted.
REN	Nuno Ribeiro	REN Serviços, S.A.	Head of Investment	01-06-2015	01:48:38	Interview (recorded). The interview protocol was adopted.
REN	Alexandra Reis	REN Serviços, S.A.	Procurement Director	26-06-2015	N.a	Final document approval.

CASE	INTERVIEWEE	COMPANY	ROLE	DATE	DURATION	OBS.
TEJO ENERGIA	Beatriz Milne	Tejo Energia - Produção e Distribuição de Energia Electrica, S.A.	Sales Director	08-06-2015	N.a	Document review and comment.
N.a.	Filipe Almeida Santos	Martifer Solar, S.A.	CFO	16-06-2015	00:45:02	Meeting & conversation (free).
N.a.	Marco Oliveira	Martifer Solar, S.A.	Plant Manager	16-06-2015	01:14:20	Guided visit to the factory plant
N.a.	Rui Cardoso	Martifer Solar, S.A.	O&M Manager	16-06-2015	00:36:54	Introduction & presentation to the Global O&M centre.
TEJO ENERGIA	Paulo Almirante	Tejo Energia - Produção e Distribuição de Energia Electrica, S.A.	CEO	10-08-2015	N.a	Final document approval.
EDP	Filipe Duarte	EDP Producao, S.A.	Sub Director	31-12-2015	00:41:04	Phone call interview.
EDP	Mário Camacho	EDP Producao, S.A.	Director	1-03-2016	00:55:36	Interview (recorded). The interview protocol was adopted.
EDP	Filipe Duarte	EDP Producao, S.A.	Sub Director	1-03-2016	01:41:14	Interview (recorded). The interview protocol was adopted.
EDP	Filipe Duarte	EDP Producao, S.A.	Sub Director	23-03-2016	N.a	Final document approval.
EDP	Carlos Madeira e Rui Miguel Martins	LABELEC, S.A.	Board Member and Technical Director	25-05-2016	N.a	Guided visit to the lab.
REN	Filipe Ribeiro	REN Serviços, S.A.	Dispatch Centre Manager	25-05-2016	N.a	Guided visit to the National Energy Dispatch Centre.
EDP	Berto Campinho Martins	EDP — Energias de Portugal, S.A.	Deputy Director Energy Markets	22-07-2016	01:22:51	Interview (not recorded).
N.a.	Jorge Cruz de Moraes	Associação Portuguesa da Energia	President	04-10-201	N.a.	Attendance APE 2016 Conference

Source: author.

4.2.3. Data analysis

In this research, I followed a methodological framework for data analysis which included recommendations provided by Miles and Huberman (1994), Eisenhardt (1989), Yin (Yin, 2009, 2011), Stake (1995), and Dul and Hak (2007).

Qualitative data were not available or immediately accessible for analysis and instead required some level of systematic treatment or processing (Miles & Huberman, 1994, p. 9). In this research, interviews were conducted in Portuguese. Tape recordings and field notes of the interviews were transcribed, edited, and converted into text for further analysis (see Appendix 4). I have disassembled the data by formally coding them (Yin, 2011, p. 186). I used the software MAXQDA 12 (release 12.1.0)² to code the data retrieved from the interviews. The data coding was accomplished before translating the interviews' content into English. I ran the analysis in the original Portuguese with the aim of preserving useful insights embedded in the original interview discourses. Miles and Huberman (1994, p. 10) understand 'data analysis' to include: (i) data reduction; (ii) data display, and (iii) conclusion drawing and verification. Data reduction consists in abstracting and selecting previously collected valuable data. Data display also involves a process of data reduction, as well as information organization, which paves the way for the last step of data analysis: conclusion drawing and verification.

Zikmund (2003) suggests that research can be classified as (i) exploratory; (ii) descriptive; or (iii) causal, according to its purpose or function. My work is largely causal albeit having a descriptive trait. The purpose of descriptive research is to describe the characteristics of a phenomenon while taking into consideration prior knowledge of the nature of the problem under study (Zikmund, 2003). Zikmund also claims that

² Copyright (c) Verbi GmbH.

describing the characteristics of a phenomenon is achieved by answering questions that centre on the notions ‘who’, ‘what’, ‘when’, ‘where’, and ‘how’. Answering these questions is key to my research, as is an emphasis on data displays, such as matrices and networks (cf. Miles & Huberman 1994, pp.3, 11) as a means of facilitating both data analysis and the work of the reader.

A theoretical model, represented by Figure 3.1, has been adopted as a framework for the collection of data. This *ex-ante* conceptual framework provided guidance for data gathering. It also presented limitations, however, to the degree that it was unable to provide a comprehensive explanation of the phenomenon under analysis. A new conceptual model that better explains the phenomena emerged from the empirical data (see Figure 6.4). During this process, the original coding scheme (see Appendix 5) was replaced with a modified coding scheme (see Table 6.1).

Three case studies were used to generate valuable insights, which in turn helped to further develop the above-mentioned *ex-post* theoretical model. Each case study served as the subject of a case analysis (each of the three embedded units of analysis level). In a separate phase, the cases were united via cross-case analysis, which then allowed for the final stage of comparative analysis at the level of the unit of analysis.

A multiple case study approach allows for the gathering of ‘confirming and disconfirming cases’, which contributes to a rich theoretical framework. In adopting this multiple case study approach, however, the aim is to adopt not a sampling logic (Yin, 2009, p. 54) but a replication logic.

4.2.4. Quality criteria

The credibility of research findings is a concern shared by many scholars (Bryman & Bell, 2007; Eisenhardt, 1989b; Miles & Huberman, 1994; Saunders et al., 2007; Yin, 2009, 2011). Saunders *et al.* (2007, p. 149) claim that special attention and emphases should be given to reliability (most often threatened by “participant” and/or “observer bias”) and (internal) validity. In addition, they worry about generalizability, sometimes referred to as “external validity”. According to these authors, these represent quite different concerns. Internal validity “is concerned with whether the findings are really about what they appear to be about” (Saunders et al., 2007, p. 150), while external validity concerns the extent to which research results are generalizable, that is to say, the extent to which they “may be equally applicable to other research settings” (Saunders et al., 2007, p. 151). Table 4.5 summarises diverse theoretical views on this theme and outlines key quality criteria for evaluating business and management research.

Generally speaking, Bryman and Bell (2007, p. 40) identify reliability, replication and validity as key criteria for assessing management research. However, those authors also discuss the fact that work by qualitative researchers must be judged according to different criteria from those used to assess quantitative research.

TABLE 4.5 — Theoretical views on key quality criteria

AUTHOR	RELIABILITY	CONSTRUCT VALIDITY	REPLICATION	INTERNAL VALIDITY	EXTERNAL VALIDITY
Miles & Huberman (1994)	Concerns the consistency and stability over time of the process of the study.			Concerns the credibility of the study's results: when they are presented to the people who are studied and to readers.	Concerns the transferability of a study's conclusions to other domains and contexts.
Bryman & Bell (2007)	Concerns the ability to repeat results. Measures adopted to devise concepts should be consistent.		Guarantees the reproducibility of a study by others. A researcher should spell out his procedures in great detail.	Concerns the integrity of the conclusions that are generated by the research. In particular, a causal relationship between two or more variables should hold up.	In particular, the results of a study should be generalizable beyond the specific research context.
Yin (2009)	If a later investigator follows the same procedures as those described by an earlier researcher and conducts the same case study again, the later investigator should have the same findings.	Concerns developing a sufficient operational set of measures that allows for the study of concepts.		Only concerns causal relationships (applicable neither to descriptive nor to exploratory studies) in the sense of making inferences.	Concerned with the generalization of case findings beyond the immediate case study.

Source: author.

Interest in qualitative research methods such as case studies has been growing, especially in cases where researchers seek to understand a social phenomenon in its natural environment (Darke et al., 1998). Darke *et al.* (1998) warn about the practical difficulty of ensuring that this kind of research has scientific rigor. Perry (1998) confirms this constraint by noting the lack of scholarly publications based on this

method. Johnston *et al.* (1999) emphasize that case-based research has traditionally been the target of criticism from the scientific community due to its lack of objectivity and scientific rigor. However, these authors acknowledge its relevance in exploratory phases. Woodside and Wilson (2003) argue that the research paradigm in organizational behaviour needs to change.

Lincoln and Guba (1985) offer four different criteria for evaluating qualitative research: (i) credibility; (ii) transferability; (iii) dependability; and (iv) confirmability. According to Bryman and Bell (2007, pp. 40, 411), each of the four criteria proposed by Lincoln and Guba (1985) parallels a criterion used to assess quantitative research: (i) credibility parallels internal validity; (ii) transferability parallels external validity; (iii) dependability parallels reliability; and (iv) confirmability parallels objectivity. Credibility concerns whether the research is carried out according to correct scientific standards and rules and whether researchers submit their findings to a respondent or for 'member validation'. In the interest of credibility, members of a social world being studied should therefore confirm that the social researcher has correctly understood that world. Transferability concerns whether the relevant findings are transferable from the social world being studied to a different one. Dependability concerns the possibility of auditing the research records and assuring that theoretical inferences can be justified. Confirmability concerns whether the researcher acted in 'good faith' – that is to say, whether he/she let personal values or theoretical inclinations influence his/her findings.

The four criteria proposed by Lincoln and Guba (1985) are critical to assessing the scientific quality of the present research. They served as guiding standards

not only during the execution of my field work and its analysis but also during the research design phase and the drawing of conclusions.

I sought to assure the credibility of my research by submitting all case studies for prior acceptance (see Appendix 2) and subsequent member validation (see Appendix 3). I also aimed to ensure the transferability of my research by providing a rich description of the social world being studied in each case (I recreated a rich case narrative for each of the cases presented in this work). I promoted the study's dependability by maintaining an archive of all records produced by this study and by making them available to anyone who requests access (see Appendix 4 and Appendix 6). The study's confirmability, however, can only be verified by external auditors. This is due to the particular nature of the study. In fact, this is the only criterion in terms of which I am unable to take a proactive stance with a view to exhibiting the overall scientific quality of this work.

In addition to these efforts, I adopt the following recommendations from Yin (2009, p. 41) in the interest of increasing the scientific quality of this study: (i) use multiple sources of evidence; (ii) have key informants review draft case study reports (see Appendix 3); (iii) address rival explanations; (iv) engage in pattern matching; (v) engage in explanation building; (vi) use case study protocols (see Appendix 1); and (vii) develop case study databases.

5. EMPIRICAL WORK

Portugal established its current legal framework for the electricity sector in 2006, based on the 2003/54/EC European Electricity Directive. Although the transmission component of the electricity industry continues to be provided through the awarding of public concessions (e.g. REN), the Portuguese electricity sector is now almost fully open to competition (subject to the obtaining of licenses and approvals). Between 2011 and 2013, the gross average price (including taxes) paid by Portuguese residential consumers increased by 14,5% (Deloitte, 2014). More than half of these consumers nonetheless exhibit a high level of satisfaction with their energy suppliers (Accenture, 2014).

The Portuguese electricity sector is divided into six independently operated activities (EDP, 2015): (i) generation; (ii) transmission; (iii) distribution; (iv) supply; (v) operation of the electricity market; and (vi) switching electricity suppliers for consumers. These functions must obey the following principles: (i) efficient use of resources; (ii) competition; and (iii) environmental sustainability. Competitive players must obtain the requisite licenses and approvals. Transmission and distribution, however, continue to be provided through the awarding of public concessions. Table 5.1 lists a selection of firms operating in the Portuguese energy market (including vendors of capital equipment, such as EFACEC and Siemens) that have been ranked among the top 500 firms.

TABLE 5.1 — Exame's ranking of the top 500 firms (selection of firms operating in the energy sector)³

RANK	FIRM	REVENUES	NET PROFIT	ASSETS	EQUITY	LIABILITIES	EMPLOYEES
1	PETRÓLEOS DE PORTUGAL - PETROGAL	10.866.515.916	-70.214.216	5.849.876.272	937.985.242	4.911.891.030	1.808
2	EDP SERVIÇO UNIVERSAL	4.442.617.893	-1.462.219	2.916.938.711	63.232.111	2.853.706.600	27
5	GALP GÁS NATURAL	2.697.008.314	174.767.465	752.885.343	349.104.903	403.780.439	7
6	EDP DISTRIBUIÇÃO	2.649.461.000	252.197.000	5.064.301.000	525.722.000	4.538.579.000	3.459
7	EDP	2.477.431.502	790.875.101	20.988.027.792	7.033.083.900	13.954.943.892	34
16	EDP - GESTÃO DA PRODUÇÃO DE ENERGIA	1.276.809.269	289.669.286	8.150.725.555	2.170.541.902	5.980.183.653	1.022
22	ENDESA ENERGIA	800.577.832	55.275.406	213.114.480	55.275.406	157.839.073	4
36	REN - REDE ELÉCTRICA NACIONAL	531.684.937	101.873.610	3.222.384.016	705.813.681	2.516.570.335	267
66	GALPGESTE	338.456.622	678.954	9.313.257	-2.567.139	11.880.397	1.125
73	SIEMENS	306.488.621	9.414.545	278.445.382	111.766.723	166.678.659	1.364
90	EFACEC ENERGIA	246.104.657	-70.303.872	299.627.484	79.456.401	220.171.083	1.077
91	GÁS NATURAL COMERCIALIZADORA	244.440.213	6.948.862	72.453.964	8.313.646	64.140.318	8
95	EFACEC	235.411.721	8.046.081	378.968.413	80.725.787	298.242.625	1.060
104	GALP POWER	224.911.701	1.058.081	89.382.599	713.648	88.668.952	0
111	EDA - ELECTRICIDADE DOS AÇORES	208.792.433	16.197.969	590.137.625	213.532.082	376.605.542	717
116	TEJO ENERGIA	202.049.000	35.113.000	600.566.000	106.432.000	494.134.000	14
120	EEM - EMPRESA DE ELECTRICIDADE DA MADEIRA	199.076.186	4.174.218	643.298.581	126.696.016	516.602.565	796
175	GALP MADEIRA	141.071.285	5.677.829	51.330.533	8.072.069	43.258.464	10
179	EDP RENOVÁVEIS PORTUGAL	140.220.577	51.524.489	577.932.659	109.988.962	467.943.697	1
221	REN - GASODUTOS	117.503.127	36.900.975	842.992.765	457.093.891	385.898.874	98
227	SINECOGERAÇÃO	114.239.663	4.748.470	71.304.458	4.808.470	66.495.988	0
230	TRANSGÁS	112.799.117	-1.550.090	105.306.467	25.177.499	80.128.967	0
235	LISBOAGÁS GDL	111.455.763	27.811.022	683.691.582	146.007.624	537.683.958	133
236	LISBOAGÁS COMERCIALIZAÇÃO	111.054.961	675.854	50.815.264	7.735.854	43.079.410	0

³ Revenues, net profit, assets, equity, and liabilities in euros.

RANK	FIRM	REVENUES	NET PROFIT	ASSETS	EQUITY	LIABILITIES	EMPLOYEES
241	EUROPA&C ENERGIA VIANA	109.540.103	13.806.930	50.722.749	17.406.930	33.315.819	0
250	TURBOGÁS	104.868.831	28.959.333	396.485.960	185.568.337	210.917.623	1
305	GALP ENERGIA	90.887.840	387.247	29.998.339	3.097.100	26.901.239	491
316	EMPRESA HIDROELÉCTRICA DO GUADIANA	88.129.518	10.072.924	525.287.603	37.747.046	487.540.557	1
319	GALP AÇORES	87.330.515	1.844.673	35.811.582	6.003.257	29.808.325	11
327	PORTCOGERAÇÃO	86.153.373	5.209.803	129.130.480	4.797.408	124.333.072	0
356	MARTIFER	79.540.768	-29.391.790	139.673.785	8.136.357	131.537.428	1.046
380	GÁS NATURAL SERVICIOS SDG	75.541.457	3.601.887	47.317.372	12.070.841	35.246.531	0
404	EDP GÁS	71.324.000	2.569.000	50.252.000	15.281.000	34.971.000	4
407	VENTOMINHO	71.136.960	23.727.450	311.091.550	27.627.815	283.463.735	1
426	CARBOPEGO	68.806.066	370.717	7.897.346	6.782.255	1.115.091	2

Source: (Exame, 2014).

At the international level, renewable energy will almost quadruple over the next 20 years and will come to supply a third of the growth in power generation. This rapid growth in renewables will be supported by cost reductions, including reductions to the cost of onshore wind, which is expected to fall by 25% by 2035 (BP, 2016). Renewable energy is also becoming increasingly important in the Portuguese context and will play a key role in the future energy system, particularly given the broad consensus on the importance of reducing the role played by coal in the current energy mix (Gifra & Cardenete, 2015). Portugal produced a total of 50,411 GW hours in 2013 (OECD, 2015). Electricity is generated using various energy sources (e.g. coal, natural gas, fuel oil, diesel, water, wind, sun, biomass and waste), but in Portugal large thermoelectric and hydroelectric power stations are predominant. Nuclear power plants are not used in this European country. Over the past decade, the number of power

generators has increased significantly as many players with lower power production sites entered the Portuguese market. Most of these players are using co-generation or generation from renewable sources like wind farms. Figure 5.1 illustrates the evolution of the Portuguese power generation mix from 2008 to 2014.

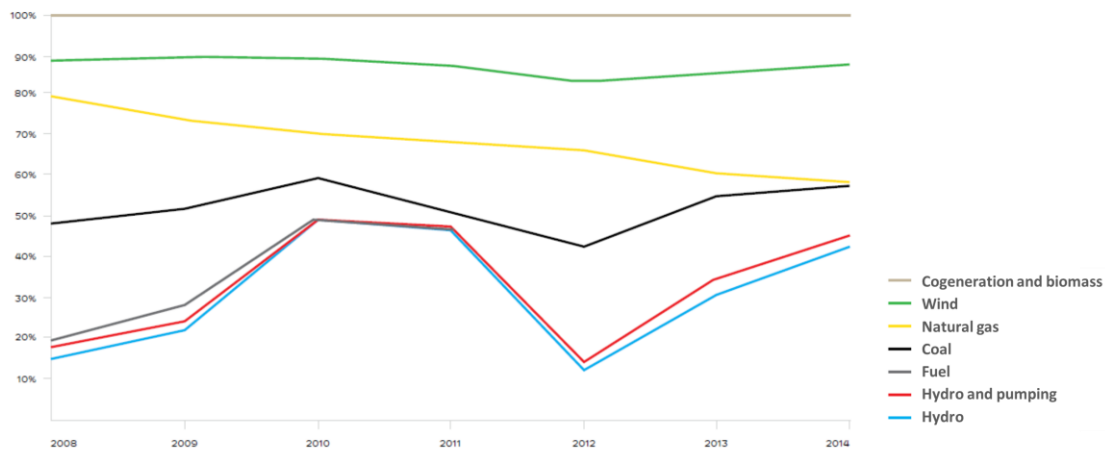


FIGURE 5.1 — Portuguese power generation mix (from 2008 to 2014).
Source: Silva, Ferreira, & Rocha, 2015, p. 46

From the beginning of this century onwards, Portugal has greatly increased its capacity for wind-powered electricity generation. In 1998, the country had an installed capacity of 51 MW as a result of its wind turbines. In 2010, Portugal increased its wind capacity to 3702 MW. Further increases in wind power generation are constrained by the development of pumped storage plants, among other factors. The intermittent nature of renewable energy sources means that production is often not aligned with demand. Reversible systems with storage capacity optimize the use of these energy sources.

5.1. THE CASE OF TEJO ENERGIA

At present, two conventional coal power plants exist in Portugal: Sines and Pego. The Pego power plant is Portugal's sixtieth largest power plant. It is located in the centre of Portugal, in the district of Santarem, and was built by EDP (the incumbent firm) from 1988-1995 in order to satisfy increasing electricity consumption. This infrastructure has a total installed capacity of 628 MW. It has two productive units of 314 MW each. The consortium Mague/Foster Wheeler EC manufactured the Boilers. Asea Brown Boveri (ABB) provided and installed the turbines and the generator. Equipment from other vendors, such as transformers from EFACEC, have also been installed at the plant. The first productive unit was commissioned in 1993, the second in 1995. It is operated by PEGOP on behalf of Tejo Energia. Tejo Energia is responsible for the management of a 28-year power purchase agreement signed with REN (the "off-taker").

In 1990, as part of a government initiative to restructure EDP and encourage private sector investment in the electricity sector, the Pego power plant was marketed for sale in an international bid. The purchase of the Pego power plant by Tejo Energia took place in 1993. The sale resulted in the infusion of around 755 million euros into the national treasury. At the time, this was the largest financial transfer across European international borders. It represented the first large-scale 'project finance' in Southern Europe, and its framework is described in Figure 5.2. Moreover, it involved some of the largest Portuguese and international banks in the world. Today, Tejo Energia is one of the largest Portuguese private companies in terms of assets. When Tejo Energia was established in 1993, over 100 contracts regulated the company's legal and financial activities ("Estrutura Financeira da Tejo Energia," 2015). At the time of its foundation, the percentage of borrowed capital was around 85% – that is to say, the total project

cost was funded by a mix of debt and equity, in an 85/15 split. In 2006, the business was re-financed with a consortium of 13 banks, including some of the largest national and international financial institutions in the world. The mandated lead arrangers were: (i) the Royal Bank of Scotland; (ii) Caixa Banco de Investimento; (iii) Caja Madrid; and (iv) Banco Espírito Santo de Investimento. Alongside the shareholders, the banks play an important role in monitoring the project's technical and financial performance. According to the procurement and contract manager, the fact that this was 'project finance' meant that specific adaptations of many business activities had to be made. For instance, in procurement activities special care had to be taken with regard to contracts and legal requirements. These demands were mainly set by the consortium of banks that ran the 'project finance' agreement.

CarboPego also began as a 'fifty-fifty' joint venture between Endesa and International Power. The firm is responsible for supplying the Pego power station with the coal it requires for producing electricity (this firm is also known as the "fuel provider"). The Pego power plant has an annual consumption of approximately 1,500,000 tonnes of coal. CarboPego is responsible for purchasing coal in the international market and delivering it to the power plant. Imported coal is brought into Portugal at the port of Sines and then delivered by rail to the power plant. The Pego power plant is located 290 km away from the port of Sines.

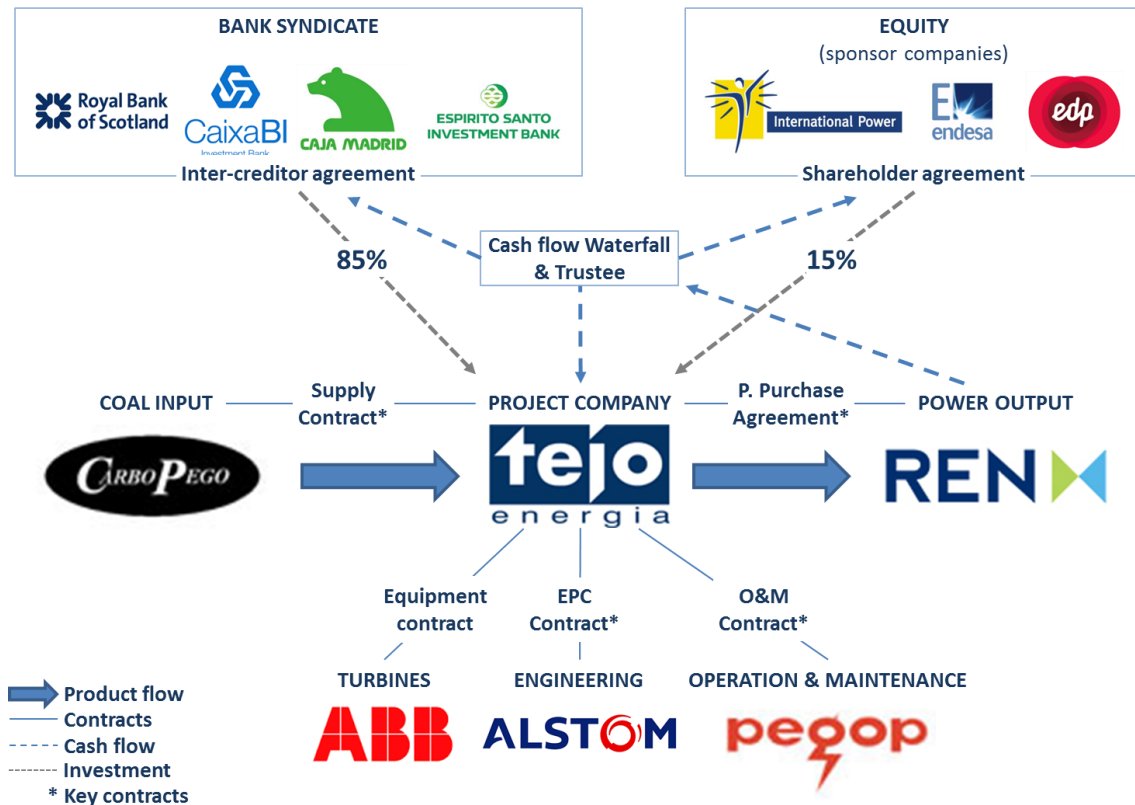


FIGURE 5.2 — Project finance framework for Tejo Energia.
Source: author.

PEGOP – Energia Eléctrica was founded as a joint venture between Endesa (50%) and International Power (50%). This company is responsible for operating and maintaining the Pego power plant (also known as “O&M”). PEGOP was specifically created for this purpose but currently works for both Tejo Energia and ElecGas. The company manages a broad set of contracts with external companies, but it also employs its staff in direct operations and maintenance activities. The outsourcing option is taken in cases where PEGOP is not able to provide highly complex or specialized services. Sometimes, contracting an external provider for maintenance services is required, most often due to formal equipment guarantees that are requested by the consortium of banks that manage the project finance.

In 2008, International Power partnered with Endesa in the construction of a new 830 MW combined-cycle power plant (ElecGas). The engineering procurement and construction agreement was signed with Siemens in the form of a turnkey project. The fuel (natural gas) is sold by Endesa, and the entire output of this new plant is sold to Endesa Generación, a subsidiary of Endesa, under a 25-year rolling contract. The plant is owned and operated on a ‘fifty-fifty’ basis by International Power and Endesa. ElecGas is located inside the premises of the Pego power plant, on a site adjacent to the existing coal power plant, and benefits from shared services such as cooling water infrastructure.

Tejo Energia equity was owned by International Power (50%), Endesa Generación (38,9%), and EDP (11,1%) until 2012. International Power then sold 50% of its shares of Tejo Energia to Trustenergy, a joint venture (50/50) between the French group GDF SUEZ and the Japanese firm Marubeni. In addition, Trustenergy also bought a 50% stake in CarboPego, PEGOP, and ElecGas. As of 2015, Tejo Energia has been owned by Trustenergy (50%), Endesa Generación (38,9%), and EDP (11,1%). CarboPego is owned by Trustenergy (50%) and Endesa Generación (50%). PEGOP is owned by Trustenergy (50%) and Endesa Generación (50%). ElecGas is owned by Trustenergy (50%) and Endesa Generación (50%).

5.1.1. Buying behaviour

Among other responsibilities, PEGOP runs the production and maintenance departments at the Pego power plant. Both departments, as well as other staff units, are supervised by the head of the power station. The objective of the production department is to conduct the power plant’s productive units so as to fulfil REN’s despatch instructions. For instance, it starts and stops each of the productive units. PEGOP’s

maintenance department guarantees the power plant's working conditions and is responsible for managing maintenance activities, including: (i) corrective maintenance; (ii) planned maintenance; (iii) predictive maintenance; and (iv) preventive maintenance.

Pego's procurement office is a subset of the maintenance department. It is responsible for running major procurement processes, including the acquisition of: (i) spare parts; (ii) contracts (maintenance or other); (iii) EPCs ('turnkey' contracts, also called 'special projects'); and (iv) other non-critical goods. Purchasing is normally conducted via tender, and more aggressive purchasing tactics (such as reverse auctions) are not used. Among other staff, the office is composed of one procurement and contract manager and two operational buyers. The office is governed by processes that, according to its manager, are well designed and set the rules and boundaries for its operation. Nevertheless, according to the same source, due to its small dimensions the procurement office is highly flexible, adopting different procedures according to the relevance and complexity of the items being bought. The firm trusts each member of its purchasing staff and expects them to act in its interests.

Downtime is the most critical factor in this industry, as replacement parts are difficult to procure. Even if this were not so, however – that is to say, even if replacement parts were easily obtainable – the replacement process would be too lengthy and expensive due to the costs of halting production. Such costs are several thousand times higher than the costs of intervention and maintenance. In this context, the price is not the principal criterion when selecting a vendor, either for equipment or for services. Instead, the primary criterion is the economic value of the adopted solution.

PEGOP's purchasing manager argues that there is an imbalance of power in this sector between the buyer (the power plant) and the vendor. He claims that once a

decision to buy a critical element from a specific vendor has been taken, the maintenance services and spare parts must be bought from the same vendor. This reality is even harsher in the context of project financing – as is the case with the Pego power plant – where a formal guarantee of all production equipment is requested. According to the same source, several tactics can be adopted to overcome this hazard. One option is to conduct buying negotiations based on future business expectations. Another is to rely on shareholders' support to gain information on prices and increase negotiating power.

5.1.2. The handling of customer references

The purchasing office assesses a vendor's experience by obtaining reference lists, which are then confirmed. Overall, the checking of customer references is an informal process. It is only done when necessary, for instance in order to lend greater credibility to the buying decision. When it is necessary, contact with counterparts may have three objectives: (i) to learn about a previous solution; (ii) to ascertain how much it cost; and (iii) to gain knowledge of the extent to which the solution was successful. Vendors are not requested to provide reference lists since they deliver them by default. Customer reference checks are often conducted via email, telephone, or site visit. Nevertheless, there is no formal process for handling them. According to the purchasing manager, this informality is not an obstacle since in purchasing there are only three elements that carry any objectivity: (i) the price; (ii) the expected delivery date; and (iii) the extension of the guarantee. Accordingly, the rest remains subjective. Generally, the maintenance department checks customer references, although this is sometimes undertaken by the purchasing office. Once again, no formality or rigid processes apply. The information obtained via customer references is incorporated into the buying process as it is collected. It is ultimately an ad-hoc, interactive, and dynamic process.

At the extreme, customer references can reverse the direction of a buying decision. During customer referencing, diverse questions of the following sort arise: (i) “Is this company working for you?” (ii) “What have they been sourcing you for the last five years? What values have been involved?” (iii) “How was this service? What problems arose?” (iv) “Are they delivering what they agreed to? How do they behave?” and (v) “Is the price aligned with the market?”

PEGOP’s procurement and contract manager argues that when a vendor is good, honest, and transparent (that is to say, when it does not hide behind false excuses for delays or mistakes), it is common for reference customers to say positive things about it. In fact, he claims that if one can speak to the technician responsible for running the equipment operation or its maintenance, the truth about the vendor will immediately come out. The purchasing manager argues that his immense trust in technicians’ accounts is grounded in the fact that technicians do not have a “commercial filter”; their situation is not affected by sales incentives.

The purchasing manager argues that customer references do not help in assessing either vendors’ reputations or their credibility because “they are much more than what their references say about them” (this is even more valid now due to the present concentration of vendors, which is considered oddly high). With this said, customer references do help to reveal the problems (expected or unexpected) and outcomes (what went right or wrong) associated with a given investment. Above all, references help in the assessment of a supplier’s ability to deliver a specific contract or technology and reduce project risks (they validate a solution proposed by a vendor). This same manager argues that risk reduction is the most important benefit of customer references. He also suggests that customer references help firms to implement new

technologies and estimate returns on investment (ROI), as well as other related key performance indicators (KPIs). Requests for information (RFIs) are often triggered by analysis of customer references.

Following the installation of the new flue gas desulfurization (FGD), selective catalytic reduction (SCR), and electrostatic precipitator (ESP) units, the Pego power plant has received many visits from other coal plant managers who want to know more about the adopted solution and the quality of the relationship with the vendor. The plant welcomes these managers, providing them with information and dedicated site visits. Of all these visits, no more than three were promoted by Alstom, the solution vendor.

5.1.3. The FGD/ESP purchase

Under the European Union's green legislation, member states had until 2008 to reduce emissions of acidifying pollutants, particles, and ozone precursors from power plants. Tejo Energia invested approximately 170 million euros in order to comply with the new regulation requirements. This investment took place between 2007 and 2008. The Pego power plant installed a new FGD unit that used wet limestone forced oxidation (LSFO) technology. FGD units use a set of technologies to remove sulphur dioxide from exhaust flue gasses from fossil fuel power plants. Because of environmental regulation, the FGD, SCR and ESP units are considered critical; the power plant is unable to operate without them. When it comes to NOX control, the power plant relies on selective catalytic reduction equipment. In addition, an ESP was acquired in order to control the emission of particulates.

The entire contract was awarded to Alstom in the form of an engineering procurement and construction (EPC) arrangement. This contract was executed by the

Italian and Swedish technology centres in consort with Alstom's unit, based in Portugal. Alstom is a French vendor that had already provided the coal power plant's core elements.⁴ According to the purchasing manager, the relationship with Alstom is "regular" and "without any quarrel, just the normal conflicts between people who buy and sell". When we do not take into account the cost of coal, Alstom is the Pego power plant's top supplier, even when EPCs are not considered. According to the purchasing manager, Alstom's role as an incumbent supplier may have had an influence on the strength and competitiveness of its offer, above all given its experience and know-how.

Almost all Pego power plant EPC's have benefitted from the external support of both technical and legal consulting firms. This was also so when it came to the recent FGD/SCR and ESP acquisition. Tejo Energia contracted the services of an independent consulting firm, which helped to establish the technical specifications, assess the solutions offered by different competing vendors, and manage the contract's implementation after it had been signed off. In addition, the company received support from technical teams from their shareholders (Endesa and International Power). A legal firm also supported the buyer in this contract. This firm had already worked with Tejo Energia and had developed a solid relationship with it. PEGOP acted on behalf of Tejo Energia, leading the procurement process. This EPC dealt with the acquisition and installation of the new FGD/SCR and ESP units. Nevertheless, it did not involve maintenance services, as these were to be performed by PEGOP. Staff from Tejo Energia were also involved in defining the specifications and assessing the solutions presented by competing bidders (for instance by tracking their status with rating

⁴ In 1999, ABB's power business was included in the joint venture with Alstom, which gave rise to ABB Alstom Power. In 2000, ABB Alstom Power became Alstom Power.

agencies like Dun & Bradstreet). Meetings took place on a weekly basis in order to assess the EPC's progress.

The initial stage of the buying process involved "theoretical analysis of several alternative solutions". The goal of this buying decision was to comply with the European directive. Different technical options were assessed, and project constraints were identified (e.g. the space available to implement the solution, considered scarce). After completing the initial phase, the team listed European power plants that had already installed similar solutions. Their goal was to gather feedback from owners and other information that could provide relevant insights. Several power plants located in France were therefore visited. Alternative viable solutions were made available, as was a rough estimate of their costs. Next, a technical solution was chosen, and the tender dossier (set of specifications) was completed. The owner's engineering team (shareholders) supported the local team with advice and guidance.

When the Large Combustion Plant Directive was issued, expertise in the technology needed to comply with it was largely unavailable. Neither Portugal nor Spain had this kind of equipment. The technology was therefore new to Endesa, although GDF SUEZ had already deployed units in France. The visits to French FGD and ESP units were not promoted by potential vendors. Nevertheless, they allowed for the gathering of information and other benefits, as if they had been promoted by potential vendors.

Formal requests (request for information) for potential vendors to present references for similar projects were made. Potential suppliers were required to provide the details of the installation date and the amount of work hours. The goal was to assess the vendors' experience with similar projects. Any claim on the vendor's part to owning

a new technology does not entail that it has already been able to sell it, or, more importantly, that it has implemented it successfully. This is important, according to the procurement and contract manager, since no bank will be willing to pay for a technological trial in the context of project finance. None of the references presented by the vendors were checked.

The entire buying process took almost two years. According to the procurement and contract manager, the major difficulty faced by the team in charge of managing the EPC concerned the technical issues. Once this difficulty was overcome – that is to say, once the engineering team came up with the solution design – the rest of the process was straightforward (e.g. the preferred bidder selection, which was completed in approximately four months). The contract negotiation and agreement also took about four months to complete.

The tender for the EPC had two distinct parts: one related to providing the ‘core’ equipment and another related to contract works. Consortium leaders who replied to the call for tender were all main providers of contract works. Offers from Alstom, Mitsubishi, and Hyundai, were among the several received.

In EPC acquisitions, shareholders generally have something to say about prospective vendors since they often have past experiences that they can share with local companies. This influence comes in the form of ‘soft power’, but it never reaches ‘hard power’. That is to say, it is common to hear expressions like “this is a good vendor”; when it comes to the Pego power plant, however, “there is no memory of hearing the expression ‘we would like this vendor to be chosen’”, according to the purchasing manager. In short, shareholders’ informal recommendations about whom to choose as vendors are not followed as if they were formal recommendations.

5.2. THE CASE OF REN

REN was founded in 1994. It became an independent company in 2000 due to the unbundling of the Portuguese electrical sector. Today (2015), the firm is a listed public limited company with a free float of 30%. In addition, 25% of shares are owned by State Grid of China and 15% by Oman Oil. REN operates in two major business areas: (i) the transmission of electrical power (electricity) and (ii) the transport of high-pressure natural gas. The firm manages the transport network for electricity and gas in Portugal. Its mission is to ensure an uninterrupted supply of electricity and natural gas at the lowest cost with quality and safety. The firm manages fixed assets with an estimated total value of approximately five billion euros.

REN is the only electricity transmission entity in Portugal. It operates the National Transmission Grid, which connects power-generating units to the distribution network and consumption centres, ensuring a balance between energy supply and demand. The grid feeds the distribution network, which supplies end customers. The distribution network is managed by private firms responsible for servicing and billing end users.

Transmission networks transport electrical power from generating units to demand centres. Electricity is generated using primary energy sources such as water, natural gas, fuel oil, coal, diesel, sun, biomass, and wind. Hydroelectric plants, thermoelectric power stations, wind farms, co-generation power stations and photovoltaic plants are used as power generation units. The transmission infrastructure carries electrical power over long distances to local distribution networks. Between the power-generating units and the consumer, electric power flows through several different voltage levels in order to increase its transportation efficiency. Substations transform voltage from low to high, and vice versa. A transmission substation is a part of an

electrical system that connects two or more transmission lines. A substation includes transformers that alternate voltage levels from high transmission to lower distribution.

REN is a TSO (a transmission system operator). TSOs transport energy using fixed infrastructure, such as transmission lines. TSOs also transport electrical power from generation units belonging to private firms (e.g. EDP, EDP Renováveis, Tejo Energia, and others) over the electrical grid to distribution firms (e.g. Endesa, EDP Distribuição, GALP). The transmission of high voltage electricity (150, 220 and 400 kV) within Portugal is managed by REN due to a concession contract that includes the planning, construction, operation and maintenance of the National Transmission Grid. This grid has a total length of 8733 km, 2434 km of which consists of 400 kV lines, 3565 km of which consists of 220 kV lines, and 2734 km of which consists of 150 kV lines.

The term TSO is often used by the European Commission to refer to the natural monopoly that emerges from the cost of establishing a transmission infrastructure. Due to their monopolistic nature, TSOs are frequently subject to regulation. Despite being a private firm, REN is subject to diverse legal and regulatory standards and operates under a public service concession contract. In this context, the firm is obliged to guarantee the uninterrupted supply of electricity and natural gas to mainland Portugal. In addition, REN must comply with Portuguese procurement legislation. The firm is therefore unable to use more aggressive purchasing techniques.

5.2.1. Buying behaviour

Since 2010, REN has had a centralized procurement department, which is in charge of the acquisition of goods and services. Before 2010, the operational

departments were responsible for buying capital goods. The procurement department's mission is:

“to ensure the optimisation of the acquisition of goods, services and contracts, in what regards pricing and quality of service, contributing to REN value generation, while assuring rigour and transparency in the procurement processes, based on ethical and sustainability principles.”

Source: http://www.ren.pt/en-GB/o_que_fazemos/fornecedores/como_a_ren_compra/ (accessed 15th March 2015)

The firm's procurement department handles all sorts of products and services directly related to its two core business activities. The acquisition of capital goods and supplies is therefore indispensable to firm's ability to carry out these key activities. Contracts featuring electrical grid expansion, electrical substation construction, substation renewal, and the construction of new gas pipeline sections, liquefied gas storage terminals, and gas cave storage systems, provide examples of cases where capital investment is managed by a procurement department. Beyond these contracts, the purchasing service also handles the buying of services related to supporting business activity, including cleaning services, surveillance services, and information systems (IT). Nevertheless, the procurement department is not involved in the acquisition of strategic consulting services, real estate, or financial products.

According to the procurement director, capital goods are those goods that count as the assets of a firm. The buying of capital goods starts by listing the needs in the firm's investment pipeline, also referred to as the Annual Procurement Plan. This plan strives to: (i) define acquisition strategies according to each purchasing category; (ii) aggregate acquisition volumes; (iii) identify potential sources of synergy; and (iv) increase savings for the company. The Annual Procurement Plan is managed by the investment department, which is not a financial organization so much as an engineering group, mostly made up of project managers (eleven engineers) whose mission it is to

ensure that the integration of new equipment into the existing infrastructure is carried out correctly. The Annual Procurement Plan is approved by an investment committee twice yearly. This committee comprises the Chief Operational Officer, the Chief Financial Officer, the planning and engineering department, the procurement department, the investment department, and the operations department. The investment committee only deals with investments worth more than five million euros.

Several of the firm's operational departments (such as the planning and engineering department) are engaged in forecasting infrastructure development with an eye to guaranteeing an uninterrupted supply of energy to the country. Diverse sources of information are used for this purpose, such as demand forecasts. Once approved, investments are remunerated according to Portuguese law, which details the related rate of return. The remuneration amount is incorporated into tariffs and paid by consumers.

The procurement model adopted by the firm distributes responsibilities among three different bodies: (i) the service responsible for specifying the purchase need (one of the several operational departments); (ii) the service responsible for negotiation (the procurement department); and (iii) the service responsible for managing contracts and payments (the operational or the technical departments). Rules and procedures that apply to the firm as a whole were set out in order to provide a framework for purchasing operations. This procurement model aims to reduce the total cost of ownership of the infrastructure managed by the firm.

Tender evaluation tends to be based on a mix of price and quality. Before launching a new call for tender or request for proposal, the service responsible for specifying the purchase need and the purchasing department must agree on the details of the tender process, including its timeline, the tender evaluation criteria (respective

weights given to price and quality), methods of approaching vendors, and the terms of payment. According to the procurement director, the implementation of the present procurement model was not garnering much consensus as operational areas were highly concerned with the weight given to price, which can often reach 90%. Operational areas claimed that price should not carry this level of weight when it comes to purchasing “strategic” equipment because this will result in the acquisition of lower-quality equipment, which could jeopardize the firm’s mission. According to the same source, this concern has now been overcome and operational areas are now comfortable with the weight given to price. In order to reach this level of contentment, the procurement department and the operational units agreed on a standardized set of measures, including rigorous equipment acceptance procedures, manufacture tests, and factory visits. Sometimes, REN contracts firms that specialize in auditing the manufacture of complex electrical grid equipment.

The procurement process (see Figure 5.3) defines all of the procurement stages, from the identification and planning of the need to the payment of the invoice. It also frames all activities related to supplier management. The operational department becomes responsible for the management of the contract as soon as the selected proposal is approved. The contract is managed according to the terms and conditions agreed with the supplier. The acceptance of the supplied goods enables supplier invoicing and subsequent payment.

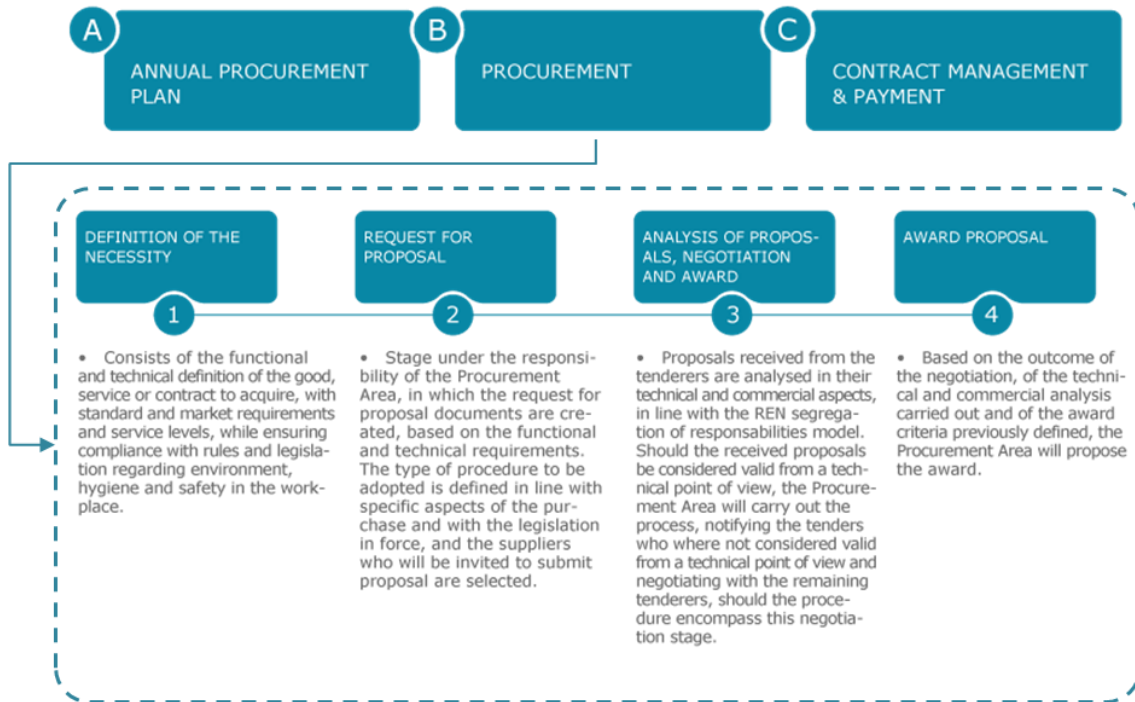


FIGURE 5.3 — Procurement process at REN

Source: http://www.ren.pt/en-GB/o_que_fazemos/fornecedores/como_a_ren_compra/ (accessed 15 March 2015)

The supplier management model includes: (i) the supplier qualification system and (ii) the evaluation processes. The supplier management model enables firms to invite potential vendors to reply to a “request for proposal”. REN uses the qualification system to limit the amount of suppliers it has to deal with (aiming to reduce the overall costs associated with supplier management). Nevertheless, the firm claims that it applies several ethical principles, including fair competition and equality of treatment, to all potential suppliers. The firm also claims that these principles rest on a set of objective and rigorous criteria for assessing suppliers’ capabilities.

The supplier qualification system involves four steps (see Figure 5.4).

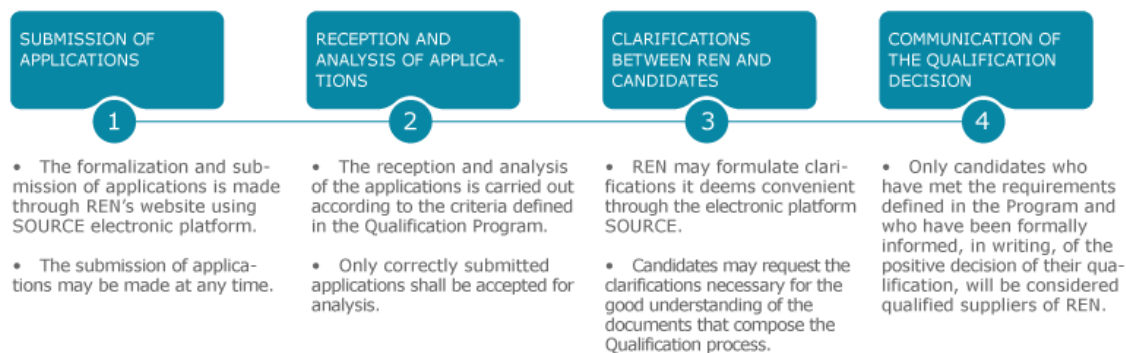


FIGURE 5.4 — The supplier qualification system at REN

Source: http://www.ren.pt/en-GB/o_que_fazemos/fornecedores/como_ser_fornecedor_ren/ (accessed 15 March 2015)

The qualification system distributes suppliers across three different risk levels (see Figure 5.5).

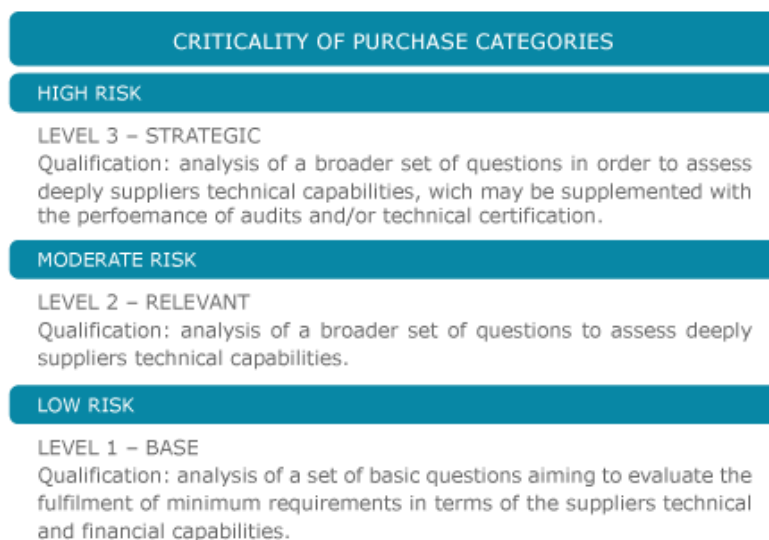


FIGURE 5.5 — Risk levels

Source: http://www.ren.pt/en-GB/o_que_fazemos/fornecedores/como_ser_fornecedor_ren/ (accessed 15 March 2015)

The selected vendors reply to REN's request for proposal after receiving an invitation. The proposal is presented to the firm in two different documents: (i) the commercial offer and (ii) the technical offer. Each commercial offer is analysed by the

procurement department, whereas all technical offers are studied by the service responsible for specifying the purchase need. Above all, the procurement department validates competitors' compliance regarding formal technicalities listed in the initial tender requirements. These initial tender requirements are not subject to negotiation since they are grounded in REN's procurement policy. Afterwards, the procurement department produces a report that sets out all received commercial offers; likewise, the service responsible for specifying the purchase need delivers a report that sets out all received technical offers. Both documents are integrated into a final report, which contains a recommendation to award the contract to a certain supplier. That final report is then subject to the approval of the board. Prior to awarding a contract to a supplier, REN discloses a contract template, all clauses of which the vendor is expected to agree to. According to the procurement director, firms from the USA argue the most against this modus operandi as they habitually attempt to negotiate contract terms.

5.2.2. The acquisition of two transformer units

The procurement department was recently (2014) in charge of purchasing two 170 MVA (220 V/60 kV) transformer units. This acquisition was approved by the investment committee because it was part of a bigger expenditure for the renovation of two substations. In this case, the company opted to split the initial overall contract into smaller parts. Although in some cases operational departments prefer to buy "turnkey" solutions for the substations (since they are easier to manage), according to the procurement director the company opted for unbundling since it increases the chances of a better procurement process. Operational areas made an effort to maintain the *status quo* during the supplier qualification process by promoting incumbent vendors.

An electrical transformer is a device that transfers energy between two circuits by means of electromagnetic induction. Transformer technology is characterized by long innovation cycles, and it is therefore conservative. REN's procurement director argues that in this business context it is harder for new entrants (e.g. Chinese players) to acquire new accounts. Nevertheless, in the business of selling transformers, players distort competition due to the geographic nature of the business. PEGOP's procurement and contract manager refers to EFACEC (a Portuguese manufacturer) as a typical example of this phenomenon, since in the past it was uncommon for Portuguese firms to buy transformers from other vendors. An exception to the acquisition of EFACEC's transformers was the acquisition of ABB transformers, which were almost residual. Due to the high cost of transport and logistics, EFACEC was able to sell transformers in Portugal at a cheaper cost than its competitors, albeit with higher margins.

These two newly acquired units served two different substations in the National Transmission Grid, managed by REN. In the words of the procurement director, this purchase was considered strategic insofar as the security of the grid depended on these two pieces of equipment. These two units covered two points on the grid that were considered fragile. Failure of the units would affect each point of the network, leaving several thousands of homes and industrial buildings without electricity. It is often common for a transformer to weigh up to 120 tonnes. This trait causes complex logistic troubles in cases where a transformer needs to be returned to the factory where it was built for repair. In addition, the market does not offer transformers for rent in circumstances where repair is necessary.

The call for the tender specified the features of the equipment to be acquired and the associated installation services, but it did not include any additional

requirements concerning maintenance or repair services. According to the procurement director, this is a normal procedure in buying contexts of this sort because the life span of this kind of equipment has increased greatly over the years. The adopted procedure is to run more thorough but less frequent interventions in order to guarantee equipment conditions. These interventions target an individual contract, most often come with high costs, and in general take place in 10-year cycles.

Following the initial approval, the buying process took four months to complete. The planning and engineering department defined the equipment specifications, and negotiations were managed by the procurement department. This equipment is built to order (rather than built to stock) insofar as the transformer will be built according to REN's specifications. The delivery is expected to take one year.

The Executive Committee was also involved because this purchase dealt with economic figures that required its guidance and approval. The planning and engineering department reported to the Chief Operational Officer, and the procurement department reported to the Chief Financial Officer. Both the Chief Operational Officer and the Chief Financial Officer were members of the firm's Executive Committee. Taken together, these elements constituted the buying decision unit.

The list of qualified vendors for the supply of the two transformer units included: (i) Alstom; (ii) EFACEC; (iii) Hyundai Heavy Industries; (iv) Shandong Electric Power Equipment Co.; and (v) Siemens. The planning and engineering department had a traditional relationship with (i) Alstom, (ii) EFACEC, and (iii) Siemens. The procurement director argues that suppliers wishing to sell to a new customer usually start by contacting the purchasing service (using it as an entry point) while current vendors strive to consolidate relationships they already have with

operational areas. Purchasing services make good points of entry as they value increasing rivalry among competing suppliers.

In the past, REN awarded similar contracts for the sourcing of transformers to players like EFACEC and one contract to a Chinese firm. This time, the winning bid was made by Siemens and featured a price of approximately 2.5 million euros. The second bid was approximately 100 thousand euros more. As a criterion of proposal assessment, price was weighted at 90%, and the remaining 10% was largely taken up by the length of the guarantee and technical parameters (e.g. equipment losses and efficiency). Siemens decided to manufacture the transformers in a factory that it owned in China. This decision allowed Siemens to offer a highly competitive price, which led to its winning the contract. The procurement director argues that Siemens's pricing decision was strongly influenced by the fact that it was competing with a Chinese firm. Nevertheless, Siemens's choice to manufacture the transformers in a Chinese factory caused some degree of anxiety for the operational teams, which was later overcome with the support of the procurement department. In order to get away with weighting price at 90% in the assessment procedure, REN needed to outline the relevant specifications very precisely. This level of detail was only possible because REN had previous solid experience in the buying of transformers.

5.2.3. The handling of customer references

It is customary for customer references to be requested by the procurement department during the supplier qualification process. According to the procurement director, customer references constitute a major component of this process and are the most relevant dimension in a vendor assessment. They allow for the assessment of a vendor's competence, associated risk, degree of innovation, know-how and experience.

A vendor that does not produce customer references is not qualified. Nevertheless, customer references are not used to assess a supplier's reputation or its credibility. The procurement director acknowledges that the market is often filled with misleading rumours.

REN's procurement director argues that it is common for conversations featuring references to take place during seminars, events and summits, where electrical industry purchasing professionals are gathered. In addition, it is also common for electrical industry purchasing professionals to exchange emails and phone calls to the same end, in addition, for example, to relating experiences and spreading awareness of novelty and best practice. The procurement director claims that, in general, a special understanding exists among purchasing professionals. Within this group, they only reveal that they have a relationship with a supplier or, in the opposite direction, that a given relationship is bad. There is no middle option. One should not expect a customer to say good things about a supplier. According to this source, purchasing professionals expect their present suppliers to perform according to their expectations; otherwise, they would not contract them. Being a good supplier and nothing less is what is expected from the procurement department's point of view. The procurement director also reveals that operational teams have communication channels through which they are able to verify customer references. Nevertheless, the procurement department is more active in this practice since it is responsible for driving the supplier qualification process.

Beyond the scope of the supplier qualification process, REN encourages workshops where suppliers present new products and technologies. In this environment, it is common for vendors to communicate customer references in the form of business cases. These cases outline solutions that were provided to address a customer need and

to exhibit the delivered business benefit, such as cost savings. In the past, similar cases led to the identification of several buying needs. Nevertheless, REN always takes the presented figures into consideration and adapts them to reflect their own situation. By adopting this procedure, the firm is able to build its own business case, e.g. to deploy a new solution. In short, the procurement director of REN acknowledges the importance of customer references. She defends them as an important vehicle for learning and bringing knowledge into the firm. In addition, she also argues that these workshops are very useful to the procurement department as they help it to deal with the (technical) dogmas to which operational departments are committed. These workshops are attended by both operational areas and the procurement department.

References were requested as part of the call for tender in the acquisition of the two transformer units. These references needed to detail the amount of units sold and the customers to whom they were sold, and bidding firms were asked to make their respective contacts available. Hyundai's account team provided a complete portfolio of references, including detailed reports on similar projects, including photographs. The procurement department considered ABB's references to be less valuable because they did not cover projects and customers similar to REN's, in terms of dimension and geography.

The procurement director of REN contacted her counterpart at a Spanish TSO with the aim of confirming the references provided by Hyundai Heavy Industries. This contact was made during Hyundai's qualification process. Questions such as "what is Hyundai sourcing to you?" and "how is it going?" were posed by the Portuguese professional. The Spanish purchasing director acknowledged that it took him a long time to convince his operational department colleagues to put Hyundai on the supplier

short list. He also added that as of the date of the phone call, all was going well in the relationship with Hyundai and the supplied equipment. He also shared former Hyundai references that he had checked in the past. All this information was given in an informal context – that is to say, no written statement was given to REN.

5.3. THE CASE OF EDP

EDP was founded in 1976 as the result of a merger between 13 out of the 14 previously nationalised electric sector companies existing at the time. Today, EDP is the largest industrial group in Portugal; with almost 12 thousand employees and a turnover of more than 16 billion euros, it is a major operator in the European energy sector. EDP is an Energy Solutions Operator, and its core activities include the generation, supply and distribution of electricity and the supply and distribution of gas. EDP operates in several countries, including Portugal, Spain, France, Belgium, Poland, Romania, the United States of America and Brazil.

5.3.1. Standard buying behaviour

EDP is a group of companies comprising more than 430 firms. Some of these operate under the regulatory framework of the ERSE (Energy Services Regulatory Authority). Different firms require different levels of support from the central procurement office of EDP. The central procurement office is a division of EDP Valor S.A. – the firm in charge of managing shared services within the EDP group – and its mission is to get the best market price for a good or a service needed by any company in the EDP group. The central procurement office has a workforce of 130 people, 60% of which are buyers or lead buyers (approximately 80 people). The team also includes managers and other ‘non-core’ staff members from: (i) the information systems service;

(ii) the service accountable for designing and implementing buying processes; and (iii) the service responsible for vendor qualification and management (also known as the “eCRM”).

The procurement office manages different information systems (several of which are proprietary platforms), which are relied on in the managing of all procurement and buying activity. This need for robust information systems follows from the nature of the firm. For instance, EDP has established relationships with more than 20 thousand vendors. Nevertheless, only 5% of these vendors account for almost 90% of EDP’s annual expenditure on goods and services. A proprietary platform thus provides support for complex “supplier relationship management” activity.

The procurement office serves a total of 13 different countries and has delegation offices, known as “Local Purchasing Teams”, in five different locations: (i) Houston (USA); (ii) Sao Paulo (Brazil); (iii) Victoria (Brazil); (iv) Bilbao (Spain); and (v) Lisbon (Portugal). In addition to these Local Purchasing Teams, a Global Procurement Unit is in charge of acquiring goods and services sold internationally. In order to create a global sourcing unit, several measures were recently implemented, including corporate policy implementation, best practice sharing, and supplier development.

In 2014, EDP invested nearly two billion euros in CaPex. That same year, the purchasing office managed the acquisition of 2.7 billion euros of goods and services. The chief procurement officer claims that from 2006 to 2014, the total amount of savings (or cost “avoidances”, as he prefers to call them) surpassed one billion euros (approximately 130 million euros per year). The measures taken to avoid costs were generally of three kinds: (i) increasing volume (buying more of the same product from

the same vendor); (ii) developing the vendor (buying different products from a single vendor); and (iii) product unbundling (dividing a complex product into simpler and more commoditized elements, for instance by avoiding turnkey solutions or projects).

The buying phase (or “buying cycle”, as it is called at EDP) involves four main stages: (i) the strategic phase; (ii) the transactional phase; (iii) the financial phase; and (iv) the reporting phase. Although the “buying cycle” and its four major areas are too complex to be described in detail here, a more succinct description may suffice (all procedures are compiled and documented in extensive manuals). Supplier relationship management takes place during an initial strategic analysis, where aims include the grouping of different buying needs, the achievement of higher volumes, qualifying vendors, bargaining, and entering into contracts. Vendor qualification takes place at the initial stage of the procurement cycle. Negotiation techniques come in different forms, including auctions – most often online or sealed-bid auctions (when bids are provided in sealed envelopes to the seller, who then opens them all together) – and “face-to-face” negotiation. Once a vendor has completed its first sale and delivery to EDP, its status is reassessed and updated according to the received feedback. A contract defines and specifies several aspects, such as sale duration, delivery deadlines, volume, and commercial conditions (e.g. price). The next phase is transactional: goods or services to be acquired are sourced to EDP. The process then involves financial tasks – e.g. the vendor receives payment for the goods sold. The final step is reporting, which is the responsibility of the purchasing office (in addition to its responsibility for running all business intelligence tasks associated with any procurement activity).

The purchasing office is now implementing a new model for managing the procurement process. The chief procurement officer contends that the new model is

aligned with the best international practices adopted by companies like Google, Procter & Gamble, and Husqvarna. According to the same source, this “state-of-the-art” method involves organizing procurement activities around categories. The future listed categories will be: (i) power generation systems; (ii) networks; (iii) contracts; (iv) information and communication technology; and (v) general services. This new approach will allow for the further specialization of buyers and the reduction of the number of interfaces needed to perform a certain transaction. The old model, dating back to 2006, was chiefly concerned with centralizing the procurement activities of the corporate group. Before 2006, the EDP group distributed the procurement activities among many firms, which resulted in low levels of cost avoidance. Since 2006, EDP has nurtured a new “purchasing culture”, characterized by the slogan “think cheaper, think smarter, and think bigger”.

The purchasing office uses the same procedure to purchase both capital and operational goods; the buying process for OpEx is therefore the same as that for CapEx. Different levels of attention are given to contracts according to the economic values involved in each transaction. For instance, more demanding rules and audits are in place when contract values are higher. Also, more demanding audit procedures are followed to collect evidence to support specific buying decisions. One particular example of this is the acquisition of capital goods from multinational companies, as most rely on local representative offices. Since the equity of these offices is typically low (in comparison with the figures involved in the contract), comfort letters are requested in order to secure the transaction.

5.3.2. Generic approach to customer references

The purchasing office is in charge of qualifying all vendors who wish to sell to EDP. Vendor financial robustness is also assessed in this procedure, since it is a way to guarantee a vendor's ability to deliver what it has committed to sell to EDP. Customer references are also important in the qualification process. The purchasing office checks customer references if and when needed, but the firm acting as an internal customer also has the ability and the duty to check these references. It is considered necessary to include a description of the work or delivered product in the customer reference. According to the chief procurement officer, it is not sufficient to record that vendor *x* worked for customer *y*; the purchasing office must confirm the type of work undertaken and whether it was assessed favourably by the reference customer. Responsibility for checking references has not been formally determined – i.e. it is unclear whether this is to be performed by the purchasing office, the internal customer firm, or both. The chief procurement officer claims that this task is better performed by the internal customer firm. All feedback from customer references helps to document the qualification process.

Beyond the qualification process, it is also common to request customer references when a tender is submitted. In these circumstances, references should feature projects that are identical to that for which the tender is being submitted. The reference project should contain detailed information, such as (i) project date; (ii) reference customer contacts; and (iii) project dimensions (in euros). Although reference customer contacts are required, the chief procurement officer contends that they are not needed since the office usually has the contacts and the means to reach the professionals presented by vendors as interfaces. Informal contacts are ultimately the most relied upon agents of communication. The same source also stresses the importance of project

reference dates, as they allow for the assessment of vendor competence. In addition, customer references are highly valuable when the acquisition of innovative products is at stake. By contrast, references from firms that are shareholders (or parent companies) of the vendor are not considered relevant.

It is common for vendors to present “success stories” when introducing their offer to EDP (either to the purchasing office or to a specific firm belonging to the EDP universe, or both). The procurement director views these positively. In addition to supporting healthy debate on the product and technology being presented, the presentation of success stories also allows for the expansion of the present list of vendors available for consultation in future tenders. The procurement director views vendors as key enablers of corporate learning for any given organization. He also relates that during these presentations, vendors sometimes provide the buying firm with valuable information on the market and competitors.

5.3.3. Boosting the Venda Nova Power Station

Venda Nova III, EDP’s latest investment, aims to repower the site of Venda Nova, located in the north of Portugal. This uprating makes use of the height difference between an upper (upstream) reservoir – the Venda Nova dam – and a lower (downstream) reservoir – the Salamonde dam. Once completed, the generating capacity of the existing power scheme⁵ will increase significantly, and the Venda Nova III power plant will be the largest pumped storage power station in Europe. This repowering – which represents an investment of around 330 million euros – includes the construction of an underground powerhouse, a hydraulic circuit, two surge shafts, and access tunnels. The powerhouse will be equipped with two reversible pump turbines that drive two

⁵ Three main units of 29 MW each (1951) plus two units of 97 MW each (2005).

electrical asynchronous machines, with a total installed capacity of 780 MW (840 MVA).

Venda Nova III boasts a low environmental impact level, mainly because both reservoirs already exist and most of the infrastructure is set underground. As a result, “repowering” demands relatively low levels of civil engineering work. In addition, this investment has allowed EDP to renew the concession period (granting the license for commercial operation for another 25 years). To sum up, Venda Nova III is EDP’s response to an industry context characterized by the following (Duarte, 2011): (i) growth in wind power capacity; (ii) liberalization of the Iberian electrical market; (iii) the establishment of government objectives in favour of renewables; (iv) the reduction of the country’s dependence on fossil fuel; and (v) the extension of license periods.

5.3.4. The adopted solution

Pumped storage is the most developed and technologically mature mode of storing energy in “off-peak” times while keeping energy available to the grid for peak supply needs. In general, pumped storage plants may adopt two different types of unit configuration: (i) “ternary systems” (which perform both generation and pumping functions and are equipped with both a turbine and a pump) and (ii) “reversible machine sets”. A “reversible machine” consists of a motor generator combined with a reversible pump turbine, which functions as either a pump or a turbine depending on the direction of rotation. This configuration allows for the use of more compact powerhouses and for savings in equipment and civil work costs.

A special feature of Venda Nova III is its variable speed machines. The adoption of variable speed technology allows the pump turbine rotational speed to be efficiently adjusted according to hydraulic conditions. As a result, both the pump and

the turbine operating range are extended. The amount of energy absorbed from the grid is therefore adjusted with increased flexibility: pump capacity can be adjusted to consume the available amount of surplus energy. The combination of hydroelectric power storage and variable consumed pump power capacity is of particular interest when it comes to the development of wind and photovoltaic power, given the unpredictable and volatile nature of their generation sources.

The first variable speed machine to be operated industrially was installed in Yagisawa (Japan) in 1990 and featured 85 MVA (its speed capacity varied between 130 and 156 rpm). Toshiba, Mitsubishi and Hitachi are among the several Japanese vendors who have installed variable speed turbines (Silva et al., 2015 Annex 2).

Interest in variable speed groups is now growing in Europe. This is due to the penetration of non-dispatchable renewable energy. The first two European variable speed groups were installed in Goldisthal (Germany) in 2004. Andritz Hydro supplied these two asynchronous variable speed motor generators, with a total power of 325 MW. To this day, these motor generators have remained the only of their kind to be supplied by a company outside Japan. Andritz (2016) characterizes this achievement as “a true milestone in pumped storage technology in Europe”.

Although Goldisthal is a strong reference for Andritz, which supplied the asynchronous motor generators, other manufacturers were involved in sourcing equipment to the extent that the management team adopted a purchasing strategy based on splitting the overall contract into smaller parts. In this context, Voith Hydro supplied the pump turbines, and Alstom (now GE Renewable Energy) supplied the power electronics for excitation and frequency control. Goldisthal is equipped with cycle converters. This technology is already outdated; new, state-of-the-art voltage source

inverter (VSI) technology has recently emerged in the area of control and frequency conversion when it comes to speed variation.

5.3.5. *The decision process*

Venda Nova III has been identified as a priority investment by EDP Produção S.A. The initial study was conducted by EDP's internal Engineering Studies Department. Further analysis and evaluation was carried out by EDP's Market and Regulatory Affairs Division (as well as the former EDP Planning and Control Division), with the purpose of preparing consistent technical and economic feasibility studies. On the basis of these studies, the board of directors of EDP decided to go ahead with the investment in 2007. The company adopted a bi-contractual strategy and split the global sourcing into two major areas: civil works and equipment supply. This decision contrasts with the purchasing strategy adopted in Goldisthal. EDP believes that in the context of Venda Nova III, it is better to reduce the number of interfaces and thus to avoid potential sources of conflict and additional resource allocation. The Division of Engineering and Dams was in charge of preparing the call for tender for the civil works, and the Division of Engineering and Equipment was in charge of preparing the call for tender for both the electrical and the mechanical equipment to be supplied. This latter call for tender required of suppliers that they provide price offers for both fixed and variable speed units.

The adoption of the variable speed solution in Portugal could not be put in place easily. Complying with the grid code required by the Portuguese TSO (REN) for the variable speed units proved more demanding than the standard benchmark. This required simulations and the conducting of further studies during the proposal appraisal period. The required compliance was finally confirmed by the TSO in 2010, following

the introduction of several design changes, most of which were related to the electrical protection system with an eye to guaranteeing that the machines would continue to contribute to the overall stability of the Portuguese Public Electric System in case of any severe disturbance to the national grid.

The company launched the call for tender for the civil construction works in 2008 and the call for tender for the equipment in 2009. Both had an international scope and were published in the official journal of the European Union. Three manufacturers answered the call to supply the equipment: (i) Voith/Siemens; (ii) Alstom; and (iii) Andritz. EDP has a solid, long-time relationship with all three players. The team expected to receive more replies, namely from the Asian manufacturers mentioned above, since they could provide additional and relevant information and experience. None of the Asian vendors replied to the call for tender. The project team attributes this to linguistic constraints and the incorrect assumption that the market was confined to European players. However, Voith Hydro was skilled at getting information from the Japanese context by using their business partners, such as Fuji.

The Division of Engineering and Equipment assessed vendor proposals from the perspective of several criteria, including (i) technical robustness and performance; (ii) total cost of ownership; and (iii) manufacturer technical guarantees. Supplier qualification and contracting is one of the several tasks for which the project team is responsible. A consultant from the central procurement office supported the team in charge of assessing competitive proposals. His contribution took place at the level of running several comparative analyses. No “hard-core” techniques were used during the negotiation phase because EDP must comply with Portuguese procurement

legislation. However, colleagues from EDP Valor S.A. supported the negotiation team with a “best and final offer” approach, delivering an almost 5% price reduction.

This project was awarded to the Voith/Siemens consortium at the end of 2010. This consortium now supplies a complex, high-tech power generating solution. Voith Hydro was put in charge of producing two variable speed pump turbines (each rating 390 MW), two asynchronous motor generators (420 MVA each), two double voltage converters (VSIs), and the distributed control system, as well as the hydro-mechanical equipment for the pumped storage power plant. Siemens was in charge of the “base of plant” setup (e.g. power systems, 400 kV cables and gas-insulated switchyards, the overall ventilation system, lighting and power plugging, auxiliary system power supply, both direct current and alternating current, telecommunications equipment, CCTV, intrusion detection, safety equipment, etc.) and deployment, as well as its commissioning. In addition, Siemens also sourced two power transformer units with the largest capacity in Portugal (465 MVA). The VSI was subcontracted by Voith to the firm Convertteam (which has now merged with the multinational company General Electric, Co.).

Since the contract was awarded to the Voith/Siemens consortium, personnel from the Division of Engineering and Equipment were allocated to the EDP Project Management team, and others were assigned to provide technical support. This team is now responsible for managing the overall project/investment, including (i) planning; (ii) tests and commissioning coordination; (iii) equipment acceptance; (iv) construction supervision; and (v) trial run follow-through. During this process, the team in charge of contracting the equipment is entirely liable for the machinery. This responsibility will end when the plant enters the so-called “industrial operation”, following the successful

completion of a four-week trial-run period. Once this status is achieved, the equipment will be handed over to the O&M Division, which is then fully accountable for its ownership.

Construction work began in 2010 and was initially expected to reach completion in 2015. The overall project suffered a slight delay, however. Completion is now forecasted for the summer of 2016.

5.3.6. The role played by references

Venda Nova III is a landmark in the electrical power industry. It is the fourth plant of its kind in Europe and is equipped with the largest units on the continent, the second largest in the world.

The provision of customer references from vendors is mandatory in any tender promoted by EDP. Customer references featuring variable speed pump turbines of this scale were not available. A member of EDP's engineering team acknowledged: "if we had searched references for identical equipment, we would not have been able to find any". In this context, the engineering team accepted similar or related customer references from manufacturers.

Prior to any decision-making, a study was conducted to assess the sophistication of the technology. EDP also consulted and interviewed key suppliers and twice visited the Goldisthal power plant. These site visits were suggested and organized by Andritz. The firm was diligent and invited the former project manager to the visits so that he could personally explain all details and features of the delivered solution. The EDP team also talked to the head of the power plant. He was open to answering questions about the relationship they have established with all manufacturers and their performance. Goldisthals's visits were of great value to EDP, especially with regards to

understanding technical issues. The team was also able to collect precise information regarding downtime and maintenance costs.

The head of the power plant also shared with the EDP team the story of how the Goldisthal configuration had been established. In fact, the design submitted by the engineering team to the executive board featured a conservative approach, with a mix of two fixed speed pump turbines and two variable speed pump turbines. The aim was to adopt a prudent attitude towards innovative technology. As the four groups began operations, everyone concluded that the remuneration from the variable speed option, in addition to less tangible benefits, would be much higher than the remuneration from the fixed speed groups. This difference stems from the possibility of selling the “tertiary band”, which is very profitable.

Pump turbines with variable speed features were considered for Venda Nova III, since they would increase value and enhance flexibility during pumping phases. The investment in variable speed units was estimated to be higher than the investment in conventional units. In 2008, equipment investment was estimated at around 30 million euros, on top of a “traditional” unit set,⁶ but the same studies estimated revenues of around three million euros per year in some scenarios. Despite the benefits offered by the variable speed option, it became necessary to demonstrate its viability from an economic point of view.

Although both technical and economic analysis recommended investing in variable speed at Venda Nova, its costs were calculated based on budgetary estimates. As a result, the executive board of EDP Produção S.A. decided that, in order to move ahead with the investment, the firm would need to base its decision on suppliers’

⁶ A standard turbine costs approximately 100 million euros.

proposal prices (which would reveal a more precise estimate of the involved costs and overall CapEx). This is why EDP issued a call for tender that required two alternative scopes: fixed and variable speed. Prices for variable speed were ultimately lower than anticipated. In the end, the variable speed solution was chosen, and the equipment contract was given to the Voith/Siemens consortium.

The tenders were based on a generic solution design, which resulted from interaction between EDP's engineering team and interfaces from each of the three equipment suppliers. This initial solution design allowed for the comparability of the proposals and for assurance that the project was technically feasible.

Among the three proposals, EDP's technical evaluation ranked Andritz Hydro slightly higher than the others. EDP's engineering team stated that "Voith did not present the best technical proposal, but it was clear that this would not compromise the project in any relevant sense". However, the commercial conditions offered by Voith/Siemens for the variable speed unit were equal to the price of a fixed speed machine, representing a savings of around 30 million euros. It was going to be the first project of its size to be designed by the awarded vendor. It is understood that Voith/Siemens viewed the price cut on variable speed as a marketing investment. As a member of EDP's engineering team put it, "[t]his investment allows Voith/Siemens to have the best customer reference in the field, and I am sure we will be receiving frequent visits from utilities staff from around the world".

Although EDP did not select the proposal that ranked highest from a technical point of view, EDP's engineering team has great confidence in Voith/Siemens's performance and believes that this was ultimately the best possible supply option. The "not-so-well-detailed" issues with Voith/Siemens's initial proposal

have been resolved to the extent that the firm invested in knowledge and know-how during the design phase in order to overcome possible obstacles and constraints. As an engineer working for EDP put it, “[t]hey simply do not tolerate failure, and this is due to the project’s enormous visibility, as well as their well-renowned prudence. When they face the unknown, they prepare themselves by putting on a belt, suspenders and a second pair of pants”. In this industry, the usual duration of a manufacturer warranty is two years. Influenced by EDP’s management team, Voith/Siemens agreed to extend this to five years for all equipment (excluding the VSIs, which are under warranty for four years).

6. FINDINGS

6.1. WITHIN CASE ANALYSIS

6.1.1. The Case of Tejo Energia

The case of Tejo Energia presents a “new task” buying situation where a significant amount was invested in CapEx by awarding an EPC contract to a vendor. The awarded contract’s estimated value was approximately 170 million euros. It was Tejo Energia’s largest investment following the power plant’s initial opening. This EPC had the features of a reference business since it involved innovative technology and a complex solution. Also, it was the first purchase of this kind of equipment in Portugal – equipment with which the shareholders of Tejo Energia were not familiar. Moreover, the total investment almost equalled the firm’s annual revenue. All these factors allow us to categorize this transaction as a reference business where, according to the literature reviewed above, the referencing phenomena should be observable (Tullous & Utrecht, 1992). This body of literature contends that customer references should have played an important role in this transaction. However, evidence for the relevance of references was not found. On the contrary, case analysis suggests that customer references did not play a key role in the buying decision under consideration.

Within the specific context of EPC, the firm’s buying centre requested customer references from potential vendors. These references were presented in the form of reference lists. Generally speaking, the firm seems to have had a positive attitude towards customer referencing. The firms’ official view on customer references is in line with the theory of referencing. The procurement officer pointed out the benefits of including customer references in the purchasing decisions at Tejo Energia. Nevertheless, the above analysis reveals that customer reference information was not considered by the buying centre of the electrical company. In fact, the case analysis

suggests that the buying firm dealt with the reference information in a highly informal fashion. Moreover, references were not verified by members of the buying centre; no contact was established between any member of the buying firm and the reference customer. Therefore, no relationship (formal or informal) between the buying customer and the potential vendor was either established or initiated. This reveals that the reference triad did not play a significant role in the complex capital investment buying decision outlined above. We can therefore assume that this case did not feature the reference triad. The implicit conclusion is that in this buying decision reference marketing did not influence the organizational buying behaviour. Likewise, no adaptation took place in this situation. The findings suggest that there is high uncertainty regarding the influence of supplier reference marketing on the organizational buying behaviour.

The irrelevance of customer reference marketing in the context of the studied case can be explained by the following conjectures (not mutually exclusive): (i) the firm's purchasing behaviour may have been affected by the fact that this transaction involved project finance; (ii) the previous relationship with the selected vendor may have affected the relevance of reference marketing; (iii) Tejo Energia shareholders may have interfered with the buying decision; (iv) the informal handling of reference information may have rendered customer references ineffective.

This case study features an example of project finance. Did this characteristic affect the influence of customer referencing on the firm's purchasing behaviour? The long-term financing of the Pego power plant is based on its projected cash flows. The project's financing structure involved a syndicate of banks. They are secured by the involved assets and paid entirely from the generated cash flow.

Therefore, cash flow assurance lies at the heart of the firm's buying behaviour. All decisions are subject to this criterion. This explains the relevance of the economic value of the adopted solution. Downtime is the most critical factor because it strongly impacts the firm's cash flow. This project finance context motivates conservative, risk-free buying behaviour. Customer references provide evidence in support of a decision of this kind. Hence, supplier's reference marketing should have played a role in the studied decision. The fact that this case involved project finance should have enhanced the relevance of customer references. However, evidence suggests that customer references were ultimately irrelevant to the decision.

Another open possibility raised by the case is that perhaps referencing only has implications for purchasing if the referencing material reveals a negative review of the supplier or offer, leading to its exclusion. In the opposite direction, if the reference content is positive, the reference may provide comfort for a decision maker, who may then proceed to carry out a technical or financial assessment. The literature review did not suggest anything of the kind.

In the studied transaction, the selected vendor already had a past relationship with the buying firm. It is relevant to understand to what extent this relationship affected the firm's buying behaviour. The case suggests that the relationship between Alstom and Tejo Energia developed in a positive (or at least neutral) environment, Alstom being a relevant supplier to the Pego power plant. This status might have provided Alstom with a privileged position in the EPC tender. On the other hand, the buying firm considers Alstom to be a qualified vendor for the new equipment. Nevertheless, the Pego power plant has also successfully installed equipment from other vendors, e.g. turbines from ABB. Apart from Alstom, other

privileged relationships also do exist. To the degree that this is so, these relationships should have equally influenced the buying behaviour of Tejo Energia. To the extent that it acknowledges this consideration, this research work takes a neutral stance on relationships with core vendors and their impact on a firm's buying behaviour.

It is also relevant to understand if Tejo Energia's shareholders interfered in the buying decision. This issue is highly pressing for scholars who focus on equal research circumstances. In this study, I tried to find any evidence that could suggest that Tejo Energia's shareholders influenced the EPC buying decision. Unfortunately, no evidence supporting this line of argument was found.

The case reveals that PEGOP acted on behalf of Tejo Energia, leading the EPC procurement process. In addition, the case reveals that the resources available to support the buying activity were few, which resulted in a certain amount of informality in the handling of customer references. Did the informal handling of reference information undermine the value of customer references in this case? There is surely an argument for the idea that a more formal handling of reference information would have enhanced its influence. Moreover, a more comprehensive and committed approach to the field of customer reference analysis would have further supported the buying decision taken by the power plant. Nevertheless, the evidence suggests that the handling of customer references in the transaction being studied was generally quite informal.

This analysis suggests that new research is needed in the field of organizational buying behaviour. Empirical evidence for the existence of a reference relationship was not found. The findings suggest that the reference relationship might not always play a role in the acquisition of capital goods, even in the context of a reference business. That is to say, the influence of reference marketing on

organizational buying behaviour has yet to be proven. In addition, no evidence of adaptation was found, despite the prevalence of this notion in the literature. As a result, theories of customer referencing should be reviewed accordingly and should include this aspect of reference networking. New avenues of research that feature the potential buyer and its decision centre should be pursued, as this will contribute positively to the present theory of customer referencing.

This said, the current literature on customer references remains relevant to the extent that most of its central observations were confirmed in the case under examination. For instance, this case suggests that the firm's buying centre genuinely appreciates the benefits of customer referencing. Moreover, the purchasing manager relied on terms such as 'reference customer', 'success stories', and 'reference lists'. By contrast, the 'reference triad' model was not observed during the field work. Future research on customer referencing should aim to broaden our understanding of the circumstances under which reference marketing influences organizational buying behaviour. As noted above, this future research should take place from the point of view of the potential customer – that is to say, the potential customer should be the empirical unit of analysis, and, if possible, new research should select and observe its buying centre.

Figure 6.1 illustrates of case Tejo Energia based on the modified coding scheme (see Table 6.1).

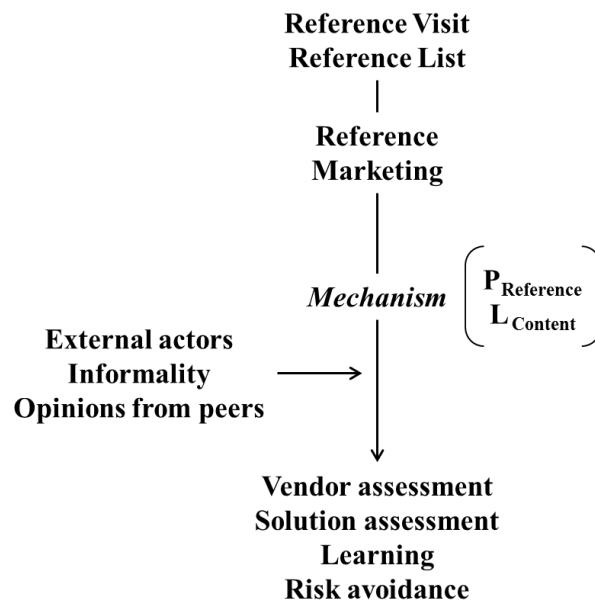


FIGURE 6.1 — Visualization of the Case Tejo Energia
Source: author.

The Pego case study involved (i) a reference visit and (ii) a reference list. These objects both belong to the broad structure of reference marketing. The case features a mechanism with causal powers. Causal power is affected by a liability: content. The case reveals three conditions: (i) external actors; (ii) informality; and (iii) opinions from peers. These external mechanisms affect the causal power of reference marketing. The case displays four effects or events: (i) learning; (ii) risk avoidance; (iii) solution assessment; and (iv) vendor assessment.

6.1.2. The Case of REN

This case involved a buying centre composed of four actors: (i) the procurement director; (ii) the planning and engineering director; (iii) the chief financial officer; and (iv) the chief operational officer. Out of these four actors, only two were exposed to reference marketing: (i) the procurement director; and (ii) the planning and

engineering director. These two actors in the case declared to have a positive attitude towards reference marketing.

The case of REN, which featured the acquisition of two transformer units, highlighted the buying behaviour of a TSO that was engaged in the “qualification of potential suppliers”. This acquisition featured a modified rebuy. The case offered evidence for the discourse of benefits. This discourse takes place during the workshops that the firm regularly organizes with vendors. By contrast, the topics of commitment and technological expertise were the subjects of conversations that the procurement director established with, e.g., her Spanish counterpart. As these conversations were not organized by the vendor, they cannot be considered species of vendor discourse. The vendor did not have any control over the content of the conversation. Accordingly, no evidence was found for the discourse of commitment or the discourse of technological expertise.

The reference practices involved in the case of REN include (i) reference lists and (iii) detailed descriptions of similar contracts. Reference lists were used during the vendor qualification process. They allowed REN to check references from other TSO’s, although this practice is not always relied on. The case also involved the last reference practice in the form of workshops with vendors that were organized by the firm.

The case study suggests the existence of a reference relationship adaptation (Helm & Salminen, 2010; Holma, 2009). This adaptation was observed on all three dimensions: (i) involvement; (ii) catalysts; and (iii) motivation. With regards to the first dimension, the case reveals that both the procurement director and the planning and engineering department were available to establish conversations with reference

customers. Regarding the other members of the buying centre – the chief financial officer and the chief operational officer – no evidence of their involvement with any sort of customer reference activity was found. Regarding the second dimension (catalysts), the procurement director was engaged in promoting customer reference materials within the company as a way to increase the number of potential vendors (adding more vendors to the list increases the competitiveness associated with the tender process). Lastly, this case identifies the driving forces that inspired the procurement director and the planning and engineering department to act on reference information. Their motivation for analysing reference information – specifically, reference lists – and distributing it internally within the firm was mainly related to the supplier qualification process. In addition, the case also revealed the firm's interest in the organizational learning process and its relation to customer referencing. This case therefore provides evidence that customer references do play a role in organizational capability building.

The case study found evidence for referencing benefits such as: (i) establishment of the supplier's competence; (ii) buying decision risk valuation; (iii) the sharing of information on innovative technology; and (iv) return on investment forecasting. On the other hand, the case did not provide evidence for the following benefits: (i) establishment of the vendor's reputation; and (ii) establishment of the vendor's credibility.

The literature on customer referencing reviewed above presents vendors as being in control of their reference activities. However, this case considers a buying situation in which the vendor has little control over what is being said about its customer relationships. The vendors described in this case do not put much effort into managing reference marketing and instead restrict their attention to elaborating

reference lists and presenting success stories at workshops. In addition, vendors do not strive to adopt diversified customer referencing practices. The case involves only two types of reference practice. The positive attitude that REN displays towards customer referencing suggests that other referencing practices, e.g. reference visits, could have an impact on the firm's buying behaviour. In this case vendors did not find the necessity to exploit these practices.

Finally, the case also suggests that reference marketing influences the buying centres of potential customers. The influence takes place at the level of identifying buying needs and by positioning vendors inside the approved vendors list. The identification of buying needs takes place at the workshops, which are regularly promoted to REN's suppliers. These workshops are important for the firm to the extent that they are a source of organizational learning.

Figure 6.2 presents a visual diagram of the case of REN based on the modified coding scheme (see Table 6.1).

The case of REN involves three objects: (i) a reference visit; (ii) a workshop; and (iii) a reference list. These three objects are included under the broader structure of reference marketing. The case features a mechanism with causal powers. Causal power is here affected by two liabilities: (i) content and (ii) consistency. The case presents two conditions: (i) external actors and (ii) opinions of peers. These external mechanisms affect the causal power of reference marketing. The case displays six effects or events: (i) learning; (ii) risk avoidance; (iii) solution assessment; (iv) the unleashing of new buying needs; (v) vendor assessment; and (vi) vendor qualification.

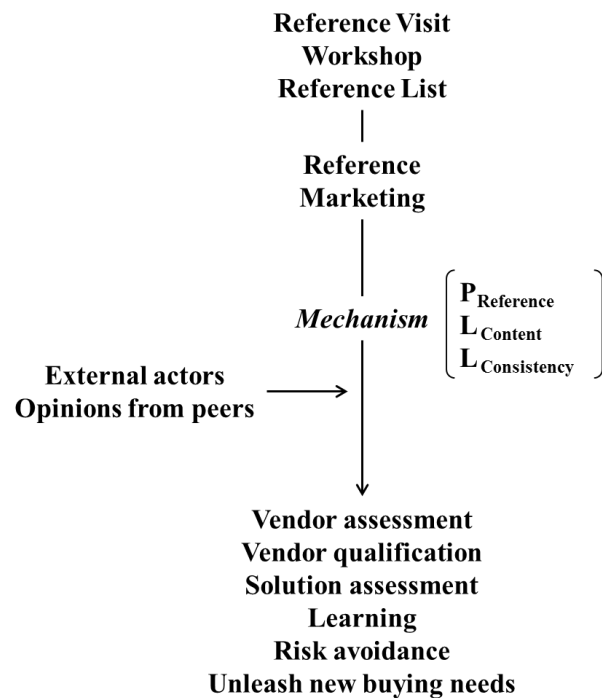


FIGURE 6.2 — Visualization of the Case REN
Source: author.

6.1.3. The Case of EDP

This case describes a “modified rebuy” scenario that involved a complex buying centre. This buying centre involved people from different locations within EDP: (i) the Engineering Studies Department; (ii) the Market and Regulatory Affairs Division; (iii) the Planning and Control Division; (iv) the board of directors; (v) the central procurement office; and (vi) the Division of Engineering and Equipment. Customer referencing only impacted the Division of Engineering and Equipment. Their members engaged in two reference visits and demanded reference lists during the tendering process. They revealed a positive attitude towards customer referencing practices, in particular during the buying phases of identification and the evaluation of alternatives. The team benefited from customer referencing to the extent that it allowed

for efficient learning about solution alternatives. As a result of the reference visits, the engineering team was made aware of the business potential of adopting variable speed pump turbines. This knowledge motivated the team to engage in several internal (including C-Level) and external (with the TSO) debates, with the aim of pushing forward the adoption of new technology.

The EDP case also highlights a group of companies that share a central procurement office. This infrastructure responds to purchasing needs from different companies that belong to the same corporation. Since 2006, the procurement office has evolved and increased its capacity. Currently, it is capable of responding to demands from diverse regions and business units. In its current form, it is a complex organization. Nonetheless, management is striving to make it even more “up to date” and better able to adopt the latest management trends by observing leading multinational companies. The office director did not claim to be short on resources (with regards to either qualified staff or technology).

The procurement office of EDP Valor S.A. has a procedure for the acquisition of both capital and non-capital goods. Nevertheless, not only did the capital equipment buying decision described in the case not follow that procedure, but it was also managed externally. Instead, the procurement office sourced an external consultant to support EDP Produção S.A. in the acquisition of equipment for the power plant retrofit. This consultant played a significant role in a specific phase of the buying process: the final price bargaining.

This purchasing configuration may be related to the independence of the firms that make up the EDP group of companies, or it may be related to the complexity of the equipment. In fact, the case suggests that the firms are to some extent

independent, in the sense that there is no explicit rule requiring them to attend the purchasing office for all purchasing needs. Despite their freedom not to interact with this office, companies make use of their services since they thereby profit from “cost avoidance”. The office is able to exhibit and quantify the benefits of its activity (savings in euros). This motivates firms to attend procurement office services. However, the following question is nonetheless relevant: do EDP firms engage with the central procurement office when a complex capital equipment decision is at stake? Although the case does not offer any evidence with regards to this question, the assumption is that the central procurement office is most often engaged with the acquisition of less complex and differentiated goods and services, such as commodities and other non-critical merchandise. In context of the case, the high level of technical expertise demanded by the variable speed pump turbine meant that this specific purchase could not be handled by anyone who was not a member of the engineering staff of EDP Produção. Another possibility is that the high risk and duration of the buying decision made this tender unattractive to the purchasing office. Resources will have to be allocated to this buying project for some time, and high learning costs will have to be considered. However, it is possible to conclude that the adopted mode of operation raised efficiency to a large extent, especially in a context where high specialization is required. This was due to the high level of coordination among the different actors involved in the buying process.

Another interesting feature of the case is the economic effort exerted by one of the bidding companies in its attempt to win the tender. The winning competitor was not ranked first in the non-commercial aspects of the tender. However, Voith invested its marketing budget to expand its reference base by adding Venda Nova III to its

portfolio. In other words, the firm paid to acquire the reference, and this took the form of a “customer-pilot” project. The investment was not confined to the price cut offered during the bidding process. In addition, the firm made complementary and proactive investments, such as (i) extending warranty length; (ii) acquiring the additional knowledge needed to increase complete project feasibility; and (iii) adopting proactive measures to guarantee overall customer satisfaction. This investment therefore involved two different components. The first is the money “offered” as a means of securing the tender, and the second is the money “paid” in order to guarantee customer satisfaction. The case suggests that Voith expects a high return from this investment. The return will result from the visibility of Venda Nova III and its impact on its other potential customers. This is even more critical to the extent that the market for variable speed pump turbines is expected to grow due to the massive implementation of wind generators. Voith understands this business context and is investing at a time when the market for variable speed pump turbines is expected to take off. However, the firm also understands that it cannot take risks when it comes to this project. Should anything go wrong, not only would the company’s credibility suffer, but it would miss out on additional sales from this emerging market.

Although this case did not involve a “first customer reference” (Gomez-Arias & Montermoso, 2007; Ruokolainen, 2003, 2005a, 2005b, 2007, 2008a, 2008b; Ruokolainen & Igel, 2004; Ruokolainen & Mäkelä, 2006, 2007), some sort of parallel can be established between the two situations. In both cases, the customer reference is especially important for companies seeking to enter new or emerging markets. Also, the supplier closes the deal with no margin (or with a negative margin) in anticipation of gaining a valuable customer reference. Nevertheless, there are certain dissimilarities

between these situations. The most striking contrast stems from differences in company size. In the first case, a startup company is considered, whereas the second example concerns an established firm. While startups have limited marketing budgets (due to their nature), an established firm like Voith is able to invest large sums for promotion (as revealed in the EDP case). Although both strategies appear similar, the difference may stem from the goals each type of firm aims to achieve by investing in customer referencing. While startup companies may wish to build their reputations in the market, the same might not be the case for established companies with already-solid reputations. Established firms might instead wish to leverage their orders on customer references, mainly by securing orders from emerging markets in which innovation plays a key role. Helm and Salminen (2010) argue that customer references are solid foundations and a key means of building a supplier's reputation. I could not find any evidence for this claim. The EDP case sheds some light on this topic but fails to offer a comprehensive account of this phenomenon. Reputation in business markets and its relation to referencing practice is therefore a subject that deserves further research.

Figure 6.3 presents an illustration of the case of EDP based on the modified coding scheme (see Table 6.1).

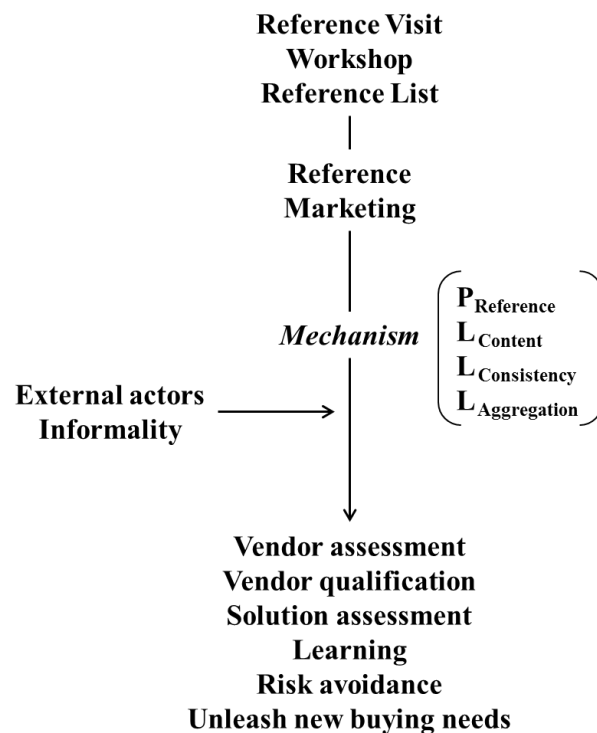


FIGURE 6.3 — Visualization of the Case EDP

Source: author.

The case of EDP features three objects: (i) a reference visit; (ii) a workshop; and (iii) a reference list. These three objects are included under the broader structure of reference marketing. The case features a reference mechanism that has causal power. This causal power is affected by three liabilities: (i) content; (ii) consistency; and (iii) aggregation. The case presents two conditions: (i) external actors and (ii) informality. These external mechanisms affect the causal power of reference marketing. The case displays six effects or events: (i) learning; (ii) risk avoidance; (iii) solution assessment; (iv) the unleashing of new buying needs; (v) vendor assessment; and (vi) vendor qualification.

6.2. CROSS CASE ANALYSIS

This study's *ex-ante* conceptual framework allowed for the gathering of useful and interesting data. This primary data was complemented by secondary data and provided a foundation for the three case narratives presented in this research. All cases were reviewed and submitted for member validation (see Appendix 3). They are descriptive by nature, and a highly factual writing style was adopted in order to facilitate the member validation process. Thus far, the *ex-ante* conceptual framework has served its early purpose.

Based on this conceptual framework, I conceived a coding scheme to disassemble the data (see Appendix 3). However, this initial coding scheme did not allow for the effective handling of empirical data. For instance, it did not provide insights into how to deal with conflicting conclusions derived from the three cases. As noted above, the case of Tejo Energia involves a purchasing decision where customer reference information was not considered by representatives of the power plant's buying centre, which raises doubts about the significance of customer referencing to capital buying decisions. Moreover, the case of EDP is not clear with regards to the impact of customer referencing on capital equipment buying behaviour. Although the theory of referencing suggests that customer references influence organizational buying behaviour, the first inference from the empirical reality under study in this research can be described as follows: while the case of REN suggests that there is a causal connection between customer referencing and capital buying decisions, the same does not apply either to the case of Tejo Energia or to the case of EDP. Thus the existence of a causal connection between customer referencing and capital buying decisions is not confirmed by this study. To the extent that this is so, it would seem that suppliers ought to put an end to customer referencing practices, since it is not possible to demonstrate

that they deliver or are necessary for any sort of positive return or benefit (e.g. cost or risk avoidance). Because this interpretation contradicts the theory of referencing, it is a cornerstone issue for my research and therefore requires a valid ontological perspective from which to explain the observed phenomena.

Critical realism (Archer et al., 1998; Easton, 2002; Sayer, 1997, 2000)⁷ helps to shed light on the referencing phenomenon because of its view on causality. As noted above, it accepts “causal mechanisms” instead of “causal relations”; in other words, this ontological approach rejects the idea that causality must involve consistencies among sequences of events, or ‘cause-effect’ regularities. On this view, the influence of customer referencing on buying behaviour might not always be observable since its manifestation depends in part on external conditions or liabilities, or may be the decision model is not universal.

By adopting a critical realist perspective, I move towards understanding the liabilities and conditions that might affect the ability of the referencing mechanism to deliver the desired effect. Diverse referencing practices become objects that belong to the same structure: reference marketing. This structure may contain causal powers and liabilities. To the extent that this is so, it produces effects which will only emerge under specific conditions. I aim to uncover the liabilities, conditions and additional effects in terms of which reference objects operate. The present research seeks to uncover these elements in order to introduce a new conceptual framework that further explains the referencing phenomenon. To this end, a modified coding scheme (see Table 6.1) was used to disassemble and re-assemble the data.

⁷ Cf. topic “Inquiry paradigms”.

TABLE 6.1 — Modified coding scheme

1 ST LEVEL	2 ND LEVEL	3 RD LEVEL
Objects	Reference List	
	Reference Visit	
	Workshop	
Structure	Reference Marketing	
Mechanism	Causal Power	Aggregation to other marketing resources
	Liability	Consistency
		Content
Effect/Event	Learning	
	Risk avoidance	
	Solution assessment	
	Identification of new buying needs	
	Vendor assessment	
	Vendor qualification	
Conditions	External consultants or intervenient in the buying process	
	Informality	
	Opinions from peers	

Source: author.

The modified coding scheme stems from the collected data and presents five first-order codes, bringing into play the critical realist perspective. This new coding scheme arranges codes in a way that conveys the *ex-post* theoretical model (see Figure 6.4).

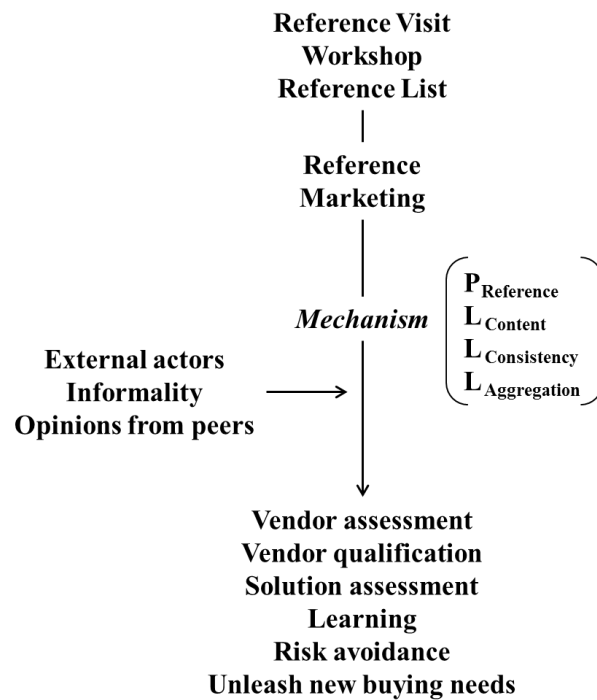


FIGURE 6.4 — Visualization of the *ex-post* theoretical model
Source: author.

The *ex-post* model involves three objects: (i) reference visits; (ii) reference lists; and (iii) workshops. These three objects are included under the same structure: (supplier) reference marketing. A reference visit is a visit that a potential customer makes to the site of a supplier’s satisfied customer with the aim of verifying the previously sourced reference description. A reference list is one of the possible formats a company may select to present its customer references. In workshops, vendor companies meet at the potential customer’s facilities to introduce new products or services, often by presenting customer references in the form of success stories. Although the literature on referencing describes reference visits as one of many reference practices (Jalkala & Salminen, 2009; Salminen & Möller, 2003, 2004), to my knowledge workshops are not mentioned by any author. This research thus identifies a

new form of reference practice – one not yet described in the literature on referencing.

Some segments of coded data help to further understand this reference practice:

“A supplier who has success or a new product will usually attempt to sell to EDP. They request a meeting and make a presentation.” [coded segment #1]

“Outside the scope of supplier qualification, it is customary to have workshops (meetings) with suppliers to present new products or new case studies. They did so and were able to solve this problem and managed to save ‘x’.” [coded segment #2]

“Some vendors engage in marketing activities. For example, they come to REN to present their products, and they bring technicians and real customers. The operational areas are present.” [coded segment #3]

In conclusion, workshops are private meetings where suppliers aiming to sell outside the scope of qualification present their products and services by introducing success stories. Occasionally, in this marketing effort vendors are accompanied by real customers, which enhances the credibility of their messages. For example, REN made its first purchase of thermo-resistant cables (an innovative technology) as a result of having participated in a supplier workshop.

The theoretical model features a mechanism that has causal power. In this model, the relevant causal power is the capacity of reference marketing to influence capital buying decisions by delivering its expected and desired effect – that is to say, the outcome or benefit of customer referencing. Referencing benefits take place at the supplier level and at the level of the potential customer. Liabilities may inhibit the causal mechanism’s ability to deliver its expected effect. In the theoretical model presented above, causal power is affected by three liabilities: (i) content; (ii) consistency; and (iii) aggregation. If reference marketing is not able to provide the right content in a consistent way and aggregate it to other marketing efforts, it will lose its causal power. The first liability described in the theoretical framework is content, which is embedded in the following coded segments:

“Customer references are important for the purchasing department not only because they provide a list of key customers but also insofar as they allow for verification. Importantly, customer references facilitate the assessment of a firm’s work. The mere communication of the fact that a supplier worked for someone else is not enough. The purchasing department needs to confirm the type of work undertaken for that client and its ultimate effectiveness (whether or not the supplier did a good job). It is customary for the purchasing department to ask for references from providers when they enrol in the suppliers list/database. When the purchasing department engages in consultation for a specific project, it also requests customer references related to the project. Another important element is when, precisely, the supplier undertook the relevant work (the project’s time frame). This allows for the evaluation of its professional skills. They ask for information on similar projects and the value of the project in euros.” [coded segment #4]

“One of the criteria in the contract documents is the supplier’s obligation to submit a list of customer references detailing past projects involving similar equipment, content, and dimensions, along with these projects’ outcomes.” [coded segment #5]

“ABB’s customer references were not considered high quality because the customers and projects listed were not sufficiently similar REN (in terms of size, geography).” [coded segment #6]

“The portfolio of customers presented by a potential supplier is scrutinized (assessed) according to its significance to and affinity with REN.” [coded segment #7]

This supplier presented references. However, there was no reference from within the European market.” [coded segment #8]

“An important piece of information requested in customer references is the installation date and the number of hours during which the machine was in operation.” [coded segment #9]

References and reference marketing materials will not be of any use if they do not provide useful content to purchasing managers. Good reference content allows decision makers to collect relevant information on the basis of which they can act. In addition, content credibility should not be questionable, and purchasers should be able to access reference sources, e.g. the purchasing managers or members of the engineering team, in order to confirm the information made available by reference marketing. Suspicious or conflicting information, no matter how minor, leads to sceptical attitudes on the part of potential buyers. It is also important for the content to highlight the similarities between the present purchase context and the relevant past transactions with regards to company or business unit size, geography, and, if possible, business context. This is emphasized by: Dean and Biswas (2001), who argue that the

reference customer must be in some respect similar to the potential customer in order for reference marketing to be effective; Salminen *et al.* (2008), who argue that good customer reference communication should stress the similarity between both the customer that awards the reference and the potential customer and the relevant benefits; Helm and Salminen (2010), who suggest that firms acting as references should have needs that are similar to the potential customer's needs and should be easily accessible to potential customers; and Aarikka-Stenroos and Jalkala (2012), who note that marketing messages should resonate with potential customers' problems and needs.

The second liability described here is consistency. It is illustrated in the following coded segments:

"Another important element is the project date (when it took place)." [coded segment #10]

"Analysis of the supply over several years is important because it allows for the evaluation of the consistency of the supply. Consistency generates confidence in the supplier." [coded segment #11]

"A technical advice is pronounced on the consistency (or lack thereof) of the list of customer references, in addition to their recognizable quality requirement." [coded segment #12]

"Technical departments do not proceed to a confirmation of customer references, but rather to an analysis of them, to confirm their consistency. If the references lack consistency, they sometimes request clarification from the vendor (for example by asking a vendor to complete its list of customer references). The supplier sometimes completes a list of customer references and also sends statements of concerning successful past projects and customer satisfaction." [coded segment #13]

"Reputation - yes, if there is evidence of consistency in providing for the type of customer that is relevant to REN." [coded segment #14]

"Lack of consistency with regards to a supplier list generates distrust" [coded segment #15]

Consistency in terms of the years of supply is a key element of reference lists since inconsistency generates doubt. Vendors that demonstrate consistency or regularity give confidence to buyers. Running a consistency analysis is the first evaluation done by buyers working with reference lists. Sometimes, it is the only

analysis performed by purchasing managers. Uncovering this liability was a major achievement to the extent that the literature is silent on this phenomenon.

The third liability is aggregation. It is embedded in the following coded segments:

“Customer references are always seen as just another element of supplier evaluation, and considered on their own they have low value.” [coded segment #16]

“Voith did the work of getting information from Japan. To this end, companies rely on connection companies, like Fuji.” [coded segment #17]

“If they had been purists about customer references, the only provider that would have been considered would be Audrithz, given the path that had already been travelled together in the preparation of the contract documents/contest and the solution design.” [coded segment #18]

The positive effect of reference marketing increases to the degree that it is bundled with other forms of marketing action. If it is complemented by other marketing activities, then account managers are able to build a comprehensive case for their offer. Customer references on their own are not sufficient to support a winning sales pitch. Most often, the acquisition of capital equipment goods involves a long process in which complex interactions take place. From the vendor’s point of view, the sales argument must be built according to the movements of both the customer and other competitors. An analogy with waltzing might illustrate this idea. In a waltz, the male guides the movement of the female around the ballroom, such that they are both able to enjoy the dance. However, the guiding dancer also avoids crashing into other couples, which would damage his relationship with the female dancer. A skilled dancer adapts his movements (i.e. speed and direction) to those of the partner he has invited to the dance floor.

The revised theoretical model presents three conditions: (i) external actors; (ii) informality; and (iii) opinions from peers. These external mechanisms affect the

causal power of reference marketing. The collected data offers examples of external actors who are members of the buying centres of the studied cases. Shareholders' representatives and external consultants are most often cited. Their presence in the buying centre may be permanent, from the beginning to the end of the buying decision, or they may attend (or contribute to) a specific moment of the buying process. Their capacity to influence the buying decision may also vary according to several factors, such as their degree of expertise or technical capabilities. The augmentation of the buying centre to include external actors (such as consultants) can be a prudent decision, in particular when capital equipment is being acquired and past experience cannot be called upon to help with the process. One context where consultants are more likely to support a buying centre is thus a new task situation (cf. Robinson et al. 1967).

Shareholders' representatives provide experience and knowledge to the buying centre. This capability stems from past transactions led by shareholders. Yet shareholders' representatives may act within the framework offered by agency theory (Fama & Jensen, 1983; Jensen & Meckling, 1976). According to Eisenhardt (1989a, p. 58), this theory "is directed at the ubiquitous agency relationship, in which one party (the principal) delegates work to another (the agent), who performs that work". In this context, shareholders' representatives may intend to guarantee that the goals and the attitudes towards risk of the principal and the agent are aligned – that is to say, they do not conflict. In addition, the presence of shareholders' representatives in the buying centre may be a less expensive way for the principal to verify what the agent is actually doing.

Demanding customer references for the tendering process is a common practice. For instance, many firms demand reference lists for the qualification of

potential vendors. However, companies might analyse reference information offered by suppliers informally. The effect of customer references on buying behaviour depends on the degree of informality associated with their assessment. A firm that relies on reference marketing might assess its content in a more formal way. My findings suggest that when customers assess referencing content in a formal way, references will have a more explicit impact on the buying decision. By contrast, if customers assess customer references informally, these references will have a less explicit impact on the buying decision.

The external mechanism of ‘opinions from peers’ is consistent with the theory of perceived risk. Risk reduction is relevant to industrial buying decisions (Choffray & Johnston, 1979; Greatorex, Mitchell, & Cunliffe, 1992; Hawes & Barnhouse, 1987; Puto, III, & King, 1985). According to Hawes and Barnhouse (1987, p. 287), “perceived risk is the anxiety or stress that is recognized by the individuals who are involved in making the buying decision”. Industrial buyers attempt to reduce uncertainty by gathering additional information (Puto et al., 1985; Webster & Wind, 1972). The greatest impact on risk reduction comes from positive opinions from informal influencers located outside the buyer’s firm (Henthorne, LaTour, & Williams, 1993). Questioning actual clients about the supplier’s performance is an important proactive purchasing strategy (Greatorex et al., 1992; Mitchell, 1990). The usefulness of colleagues’ opinions increases as the buying process progresses (Mitchell, 1998).

The *ex-post* conceptual framework highlights six effects or events: (i) learning; (ii) risk avoidance; (iii) solution assessment; (iv) the unleashing of new buying needs; (v) vendor assessment; and (vi) vendor qualification. These effects operate at the level of the potential customer. The referencing theory describes seven outcomes of the

use of references: (i) risk avoidance; (ii) solution assessment; (iii) vendor assessment; (iv) vendor qualification; (v) supplier learning; (vi) relationship management; and (vii) opportunity generation. The first four outcomes take place at the level of the potential customer, while the last three take place at the level of the supplier. As expected, empirical observation did not reveal three referencing outcomes from the list of seven identified in Table 6.2 – (i) supplier learning; (ii) relationship management; and (iii) opportunity generation – since they take place at the level of the vendor, which is not the focus of this research. The *ex-post* framework introduces two new effects of referencing practices: (i) the unleashing of new buying needs and (ii) customer learning.

Unleashing new buying needs is embedded in the following coded segments:

“Sometimes it is the supplier who issues a call to go see equipment that is running in another customer’s installation. This doesn’t occur often, but it happens, especially with the most innovative equipment (e.g. OPGW and heat-resistant cables). In these cases, the suppliers are interested in promoting conversations between potential and existing customers. There are examples within REN of these kinds of visits, which have led to the acquisition of equipment.” [coded segment #19]

“These workshops allow us to present new solutions that can initiate new purchasing requirements in the company.” [coded segment #20]

By observing other companies’ buying decisions and by analysing the impact of buying decisions on their businesses and activities, a firm may project itself onto that decision and consider the benefits it would gain if it were to acquire a similar product or solution. Reference stories serve as prompts for firms when it comes to initiating formal processes of ‘needs assessment’. This is especially valid where the solution being offered addresses so-called ‘hidden pains’. Hidden pains are buying needs that have not yet been made explicit by engineering departments or other functional areas of the company. By exhibiting a real case, vendors’ sales teams are able to unleash or make explicit new buying needs, which will often evolve into a future call for tender.

The other effect of referencing practices is customer learning. Customer learning is embedded in several coded segments, including the following:

“It is always possible to learn from the suppliers: they are great enablers of learning for any buying structure and for any company.” [coded segment #21]

“Learning with successful implementation!” [coded segment #22]

“Business cases are important for procurement. Contact with technology providers is very important. This is how the operational areas learn. It is knowledge that is being granted to us. It is also with suppliers that we learn to deal with the arguments of the internal areas and to discard dogma.” [coded segment #23]

“The customer references [...] tell us about problems, contingencies, things that went well, things that went badly, problems that no one anticipated, problems that were expected (because they occurred in identical projects)” [coded segment #24]

“Talking to these reference customers teaches us how to implement a new technology.” [coded segment #25]

Customers learn many things from suppliers. For instance, based on success stories and reference visits, customers may learn how to solve a business problem. Customers attribute these learning opportunities to customer referencing. It is not just a question of having access to information but rather concerns the possibility of observing how a firm has handled or solved a real problem. Vendors may be seen as bees working on pollinating their customers with reference marketing: they grab important information from one firm and take it to others. Firms receive critical business information to which they would not have access if it were not for the vendors who play their ‘pollinating’ role. As noted above, vendors are ‘learning enablers’. Firms therefore profit by interacting with vendors. Industrial network theory (cf. chapter 2) supports this view and helps to explain it by bringing into play business interactions and networks.

TABLE 6.2 — The literature on the outcomes of references

POTENTIAL CUSTOMER				VENDOR		
RISK AVOIDANCE	SOLUTION ASSESSMT	VENDORS ASSESSMT.	VENDORS QUALIFITN.	LEARNING	RELINSHP. MANAGMNT.	OPPORTNTY. GENERTIN.
Reduction of perceived risk.	Provision of evidence of experience, past performance, functionality, technology and customer value delivery; Provision of a strategic criterion in bidding decisions; Demonstration (to the buyer) of the functionality of technology; Avoidance of high switching costs.	Establishment of the supplier's credibility; Conferring of status from reputable customers; Signalling and strengthening of the supplier's position in the market; Establishment of reputation; Establishment of credibility; Demonstration of competence; Transfer of status; Demonstration of service quality; Enhancement of source credibility regarding the product and supplier performance; Development of the supplier's image.	Improvement of the chance of being shortlisted; Improvement of the chance of being selected.	Facilitation of organizational learning; Motivation and training of employees; Portfolio development; Understanding of customer needs; Improved sales force performance.	Creation and maintenance of confidence in existing relationships; Disruption of competitors' relationships; Re-establishment of credibility with old customers.	Presentation and demonstration of suppliers' offers; Access to new project markets; Increased access to new market segments; Acquisition of new customers.

Source: Author adaptation based on Salminen & Möller 2006; Salminen & Möller 2004; Salminen & Möller 2003; Jalkala & Salminen 2009a; Salminen 2001; Jalkala 2009; Helm & Salminen 2010; Jalkala & Salminen 2010.

6.3. ANSWERING THE RESEARCH QUESTIONS

This study aims: (i) to validate the current body of knowledge on reference marketing; (ii) to deepen the general view we currently have on the research topic; and (iii) to understand the role played by customer referencing in the buying behaviour of industrial firms. I addressed these goals by raising five research questions.⁸ Table 6.3 presents a data accounting sheet (cf. Miles & Huberman, 1994, p. 80), which illustrates the relationship between the research questions and the data sources (the three cases from which data has been collected).

TABLE 6.3 — Data accounting sheet: research questions vs. data sources

RESEARCH QUESTION	PEGO	REN	EDP
How does reference marketing influence the various members of the buying centre?			
How do the various customer reference discourses influence the buying behaviour of potential customers?		✗	✗
How do the identified reference practices influence the buying behaviour of potential customers?	✗	✗	✗
How does the potential customer benefit from vendor references?	✓	✓	✓
What facts and circumstances affect customer referencing practice?	✓	✓	✓

Legend: blank – missing data; ✗ – incomplete data; ✓ – complete data.

Source: author.

⁸ Cf. topic “Research questions”.

The empirical work in this study does not address each of these research questions equally. By taking a cumulative approach to the insights gleaned from this empirical work, however, we can extract useful information from the analysed data. In the next section, I will answer each of the five research questions featured in this study.

6.3.1. RQ1: How does reference marketing influence the various members of the buying centre?

This work is not able to provide an answer to this research question. Despite the insights gleaned from the three presented cases, the research is not conclusive regarding the influence of reference marketing on the various members of the buying centre. Further research into RQ1 is needed.

6.3.2. RQ2: How do the various customer reference discourses influence the buying behaviour of potential customers?

This work is not able to fully reply to this question. The cases do not feature all three reference discourses (Jalkala & Salminen, 2005, 2009). The empirical evidence suggests that the discourse of benefits may unleash new buying needs. However, the research is not conclusive on this topic, and therefore further research into RQ2 is also needed.

6.3.3. RQ3: How do the identified reference practices influence the buying behaviour of potential customers?

This study fails to answer this research question. Despite the richness of the three presented cases, the research is not conclusive regarding the influence of the identified reference practices on the buying behaviour of potential customers. Also, out

of all of the reference practices described in the literature on referencing, only three were identified in the presented cases. Further research into RQ3 is therefore needed.

6.3.4. RQ4: How does the potential customer benefit from vendor references?

The *ex-post* conceptual framework suggests six effects or events that take place at the level of the potential customer: (i) learning; (ii) risk avoidance; (iii) solution assessment; (iv) unleashing of new buying needs; (v) vendor assessment; and (vi) vendor qualification. Thus the *ex-post* theoretical model responds to RQ4 by identifying the benefits potential customers receive from vendor reference marketing.

6.3.5. RQ5: What facts and circumstances affect customer referencing practice?

The *ex-post* conceptual framework suggests that referencing is affected by three liabilities: (i) content; (ii) consistency; and (iii) aggregation. Liabilities may prevent the causal mechanism from delivering its expected effect. The revised theoretical model also presents three conditions: (i) external actors; (ii) informality; and (iii) opinions from peers. These external mechanisms affect the causal power of reference marketing and should be identified as circumstances that affect the potential causal power of reference marketing. The theoretical model therefore responds to RQ5 by identifying the conditions and liabilities that affect customer referencing practice.

7. CONCLUSION

The general purpose of the present work is to understand customer referencing and how it influences the buying behaviour of potential customers. I started by introducing the topic of customer referencing (cf. chapter 1) and, in order to characterize the research topic, I provided the reader with a view on: why vendors strive to obtain references from customers; why customers participate in referencing activities and reference marketing programs; the use of customer references by vendors; and how vendors communicate reference content. After, I defined the research problem and established the research objectives and guiding questions. I also defined theoretical boundaries for this research and presented the outline I followed to address the research problem.

In the second chapter I addressed the literature review. Three key topics were reviewed: buying behaviour; business relationships; and customer reference marketing. In this process I aimed to define customer reference and I also aimed to bring out taxonomy dealing with the issue of customer referencing. The literature on customer referencing raises the question of whether customer references have a positive impact on vendor marketing activity. In my theoretical research, I argue that the present theory of customer referencing would benefit from additional contributions. A considerable body of knowledge strongly supports it, but its comprehensiveness remains limited. In the context of reference networks, the business relationship consists of at least three dyadic relationships. In order to deepen the body of knowledge on customer referencing, research should observe the dyads established during the customer referencing process.

According to literature, dense reputation transfers take place inside reference triads and reference customers create value for potential customers and for the

seller, but the reverse is also true. The vendor's perspective on customer reference marketing (with regards to its motivation to invest in customer references) is a research subject that has already been given some attention by the scientific community, as seen in chapter 2. The literature on customer referencing portrays customer references as a source of competitive advantage and irrefutable influence. Customer referencing has a positive effect on vendors' credibility by raising their perceived competence. At the same time, it decreases the buyer's uncertainty and perceived risk. With this said, previous research has not considered the potential customer as its unit of analysis. Once the research gap was identified, I raised five research questions and concluded chapter 3 by presenting the ex-ante theoretical framework.

In the fourth chapter I addressed the methodology. In this chapter I offered a retrospective on organizational buying behaviour and attended the selected ontological perspective. Regarding the research design adopted for this work, I described the research setting, the procedure for data collection and data analysis. The present work adopts a case study research strategy which is particularly suitable for addressing the specific purpose of the study because it allows increasing our understanding of the customer references phenomenon and providing additional and far-reaching insights into the related variables. Finally, the implemented research quality criteria were introduced.

Three cases featured chapter 5 where the empirical work was presented. The first case was the case of Tejo Energia, one of the largest Portuguese private companies. The firm owns the thermoelectrical power plant of Pego. The second case was the case of REN. This public company operates the Portuguese Transmission Grid. The third case was the case of EDP, the largest industrial group in Portugal and a major operator

in the European energy sector. EDP is an Energy Solutions Operator, and its core activities include the generation, supply and distribution of electricity. The case description seems to follow a replication approach in all three cases, but this is not true because each case presents a different buying situation emerged in its own transaction context. However, I tried to secure as much as possible the replication approach, even when facing the empirical constraints.

I presented the key findings arriving from this research project in chapter 6. In this section I realized a “within” and a “cross case” analysis of the three cases presented in chapter 5. In addition, I addressed the research questions introduced in chapter 3. From the five questions initially raised, I was able to provide an answer to two, to be precise questions #4 and #5.

This research contributes to the literature on customer referencing by taking the potential customer’s perspective. It offers a new theoretical model (cf. chapter 7) that aims to describe the causal mechanism that links reference marketing to its outcomes. This causal mechanism deepens our understanding of the role played by customer referencing in capital equipment buying decisions.

To bring to a close, this research challenges the body of knowledge on customer referencing. I have argued that empirical work that can support a comprehensive theory of customer referencing is still lacking in the literature on organizational buying behaviour. I studied the referencing phenomenon by situating the customer as the unit of observation, and I offered a theoretical model that aims to contribute to the ongoing debate on customer referencing.

7.1. THEORETICAL IMPLICATIONS

Despite growing interest in industrial marketing research, the literature on customer referencing is still at an early stage. Studies that focus on the potential customer are too theoretically and empirically immature to provide meaningful insights for a theory of referencing. This study aims to provide a more holistic understanding of organizational buying behaviour by determining the facts and circumstances associated with the customer referencing practice. My work therefore contributes to the theoretical body of knowledge on the customer referencing phenomenon by identifying the role it plays in buying relationships between firms.

The empirical observations in this study confirm the existence of many constructs that already belong to the theory of customer referencing. For instance, the literature on customer referencing presents reference marketing as a source of competitive advantage and as a foundation for a firm's competitiveness (cf. chapter 2). This theoretical claim can be observed in all three cases, as the evidence suggests that customer references are required in vendor qualification, most often in the form of reference lists. As noted by the purchasing director of REN "[a] supplier without customer references is not qualified". If a vendor is not able to present a suitable reference list, it will not gain access to the tender and will therefore lose its competitiveness.

The empirical evidence also supports the idea that customer references serve as valid ways of presenting evidence of a supplier's competence, as seen in chapter 1. As Nuno Ribeiro from REN states, "I think that customer references are relevant and important analytic tools when it comes to assessing a supplier's credibility and competence". Customer references might therefore serve as indirect evidence of a supplier's ability to provide a product, service or solution. Alexandra Reis from REN

confirms that “[c]ustomer references allow us to assess a supplier’s ability to deliver on a specific project or technology”.

Referencing theory also claims that customer references are highly effective tools in attracting new customers and creating strong links with existing customers. The procurement department of PEGOP generates requests for information (RFIs) on the basis of the analysis of customer references.

EDP’s visit to the Goldisthal power plant illustrates how customer references foster the creation of strong links with existing customers. In fact, the relationship between the members of the EDP team and the staff from Andritz played a direct role in EDP’s recognition that Andritz offered the best technical reply to the call for tender.

Several referencing literature authors suggest that relationships are a main feature of customer referencing, as seen in chapter 2. According to the theory of referencing, reference marketing helps to create and maintain confidence in existing relationships. In this context, suppliers aim to demonstrate their ability to build strong relationships with their customers insofar as one of the most common ways of evaluating a new partner is through references. Potential customers assess new vendors by observing how they have handled earlier relationships. This facet of referencing theory is illustrated in several cases, such as REN and EDP. The evidence therefore suggests that relationships are a key feature of reference marketing and that customer referencing is an important function of relationship management, specifically in the context of capital equipment markets.

According to the theory of referencing, customer references play various roles, such as reducing the potential buyer’s perceived risk and signalling suppliers’

credibility (cf. chapter 2). The same theory asserts that references are also effective tools for reducing ambiguity about the value promised by a supplier's offer. This positive effect of reference marketing is exhibited in the case of EDP. In particular, it was observed in the context of the visit to the Goldisthal power plant, where key information regarding downtime costs and tertiary band revenues was exchanged.

Customer references are especially needed by companies looking to enter new markets where their reputations are not yet established, as seen in chapter 2. The case of REN also illustrated Hyundai's efforts to step into the European market. Because of its solid references, the South Korean company was invited to reply to REN's call for tender.

By contrast, empirical evidence contradicts referencing theory in other ways. For instance, although the literature on organizational buying behaviour suggests that customer references have a positive impact on vendors' reputations (cf. chapter 2), I was unable to confirm this claim.

The findings suggest that reputation building is not the aim of customer referencing practice when it comes to already established firms, as we saw with the case of EDP. However, reputation building may be a goal when it comes to firms seeking a first reference customer, as various authors suggest (cf. chapter 2).

The literature on referencing claims that the use of monetary compensation when acquiring customer references undermines their credibility, as seen in chapter 2. The case of EDP contradicts this claim, however: the Voith-Siemens consortium 'paid' to acquire the Venda Nova III reference. These suppliers expect hefty benefits from this investment. This practice also takes place in other industries, such as telecommunications, where pilot customers secure a discounted price in return for their

role as early adopters of a new technology. Customer references (and pilot customers) are important for the realization of “industrial innovations”, a point argued by referencing literature authors.

The present research is an original contribution to the theory. It presents a new theoretical model that aims to explain the referencing phenomenon. The model portrays the causal mechanism between reference marketing and its outcomes. Because of the qualitative nature of the research, no claim to statistical significance can be made. The model presented here helps us to understand the empirical phenomena as exhibited in the case studies, but it does not allow for statistical generalization. Further research, such as multi-case, multi-context studies, might ground analytical inferences. Also, fuzzy logic (Ragin, 2000, 2008; Zadeh, 1965) might be adopted with the aim of running a qualitative comparative analysis. The *ex-post* theoretical model presented above allows for a certain degree of analytical inference but only with regards to its boundaries and limitations, since the above findings are specific to the Portuguese electric power industry.

This work also extends the empirical fields of research on the referencing phenomenon by focusing on a new geographical region (Portugal) and a new industry (the electrical power sector). Further, it identifies a reference practice (workshops), which has yet to be given attention in the literature on referencing theory. Workshops are meetings where vendors make pitches to their customers by introducing success stories. This occurs outside the scope of tender qualification, and vendors are sometimes accompanied by other customers. Finally, this research makes a novel contribution by applying a critical realist approach to the study of customer referencing.

7.2. MANAGERIAL IMPLICATIONS

Sales managers wishing to undertake more compelling customer engagement approaches need to implement enhanced processes for marketing resource usage. This research offers a contribution to the improvement of management practice to the extent that it delivers fruitful insights for capital equipment vendors. Based on the findings provided by this study, we can now look at reference management from a wider perspective. By integrating this broader view into their marketing strategies, managers can pursue marketing strategies based on more effective customer referencing practices. The principal recommendation prompted by this study is the need to manage the liabilities and conditions involved in customer referencing activity. This recommendation is made in the interest of helping firms to profit from the expenditures they make in the context of reference marketing programs.

Purchasers base their evaluations in part on the consistency of reference lists. A good reference list will therefore be consistent. It should exhibit references for a certain project without regional or temporal gaps. These are viewed negatively by purchasing teams, who become suspicious about the reasons for what they judge to be ‘order interruptions’. The geographic areas across which references span are also assessed by customers. Customers often feel more comfortable with references from their own geographic zones. When a certain region dominates others in a reference list, this may raise doubts in the purchaser’s mind regarding the ability of the vendor to serve other markets. This is even more relevant if the markets in which the vendor is present are less sophisticated than the target market. One example that illustrates this point is the Chinese vendor Huawei. Before becoming a world player in the telecommunications industry, the firm invested in building its reference portfolio. This was a huge effort, however, because the initial reference portfolio was built exclusively

on Asian customers. The next area to be incorporated in its portfolio was Africa, followed by South America. Only then was Huawei able to sell to Southern European operators, the Portuguese firm Novis being one of its first European references. Nowadays, the company serves several European customers, as noted above.

A good reference presents content that is relevant to the customer. Potential customers need customer references that feature challenges similar to their own. Both reference visits and success stories should therefore be presented as opportunities for customers to learn from others' experience with a key issue. Putting in place reference visits and presenting success stories that do not address real customer needs is a waste of marketing expenditure and, most importantly, of the customer's time. When running workshops this point should be kept in mind and vendors should envisage this concern by selecting the right content and the most adequate success stories to present to customers. Often, meetings with customers only serve the purpose of technology evangelization and include the presentation of irrelevant references by pilot customers. The usefulness of these meetings can be questioned, and their return is often non-existent. However, if the account management team works in advance to identify customer challenges, they will be able to organize useful workshops from which customers are able to gain relevant insights. Partnering with customers to share information and knowledge is a challenging process with which vendors must become comfortable. With this said, it is not often the selected path.

The buying decision is the outcome of complex interactions between buyers and sellers. References should be considered marketing pieces within a broader persuasion strategy. Although they provide strong evidence for several lines of sales arguments, they can be combined with other marketing and sales tools. These different

marketing tools can be used at the same time, enhancing the strength of the argument, or they can be used as pieces of a complex sales strategy, where any action is contingent on the competitive context shaped by customers and competitors. Suppliers should therefore incorporate references with other marketing tools since the positive effect of reference marketing increases to the degree that it is complemented by other marketing and sales efforts.

Suppliers should not forget to influence and/or manage the external mechanisms that affect customer references. In particular, the presence of external actors, informality and opinions from peers should appear on the radar of sales teams. Every so often, an external actor (e.g. a shareholder representative or an external consultant) infiltrates the buying centre in charge of purchasing capital equipment. This presence becomes more relevant in situations where the procurement organization is not skilled enough to perform a specific buying task or does not have the purchasing capabilities to handle a specific project or technology. In these cases, the sales team should also be available and proactive in involving these external actors by making them targets of their referencing activity. For instance, if a reference visit is taking place, sales teams should not forget to invite external consultants and shareholder representatives.

Informality and opinions from industry peers go hand-in-hand to the extent that both might jeopardize vendors' selling efforts. The existence of opinion leaders is a phenomenon that is well understood by firms operating in the context of B2C. An analogy might be established between opinion leaders and opinions from peers, the first of which is associated with the B2C context, and the second with a B2B setting. Suppliers wishing to increase their reputations and credibility in a specific domain or

technology should therefore direct their marketing efforts towards these industry experts and communicate their references as part of their strategy. Firms should be able to anticipate customer movement in the direction of their industry peers. Firms should also be able to ask for information on a vendor or on the viability of adopting a specific technology. Industry summits and exhibitions work as catalysts for this sort of activity as they facilitate the collection of opinions from various peers with low effort. Informality with regards to the handling of customer references increases the competitive advantage of less prepared and capable competitors. Therefore, firms that invest in reference marketing should make an effort to include referencing evidence in their formal procurement processes.

7.3. LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

As said before, from the five research questions raised in chapter 3, I provided an answer to two, to be precise questions #4 and #5. This is perhaps the biggest limitations of this study. I suppose that this limitation could be surpassed by increasing the number of cases under study. To achieve this aim, the present work would have to acquire an international dimension, as new cases would have to arrive from other countries than Portugal (REN, Tejo Energia and EDP cover all the electrical power production companies acting in Portugal; cf. section 4.2.1.). Acquiring an international perspective is beyond the available resources I had available for the current research. In order to advance the geographical scope of this research, I would require financial resources that I do not currently possess. Thus, a suggestion for further research is to expand the number of cases under study by exploring additional geographies.

My research also faces limitations at other different levels. At a theoretical level, a main challenge stems from the absence of similar studies on organizational purchasing. At a methodological level, another challenge stems from the fact that research strategies other than case study research are unavailable. Finally, the main empirical limitation of this research relates both to the scarcity of accessible data on the dyadic relationships established between each of the three members of the reference triad and to the fact that it focuses on a single geographic area and a single industry.

As noted above, the use of only one side of the dyad in this empirical research implies certain methodological constraints. Hence an immediate suggestion for further research is to expand the empirical unit of analysis from the potential customer to the entire triadic network and to include all of the established dyadic relationships.

Moreover, limitations also stem from the adopted research method: the case study. Because this method cannot ground empirical generalization, it cannot ground claims to statistical significance. In this sense, one suggestion for further research is to adopt quantitative methods as an additional form of research, as seen in chapter 4. To this end, the propositions presented in the sub-chapter “research questions” might be of some use since it is possible to test them using quantitative research methods. Another possible way to complement the present research by adopting quantitative methods is to deduce propositions from the *ex-post* theoretical model (see Figure 6.4). These propositions could then be used as a foundation for the creation of a questionnaire aiming to test the theoretical model on a global level (e.g. in other geographical regions and industries).

In addition, other industries should also be studied, e.g. the telecommunications sector. This industry already served as the research field for a

doctoral dissertation produced within the context of the Industrial Marketing and Purchasing Group.

One line of research related to the topic of customer referencing that has yet to be considered and genuinely analysed is the use of success stories as instruments of supplier reference marketing. Success stories are not yet classified, nor are they deeply documented by referencing theory. They might act as part of what Håkansson (1982, pp. 22, 25, 31) describes as the “institutionalization” of the “interaction process”. Still, from a theoretical point of view we know very little about this phenomenon and its relevance to the customer-vendor relationship. I believe that scholars should turn their attention to this field, which has recently become an area of increasing marketing expenditure and investment for companies. A useful contribution to management would involve tackling development and best practice recommendations in order to put into place this form of customer referencing.

Finally, a topic for further research which emerges from the present work is the relationship between customer referencing and reputation building. The case of EDP tackled this issue. As discussed above, a comprehensive and deeper understanding of these concepts and the connections between them would contribute greatly to the literature on industrial marketing.

REFERENCES

- Aarikka-Stenroos, L. (2009). What stimulates business actors to promote others' business without monetary rewards? Exploratory narrative research on motivation factors. In *Proceedings of the 25th IMP Conference, Euromed*. Marseille, France.
- Aarikka-Stenroos, L., & Jalkala, A. (2012). Customers as Co-marketers: A Triadic Value Creation in Reference Networks. In *Proceedings of the 28th IMP Conference, Università Cattolica del Sacro Cuore*. Rome, Italy.
- Aarikka-Stenroos, L., & Makkonen, H. S. (2014). Industrial buyers' use of references, word-of-mouth and reputation in complex buying situation. *Journal of Business & Industrial Marketing*, 29(4), 344–352. <http://doi.org/10.1108/JBIM-08-2013-0164>
- Accenture. (2014). A Energia em Portugal: Perspectiva de quem a utiliza. Retrieved July 24, 2016, from http://www.apenergia.pt/uploads/docs/Estudo_Energia_em_Portugal2014_relatorio_final.pdf
- Ackroyd, S., & Hughes, J. (1992). *Data collection in context*. London: Longman.
- Anderson, J., Håkansson, H., & Johanson, J. (1994). Dyadic Within a Business Relationships Business Network Context. *Journal of Marketing*, 58(4), 1–15.
- Anderson, J., Kumar, N., & Narus, J. (2007). *Value Merchants: Demonstrating and Documenting Superior Value in Business Markets. Composites*. Boston: Harvard Business School Press.
- Anderson, J., & Narus, J. (1998). Business marketing: Understand what customers value. *Harvard Business Review*, 76(November-December), 53–675.
- Anderson, J., & Narus, J. A. (1999). *Business Market Management: Understanding, Creating, and Delivering Value* (1st ed.). Upper Saddle River, New Jersey: Prentice Hall.
- Anderson, J., Narus, J., & Rossum, W. van. (2006). Customer Value Propositions in Business Markets. *Harvard Business Review*, 84(March), 90–99.

- Anderson, J., & Wynstra, F. (2010). Purchasing higher-value, higher-price offerings in business markets. *Journal of Business-to-Business Marketing*, 17(1), 29–61.
<http://doi.org/10.1080/10517120903000363>
- Anderson, P. F. (1982). Marketing, strategic planning and the theory of the firm. *Journal of Marketing*, 46(Spring), 15–26.
- Araujo, L., & Easton, G. (1996). Networks in socio-economic systems: A critical review. In D. Iacobucci (Ed.), *Networks in marketing* (pp. 63–107). Thousand Oaks: Sage.
- Archer, M., Bhaskar, R., Collier, A., Lawson, T., & Norrie, A. (1998). *Critical realism: Essential readings*. London: Routledge.
- Axelsson, B., & Easton, G. (Eds.). (1992). *Industrial Networks: A New View of Reality*. London: Routledge.
- Baptista, C. S. (2001). *Buying behavior and long-term relationships in the metal mining industry: Case studies of capital equipment buying. Doctoral dissertation*. Luleå University of Technology.
- Baptista, C. S. (2013). Interaction processes in long-term relationships in the metal mining industry: Longitudinal case studies of capital equipment buying. *Industrial Marketing Management*, 42(6), 969–982.
<http://doi.org/10.1016/j.indmarman.2013.03.009>
- Barney, J. B. (1986). Organizational Culture: Can It Be a Source of Sustained Competitive Advantage? *Academy of Management Review*, 11(3), 656–665.
<http://doi.org/10.2307/258317>
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. B., & Arian, A. M. (2001). The Resource based view: Origins and Implications. In M. A. Hitt, R. E. Freeman, & J. S. Harrison (Eds.), *The Blackwell handbook of strategic management* (pp. 124–188). Oxford: Blackwell Publishing.

- Bhaskar, R. (1975). *A Realist Theory of Science*. London: Verso.
- Bhaskar, R. (1979). *The Possibility of Naturalism: A Philosophical Critique of the Contemporary Human Sciences*. Hemel Hempstead: Harvester Press Ltd.
- Bhaskar, R. (1989). *Reclaiming Reality: A Critical Introduction to Contemporary Philosophy*. London: Verso.
- Blau, P. M. (1964). *Exchange and power in social life*. New York: Wiley.
- BP. (2016). BP Energy Outlook - 2016 edition. Retrieved July 24, 2016, from <http://www.bp.com/content/dam/bp/pdf/energy-economics/energy-outlook-2016/bp-energy-outlook-2016.pdf>
- Bryman, A., & Bell, E. (2007). *Business research methods* (2nd editio). New York: Oxford University Press.
- Cardozo, R., & Feldman, W. (1969). The Industrial Revolution and Models of Buyer Behavior. *Journal of Purchasing*, V(November), 77–88.
- Choffray, J.-M., & Johnston, P. E. (1979). Measuring perceived pre-purchase risk for a new industrial product. *Industrial Marketing Management*, 8(4), 333–340. [http://doi.org/10.1016/0019-8501\(79\)90042-7](http://doi.org/10.1016/0019-8501(79)90042-7)
- Coase, R. H. (1937). The nature of the firm. *Economica*, 4(16), 386–405.
- Cunningham, M. . T., & White, J. G. (1974). The behaviour of industrial buyers in their search for suppliers of machine tools. *Journal of Management Studies*, 11(2), 115–128.
- Cyert, R., & March, J. (1963). *Behavioral theory of the firm*. Oxford: Blackwell.
- Darke, P., Shanks, G., & Broadbent, M. (1998). Successfully completing case study research: Combining rigour, relevance and pragmatism. *Information Systems Journal*, 8(4), 273–289. <http://doi.org/10.1046/j.1365-2575.1998.00040.x>
- Dean, D. H., & Biswas, A. (2001). Third-Party Organization Endorsement of Products:

- An Advertising Cue Affecting Consumer Prepurchase Evaluation of Goods and Services. *Journal of Advertising*, 30(4), 41–57. <http://doi.org/10.2307/4189195>
- Deloitte. (2014). Liberalização do mercado de electricidade: Ponto de situação. Retrieved July 24, 2016, from https://www.worldenergy.org/wp-content/uploads/2014/11/estudo_liberalizacao.pdf
- Dickson, P. R. (1992). Toward a general theory of competitive rationality. *Journal of Marketing*, 56(January), 69–83.
- Duarte, F. (2011). Venda Nova III facing variable speed. In *Technical Hydropower Production Conference*. Oslo.
- Dubois, A., & Araujo, L. (2007). Case research in purchasing and supply management: Opportunities and challenges. *Journal of Purchasing and Supply Management*, 13(3), 170–181. <http://doi.org/10.1016/j.pursup.2007.09.002>
- Dubois, A., & Gadde, L.-E. (2002). Systematic combining: An abductive approach to case research. *Journal of Business Research*, 55(7), 553–560. [http://doi.org/10.1016/S0148-2963\(00\)00195-8](http://doi.org/10.1016/S0148-2963(00)00195-8)
- Dul, J., & Hak, T. (2007). *Case study methodology in business research*. Oxford: Butterworth-Heinemann.
- Easton, G. (1998). Case research as a methodology for industrial networks: A Realist apologia. In P. Naude & P. W. Turbull (Eds.), *Network Dynamics in International Marketing* (pp. 73–87). New York: Pergamon Press.
- Easton, G. (2002). Marketing: A critical realist approach. *Journal of Business Research*, 55(2), 103–109. [http://doi.org/10.1016/S0148-2963\(00\)00145-4](http://doi.org/10.1016/S0148-2963(00)00145-4)
- Easton, G. (2010). Critical realism in case study research. *Industrial Marketing Management*, 39(1), 118–128. <http://doi.org/10.1016/j.indmarman.2008.06.004>
- EDP. (2015). The Portuguese Electricity System. Retrieved January 3, 2015, from <http://www.edp.pt/en/aedp/sectordeenergia/sistemaelectricoportugues/Pages/SistEl>

ectNacional.aspx

Eisenhardt, K. M. (1989a). Agency Theory: An Assessment and Review. *The Academy of Management Review*, 14(1), 57–74.

Eisenhardt, K. M. (1989b). Building Theories from Case Study Research. *Academy of Management Review*, 14(4), 532–550. <http://doi.org/10.2307/258557>

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory Building From Cases: Opportunities and Challenges. *Academy of Management Journal*, 50(1), 25–32. <http://doi.org/10.5465/AMJ.2007.24160888>

Emerson, R. (1962). Power-dependence relations. *American Sociological Review*, 27(1), 31–41.

Emerson, R. (1972a). Exchange theory, Part I: A psychological basis for social exchange. In J. Berger, M. Zelditch Jr., & B. Anderson (Eds.), *Sociological theories in progress* (pp. 38–57). Boston: Houghton Mifflin.

Emerson, R. (1972b). Exchange theory, Part II: Exchange relations and networks. In J. Berger, M. Zelditch Jr., & B. Anderson (Eds.), *Sociological theories in progress* (pp. 58–87). Boston: Houghton Mifflin.

Estrutura Financeira da Tejo Energia. (2015). Retrieved June 25, 2015, from <http://www.tejoenergia.com/index.asp?art=65>

Exame. (2014). 500 Maiores & Melhores. *Exame – Edição Especial*.

Fama, E. F., & Jensen, M. C. (1983). Agency problems and residual claims. *The Journal of Law and Economics*, 26(2), 327–349.

Ford, D., Gadde, L.-E., Håkansson, H., Lundgren, A., Turnbull, P., Wilson, D., & Snehota, I. (2003). *Managing Business Relationships* (Second Edi). Chichester: John Wiley and Sons Ltd.

Ford, D., Gadde, L.-E., Håkansson, H., & Snehota, I. (2002). Managing networks. In *Proceedings of the 18th IMP Conference, Curtin University*. Perth, Australia.

- Gemünden, H. G. (1998). The Development of IMP: An analysis of the conference proceedings 1984-96. In H. G. Gemünden, T. Ritter, & A. Walter (Eds.), *Relationships and Networks in International Markets* (pp. 3–12). Bingley: Emerald Group Publishing Limited.
- Gifra, J., & Cardenete, J. L. L. (2015). Some Drivers of Change to generate Alternatives in the Current Energy Order. *IESE Insight, OP-273-E*.
- Godes, D. (2008). Customer Referencing: Three Programs. *Harvard Business School*, (Background Note 508-101).
- Godes, D. (2012). The Strategic Impact of References in Business Markets. *Marketing Science, 31*(2), 257–276.
- Gomez-Arias, J. T., & Monterroso, J. P. (2007). Initial reference customer selection for high technology products. *Management Decision, 45*(6), 982–990.
<http://doi.org/10.1108/00251740710762035>
- Greator, M., Mitchell, V.-W., & Cunliffe, R. (1992). A Risk Analysis of Industrial Buyers: The Case of Mid-Range Computers. *Journal of Marketing Management, 8*(4), 315–333. <http://doi.org/10.1080/0267257X.1992.9964202>
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 105–117). Thousand Oaks: Sage.
- Gummesson, E. (2007). Case study research and network theory: Birds of a feather. *Qualitative Research in Organizations and Management: An International Journal, 2*(3), 226–248. <http://doi.org/10.1108/17465640710835373>
- Håkansson, H. (Ed.). (1982). *International Marketing and Purchasing of Industrial Goods, an interaction approach*. Chichester: John Wiley & Sons.
- Håkansson, H. (Ed.). (1987). *Industrial technological development: A network approach*. London: Croom Helm.

- Håkansson, H., & Snehota, I. (Eds.). (1995). *Developing Business Relationships in Business Networks*. London: Routledge.
- Håkansson, H., & Waluszewski, A. (2002). *Managing Technological Development. IKEA, the environment and technology*. London: Routledge.
- Håkansson, H., & Wootz, B. (1975). Supplier Selection in an International Environment: An Experimental Study. *Journal of Marketing Research*, *XII*(February), 46–51.
- Halinen, A., & Törnroos, J.-Å. (2005). Using case methods in the study of contemporary business networks. *Journal of Business Research*, *58*(9), 1285–1297. <http://doi.org/10.1016/j.jbusres.2004.02.001>
- Hawes, J. M., & Barnhouse, S. H. (1987). How purchasing agents handle personal risk. *Industrial Marketing Management*, *16*(4), 287–293. [http://doi.org/10.1016/0019-8501\(87\)90038-1](http://doi.org/10.1016/0019-8501(87)90038-1)
- Helm, S. (2003). Calculating the value of customers' referrals. *Managing Service Quality*, *13*(2), 124–133. <http://doi.org/10.1108/09604520310466815>
- Helm, S., & Salminen, R. T. (2010). Basking in reflected glory: Using customer reference relationships to build reputation in industrial markets. *Industrial Marketing Management*, *39*(5), 737–743. <http://doi.org/10.1016/j.indmarman.2010.02.012>
- Henthorne, T. L., LaTour, M. S., & Williams, A. J. (1993). How organizational buyers reduce risk. *Industrial Marketing Management*, *22*(1), 41–48. [http://doi.org/10.1016/0019-8501\(93\)90019-4](http://doi.org/10.1016/0019-8501(93)90019-4)
- Herriott, S. R. (1992). Identifying and Developing Referral Channels. *Management Decision*, *30*(1), 4–9.
- Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource Dependence Theory: A Review. *Journal of Management*, *35*(6), 1404–1427. <http://doi.org/10.1177/0149206309343469>

- Holma, A. (2009). *Adaptation in triadic business relationship settings: A study in corporate travel management. Doctoral dissertation*. Hanken School of Economics, Department of Marketing.
- Holmstrom, B. R., & Tirole, J. (1989). The theory of the firm. In R. Schmalensee & R. Willig (Eds.), *Handbook of industrial organization* (pp. 61–133). Amsterdam: North Holland.
- Homans, G. C. (1958). Social Behavior as Exchange. *American Journal of Sociology*, 63(6), 597–606.
- Homans, G. C. (1961). *Social behavior and its elementary forms*. New York: Harcourt, Brace and World.
- Howard, J. A., & Sheth, J. N. (1969). *The Theory of Buyer Behavior*. New York: John Wiley & Sons.
- Hughes, T., Bence, D., Grisoni, L., O’regan, N., & Wornham, D. (2011). Scholarship That Matters : Academic – Practitioner Engagement in Business and Management. *Academy of Management Learning and Education*, 10(1), 40–57.
- Hunt, S. D., & Morgan, R. M. (1995). The comparative advantage Theory of Competition. *Journal of Marketing*, 59(April), 1–15.
- Hydro, A. (2016). Andritz Hydro References. Retrieved March 13, 2016, from <http://www.andritz.com/hydro/hy-references.htm>
- Jalkala, A. (2009). *Customer reference marketing in a business-to-business context. Doctoral dissertation*. Lappeenranta University of Technology.
- Jalkala, A., & Salminen, R. T. (2005). Customer References as Marketing Practice in Company Web Sites: Content and Discourse Analysis. In M. Seppä, M. Hannula, A.-M. Järvelin, J. Kujala, M. Ruohonen, & T. Tiainen (Eds.), *FeBR 2005, Frontiers of e-Business Research 2005* (pp. 165–180). Tampere, Finland: Tampere University of Technology (TUT) and University of Tampere (UTA).

- Jalkala, A., & Salminen, R. T. (2006). Taxonomy of Customer Reference Communication: A Pilot Case Study in the ICT Sector. In *Proceedings of the 22nd IMP Conference, EM Lyon and Bocconi University*. Milan, Italy.
- Jalkala, A., & Salminen, R. T. (2008). Reference-oriented marketing approach: building, managing, and utilizing reference customer relationship portfolios. In *Proceedings of the 24th IMP Conference, Uppsala University*. Uppsala, Sweden.
- Jalkala, A., & Salminen, R. T. (2009). Communicating customer references on industrial companies' Web sites. *Industrial Marketing Management*, 38(7), 825–837. <http://doi.org/10.1016/j.indmarman.2008.04.009>
- Jalkala, A., & Salminen, R. T. (2010). Practices and functions of customer reference marketing: Leveraging customer references as marketing assets. *Industrial Marketing Management*, 39(6), 975–985. <http://doi.org/10.1016/j.indmarman.2010.06.017>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3(4), 305–360.
- Johnson, M., Zinkhan, G. M., & Ayala, G. S. (1998). The impact of outcome, competency and affect on service referral. *Journal of Services Marketing*, 12(5), 397–415.
- Johnston, W. J., & Bonoma, T. V. (1981). The Buying Center: Structure and Interaction Patterns. *Journal of Marketing*, 45(3), 143–156. <http://doi.org/10.2307/1251549>
- Johnston, W. J., Leach, M. P., & Liu, A. H. (1999). Theory Testing Using Case Studies in Business-to-Business Research. *Industrial Marketing Management*, 28(3), 201–213.
- Johnston, W. J., & Lewin, J. E. (1996). Organizational Buying Behavior: Toward an Integrative Framework. *Journal of Business Research*, 35(1), 1–15.
- Kennedy, A. M. (1983). The complex decision to select a supplier: A case study.

Industrial Marketing Management, 12(1), 45–56. [http://doi.org/10.1016/0019-8501\(83\)90034-2](http://doi.org/10.1016/0019-8501(83)90034-2)

- Kilian, T., Greuling, K., & Hennigs, N. (2013). Communicating Competency in References: A Qualitative Analysis of the Utilization of References in Mechanical Engineering. *Journal of Business-to-Business Marketing*, 20(2), 65–79.
- Kumar, N. (2004). *Marketing as Strategy: Understanding the CEO's Agenda for Driving Growth and Innovation*. Boston: Harvard Business Press.
- Kumar, V., Petersen, J. A., & Leone, R. P. (2010). Driving Profitability by Encouraging Customer Referrals: Who, When, and How. *Journal of Marketing*, 74(September), 1–17.
- Kumar, V., Petersen, J. A., & Leone, R. P. (2013). Defining, Measuring, and Managing Business Reference Value. *Journal of Marketing*, 77(January), 68–86.
- Levitt, T. (1965). *Industrial purchasing behaviour: A study of communication effects*. Boston: Graduate School Business (Division of Research), Harvard University.
- Levitt, T. (1967). Communications and Industrial Selling. *Journal of Marketing*, 31(2), 15–21.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications.
- Lincoln, Y. S., & Guba, E. G. (2005). Paradigmatic Controversies, Contradictions, and Emerging Confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research*. Thousand Oaks: Sage.
- Macpherson, I., Brooker, R., & Ainsworth, P. (2000). Case study in the contemporary world of research: Using notions of purpose, place, process and product to develop some principles for practice. *International Journal of Social Research Methodology*, 3(1), 49–61.
- Mattsson, L.-G. (2000). Relationships and networks. In M. J. Baker (Ed.), *Marketing*

- theory: A student text* (pp. 150–159). London: Cengage Learning EMEA.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis* (Second Edi). Thousand Oaks: Sage Publications.
- Minde, S. (2007). *Development of new technology in a network context: The embedding process. Doctoral dissertation*. Norwegian University of Science and Technology (Faculty of Social Sciences and Technology Management).
- Mitchell, V.-W. (1990). Industrial Risk Reduction in the Purchase of Micro-computers by Small Businesses. *European Journal of Marketing*, 24(5), 7–19.
<http://doi.org/03090569010003617>
- Mitchell, V.-W. (1998). Buy-phase and buy-class effects on organisational risk perception and reduction in purchasing professional services. *Journal of Business & Industrial Marketing*, 13(6), 461–478.
<http://doi.org/10.1108/08858629810246779>
- Morgado, A. V., & de Castro, L. M. (2015a). Customer Referencing: Testing a conceptual framework in the context of a case study. In *Proceedings of the 31st IMP Conference, University of Southern Denmark*. Kolning, Denmark.
<http://doi.org/10.13140/RG.2.1.3440.7522>
- Morgado, A. V., & de Castro, L. M. (2015b). Customer Referencing in the Context of Industrial Buying and Purchasing: The case of a thermal power plant. In *Proceedings of the Forum on Industrial Organization and Marketing*. Lupcon Center for Business Research. <http://doi.org/10.13140/RG.2.1.4470.8969>
- OECD. (2015). *Energy Balances of OECD Countries*. Paris: OECD Publishing.
- Olaru, D., Purchase, S., & Peterson, N. (2008). From customer value to repurchase intentions and recommendations. *Journal of Business & Industrial Marketing*, 23(8), 554–565. <http://doi.org/10.1108/08858620810913362>
- Patton, E., & Appelbaum, S. H. (2003). The Case for Case Studies in Management Research. *Management Research News*, 26(5), 60–71.

- Penrose, E. (1959). *The theory of the growth of the firm*. New York: John Wiley and Sons.
- Perry, C. (1998). Processes of a case study methodology for postgraduate research in marketing. *European Journal of Marketing*, 32(9/10), 785–802.
- Pfeffer, J., & Salancik, G. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper and Row.
- Princeton University. (2004). Wordnet. Retrieved from <http://wordnet.princeton.edu>
- Puto, C. P., III, W. E. P., & King, R. H. (1985). Risk Handling Strategies in Industrial Vendor Selection Decisions. *Journal of Marketing*, 49(1), 89–98.
<http://doi.org/10.2307/1251179>
- Ragin, C. C. (2000). *Fuzzy-set social sciences*. Chicago: University of Chicago Press.
- Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond*. Chicago: University of Chicago Press.
- Rese, M., Pick, D., & Maiwald, K. (2012). Reference Marketing for Industrial Product Service Systems. In Y. Shimomura & K. Kimita (Eds.), *The Philosopher's Stone for Sustainability* (pp. 529–534). Tokyo: Springer Berlin Heidelberg.
http://doi.org/10.1007/978-3-642-32847-3_89
- Ricardo, D. (1817). *Principles of political economy and taxation*. London: J. Murray.
- Robertson, D. A., & Caldart, A. A. (2009). *The Dynamics Of Strategy: Mastering Strategic Landscapes Of The Firm*. New York: Oxford University Press.
- Robinson, P. J., Faris, C. W., & Wind, Y. (1967). *Industrial buying and creative marketing*. Boston: Allyn & Bacon.
- Romanainen, M., & Salminen, R. T. (2008). Constructing Customer Reference Portfolio for Launching Innovations. In *Proceedings of the 24th IMP Conference, Uppsala University*. Uppsala, Sweden.

- Rowley, J. (2002). Using Case Studies in Research. *Management Research News*, 25(1), 16–27.
- Ruokolainen, J. (2003). The usage of the first customer reference for starting a complex software business: Lessons learned in the Thai Software Industry. In *Proceedings of the 19th IMP Conference, Università della Svizzera italiana*. Lugarno, Switzerland.
- Ruokolainen, J. (2005a). Gear-up your software start-up company by the first reference customer: Nomothetic research study in the Thai software industry. *Technovation*, 25(2), 135–144. [http://doi.org/10.1016/S0166-4972\(03\)00073-7](http://doi.org/10.1016/S0166-4972(03)00073-7)
- Ruokolainen, J. (2005b). Key concepts for building customer references: Creation of a domain model for start-up technology companies. In *Proceedings of the 21st IMP Conference, Erasmus University*. Rotterdam, Netherlands.
- Ruokolainen, J. (2007). *The Use of a Customer Reference for Marketing in Start-Up Technology Companies: A Constructive Study*. Espoo: Helsinki University of Technology.
- Ruokolainen, J. (2008a). Constructing the first customer reference to support the growth of a start-up software technology company. *European Journal of Innovation Management*, 11(2), 282–305. <http://doi.org/10.1108/14601060810869893>
- Ruokolainen, J. (2008b). *The First Customer Reference. Doctoral dissertation*. Helsinki University of Technology.
- Ruokolainen, J., & Aarikka-Stenroos, L. (2015). Rhetoric in customer referencing: Fortifying sales arguments in two start-up companies. *Industrial Marketing Management*, 54(April), 188–202. <http://doi.org/10.1016/j.indmarman.2015.08.002>
- Ruokolainen, J., & Igel, B. (2004). The factors of making the first successful customer reference to leverage the business of start-up software company: Multiple case study in Thai software industry. *Technovation*, 24(9), 673–681. [http://doi.org/10.1016/S0166-4972\(02\)00130-X](http://doi.org/10.1016/S0166-4972(02)00130-X)

- Ruokolainen, J., Kauranen, I., & Igel, B. (2005). T.J.S Consultants' First Customer Reference: A Teaching Case for IT Firms Entering Business. *Management Case Study Journal*, 5(2), 51–68.
- Ruokolainen, J., & Mäkelä, M. M. (2006). Employing the First Customer Reference to Support Software Marketing: Complementary methods to analyze empirical evidence. In *Proceedings of the 22nd IMP Conference, EM Lyon and Bocconi University*. Milan, Italy.
- Ruokolainen, J., & Mäkelä, M. M. (2007). Constructing a market domain model for start-up software technology companies: A case study. *Journal of Engineering and Technology Management*, 24(3), 186–202.
- Ryu, G., & Feick, L. (2007). A Penny for Your Thoughts : Referral Reward Programs and Referral. *Journal of Marketing*, 71(January), 84–94.
- Salminen, R. T. (1997). *The Role of References in International Industrial Marketing: A Theory-building Case Study about Supplier's Processes of Utilizing References*. Doctoral dissertation. Lappeenranta University of Technology.
- Salminen, R. T. (2001). Success factors of a reference visit: A single case study. *Journal of Business & Industrial Marketing*, 16(6), 487–507.
- Salminen, R. T., Janos, A., Pekkarinen, O., Jalkala, A., & Mirola, T. (2008). Characteristics of a good customer reference for a process equipment supplier. In *Proceedings of the 24th IMP Conference, Uppsala University*. Uppsala, Sweden.
- Salminen, R. T., & Möller, K. (2003). *Role of References: The Last White Area in Business Marketing*. Research Report 147. Lappeenranta University of Technology.
- Salminen, R. T., & Möller, K. E. (2002). The Role of References in International Business Marketing. In *Proceedings of the 18th IMP Conference, ESC Dijon-Bourgogne*. Dijon, France.
- Salminen, R. T., & Möller, K. E. (2004). Use of References in Industrial Bidding: A

- Decision Process Analysis. *Journal of Marketing Management*, 20(1–2), 133–156.
<http://doi.org/10.1362/026725704773041159>
- Salminen, R. T., & Möller, K. E. (2006). Role of References in Business Marketing: Towards a Normative Theory of Referencing. *Journal of Business-to-Business Marketing*, 13(1), 1–51. <http://doi.org/10.1300/J033v13n01>
- Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research methods for business students* (4th Editio). Harlow: Pearson Education Limited.
- Sayer, A. (1984). *Method in Social Science*. London: Routledge.
- Sayer, A. (1997). Critical Realism and the Limits to Critical Social Science. *Journal for the Theory of Social Behaviour*, 27(4), 0021–8308.
- Sayer, A. (2000). *Realism and social science*. Thousand Oaks: Sage.
- Schmitt, P., Skiera, B., & Bulte, C. Van Den. (2011). Referral Programs and Customer Value. *Journal of Marketing*, 75(1), 46–59.
- Shanks, G. (2002). Guidelines for conducting positivist case study research in information systems. *Australasian Journal of Information Systems*, 10(December), 76–85.
- Sheth, J. N. (1973). A Model of Industrial Buyer Behavior. *Journal of Marketing*, 37(4), 50–56.
- Sheth, J. N. (1996). Organizational buying behavior: Past performance and future expectations. *Journal of Business & Industrial Marketing*, 11(3/4), 7–24.
<http://doi.org/10.1108/08858629610125441>
- Silva, M., Ferreira, J. C., & Rocha, N. (2015). A velocidade variável em Venda Nova III. Inovação tecnológica e impacto no negócio. In R. L. Teixeira & A. F. Costa (Eds.), *Estudos de Caso Vol. 02*. Lisboa: EDP Produção.
- Sousa, F. J. (2010). Markets-as-networks theory: a review. In A. G. Woodside (Ed.), *Advances in Business Marketing and Purchasing: Organizational Culture*,

Business-to-Business Relationships, and Interfirm Networks (Vol. 16, pp. 405–454). Emerald Group Publishing Limited. [http://doi.org/10.1108/S1069-0964\(2010\)0000016011](http://doi.org/10.1108/S1069-0964(2010)0000016011)

Sousa, F. J., & Castro, L. M. (2006). Of the significance of business relationships. In *Proceedings of the 22nd IMP Conference, EM Lyon and Bocconi University*. Milan, Italy.

Spekman, R. E., & Stern, L. W. (1979). Environmental uncertainty and buying group structure: An empirical investigation. *Journal of Marketing*, 43(Spring), 54–64.

Stake, R. (1995). *The art of case study research*. Thousand Oaks: Sage.

Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York: John Wiley.

Tullous, R., & Utrecht, R. L. (1992). Multiple or Single Sourcing? *Journal of Business & Industrial Marketing*, 7(3), 5–18.

Turnbull, P., Ford, D., & Cunningham, M. (1996). Interaction, relationships and networks in business markets: An evolving perspective. *Journal of Business & Industrial Marketing*, 11(3/4), 44–62. <http://doi.org/10.1108/08858629610125469>

Turnbull, P. W., & Valla, J.-P. (Eds.). (1986). *Strategies for International Industrial Marketing. The management of customer relationships in European industrial markets*. London: Croom Helm.

Turnbull, P. W., & Valla, J. P. (1986). Strategic planning in industrial marketing: An interaction approach. *European Journal of Marketing*, 20(7), 5–20.

Walsh, G., & Elsner, R. (2012). Improving referral management by quantifying market mavens' word of mouth value. *European Management Journal*, 30(1), 74–81. <http://doi.org/10.1016/j.emj.2011.04.002>

Webster, F. E. (1965). Modeling the Industrial Buying Process. *Journal of Marketing Research*, II(November), 370–376.

- Webster, F. E., & Wind, Y. (1972). A General Model for Understanding Organizational Buying Behavior. *Journal of Marketing*, 36(2), 12–19.
<http://doi.org/10.2307/1250972>
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180. <http://doi.org/10.1002/smj.4250050207>
- Wernerfelt, B. (1995). The resource-based view of the firm: Ten years after. *Strategic Management Journal*, 16(3), 171–174.
- Wheiler, K. (1987). Referrals between professional service providers. *Industrial Marketing Management*, 16(3), 191–200. [http://doi.org/10.1016/0019-8501\(87\)90026-5](http://doi.org/10.1016/0019-8501(87)90026-5)
- Williamson, O. E. (1975). *Markets and hierarchies: Analysis and antitrust implications*. New York: Free Press.
- Williamson, O. E. (1985). *The economic institutions of capitalism*. New York: Free Press.
- Wilson, D. T. (1971). Industrial Buyers' Decision-Making Styles. *Journal of Marketing Research*, VIII(November), 433–436.
- Wind, Y. (1966). *Industrial buying behaviour: Source loyalty in the purchase of industrial components. Doctoral dissertation*. Stanford University (unpublished doctoral dissertation).
- Wind, Y. (1967). A case study of the purchase of industrial components. In P. J. Robinson, C. W. Faris, & Y. Wind (Eds.), *Industrial buying and creative marketing*. Boston: Allyn & Bacon.
- Wind, Y. (1970). Industrial Source Loyalty. *Journal of Marketing Management*, VII(November), 450–457.
- Wind, Y. (1978). On the Interface Between Organizational and Consumer Buying Behavior. *Advances in Consumer Research*, 5(1), 657–662.

- Wind, Y., & Thomas, R. J. (1980). Conceptual and Methodological Issues in Organisational Buying Behaviour. *European Journal of Marketing*, 14(5/6), 239–263.
- Wind, Y., & Thomas, R. J. (1996). *The BuyGrid Model: Twenty-Five Years Later*. Working Paper. University of Pennsylvania.
- Wind, Y., & Webster, E. (1972). On the Study of Industrial Buying Behavior: Current Practices and Future Trends. *Industrial Marketing Management*, 4(1), 411–416.
- Woodside, A. G., & Wilson, E. J. (2003). Case study research methods for theory building. *Journal of Business & Industrial Marketing*, 18(6/7), 493–508.
<http://doi.org/10.1108/08858620310492374>
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks: Sage.
- Yin, R. K. (2011). *Qualitative Research from Start to Finish*. New York: Guilford Press.
- Zadeh, L. A. (1965). Fuzzy sets. *Information and Control*, 8(3), 338–353.
- Zaltman, G., & Bonoma, T. V. (1977). Organizational buying behavior: Hypotheses and directions. *Industrial Marketing Management*, 6(1), 53–60.
[http://doi.org/10.1016/0019-8501\(77\)90034-7](http://doi.org/10.1016/0019-8501(77)90034-7)
- Zikmund, W. G. (2003). *Business research methods* (7th ed.). Cengage Learning India.

APPENDIX 1 — CASE PROTOCOLS

CASE PROTOCOL #1 PURCHASING DEPARTMENT

NOTE: Start by introducing the topic, research objectives and confidentiality terms.

1. What main categories of products are under your supervision? (Identify “capital goods”.)
 - 1.1. How do you define “capital goods”, i.e. what features distinguish them from other product categories?
 - 1.2. In your organization, what processes/procurement techniques usually serve as means of procuring “capital goods”?

2. Could you describe the most recent (relevant) acquisition of “capital goods” you were involved in? (If the respondent shows resistance in response due to confidentiality restrictions, please suggest another acquisition process that he is able to speak about.)
 - 2.1. Who was part of the buying decision unit?
 - 2.2. What was the strategic importance of this acquisition? What need/problem solving did it aim at?
 - 2.3. Who triggered this acquisition process?
 - 2.4. How long did the acquisition process take?
 - 2.5. Who (which stakeholder) oversaw this acquisition?
 - 2.6. Who ran the acquisition process?
 - 2.7. How would you characterize the relationship with the other elements of the buying decision unit? (Identify some areas of conflict, if any.)
 - 2.8. In the acquisition process, which processes/procurement techniques were adopted? Why?
 - 2.9. What were the main difficulties/constraints faced in this acquisition?
 - 2.10. Who had a prior relationship with selected suppliers? (Please describe the nature of these relationships.)

3. Have references from customers been requested from suppliers?
4. For what purposes were customer references requested? (Is it part of the standard process for the acquisition of “capital goods”?)
 - 4.1. What was the content of those customer references?

- 4.2. What benefit has been provided by the customer references and to whom, specifically?
- 4.3. Did customer references influence the decision or acquisition process? How?
- 4.4. Did your organization address the reference customers directly?
If yes, by whom were they contacted and for what purposes?
Was this goal achieved?
- 4.5. The following list identifies several benefits which can be obtained by analysing customer references:
- Assess the reputation of sellers;
 - Establish the credibility of suppliers;
 - Assess the competence of suppliers;
 - Reduce the risk associated with the purchase decision;
 - Learn how to successfully implement innovative technology;
 - Predict and estimate the return on investment in a new product/service.
- 4.6. Are they all equally relevant? Which is/are more relevant?
- 4.7. To whom (which members of the buying decision unit) was a given benefit more relevant, and why?

CASE PROTOCOL #2

ENGINEERING DEPARTMENT AND OTHER ELEMENTS OF THE BUYING UNIT

NOTE: start by introducing the topic, research objectives and confidentiality terms. Next, identify the process of acquisition of “capital goods” that will be the target of the interview.

1. In the acquisition of “capital goods” mentioned before:
 - 1.1. Who was part of the buying decision unit?
 - 1.2. What was the strategic importance of this acquisition? What need/problem solving did it aim at?
 - 1.3. Who triggered this acquisition process?
 - 1.4. How long did the acquisition process take?
 - 1.5. Who (which stakeholder) oversaw this acquisition?
 - 1.6. Who ran the acquisition process?

1.7. How would you characterize the relationship with the other elements of the buying decision unit? (Identify some areas of conflict, if any.)

1.8. In the acquisition process, which processes/procurement techniques were adopted? Why?

1.9. What were the main difficulties/constraints faced in this acquisition?

1.10. Who had a prior relationship with selected suppliers? (Please describe the nature of these relationships.)

2. Were references from customers requested from suppliers?

3. For what purposes were customer references requested? (Is it part of the standard process for the acquisition of “capital goods”?)

3.1. What was the content of those customer references?

3.2. What benefit was provided by the customer references and to whom, specifically?

3.3. Did customer references influence the decision or the acquisition process? How?

3.4. Did your organization address the reference customers directly?

If yes, by whom were they contacted and for what purposes?

Was this goal achieved?

3.5. The following list identifies several benefits which can be obtained by analysing customer references:

- Assess the reputation of sellers;
- Establish the credibility of suppliers;
- Assess the competence of suppliers;
- Reduce the risk associated with the purchase decision;
- Learn how to successfully implement innovative technology;
- Predict and estimate the return on investment in a new product/service.

3.6. Are they all equally relevant? Which is more relevant?

3.7. To whom (which members of the buying decision unit) was a given benefit more relevant, and why?

APPENDIX 2 — LETTERS OF ACCEPTANCE

LETTER OF EDP



EDP Valor
Rua Camilo Castelo Branco, 46
1050-045 LISBOA

Tel. (351) 21 001 53 00
Fax (351) 21 001 53 70

Exmo. Sr. Professor André Vilares Morgado
AESE - Escola de Direcção e Negócios
Calçada de Palma de Baixo, 12
1600-177 Lisboa

Sua referência	Sua comunicação	Nossa referência	Data
		Carta 1/15/DNC	5-2-2015

Assunto: Investigação doutural sobre marketing industrial

Exmo. Senhor,

Antes de mais gostaríamos de agradecer o interesse manifestado pelo Grupo EDP, em particular pela área de "Procurement e Global Sourcing".

Temos o prazer de comunicar que temos todo o gosto em apoiar o estudo a desenvolver no âmbito do doutoramento.

Ficamos a aguardar a sugestão de data com vista à realização de uma reunião para análise e debate dos dados necessários.

Com os nossos melhores cumprimentos,

EDP Valor – Gestão Integrada de Serviços, S.A.
Direção de Negociação e Compras

A blue ink signature of Luís Marques Ferreira, written in a cursive style.

Luís Marques Ferreira
(Diretor)

EDP Valor – Gestão Integrada de Serviços, S.A.
Sede Social: Rua Camilo Castelo Branco, 46 1050-045 LISBOA
Matricula na CRC de Lisboa n.º 10725 NIPC: 505938022 Capital Social: € 4 550 000

LETTER OF REN



Compras

Exmo. Senhor Professor
André Vilares Morgado
Edifício AESE
Calçada de Palma de Baixo, 12
1600-177 LISBOA

Sua referência	Sua comunicação de	Nossa referência	Data
		REN - 838/2015	19-01-2015

Assunto: Investigação doutoral sobre marketing industrial

No seguimento da sua carta datada de 30 de Julho de 2014, vimos por este meio informá-lo de que a REN se encontra disponível para a colaboração solicitada.

Com os melhores cumprimentos.


Direção de Compras
Alexandra Reis
(Diretora)



REN Serviços, S.A.
Av. Estados Unidos da América, 55
1749-061 LISBOA
Telefone: (+351) 210 013 500 Fax: (+351) 210 013 310
Apartado 50316 - 1708-001 LISBOA

Capital Social: 50.000 euros
NIPC: 508 195 390
Info.portal@ren.pt www.ren.pt

LETTER OF TEJO ENERGIA



Tejo Energia - Produção e Distribuição
de Energia Eléctrica, S.A.

Quinta da Fonte
Edifício D. Maria I, Piso 2, Ala B
2770-229 Paço d'Arcos
Portugal

Telefone (351 21) 440 32 00
Telefax (351 21) 443 24 24

Exmo. Senhor Professor
André Vilares Morgado
Edifício AESE
Calçada de Palma de Baixo, 12
1600-177 LISBOA

Paço d'Arcos, 16 Março 2015

Ref: Investigação doutoral sobre marketing industrial

Exmo. Senhor Professor,

No seguimento da sua carta datada de 10 de Março de 2015, vimos por este meio informá-lo que a Tejo Energia, S.A. se encontra disponível para a colaboração solicitada.

Com os nossos melhores cumprimentos,

Pela Tejo Energia

A handwritten signature in black ink, appearing to read "Paulo", written over a horizontal line.

Paulo Jorge Tavares Almirante
Administrador Delegado

Tejo Energia é uma joint venture entre TrustEnergy, Endesa e Energias de Portugal



Sede Social: Central Termoelectrica do Pego, EN 118, Km 142,1, Pego, Abrantes.

Registada na Conservatória do Reg. Com. de Abrantes sob n.º 1169. Capital Social €: 5.025.000. Pessoa Colectiva n.º 502 869 674.

APPENDIX 3 — CASE STUDIES VALIDATION

THE CASE OF PEGO THERMOELECTRIC POWER PLANT



THE CASE OF REN

FW: Entrevista - Alexandra_Reis - 06-03-2015_V5_b - andre.morgado@gmail.com - Gmail - Google Chrome


<https://mail.google.com/mail/u/0/?ui=2&view=bt&ver=dqujp3h61mgd&q=alexandra.reis%40ren.pt&qs=true&search=query&t>


Move to Inbox

From: Alexandra Reis [mailto:alexandra.reis@ren.pt]
Sent: terça-feira, 26 de Maio de 2015 11:14
To: André Morgado
Subject: Entrevista - Alexandra_Reis - 06-03-2015_V5_b

Olá André,
Desculpa a demora mas aqui está. Alterações assinaladas a trak changes.
Qualquer coisa avisa.
Beijinhos e desculpa a demora.
[alexandra](#)

Siga-nos no Twitter em @REN_PT
ESTE E-MAIL É AMIGO DO AMBIENTE. PONDERE ANTES DE O IMPRIMIR!
Follow us on Twitter @REN_PT
THIS EMAIL IS ENVIRONMENT FRIENDLY. THINK BEFORE PRINTING!
Este e-mail é confidencial e apenas pode ser lido, copiado ou utilizado pelo destinatário.
Se o recebeu por engano, por favor contacte o remetente através de e-mail ou pelo telefone [+351 210 013 500](tel:+351210013500) e elimine-o imediatamente.
This e-mail is confidential and may only be read, copied or used by the addressee.
If you have received it by mistake, please contact the sender by e-mail or telephone [+351 210 013 500](tel:+351210013500) and delete it immediately.


Entrevista - Alexa...

 Click here to [Reply](#) or [Forward](#)

THE CASE OF EDP

The screenshot shows a Gmail interface in a Google Chrome browser window. The address bar displays the URL: <https://mail.google.com/mail/u/0/?ui=2&view=bt&ver=dqujp3h61mgd&search=inbox&th=153a853344e878f>. The email title is "Fwd: Caso Venda Nova II" and it is located in the "Inbox" folder. The sender is "André Morgado" (to me) and the message was received at 11:12 AM (1 hour ago). The email content includes a forwarded message from Filipe Duarte, dated March 23, 2016, at 17:36:37 WET. The subject of the forwarded message is "RE: Caso Venda Nova II". The body of the email contains the following text: "Enviado do meu iPhone", "Iniciar a mensagem reencaminhada:", "De: Filipe Duarte <Filipe.Duarte@edp.pt>", "Data: 23 de março de 2016, 17:36:37 WET", "Para: André Morgado <andre.morgado@aese.pt>", "Cc: Mário Camacho <Mário.Camacho@edp.pt>", "Assunto: RE: Caso Venda Nova II", "Caro André,", "Em anexo, seguem as nossas propostas.", "Bom trabalho!", "1 abraço e votos de Santa Páscoa,". At the bottom, there is a section for "10 Attachments" with icons for download, refresh, share, and print.

Fwd: Caso Venda Nova II

André Morgado
to me

11:12 AM (1 hour ago)

Enviado do meu iPhone

Iniciar a mensagem reencaminhada:

De: Filipe Duarte <Filipe.Duarte@edp.pt>
Data: 23 de março de 2016, 17:36:37 WET
Para: André Morgado <andre.morgado@aese.pt>
Cc: Mário Camacho <Mário.Camacho@edp.pt>
Assunto: RE: Caso Venda Nova II

Caro André,

Em anexo, seguem as nossas propostas.

Bom trabalho!

1 abraço e votos de Santa Páscoa,

10 Attachments

APPENDIX 4 — INTERVIEW TRANSCRIPTS

1. ENTREVISTA ALEXANDRA REIS DA REN

Quais são as grandes categorias de produtos que estão sobre a acção da direcção de compras da REN?

A Direcção de Compras da REN compra todo o tipo de bens e serviços para a actividade de Negócio, por exemplo empreitadas e todos os materiais necessários para a execução das empreitadas, exemplo de empreitadas (construção de linhas, construção de subestações eléctricas, transporte de electricidade, gasodutos, terminais de armazenagem de gás liquefeito, sistemas de armazenagem de gás em caverna) mais todo o tipo de produtos necessários para a execução deste tipo de projectos.

Para além do que está relacionado com o negócio, como por exemplo actividades de suporte IT Information Systems, backoffice, serviços de vigilância, limpeza.

Os serviços que não compramos são consultoria estratégica, imóveis e produtos financeiros, serviços jurídicos.

Bens de capital fazem parte do activo da empresa e contribuem para o negócio da empresa (o exercício da actividade da empresa) são todos aqueles que estão relacionados com o pipeline de investimento da empresa, em concreto a construção da Rede. Um transformador é um Capital good.

Não existe distinção entre as estratégias de sourcing, processos concorrenciais com negociação forte, adaptadas para os capital goods e aqueles que não o são.

Como podem ser caracterizados?

Todavia têm algumas particularidades face a outras empresas uma vez que esta actividade encontra-se abrangida pelo código dos contractos públicos.

(The Portuguese law for procurement) logo, não podem aplicar todas as técnicas de procurment. Existe um sistema de qualificação que permite pré-seleccionar fornecedores. O objectivo é não ter uma diversidade de fornecedores grandes, pois quando assim é tem um impacto nos custos de operação e manutenção.

A última compra de um bem de capital em que estivemos envolvidos foi a aquisição de transformadores. Foram 2 máquinas de 220V/60KVolts 170 MVA'S. Destinaram-se à ampliação de subestações. Cada máquina teve um custo de 1 milhão e pouco, ou seja, o tender ultrapassou os 2 milhões de euros. O fornecedor escolhido foi a Siemens. À data do caso apenas teve lugar o processo de procurment. A entrega ainda não tinha sido realizada. O tender apenas

incluía o equipamento e os serviços de instalação. Não incluía. Não se incluíram serviços de manutenção.

Tipicamente, estes serviços não são incluídos na aquisição de transformadores porque o período de vida do bem é muito grande e é mais vantajoso fazer intervenções regulares maiores (mais forte), por exemplo de 10 em 10 anos, do que todos os anos incorrer em opex para fazer pequenas intervenções. Esta é uma particularidade deste tipo de bens de equipamento. A Unidade de Decisão de compra é composta pela unidade operacional (que tem a responsabilidade do investimento e que faz a especificação técnica do bem do produto a adquirir; é a Direcção Operacional ou Operações).

A Comissão Executiva (para montantes de investimento superiores a um determinado montante).

O processo é o seguinte: a direcção operacional solicita à direcção de compras para montar o concurso. São definidos critérios (exemplo: prazo de pagamento). A direcção de compras por sua vez solicita à direcção operacional critérios specs.

Antes de solicitar propostas ao mercado, a direcção de compras e a direcção de operações têm de chegar a um acordo quanto aos contornos do processo de procurment. No caso de não chegarem é suposto escalar o problema hierarquicamente. Isto nunca acontece na REN.

A direcção de Compras reporta ao CFO e a direcção de operacional ao COO.

As propostas têm duas componentes: Uma proposta técnica (que é avaliada pela direcção de operações) e uma Proposta Comercial (é avaliada pela direcção de Compras). Daqui saem 2 relatórios, sendo que um é técnico, com a análise de todas as propostas recebidas. No relatório comercial não existe uma análise mas sim a validação de compliance (ver falhas que leva à exclusão por motivos formais).

Do ponto de vista comercial há um conjunto de condições pré-estabelecidas que não são objecto de negociação. Estas derivam das políticas de procurment da firma, como por exemplo o pagamento a 60 dias. A REN, envia uma minuta de contrato na comunicação do tender e dá logo a conhecer as suas políticas de compra logo nesta fase. As multinacionais americanas contestam muito frequentemente os termos do contrato apresentado. A REN recebe propostas de 2 maneiras: ou por uma plataforma externa que são obrigados a usar por motivos de Lei (a Saphetygov) — código dos contractos públicos — ou por uma plataforma proprietária que funciona como uma plataforma proprietária à qual os fornecedores acedem e entregam as propostas.

Esta compra de transformadores é importante ou estratégica uma vez que está relacionada com a segurança de abastecimento da rede. Todavia, é uma compra regular.

A REN tinha 2 pontos na sua rede eléctrica que apresentava alguma fragilidade e que foi necessário reforçar a qualidade da rede naqueles pontos. Se uma das linhas que fosse dar a uma destas sub-estações falhasse, então uma grande área geográfica ficaria sem serviço. A EDP Distribuição, ficaria sem servir os seus clientes (milhares de lares por transformador). A aquisição dos transformadores é despoletada/iniciada pela área operacional que tem a necessidade que depois a leva à Direcção de Investimento. (Não é uma área financeira, mas sim de engenharia). Na sua maioria é composta por gestores de projecto que asseguram a correcta implementação do novo equipamento na rede. Em paralelo, a REN tem um comité de investimentos que toma a decisão. Ele reúne cerca de 2 vezes por ano, em concreto quando é feito o orçamento da empresa. Neste comité estão presentes o CFO; COO, as Compras, o Planeamento e Engenharia de Rede e a parte de investimento e Direcção de Operações e este comité analisa a Direcção de exploração é quem dita a necessidade de renovações da rede. Um pipeline de projectos, aprovando uns e rejeitando outros. O comité apenas reúne para se pronunciar sobre projectos de valor superior a 5 milhões de euros. Os transformadores adquiridos estavam integrados num projecto de renovação de subestações, cada um de valor superior a este valor. Para cada projecto é adoptada uma estratégia de procurment, ou seja, vai-se definir que o que se compra em conjunto e em separado, quais as metodologias de compra a adoptar, etc. Aqui é necessário chegar a consenso com as áreas operacionais. Por exemplo, as áreas operacionais gostam de comprar chave na mão (pois é mais fácil de gerir) enquanto as compras vêm a chave na mão como algo menos eficiente.

O processo de aquisição dos transformadores durou cerca de 4 meses, após aprovação orçamental. Neste período existem contactos regulares entre a Direcção de Compras e a Direcção Operacional, com o intuito de avaliar o andamento do processo. O processo de procurment é conduzido pelas compras. A relação hoje é muito pacífica entre o direcção de operações e a direcção de compras. Todavia, numa fase inicial houve muitas resistências porque as áreas operacionais sentem a importância estratégica da aquisição (equipamento) e ficaram muito preocupados quando a direcção de Compras procura alinhar o critério preço como o mais importante e que leve a que se adquira um produto de menor qualidade, correndo riscos que não são necessários.

Os fornecedores que apresentaram proposta foram a Hyundai, a Siemens, a Shandong Power Equipment CO (SPECO), Alstom e a EFACEC. A Siemens ganhou o concurso. Para ganhar este concurso a Siemens optou por fabricar o equipamento na China, por forma a apresentar o preço mais competitivo. O prazo de entrega é um ano, ou seja, é build-to-order e não build-to-stock.

Existe a preocupação que apresentar um critério de preço forte, venha a ter lugar uma diminuição da qualidade do bem no seu processo de fabrico. A REN tem um conjunto de mecanismos para garantir que tal não acontece: aceitação do equipamento, testes em fábrica, etc. O preço dos transformadores teve um peso de 90%. As áreas operacionais procuram conhecer a priori a fábrica onde estes equipamentos irão ser construídos. No processo de qualificação de fornecedores são feitas auditorias (por vezes recorrendo a fornecedores externos) aos potenciais fornecedores.

Para o processo de aquisição dos transformadores estavam pré-seleccionados (qualificados) 6 fornecedores que têm uma fábrica associada.

O problema dos transformadores (ser estratégico?) é que pesa 120 toneladas. Se avaria não se tem outro de spare (peça de substituição para trocar). Demora 2 dias para lá ir alguém perceber porque é que avariou. A maior parte das vezes a intervenção tem de ser feita na fábrica. Colocar o equipamento no autocarro, pedir autorização para andar com ela na auto-estrada, colocá-lo num barco e levá-lo à fábrica de origem. Em equipamentos maiores chega a ser necessário montar uma fábrica no local quando é necessário proceder a uma reparação.

A compra deste transformador Siemens teve um momento de ansiedade que teve lugar quando a empresa fornecedora propôs fabricar o equipamento na China para ter um preço mais competitivo.

Para conseguir ter o critério preço em 90% é preciso ter as especificações bem fechadas. Isto aconteceu com estes transformadores, pois já tinham experiência acumulada com este tipo de equipamento.

Há 4 anos as Direcções Operacionais operavam sozinhas (2010).

Quer as compras quer as áreas operacionais tinham relação com os fornecedores qualificados. Todavia, com os fornecedores SPECO e Hyundai, a relação mais forte é com as compras, sendo a relação destes 2 fornecedores com as áreas operacionais quase inexistente.

As referências são solicitadas no processo de qualificação de fornecedores. Uma boa parte da qualificação de fornecedores é feita com base em referências. É um dos temas mais importantes para qualificar os fornecedores. Um fornecedor sem referências não é qualificado. Para o processo de aquisição de transformadores foram pedidas referências que discriminem o número de unidades vendidas e para que cliente e contactos de clientes. Em concreto, sobre o fornecedor Hyundai foram feitos contactos directos com um TSO congénere (Spain) para o seu processo de qualificação. Foi explicada a necessidade (Qualificação). Perguntou-se o que andavam a fazer com a Hyundai? Como é que estava a correr? O espanhol explicou o que estava a acontecer. É como haver conversas pontuais, encontros em eventos, troca de emails, etc.

Existem conversas habituais entre CPO'S para trocar e partilhar experiências de projectos, conhecer novidades, o que fazem e como fazem, etc.

Sobre a Hyundai, o CPO congénere disse à CPO da REN que tinha demorado muito tempo a convencer as áreas operacionais da necessidade de o consultarem, mas que não tinha a menor das dúvidas e que hoje as coisas estavam a correr bem. A informação dada foi informal.

Todavia, o CPO espanhol partilhou com a CPO da REN o cross-check de referências que já tinha feito com outros TSO'S. O fornecedor da Hyundai mandou muita informação sobre projectos idênticos, com fotografias e descrições detalhadas. As referências da ABB não foram consideradas de boa qualidade pois não reflectiam clientes congéneres à realidade da REN (Dimensão idêntica/Geografia).

As áreas operacionais também têm canais informais onde checkam referências de fornecedores. Quando está a correr bem ninguém diz... só se fala de fornecedores para dizer sim eu tenho ou muito mal. Não se diz que são excelentes ou fantásticos pois isso é o que toda a gente espera que elas sejam. A linguagem entre CPOs tem códigos linguísticos próprios.

Fora do âmbito da qualificação de fornecedores, é habitual fazer workshops/reuniões com fornecedores para a apresentação de produtos novos ou case studies. Eles fizeram aquilo por causa daquilo e conseguiram resolver este problema e conseguiram poupar x. Business cases são importantes para as compras. O contacto com os fornecedores de tecnologias é muito importante. É assim que as áreas aprendem. É conhecimento que nos estão a entregar. É com os fornecedores que aprendem também a lidar com os argumentos das áreas internas e a desfazer dogmas.

Estes workshops permitem apresentar soluções novas que podem dar origem a novas necessidades de compra na empresa. Os workshops têm a presença das áreas e da Direcção de Compras. Estas reuniões são sempre muito estimulantes. Os fornecedores novos abordam mais as compras e os antigos as áreas operacionais. A direcção de compras é uma boa porta de entrada porque estão mais receptivos ao tema da concorrência, enquanto as áreas operacionais preferem não lidar com o desconhecido e comprar a que confiam (menos incerteza).

A área operacional também valida e tem acesso às referências de clientes que os fornecedores apresentam.

A qualificação de fornecedores é da responsabilidade das compras. Onde são mais proactivos a checkar referências.

As referências permitem avaliar a experiência e o conhecimento (Know-how) dos fornecedores. As áreas operacionais quiseram manter o status quo no processo de qualificação de fornecedores (Siemens, Alstom, e EFACEC) para terem as coisas mais controladas.

A tecnologia nos transformadores tem ciclos de inovação muito longos. Por isso diz-se conservadora. É mais difícil entrarem novos players (como o chinês).

O preço da Siemens ficou 100 K€ abaixo do segundo player. No passado já ganharam concursos idênticos a EFACEC e o chinês. Quando a Siemens desta vez soube que tinham concorrido asiáticos, os preços baixaram logo. A estratégia de compras adoptada trouxe muito benefício à REN.

Neste concurso o mais importante foi preço (90%) e o nº de anos de garantia.

Avaliar a reputação dos fornecedores não foi valorizado neste caso dado que a especificidade do mercado pode ser devido a rumores.

A credibilidade vem das pessoas e não empresas (também não foi valorizado).

A competência é valorizada.

Risco ok!

Inovação ok!

ROI sim, é usado mas com adaptação à realidade da firma.

No negócio dos transformadores os players distorcem a concorrência pela natureza da sua localização geográfica. O exemplo típico é a EFACEC no negócio dos transformadores. Quase ninguém compra transformadores em Portugal que não seja a EFACEC, porque a EFACEC consegue ganhar mais dinheiro a vende-los mais baratos que os estrangeiros. Porque os custos de transporte (logística) são muito grandes. Há 10 anos ninguém comprava transformadores em Portugal que não fosse a EFACEC, mais um ou outro que eram da ABB.

2. ENTREVISTA A ENG. FILIPE DUARTE DA EDP

A análise técnica, custos e garantias são os requisitos que servem para avaliação das propostas, é feita pela Direcção de engenharia (mecânica e eléctrica).

Para a avaliação do mérito das propostas também contam com o apoio de um colega da EDP Valor, para o tema dos custos e para fazer análises comparativas.

O concurso é lançado pela equipa de projecto (e não pelo CPO procurment).

A contratação é uma das valências da equipa de gestão do projecto que também tem delegação de poderes para seleccionar fornecedores/avaliar propostas e propor ao CAE a adjudicação.

É lançado um concurso internacional para quem desejar candidatar-se. Este concurso é divulgado no jornal oficial da União Europeia.

Com essa publicação, a equipa de projecto esperava receber propostas dos fabricantes asiáticos. O aspecto linguístico revelou-se preponderante e não receberam qualquer proposta dessa geografia.

A EDP tinha muito interesse em receber pelo menos uma proposta destes fabricantes pois seria uma baliza interessante.

A Voith fez o trabalho de ir buscar informação ao Japão. Para esse efeito socorrem-se de empresas de ligação, como por exemplo a Fuji.

A Alstom, a Audrithz e a Voith/Siemens responderam ao caderno de encargos da EDP.

Se tivessem sido puristas quanto às referências, o único fornecedor que se poderia ter sido considerado tinha sido a Audrithz dado o caminho que já tinha sido percorrido em conjunto na fase de preparação do caderno de encargos/concurso e do desenho da Solução.

O concurso contemplava a velocidade variável e a velocidade fixa. À data não tinham ainda autorização da REN para avançar com a velocidade variável. Essa autorização apenas chegou depois de lançado o concurso.

O percurso de desenho da solução foi percorrido com os 3 fornecedores de turbinas

Contudo, a equipa de projecto afirma que o melhor apoio foi dado pela equipa da Audrithz. A nossa equipa também afirma que melhor proposta do ponto de vista técnico era a da Audrithz. Contudo a Voith apresentava um preço esmagador e ganhou o concurso. A Voith baixou o preço pois conseguiu incorporar uma parcela destinada à promoção do produto, (marketing). As máquinas da Voith em Venda Nova III têm a potência unitária mais elevada da Europa. Este facto vai permitir à Voith dizer ao mundo inteiro que foram eles que conseguiram esse feito. A Voith fica com a maior referência (dos 3 fornecedores) nesta área.

A referência tem valor. É um valor intangível, mas neste caso a Voith valorizou-a (deu-lhe um valor) e ganhou o concurso.

Para a EDP a velocidade variável ficou a custo zero porque adjudicaram a velocidade variável ao preço da velocidade fixa (solução convencional) cerca de 30 milhões

A EDP vai receber visitas de todo o mundo assim que o projecto estiver em produção. Por exemplo, é de esperar que um dos próximos congressos Europeu de Hidro Electricidade (Hidro 200X) tenha lugar em Portugal e inclua uma visita a Venda Nova III.

Apesar da melhor proposta ter sido a da Audrithz, hoje a equipa do projecto está agradavelmente surpreendida com a resposta que a Voith nos deu. Os aspectos menos bem conseguidos na proposta da Voith estão hoje ultrapassados. A Voith não tem olhado a poupanças para investir em conhecimento e Know-how. Não podem falhar dado o risco de correr mal. Perante o desconhecido põem cinto-suspensório e segundo par de calças.

As referências são sempre da maior relevância. Um dos critérios presentes nos cadernos de encargo consiste na obrigatoriedade de o fornecedor apresentar a sua lista de referências para fornecimentos idênticos, do mesmo teor, da mesma grandiosidade e com provas provadas. Caso contrário podem ser excluídos.

Normalmente mandamos muitas entidades referenciadas, se tivermos dúvidas ou alguma questão (...) e eles respondem-nos. O meio é suficientemente reduzido para se saber tudo. Se fossemos à procura de uma referência para grupos idênticos aos que adjudicávamos não havia ninguém!

A dimensão estratégica desta aquisição era fortíssima, dado o cariz de inovação que encerrava. O processo de aquisição tem início com o objectivo de fazer o reforço de potência.

3 Grandes classes de Bens (pagamentos) : i) Estudos e equipamentos; ii) transporte; iii) Montagem e ensaios.

O pagamento é geralmente feito da seguinte forma: 10% à cabeça e outros 10% no final (i é, quando recebem a obra). Os outros 80% são distribuídos por milestones (factos relevantes). Quem faz o pagamento é o departamento de contratação (que está na EDP Valor).

A factura entra pela EDP Valor e a equipa de projecto valida o seu pagamento dando ok ao Departamento de contratação. As garantias mínimas são geralmente de 2 anos. Dada a especificidade deste equipamento, foi possível estender as garantias para 5 anos, c/ excepção dos VSI's que tiveram garantia de 4 anos, sendo que têm uma vida inútil de 10 anos.

A EDP segue o código de contratação público. Não foram adoptadas técnicas de compra agressivas. Contudo, na fase final de negociação, a equipa de projecto contou com o apoio dos colegas da EDP Valor (CPO) para o chamado BAFO: very final and best offer. Geralmente consegue-se neste apertão final uma baixa de preço na casa dos 5%. A Voith baixou inicialmente 2,5% e no acto negocial final a administração conseguiu em conversa directa mais 2%.

A relação que a EDP tem com estes fornecedores é considerada muito antiga e boa. O relacionamento institucional é muito positivo.

Para sobreviver os fabricantes concentram-se. Neste momento há 3!

No concurso foi formalmente pedida lista de referências. Faz parte da documentação a entregar no concurso. Uma das lacunas que a EDP tem é não passar as referências entre diferentes projectos que estejam a ocorrer. Esta partilha de conhecimento é vista como uma oportunidade de melhoria dentro da EDP. É necessário implementar ou instruir práticas de dispersão de conhecimento. A lista de referências é uma tabela/lista com o local, país, potência, nº de grupos, cliente, tipo de máquina, e contacto.

Quando é necessário confirmar alguma referência, a prática mais habitual é o email. Contudo, o melhor processo é a visita tal como fizeram c/ Godisthal. A EDP foi convidada para visitar a central Alemã. Fomos como convidados da Audrithz que teve o cuidado de chamar um chefe de projecto que já estava reformado para estar presente. Fomos recebidos pelo director da Central com grande abertura. Na altura fizeram-se perguntas aos colaboradores da Central sobre a satisfação que tiveram os diversos fornecedores, incluindo a Voith. Todos revelaram grande abertura para responder às questões.

A visita a Godisthal teve um grande benefício, nomeadamente no que respeita a questões de natureza técnica. Obtivemos informação referente à manutenção das máquinas e tempos de paragem que foi muito relevante e importante.

As referências não permitem estabelecer a reputação dos fornecedores, pois, neste caso, já está estabelecida.

Contudo, as referências permitem limpar os patos-bravos. A EDP não está preocupada com as referências da Audrithz, da Alstom ou da Voith, mas está preocupada quando aparece um fornecedor desconhecido. Neste caso, a EDP quer limpar esses pseudo fabricantes o mais rapidamente possível. As referências permitem proteger a EDP de fornecedores que saem fora da lista dos habituais.

A EDP está inclusive numa situação privilegiada, pois conhece melhor cada um destes 3 players do que o conhecimento que eles têm, de eles, e entre eles.

Reputação e credibilidade fazem parte do conhecimento que a EDP tem destes fornecedores.

Logo, não é apenas pelas referências que se estabelece a credibilidade dos fornecedores. Idem para competência. Contudo, as referências têm relevância para estabelecer e conhecer custos associados a uma determinada solução. Exemplo dos 10 dias de paragem para cálculo do retorno sobre o investimento.

Neste caso as referências não permitiram aprender a lançar com sucesso uma tecnologia inovadora (pois os japoneses não estavam disponíveis).

3. ENTREVISTA FERNANDO MATA – DEPARTAMENTO PRODUÇÃO PEGOP

Unidades de desulfurização. Os limites de NOx anteriores eram de 800mg/m³. Os novos limites de NOx são de 200mg/m³. A nova regulação é imposta pela comunidade europeia, para estabelecer o nível de emissões dos grupos térmicos. Também foi necessário reduzir o enxofre. O investimento realizado rondou os 150.000.000 euros, em duas novas unidades: a unidade de desulfurização e a unidade de desnitrificação. Também houve investimento nos precipitadores

electroestáticos. São equipamentos que reduzem as partículas emitidas. A nova norma europeia também exigiu a redução dos limites das partículas poluentes.

O fornecedor destes equipamentos foi a Alstom.

A Tejo energia contratou os serviços de uma empresa independente para avaliar os projectos provenientes dos diversos fornecedores. Para além disso, a empresa ajudou a definir as especificações do equipamento a adquirir, avaliou as propostas, e acompanhou o processo de obra de gestão de empreitada. Para além da Alstom, a central conta com equipamentos de outros fornecedores como ABB e a EFACEC.

Os grandes trabalhos de manutenção das turbinas são realizados pela Alstom. A PEGOP também presta serviços de manutenção programada e não programada com o seu pessoal. Todavia, não consegue prestar serviços de elevada complexidade ou de maior especialização, ou quando têm termos de garantia associada. O preço é um factor importante mas não é decisivo na aquisição de serviços de manutenção especializada. O garante de uma facturação correcta passa pela relação de confiança que existe com a Alstom.

A disponibilidade é um dos critérios críticos para a adjudicação de serviços de manutenção (downtime)

Veja que não existe equipamento redundante, logo a disponibilidade assume um papel chave na decisão de compra.

Para avaliar a reputação de fornecedores, a Central do Pego fala com outras centrais e pergunta se conhecem ou não o fornecedor x, se as referências são ou não são boas.

Se o equipamento FGD (equipamento ambiental) ficar indisponível, a central toda, pára obrigatoriamente uma vez que não cumpre com a regulação ambiental.

Existe um departamento de Manutenção e um Departamento de Produção. O Departamento de Produção cujo objectivo é fazer a condução dos grupos ou unidade produtiva. Por exemplo: é quem arranca e para com os grupos, ou decide variar a carga. Faz a relação com outras empresas externas como a REN e a Endesa. Trata ainda dos temas ligados à Segurança e Documentação.

4. ENTREVISTA ENG. JOÃO MELANCIA PEGOP

A Tejo energia é a dona da Central do Pego. A Tejo energia vende a energia produzida à REN. A Tejo energia é uma joint venture da Trust Energy com 40% da Endesa e 10% da EDP. A Trust Energy 50% GDF e 50% Maurubeny. No passado, a construção da central foi feita a 100% pela EDP e só em 1993 é que é vendida (90%) a um consórcio. National Power (Endesa, EDF, EDP). A Carbopego, apenas faz a compra e a logística (transporte ferroviário) do carvão.

A Pego (50% trust energy e 50% Endesa) apenas faz a operação e a manutenção da central. A Pego tem 2 clientes, 2 contractos de OP e manutenção: 1 com Tejo energia e outro com Elec gás. A Elecgaz alugou os terrenos onde tem 2 os grupos de ciclo combinado à Tejo energia. Inicialmente estavam previstos 4 grupos a carvão. Todavia, apenas foram construídos 2. Mais tarde aproveitou-se o local disponível e alugou-se à Elecgas para 2 grupos de ciclo combinado. No início do negócio a Tejo energia não era dona do terreno. O terreno inicialmente era propriedade da REN, mas agora já é.

A Direcção de compras da Pego é responsável pela aquisição de: 1) Peças de Reserva e Manutenção (spare parts); 2) Instalações (grandes construções), EPC's (Engineering Procurement and Construction) ou Projectos chave-na-mão; e 3) Projectos Especiais (manutenção da evolução ou de Ampliação).

A instalação dos módulos catalíticos (partículas) foi um grande investimento: um EPC.

O downtime tem custos de não operação ou não venda muito superiores e não comparáveis aos custos da intervenção que tem lugar de forma programada e mesmo não programada.

A natureza do Projecto da Central do Pego é um Project Finance. Quando a central foi comprada à EDP, apenas 20% eram capitais próprios. 80% era financiamento bancário. Esta natureza acarreta exigências contratuais impostas pelo sindicato bancário, que condicionam as decisões compras feitas. Por exemplo, para ter a garantia de uma turbina adquirida à Alstom, os trabalhos têm de ser feitos pela mesma empresa.

O acto de negociação é uma peça de teatro, onde cada actor representa um papel e tem de conhecer o seu limite.

No sector da energia existe um poder desequilibrado, pois o cliente fica na mão do fornecedor depois de comprar.

A forma de corrigir esses desequilíbrios passa pelos negócios futuros. Por isso é importante estar associado a grupos que têm outros activos na indústria. Esta associação a grandes grupos tem outra dimensão positiva que é a de permitir trocar informações com empresas congéneres e perguntar se compraram ou não algo idêntico e quanto custou.

Os projectos de intervenção, são sempre mais baratos que as percas de produção.

Normalmente, os contractos feitos com as empresas congéneres são feitos com 3 objectivos: qual foi a solução encontrada? quanto é que custou? correu bem?

A Direcção de Compras da Central do Pego (PEGOP) é composta por um manager e dois compradores. O plano da delegação existe, bem como processos claramente desenhados.

No caso dos EPC's é frequente recorrer a serviços de assessoria técnica e jurídica. Do ponto de vista jurídico o EPC ambiente foi acompanhado pelo gabinete de advogados da empresa. Do ponto de vista técnico, estiveram envolvidos representantes dos shareholder que ajudaram a

tomar decisões (Endesa e International Power) e a fechar o scope do projecto. Neste EPC contractualizou-se o equipamento e a sua instalação. Neste caso não se associou um contrato de manutenção porque se considerou que a PEGOP iria assegurar esses serviços (por delegação da Tejo Energia ou “acting on the behalf of”. A PEGOP e os seus sub-empregados tratam da manutenção preventiva corrente e curativa imediata.

A manutenção programada é objecto de concurso.

A verificação de referências é um processo informal. Pode haver um email, 1 telefone, 1 visita, mas não há um processo.

Num processo de compra apenas temos 3 elementos objectivos: o preço, o prazo de entrega e a garantia. Tudo o resto é subjectivo.

A verificação de referência, a análise de risco, é feita pela Direcção de Manutenção. No limite condicionam o processo de decisão.

A verificação de referência consiste em perguntar: a empresa x trabalha para vocês? O que é que vos forneceu? Fornece bem? Cumpre o acordado? Preços dentro do mercado? Este processo não é objecto de procedimento formal pois as compras da Tejo têm apenas 5 compradores. A Tejo tem procedimentos muito ágeis e ligeiros dado que não tem uma estrutura complexa de recursos. A confiança nos compradores e na estrutura de compras é chave.

A verificação de referências é feita quando é absolutamente necessário. Quem faz este trabalho é quem necessita da informação. Normalmente é a parte técnica. Esta informação vai sendo introduzida no processo de compra à medida que o mesmo se vai desenrolando. É um processo dinâmico que nasce de uma necessidade, normalmente técnica, e que vai sendo incorporado no processo de aprovisionamento consoante as informações que vão obtendo. Não é um processo rotinado, mas sim um processo ad-hoc. É um processo dinâmico e interactivo. Quando o fornecedor é bom, cumpridor e transparente é normal a Direcção de Compras dizer bem dele. Também é comum ouvir dizer bem dos fornecedores a colegas congéneres.

Temos recebido muitas visitas, mesmo fora de Portugal, de colegas que querem conhecer a EPC Ambiente. De todas as visitas, umas duas foram promovidas pelo fornecedor. A Direcção de compras apenas compra com base em tender e não recorre a leilões. A decisão assenta em seleccionar a proposta economicamente mais vantajosa. Todavia, o preço tem sempre um peso muito grande superior a 60%. Preço é o dinheiro fora do bolso.

A experiência de um fornecedor é avaliada de 2 formas: documentalmente com listas de referências, e check de referências, via telefone ou visita.

A pequena dimensão da Tejo tem como vantagem a flexibilidade. Em concreto, permite usar as referências de forma flexível, ou seja, sem estar preso a um processo previamente determinado.

A necessidade do EPC Ambiente nasce de uma alteração legislativa. Foi publicada uma directiva europeia onde a partir de determinada data a empresa era obrigatoriamente forçada a reduzir as emissões de enxofre, azotos e poeiras. Fez-se uma análise teórica das soluções possíveis. A seguir já se encontravam soluções instaladas para ter feedback dos seus proprietários. Em alguns casos foi-se visitar para ter mais conhecimento in loco, por exemplo EDF em França.

Quando se fala com o técnico que tem de fazer a operação ou a manutenção do equipamento a resposta é muito transparente e ele objectivamente diz logo sim ou não sobre a referência do fornecedor. Confio nestas opiniões pois por norma estes técnicos não têm filtro comercial. De seguida conclui-se quais são as alternativas mais viáveis. Nesta fase já têm uma visão técnica e informação sobre os valores de mercado (custos). Daqui sai uma short list de soluções e a seguir isolou-se uma solução técnica. A seguir faz-se um caderno de encargos técnico e um comercial e jurídico. Para a parte técnica contaram com o apoio dos accionistas. Quem liderou a parte comercial foram as compras e a parte técnica foi o colega Eng. Perfeito com apoio da Owner's Engineer.

No EPC existem 2 portas: o core do equipamento e os serviços suplementares. O distintivo neste concurso foi uma inversão da ordem uma vez que normalmente é o fornecedor do core a liderar a proposta. Neste caso apareceram várias propostas com a mesma marca de equipamento. (marcas: Alstom, Mitsubishi, Hyunda)

A administração foi o decisor. As Specs foram feitas pela manutenção. As componentes técnicas foram avaliadas pelos responsáveis das respectivas áreas que estão debaixo do departamento de manutenção (mecânica, eléctrica, exterior, etc.). Numa empresa com a dimensão da Tejo não há formalismo processual para a compra. Todas as semanas o director de compras, o da manutenção e o CEO reuniam para fazer um ponto da situação e para tomar decisões. O chefe da Central que é a entidade máxima da Central e reporta directamente à Tejo, também esteve envolvido. Por exemplo, também o director financeiro esteve envolvido para confirmar a robustez financeira dos fornecedores, consultando os ratings, por exemplo a Dun & Bradstreet.

O processo de compra Ambiente durou entre 1 a 2 anos.

No momento após-adjudicação, foi o colega Perfeito que foi o chefe-de-projecto e geriu a empreitada.

Os accionistas também têm uma palavra a dizer. Eles têm as suas experiências.

Aquando da saída da Directiva Europeia ainda não havia muita experiência com equipamentos idênticos. Em Espanha não havia nenhuma e portanto era estranho para a Endessa. Em Portugal

também não havia nenhuma. Existia em França e através da GDF visitaram uma instalação. Na Alemanha já havia equipamentos em operação.

Como tal neste processo não houve pressões dos accionistas. As pressões normalmente manifestam-se, não dizendo nós queremos que seja este, mas sim referindo que este é o melhor. Trazem com eles as suas experiências. As recomendações não são mandatórias, nem condicionam a decisão de compra.

A dificuldade deste negócio foi essencialmente técnica. A partir do momento que se encontrou a solução foi só questão de se negociar o contrato. Negociar um contrato nunca é fácil.

Nomeadamente quando é necessário juntar advogados de várias proveniências que vão trabalhar numa língua estrangeira. Até se ter uma proposta para fecho de contrato são necessários 4 meses desde que se fecha a proposta técnica e se selecciona o Preferred Bidder. A Alstom tinha já sido o fornecedor das máquinas, turbinas e alternadores (cobre) para a central a carvão. A relação anterior com a Alstom é como sendo uma relação contratual normal. As spare partes e os custos associados aos processos de manutenção normais continuam a fazer da Alstom o maior fornecedor da central, tirando o carvão e outro opex. Não existem atritos anormais com o fornecedor Alstom. Apenas os problemas normais de quem vende e quem compra. O facto de já ser fornecedor tornou mais forte a proposta da Alstom, uma vez que a experiência está lá sempre por baixo e não traz um conforto técnico à proposta. Note-se que o conforto comercial não existe. A relação existente com a Alstom dava algum conforto.

O espaço foi um dos constrangimentos técnicos da solução adoptada, uma vez que quando se trabalha dentro de uma instalação já construída acaba sempre por determinar o que se vai fazer.

O segundo grande requisito era cumprir as exigências regulamentares.

No processo de consulta foram pedidas referências a fornecedores de projectos similares:

Listagem de trabalhos similares em EPCs. O propósito foi aferir a experiência dos fornecedores em projectos similares. O facto de um fornecedor ser detentor de uma tecnologia, não quer dizer que já a tenha instalado em algum lado. Por exemplo, durante muitos anos a máquina de ciclos combinados da Alstom era comprovadamente a melhor em testes, mas não era bancável.

Nenhum banco disponibilizaria dinheiro para se comprar aquela máquina, porque não tinha nenhuma instalação, só tinha trabalhado em banco de ensaios, o que representa um risco muito elevado. A única solução seria instalar essa máquina num operador que a financiasse com capitais próprios. Tipicamente empresas do Médio Oriente e China. A lista de referências era simples. O mundo é muito pequeno e quando necessário a Tejo arranja os contactos dos vários clientes. Um dado importante solicitado na referência é a data de instalação e o nº de horas que a máquina teve em operação.

Este processo também serve para comprovar a tecnologia que se vai comprar, especialmente para o colega da direcção de manutenção. Pode dizer-se que o processo de referências teve alguma influência no processo de decisão, no sentido de tornar confortável o processo de decisão. Não se pode dizer, afirmar que teve uma influência decisiva. Foi mais um elemento de análise. Não foram checkadas referências pois neste concurso já tinham sido visitadas uma série de instalações previamente ao processo de RFQ. Por isso é que a influência das referências não foi decisiva. Este é o tipo de informação que, mesmo não sendo solicitada, os fornecedores tinham enviado.

As referências não permitem avaliar a reputação nem a credibilidade dos fornecedores, pois eles são muito mais do que isso. Mas permitem conhecer problemas, contingências, coisas que correram bem, mal, problemas que nunca ninguém pensou neles, problemas que já eram expectáveis e que se comprovaram, e que tenham tido lugar com projectos idênticos.

As referências permitem avaliar a competência de um fornecedor para entregar um determinado projecto/tecnologia. Permitem também reduzir risco. Falar com esses reference customers permite aprender como implementar uma nova tecnologia.

O ROI não esteve em causa neste projecto pois teve apenas como objectivo cumprir a normativa europeia. Todavia, na Tejo é frequente as referências ajudarem a estimar a o ROI bem como a performance económica dos equipamentos.

A experiência que reduz o risco é o benefício mais importante das referências.

Muitas vezes a interacção com referências de clientes despoleta um processo de RFI com vista a esclarecer dúvidas levantadas.

Num mundo com uma concentração tão elevada de players — exemplo: turbinas, temos Alstom, GE, Siemens Hyunday e Mitsubishi — não são necessárias referências para aferir a sua reputação. Na europa com 2 pesquisas na internet sabe-se tudo, ou seja, quem instalou que máquina e onde.

O tema das partículas não é uma tecnologia nova, mas sim pouco explorada. Apenas existia na Alemanha e mais 1 ou 2 poucas em França.

Através dos Shareolders é possível contornar o problema de elevada concentração e comprar melhor.

Nas peças de reserva ficamos agarrados aquele casamento ou seja à decisão de optar por um determinado fornecedor. Note que a elevada concentração existe, quer do lado da procura, quer do lado da oferta. Logo, não obriga a um marketing tradicional, mas sim ao marketing das provas dadas que como no resto do mundo são poucos, são fáceis de cruzar. Logo, não é necessário que a Alstom me diga onde é que instalou ciclos combinados que eu sei. Eu não preciso de lá conhecer ninguém que eu ligo para lá e falo com quem quero.

A lista de referências é credibilizante do processo de compra, mas não é necessário pois existe um processo paralelo que cumpre essa função. Não credibiliza pela quantidade de instalações, mas sim pelo facto de dizer: se vocês têm alguma dúvida aqui estão os sítios onde isto está. As referências sustentam a validade das soluções apresentadas pelos fornecedores.

A Direcção de compras pede referências com a seguinte formulação: que trabalhos deste tipo é que vocês realizaram nos últimos 5 anos, onde e que valor? Para fazer prova é perguntado ao fornecedor quem devo contactar? Como é que eles se portam? Que problemas tiveram são algumas perguntas feitas aos references customers.

A grande vantagem de não burocratizar demasiado os processos é que os pedidos de referências e esse chekar de referências apenas é feito quando necessário.

5. ENTREVISTA ENG. LUÍS FERREIRA DA EDP

O Grupo EDP é constituído por 430 empresas, sendo que a necessidade de apoio ao nível de compras é diferente. Algumas destas empresas são reguladas pela ERCE (regulador). Estas empresas têm tal como a REN, um processo de compras regulado. A direcção de compras do Grupo EDP está incluída numa empresa de serviços partilhados denominada EDP Valor. A direcção de compras é composta por 130 colaboradores (80 são compradores 60% + managers + lead buyers + área de desenvolvimento de sistemas de informação + área de gestão de processos de compras + área de qualificação de gestão de fornecedores).

A EDP gere vários sistemas de informação, alguns dos quais proprietários, onde corre a actividade de procurment, em várias línguas, estando presente com actividade em 13 países. Em compras tem 5 lead locations ou local purchasing teams (LPT's): EUA (Houston), Brasil (São Paulo e Victória), Espanha (Bilbao e Oviedo) (Gás e electricidade renováveis), Portugal (Lisboa).

A direcção de compras define a sua actividade de forma integrada ou completa, tendo início com uma componente estratégica (juntar valores, standardizar), uma segunda parte que é transicional gestão contratual e follow up (colocar pedidos de compras e negociação).

A seguir tem lugar a troca comercial efectiva.

Um contrato habitualmente define tempo (vigência do contrato e prazo de entrega), volume e condições. São as compras que também tratam da BI (Business Intelligence) ligada à sua actividade. O procurement cycle tem uma imagem associada.

A qualificação de fornecedores é a parte de baixo da roda e a parte de cima é a negociação.

Depois de o fornecedor entregar/fornecer pela primeira vez, existe um update do fornecedor face à sua qualificação inicial.

Há uma avaliação contínua do fornecedor.

As Direcções Locais são os Local Purchasing Teams.

O antigo modelo de gestão de compras distava de 2006. O actual, agora em implementação, estará alinhado com as melhores práticas internacionais (Google, Husqvarna, Procter & Gamble) onde fizemos benchmarking.

O state-of-the-art no procurement é estar cada vez mais focados em categorias e tendo muito desenhado por categorias. Em 2006 teve lugar uma centralização das compras e em 2008 houve um alinhamento com cada área de negócio do Grupo EDP (Distribuição, Produção, Renováveis, etc.) Em 2015 foi criada uma gestão por categorias. Isto permite que a mesma área de compras vá ao mercado com os mesmos interlocutores. E não como no passado em que o mesmo fornecedor poderia ser abordado por diferentes elementos da EDP. Esta nova organização permite uma maior especialização dentro das compras da EDP para 2015. Em 2015 é criada uma unidade de procurement global (GPU ou Global Procurement Unit) que está por cima das gestoras de categorias e que também está por cima das CPT's. A GPU apenas faz sentido para categorias globais, mas não dá resposta a necessidades de compras locais.

As compras são uma unidade de suporte. A actividade core do grupo é produzir diferentes formas (eólica, hídrica, solar, térmica) e distribuir energia.

Em 2014 as compras geriram 2,7 mil milhões de euros de compras. As poupanças geradas entre 2006 e 2014 forma mais de mil milhões de euros (130 milhões/ano) todo o grupo (mundo).

A área de compras encontra-se subordinada à estratégia do Grupo, como tal, o modelo da área de compras tem de dar todo o suporte à estratégia decidida em sede do CAE.

As categorias podem ser Globais ou Locais. As que são locais são operadas localmente.

As principais categorias são: 1 - Sistemas e processos, 2 - A geração 3 – As redes 4 – Empreitadas e serviços de construção 5 – As tecnologias de informação e comunicações 6 – Os serviços corporativos (general services).

Para a direcção de compras a sua missão consiste em que cada uma das 430 empresas que serve consiga obter o menor custo do mercado para aquele bem ou serviço que necessita, indistintamente de ser um capex ou um opex. As compras actuam de forma igual, mesmo processo, por qualquer bem que vão adquirir independentemente da sua natureza. Existem, contudo, diferentes escalões dentro da organização que obrigam a procedimentos diferenciados ou seja regras mais apertadas dado que o potencial de poupança nas compras maiores (ou de maior volume) é maior.

A Direcção está preparada, vocacionada para retirar o maior cost avoidance ou savings das aquisições que fazem.

A auditoria é também mais exigente, ou seja, crescer, com o valor da transacção que está em causa (mais claro, mais evidência).

A aquisição de bens de capital tem o mesmo processo que a aquisição dos bens correntes.

Para trabalhar com multinacionais (ABB, Siemens, etc.) são frequentemente solicitadas cartas de cartas conforto que permitem ultrapassar a relativa baixa dimensão que as filiais de essas empresas têm em países como por exemplo Portugal. O conteúdo é: se esta empresa fechar ou falir eles tomam a seu cargo as responsabilidades assumidas.

ORD – Operador de Rede de Distribuição.

A direcção de compras tem formas de qualificar fornecedores: inclusive avalia a solidez financeira do fornecedor. Esta dimensão é muito relevante.

As referências de clientes são importantes para a direcção de compras não na perspectiva de lá ter muitos nomes, mas sim na possibilidade de serem verificados. É importante que a referência discrimine o trabalho realizado. A informação de que um fornecedor trabalhou para alguém não é suficiente. A direcção de compras necessita confirmar a tipologia de trabalhos que foram realizados para esse cliente e que repercussão teve (se faz ou não um bom trabalho). É habitual a direcção de compras pedir referências aos fornecedores quando estes se inscrevem na lista / base de dados de fornecedores e quando a direcção de compras está a consultar para um projecto específico pede também referências ligadas ao projecto. Outro elemento importante são as datas (anos) em que o fornecedor fez o trabalho. Permite avaliar as competências dos profissionais. Pedem projectos idênticos e o volume do projecto em euros. Pedem também contactos, apesar de não necessitar pois conhecem sempre alguém nas empresas que são dadas como referência. O contacto informal acaba sempre por ser o mais eficiente e utilizado.

É obrigação da direcção de compras checkar as referências. Está dentro do processo de pré-qualificação ou de qualificação depois de recebidas as propostas. Todavia, este checkar de referências é mais efectivo que seja feito do lado da empresa cliente, pois é esta que vai ficar com o produto. A direcção de compras tem uma especialização comercial. A direcção de compras também checa referências, mas não há uma fronteira formal que diz que este trabalho é da competência da direcção de compras ou da empresa cliente. Não há responsabilidade de uma das áreas. O trabalho é feito por ambos e cada um pode dar opinião sobre ambos critérios desta avaliação, quer técnicos, quer comerciais.

A negociação pode ser feita: online, electrónica, leilão, face-2-face (presencial), carta fechada.

Quando um produto encerra mais tecnologia ou inovação é mais habitual serem pedidas referências.

A qualificação de fornecedores passa sempre por solicitar informação financeira.

Pedem casos de sucesso. Fazem muitas reuniões presenciais para confrontar empresas com perguntas (muitas vezes provenientes de concorrentes).

Um fornecedor que tem um caso de sucesso ou um novo produto é normal ir vender à EDP.

Pedem reunião e vêm apresentar. Geralmente não coincide a apresentação (solução) com alguma aquisição que a direcção de compras tenha para fazer, mas em termos de conhecimento geral é sempre considerado importante fazer porque é mais uma alternativa que é considerada.

Permite à EDP ferir melhor a procura. Aumenta o conhecimento sobre o produto ou serviço que está a ser comprado. Aumenta a possibilidade de negociar (mais oferta).

É sempre possível aprender com os fornecedores: são os maiores enablers de aprendizagem para qualquer estrutura de compras e para qualquer empresa. O fornecedor é responsável (inadvertidamente) por veicular informação sobre a concorrência. Traz-e-leva quer informação, quer dados económicos referentes às soluções implementadas. Os colegas das áreas técnicas estão, por vezes, presentes nas reuniões com os fornecedores.

As áreas técnicas podem (i.é, têm a liberdade) para se reunir com fornecedores sempre e quando desejarem. Não há hegemonia no que respeita ao domínio da EDP Valor sobre a comunicação com fornecedores.

Benefícios: Avaliar a reputação: concordo; quer dizer o histórico do fornecedor, confirmar o estilo de pessoa que está em frente... (confuso) Às vezes há muita fofoca e tendencialmente os fornecedores falam mal uns dos outros.

Credibilidade: Não é uma referência é um tira-teimas.

Competência: Sim, dependendo do tipo de cliente que é apresentado.

Nota: O Luís Ferreira é céptico no que respeita a referências do cliente que são accionistas do fornecedor.

Redução de Risco: Sim.

Aprender como implementar com sucesso!

Uma tecnologia inovadora: Sim.

ROI: Sim.

As referências são sempre encaradas como mais um elemento da avaliação do fornecedor e só por si, isoladamente, têm um valor baixo.

6. ENTREVISTA A ENG. MÁRIO CAMACHO DA EDP

Nota: O Eng. Mário Camacho é o gestor dos contractos de fornecimento dos equipamentos.

Faço a gestão do fornecimento até à entrada em serviço industrial das máquinas. Nesse momento as máquinas são entregues à Direcção de Operação.

Os responsáveis pela autoria do projecto foram eu (Eng. Mário Camacho) e o Eng. Filipe Duarte. Eu (Eng. Mario Camacho) tive a componente de engenharia. Depois de adjudicado, passamos para a equipa de projecto que é a entidade que, após adjudicação, se encarrega de fazer a gestão total da obra: planeamento, entregas de equipamento, montagem, coordenação dos ensaios, colocação em serviço, entre outros. O processo começa pelo levantamento dos locais onde importa fazer investimento (estudos-gerais). Este levantamento teve início nos anos 70.

Vila Nova ou Venda Nova I começou a ser construído em 1948 e é inaugurado em 1951. Venda Nova II já inclui no projecto a previsão de instalar 4 grupos, mas por questões financeira o projecto ficou reduzido apenas a 2 grupos de 97 MW cada. Esta construção teve lugar entre os anos 2000 a 2005. Em 2007 retomou-se o estudo Venda Nova III que se revelou muito interessante dado o seu baixo impacto ambiental. Este é um projecto de reforço de potência ou seja, vai-se intervir sobre um projecto já existente, o que diminui consideravelmente o volume da obra de construção civil. Com este investimento consegue-se prolongar e renovar o período de concessão que habitualmente é de cerca de 25 anos. O lançamento de processo de concurso para por parte civil teve lugar em 2008. 2 máquinas de 425 MV'AS. O concurso de equipamentos é lançado em 2009. A obra civil assenta fundamentalmente em escavação de túneis e galerias. A barragem já está construída. A central é em caverna, ou seja, a componente civil da obra é essencialmente mineira.

Para os equipamentos candidataram-se 3 firmas europeias: a Voith hidro, a Alstom e a Andritz. Das 3 em concurso é seleccionada a Voith/Siemens. O grosso da máquina é da parte da Voith: comportas, turbina, veio, alternador e sistemas de controlo. A Siemens tem a seu cargo os sistemas de alimentação e sistemas auxiliares, como a ventilação e a iluminação e tomadas, sistemas auxiliares de corrente alternada, etc. Adicionalmente, a Siemens fornece os transformadores de potência. Actualmente são os maiores e mais potentes existentes em Portugal: 465MVA'S, fabricados pela EFACEC.

A Alstom (actual GE) forneceu o VSI (Voltage Source Inverter). São 40 metros de armários. É o cérebro da máquina. Pela primeira vez foram adquiridas em Portugal máquinas com Rotor Bobinado Trifásico.

O consórcio Siemens/Voith forneceu um equipamento complexo, de elevada tecnologia, designado por variable speed pump turbine. No processo de tomada de decisão está envolvida a Direcção de Estudos Gerais (Rui Leitão) que faz uma análise de viabilidade técnica e económica

do investimento. Quando este investimento é viabilizado pelos estudos gerais, é também analisado por um Departamento DRM (Regulação e Mercado), a Eng^a Ana Cristina.

Também está envolvida a Direcção de Planeamento e Controlo.

Os estudos gerais fazem uma abordagem de grande dimensão e de Longo-Prazo e a DRM faz uma análise/avaliação mais detalhada do que os estudos gerais propõem.

Os pareceres, estudos de viabilidade económica emanados destas Direcções são apresentados à Administração da EDP/CAE.

O CAE dá luz verde para que o projecto se inicie. O processo passa, de seguida, para a direcção de Engenharia de Equipamentos (DEE) que tem as vertentes de engenharia mecânica e engenharia eléctrica. Eu (Eng. MC) (Eng. eléctrica) e o Eng. Filipe Duarte (Eng. mecânica) ficamos incumbidos de preparar o caderno de encargos e as especificações.

A tecnologia turbina-bomba de velocidade variável é utilizada já desde os anos 70 no Japão, com pequenos grupos. Esta tecnologia afirma-se nos anos 90 e fica dominada por 3 empresas: a Mitsubishi, a Hitachi e a Toshiba.

Na Europa, o primeiro exercício com este tipo de máquinas tem lugar na Alemanha de leste (RDA) em Goldisthal, mas cuja tecnologia de controlo é anterior aos actuais VSI'S. Eram ciclo-conversores.

A equipa de engenharia visitou Goldisthal 2 vezes. Esta central tinha 4 grupos, mas como era uma tecnologia muito complexa e muito mais cara. Os 2 grupos custavam mais 30 milhões 15 milhões por grupo, se fosse de velocidade variável quando comparado com tecnologia convencional.

A Administração ofereceu muita resistência à proposta dos engenheiros (que apontava para 4 grupos de velocidade variável) que, por prudência, apenas aprovou 2 grupos de velocidade variável.

A equipa de Goldisthal veio a constatar que a remuneração dos 2 grupos de velocidade variável é muito superior aos 2 grupos convencionais, dado que é possível vender a banda terciária (que é uma banda de produção que resulta da possibilidade da máquina funcionar em articulação com a geração eólica, e que é muito rentável).

A seguir a Goldisthal, Venda Nova III foi o segundo projecto de velocidade variável na Europa. Em simultâneo surgirão mais 3 projectos de velocidade variável na Europa: Eslovénia, na 2 na Suíça, mas todos de menor dimensão.

Os grupos da Central de Goldisthal foram fornecidos por um consórcio Voith (turbina), Andritz (máquina eléctrica), e Alstom (ciclo conversor regulação).

Neste caso optou-se por um modelo de elevado fraccionamento do lote que é muito exigente na medida que o contratante tem de assegurar a gestão com todos os interfaces. Este modelo pode

criar níveis elevados de conflito entre as partes. Em sentido oposto, a opção da EDP para Venda Nova III passou por fraccionar o contrato por grandes áreas de especialidade (Bicontratual, ou seja: equipamentos e empreitada).

A Direcção de engenharia de Barragens trata das empreitadas e construção de barragens.

7. ENTREVISTA ENG. NUNO RIBEIRO DA REN

Sou (Eng. Nuno Ribeiro) o Head of investment, director do investimento para a parte eléctrica. Esta direcção tem a seu cargo a concretização do plano de investimento da rede nacional de transportes que resulta de um plano que é feito. Este plano carece da autorização do concedente, neste caso do Estado. A elaboração encontra-se a cargo de outra direcção da REN: a Direcção de Planeamento e Engenharia. A DPE é quem identifica as necessidades de investimento na rede de transportes, incluindo incrementos de capacidade ou conservação. É elaborado um plano de investimento na rede de transporte, que é apresentado ao estado (concedente) para aprovação, pelo Conselho de Administração da REN. O plano é analisado pela Direcção Geral de Energia e Geologia. A seguir o plano transita para a Entidade Reguladora dos Serviços Energéticos (ERSE - Energy Services Regulatory Authority) que elabora uma consulta pública e posteriormente um parecer que envia ao concedente (estado). O PDIRT (Plano de Desenvolvimento e Investimento na Rede de Transporte) é feito de 2 em 2 anos. A Direcção de Planeamento e Engenharia é responsável pela elaboração dos projectos que posteriormente são concretizados pela Direcção de Investimento (incluindo a gestão das empreitadas).

Para 2015 o orçamento é cerca de 150 milhões de euros (integralmente capital investment). O Opex está a cargo da Direcção de Exploração. A Direcção de Gestão do Sistema gere o sistema eléctrico. Ao todo são 4 as direcções nucleares da REN.

O processo de aquisição de capex é desencadeado pela direcção de investimento com uma requisição de compra. As compras procuram ganhar escala juntando equipamento que é comprado para diversos e diferentes projectos. A Direcção de Investimento é o grande cliente interno de compras, em cerca de 85%.

A REN é concessionária de um serviço público, e, como tal, está abrangida pelo código de contratação pública, isto é, é uma entidade veiculada ao Sistema Nacional de Compras Públicas. Este código de contratação pública obriga a um processo de qualificação prévio de fornecedores para as diferentes classes de fornecimentos. Os convites para os tenders (concursos) são lançados junto das empresas que se encontram pré-qualificadas. O processo de pré-qualificação

dispensa o lançamento de concursos públicos. Qualquer empresa é livre de se qualificar para fornecer a REN, ou seja, diz-se que este sistema de qualificação é aberto. Para conseguir ser qualificado, o fornecedor tem de cumprir com requisitos de qualificação, quer de natureza económico-financeiras (solidez financeira, para não falir amanhã) quer de natureza técnica (meios humanos adequados; equipamentos; experiência.)

A REN faz ou pode fazer auditorias junto das fábricas de fornecedores para atestar a sua capacidade técnica.

A carteira de clientes que um potencial fornecedor possa apresentar é escrutinada (avaliada) em função de clientes de reconhecida importância e afinidade com a REN. As referências de clientes podem ser complementadas com visitas de auditoria à fábrica do potencial fornecedor para o qualificar. O pedido de referências é um dos requisitos do processo de qualificação.

A qualificação de fornecedores é gerida pela Direcção de Compras. A Direcção de Investimento faz a análise técnica da candidatura. Por exemplo, verifica os meios técnicos e humanos, bem como, as referências dos potenciais fornecedores. A Direcção de Compras gere a componente financeira de transacção, bem como a gestão geral do processo de compra e o seu resultado final.

Quando se abre um tender (concurso) o fornecedor já se encontra qualificado para fornecer a REN e, assim, já está dispensado de processos adicionais de qualificação.

As referências devem listar clientes, quantidades fornecidas e os anos de fornecimento. A análise dos anos de fornecimento é importante na medida em que permite avaliar a consistência dos fornecimentos. Esta consistência traduz confiança no fornecedor. Não é contudo condição sine-qua-non para ser qualificado. Os transformadores são considerados como dos mais críticos para a Rede de Transporte. A área técnica (Direcção de Investimento em articulação com a DPE, bem como, a Direcção de Exploração) é que verifica as referências dos clientes, no âmbito do processo de qualificação.

Um parecer tipo pronuncia-se sobre a consistência ou não da lista de referências, bem como sobre a sua reconhecida exigência de qualidade.

A aquisição de transformadores, desde a adjudicação até à entrega, são cerca de 10 a 12 meses. A necessidade foi identificada pela Direcção de Planeamento e Engenharia. O procedimento habitual consiste em consultar as empresas qualificadas. Todavia, a empresa que ganhou o concurso, a Siemens, não estava qualificada com a fábrica da China.

As auditorias verificam os processos de qualidade, bem como os processos de fabrico. Par os transformadores também é feito um ensaio muito exigente que é o ensaio em curto-circuito.

Os fabricantes de transformadores que estão qualificados na REN são: a Siemens, a Alstom, a Hyundai, a EFACEC e a SPECO. A Hyundai não tem vindo a concurso, apesar de convidada. A Siemens, a Alstom e a SPECO têm fábricas localizadas na China.

O primeiro transformador que a SPECO vendeu na Europa foi para a REN. Foi uma necessidade que a REN teve de abrir o mercado para não estar tão dependente de um mercado tão concentrado. O Director de Investimento afirma que os accionistas não têm influência ou interferência no processo de decisão de compra.

Existe uma desconfiança inicial das áreas técnicas face aos equipamentos produzidos na China no que respeita à qualidade desses equipamentos. Por esse motivo recorreu-se a um consultor independente internacional que acompanhou durante vários meses o processo de fabrico do transformador chinês SPECO. Este processo de auditoria (CESI) permitiu ao fornecedor aprender e ir integrando as sugestões de correcção para finalmente conseguir fornecer para a REN. Este fornecedor apresentou referências. Todavia, não tinha referências no mercado Europeu. Para ser qualificado teve de se sujeitar a um processo complexo de auditorias. A decisão de compra envolve a direcção de exploração, a direcção de planeamento e engenharia e a direcção de investimento e a direcção de compras.

As áreas técnicas não procedem a uma confirmação das referências de clientes, mas sim a uma análise das mesmas, no sentido de confirmar a sua consistência. No caso dessa consistência não estar presente, por vezes são pedidos esclarecimentos ao fornecedor, por exemplo pedindo para completar essa lista de referências. O fornecedor por vezes completa a lista de referências e chega também a enviar declarações de bom fornecimento, satisfação dos clientes já servidos. Não recorrem a essas declarações de bom fornecimento para confirmar com esses TSOs se estão conformes. As trocas de impressões têm lugar noutras formas, como por exemplo encontros europeus de profissionais da indústria. Existe igualmente muita troca de informação com o congénere espanhol e visitas deles cá e vice-versa. Dentro da REN é a Direcção de Exploração que mais hábito tem de proceder a esta troca de experiências e informação. O fornecedor não tem conhecimento destas trocas de informação, nem tem controlo sobre estes processos: é passivo. Por vezes acontece ser o fornecedor a lançar convites para irem ver um equipamento seu a funcionar numa instalação de outro cliente. Não é muito frequente, mas acontece, principalmente com equipamentos mais inovadores (exemplo cabos OPGW e cabos termo-resistentes). Nestes casos os fornecedores têm interesse em promover conversas entre potenciais e actuais clientes. Existem exemplos na REN de visitas deste tipo terem dado lugar à aquisição de equipamentos.

É o caso da primeira compra de cabos termo-resistentes que a REN fez no ano passado. Esta visita promoveu o interesse da REN pela nova tecnologia e nesse sentido foi aberto um concurso em que esse fornecedor ganhou.

Nota: o Director de Investimento reconhece que é importante existir um cliente exigente que publicamente está disponível para dizer que comprou, instalou e não teve problemas.

Hoje o preço representa mais de 90% do critério de decisão. No passado não era assim: rondava os 50%. As compras hoje são mais profissionais e pesam menos as características técnicas dos equipamentos a adquirir. Chegou-se a um momento em que a quase totalidade dos fornecedores qualificados são de elevada qualidade. Por um lado as compras têm vindo a incrementar o peso do preço nos concursos, mas por outro lado as áreas técnicas têm vindo a incrementar o grau de exigência com as auditorias e com a análise de referências.

Estas políticas de compras mais agressivas são emanadas pela administração.

A REN é concessionária de um Serviço Público.

Esta nova política de compra tem já cerca de 3 anos. Os fornecedores têm vindo a adaptar-se a esta nova política de compras. Parte dos ganhos da eficiência proveniente de comprar melhor são passados para a REN. O único foco de potencial conflito entre as áreas técnicas/operacionais e as compras prende-se com o tempo de entrega de um novo fornecimento.

Depois de aprovado o PDIRT é tornado público. Os fornecedores podem desde logo consultá-lo. Frequentemente solicitam reuniões com a REN para pedir esclarecimentos e clarificações sobre o PDIRT em curso. Alguns fornecedores fazem esforço de marketing. Por exemplo vêm à REN apresentar os seus produtos, trazem os técnicos e os clientes ao vivo. As áreas operações estão presentes. É mais fácil ter lugar um fornecimento com um fornecedor mundial ou europeu porque já dominam os processos e metodologias de qualificação.

Não sinto que os fornecedores façam um elevado esforço de marketing. Os fabricantes europeus ou mundiais que têm já fábricas na China, têm a vida facilitada pois dominam os processos de qualificação e conhecem as metodologias de análise e certificação. Na primeira adjudicação que a REN faz à SPECO a REN teve problemas complicadíssimos porque teve de explicar estes processos e formar o fornecedor. A REN, inclusive, teve de ajudar a SPECO a encontrar um representante local. A motivação da REN para este investimento (esforço) foi o seu interesse em encontrar alternativas para não estar limitada aos poucos fornecedores que tem à sua disposição. O negócio/actividade da REN na electricidade pode ser dividido em 2 componentes: subestações e linhas.

Benefícios:

- Reputação- Sim, se houver consistência no fornecimento para um tipo de clientes que merecem reconhecimento à REN.

- Credibilidade – Sim, também podem ser, apesar de a REN nunca ter confirmado as referências junto dos clientes do fornecedor.

Todavia, uma ausência de referências não significa que o fornecedor não seja credível! Mas exige mais esforço por parte da REN, por exemplo recorrer a consultores externos para auditar o fornecedor.

Nota: o fornecedor qualificado tem de rever o processo de qualificação a cada 2 anos.

- Competência – Sim

- Risco – nitidamente sim!

- Aprender com lidar com inovação – A REN não está à procura do último grito de inovação. É conservadora. Logo este benefício não é relevante, o que não quer dizer que não exista. Mas permite estar atento às novidades quando os fornecedores fazem apresentações que trazem logo no início as referências. Estas apresentações geram uma forte interação com as áreas técnicas, apesar de não gerar o movimento das interações com os actores das referências apresentadas. Todavia, em fóruns da comunidade eléctrica, têm lugar conversas sobre estas tecnologias: como se estão a dar? houve problemas? como está a correr?

- Análise Económica – Não.

O benefício principal das referências de clientes é a credibilidade/competência/risco.

A eleger uma é a credibilidade.

A falta de consistência na lista de fornecimentos gera desconfiança.

As áreas operacionais são quem beneficia com as referências do cliente (investimento e exploração). As duas áreas (investimento e exploração) trabalham em conjunto na fase de análise técnica das propostas. Olham para as listas de referências em conjunto.

Considero que as referências de clientes são relevantes e importantes para a análise (avaliação) de um fornecedor, avaliando a sua credibilidade e competência. Todavia, não devem ser consideradas em exclusivo pois não é apenas com base numa lista de referências que se toma a decisão de qualificar ou desqualificar um fornecedor. Permitem prever o grau de intervenção que se irá ter no processo de auditoria em fábrica.

A Direcção de Investimento conta com 11 (onze) engenheiros.

As geografias de onde provêm as referências de clientes não são todas iguais. Uma referência de um cliente africano ou da Albânia não é o mesmo que ter referências de clientes europeus.

APPENDIX 5 — ORIGINAL CODING SCHEME

1 ST LEVEL	2 ND LEVEL	3 RD LEVEL		
Desired Outcomes	Assess Vendor's Reputation			
	Establish Vendor's Credibility			
	Evaluate Supplier's Competence			
	Forecast ROI			
	Learn about new technology			
	Reduce Buying Risk			
Reference Relationship	Catalysts			
	Involvement			
	Motivation			
Supplier Reference Marketing	Practices	Articles in Trade Journals		
		Brochures of Customer Cases		
		Press Releases		
		Promotional Material		
		Reference Lists		
		Reference Visits		
		Seminars		
		Success Stories		
		Workshops		
			Discourses	
		Buying Behaviour	Buying Situation	Modified Rebuy
New Task				
Straight Rebuy				
Buying Phases	Establishment of Specifications			
	Evaluation of Alternatives			
	Identification of Alternatives			
	Need Recognition			
	Supplier Selection			

1 ST LEVEL	2 ND LEVEL	3 RD LEVEL
	Attitude	Favourable
		Negative
		Neutral
	Exposition to Reference MKT	C_Level
		Engineering
		Operations & Supply Chain
		Planning
		Purchasing
		Sales
	Buying Centre	C_Level
		Engineering
		External Consultants
		Financial
		Legal
		Operations & Supply Chain
		Planning
		Purchasing
		Sales
		Shareholders

Source: author.

APPENDIX 6 — CODED SEGMENTS

CODE	SEGMENT
Conditions\External consultants or intervenient in the buying process	For the evaluation of the merits of the proposals there is also the support of a colleague from EDP Valor, both to the subject of costs and to make comparative analyses
Conditions\External consultants or intervenient in the buying process	The project team had the support of colleagues from EDP Valor for BAFO: very final and best offer
Conditions\External consultants or intervenient in the buying process	The nature of Pego Center Project is a Project Finance. When the center was bought from EDP, only 20% was equity. 80% were bank financing. This nature entails contractual requirements imposed by the banking syndicate, that influence purchases decisions.
Conditions\External consultants or intervenient in the buying process	Note: the Director of Investment said that shareholders have no influence or interference in the purchase decision process.
Conditions\External consultants or intervenient in the buying process	An absence of customer references does not mean that the supplier is not credible! But it requires more effort by REN, for example, to resort to external consultants to audit the supplier.
Conditions\External consultants or intervenient in the buying process	The Tejo energy hired the services of an independent company to assess projects from various suppliers. Additionally, the company helped to define the specifications of the equipment to be acquired, evaluated the proposals, and followed the process of enterprise management work.
Conditions\External consultants or intervenient in the buying process	In the case of EPCs is frequent use of technical and legal advisory services. From a legal point of view the EPC environment was accompanied by the law firm of the company. From a technical point of view, they were involved representatives of the shareholder who helped make decisions (Endesa and International Power) and close the scope of the project.
Conditions\External consultants or intervenient in the buying process	For the technical part had the support of shareholders.
Conditions\External consultants or intervenient in the buying process	Shareholders also have a word to say. They have their experiences.

Conditions\Informality	<p>They also ask for contacts, even if they do not need them because they always know someone in the companies who are customer references. The informal contact always ends up being the most efficient and the one used. They also ask for contacts, even if not always needing them because they know someone in the companies who are customer references.</p> <p>The informal contact always ends up being the most efficient and the one used. They also ask for contacts, even if not always needing them because they know someone in the companies who are customer references. The informal contact always ends up being the most efficient and the one used.</p>
Conditions\Informality	<p>This checking of customer references is more effective if done by the client company, as it is the company that will get the product. The Purchasing Department has a commercial expertise. The Purchasing Department also checks customer references, but there is no formal boundary that states that this work is of the responsibility of Purchasing Department or of the client company. There is no responsibility from one of the areas. The work is done by both and each one can state its opinion on both assessment criteria, whether technical or commercial.</p>
Conditions\Informality	<p>Checking customer references is an informal process. There may be an email, 1 phone, 1 visit, but there is not a process.</p>
Conditions\Informality	<p>The customer references check, is to ask the company x works for you? What gave you? It provides well? Meets agreed? Prices in the market? This process is not subject to formal procedure because of the Tejo have merely 5 buyers. The Tejo is very agile procedures and light as it has a complex structure of resources.</p>
Conditions\Informality	<p>The customer references check, is done when it is absolutely necessary. Who makes this work is the one who needs the information. Usually it is the technical part. This information is being introduced in the buying process to mediate that it unfolds. It is a dynamic process that is born of a need, usually technical, and that will be incorporated into the procurement process depending on the information you will obtain. Not a routine process, but rather an ad- hoc process. It is a dynamic and interactive process.</p>

Conditions\Informality	The small size of the Tejo has the flexibility advantage. Specifically, it lets you use customer references flexibly, that is, without being tied to a predetermined process.
Conditions\Informality	The great advantage of not too bureaucratized processes is that requests for customer references and that checking customer references that is only made when necessary.
Conditions\Opinions from peers	<p>It is common to have occasional conversations, meetings, events, to exchange emails, etc. There are regular conversations between CPO'S to exchange and share project experiences, to be informed of the news, what they do and how they do it, etc.</p> <p>About Hyundai, the CPO counterpart told REN CPO that had taken a long time to convince the operational areas of the need to consult him, but that he had no doubts and now things were going well. The information given was informal.</p> <p>However, the Spanish CPO shared with REN CPO the cross-check of customer references that had been done with other TSO's. It is common to have occasional conversations, meetings, events, to exchange emails, etc. There are regular talks between CPO'S in order to exchange and to share project experiences, to be informed of the news, what they do and how they do it, etc.</p>
Conditions\Opinions from peers	Operational areas also have informal channels where check references providers
Conditions\Opinions from peers	Exchange of views take place in other ways, such as European Industry Professional meetings. There is also a lot of exchange of information with the Spanish agent and their visits here and vice versa. Within REN is the Exploration Department that usually makes this exchange of experiences and information. The supplier is not aware of these exchanges of information, neither has the control over these processes: he is passive.
Conditions\Opinions from peers	To assess the reputation of providers, Pego Central talks with other central and asks whether or not the supplier know x, if the references are or are not good.
Conditions\Opinions from peers	The list of customer references gives credit to the buying process, but is not necessary because there is a parallel process that fulfils this function.

Effect/Event\Learning	<p>For a supplier who has a case of success or a new product is normal to go sell to EDP. They ask for a meeting to make a presentation. Usually there is no match between the presented solution with any acquisition that the Purchases Department has to do, but in terms of general knowledge it is always considered important to do because it is an alternative that is considered. It allows EDP to better assess the demand. Increase knowledge about the product or service being purchased. It also increases the negotiating possibility (more offers).</p> <p>It is always possible to learn from the suppliers: they are the larger enablers of learning for any procurement structure and for any company. The supplier is responsible (inadvertently) by relaying information on competition. It brings and takes any information, whether be it economic data on implemented solutions.</p>
Effect/Event\Learning	<p>To learn on how to implement successfully!</p> <p>An innovative technology: Yes. Learning with a successful implementation!</p> <p>An innovative technology: Yes. Learning with a successful implementation!</p> <p>An innovative technology: Yes.</p>
Effect/Event\Learning	<p>Business cases are important for shopping. Contact with technology providers is very important. This is how the operational areas learn. It is knowledge that is being granted to us. It is with suppliers that we learn to deal with the arguments of the internal areas and to discard dogma.</p>
Effect/Event\Learning	<p>Innovation ok!</p>
Effect/Event\Learning	<p>Learning to deal with innovation - REN is not seeking the ultimate innovation. It is conservative. So this benefit is not relevant, which does not mean that it does not exist. But let's be aware of the news when suppliers make presentations that bring customer references early in the presentation. These presentations generate a strong interaction with the technical areas, although not generating the movement of the interactions with the actors of the presented customer references. However, in forums of the electrical community conversations take place on these technologies: how are they performing? Were there problems? How's it going?</p>

Effect/Event\Learning	The customer references not to assess the reputation or credibility of suppliers, because they are much more than that. But let experience problems, contingencies, things went well, problems that no one ever thought of them, problems that were already expected and that proved, and that have taken place with identical projects.
Effect/Event\Learning	Talk to these reference customers lets learn how to implement a new technology.
Effect/Event\Risk avoidance	Risk reduction: yes!
Effect/Event\Risk avoidance	Risk Ok!
Effect/Event\Risk avoidance	Risk - clearly yes!
Effect/Event\Risk avoidance	The verification of customer references, the risk analysis is made by the Directorate of Maintenance. In the limit, condition the decision process.
Effect/Event\Risk avoidance	It can be said that the process of customer references, had some influence in the decision process, to make comfortable the decision process.
Effect/Event\Risk avoidance	They also allow reducing risk.
Effect/Event\Risk avoidance	The experience that reduces risk is the most important benefit of the customer references.
Effect/Event\Solution assessment	Return on investment: Yes.
Effect/Event\Solution assessment	The visit to Godisthal had a great benefit, particularly with regard to technical issues. We obtained information regarding machine maintenance and downtime periods which was very relevant and important.
Effect/Event\Solution assessment	Customer references are relevant to establish and to be aware of the costs associated with a particular solution. Example of the 10-days stop for calculation of the return on investment.
Effect/Event\Solution assessment	The Goldisthal team came to realize that the remuneration of the 2 variable speed groups is far superior to the 2 conventional groups, as it is possible to sell the tertiary band which is a production band that results from the possibility of the machine work in conjunction with the wind power generation, and is very cost effective.
Effect/Event\Solution assessment	ROI yes, it is used but to adapt the company to reality.
Effect/Event\Solution assessment	Often the interaction with customer references triggers a process of RFI to clarify doubts raised.

Effect/Event\Solution assessment	The customer references support the validity of the solutions presented by suppliers.
Effect/Event\Unleash new buying needs	These workshops allow us to present new solutions that can start new purchasing requirements in the company.
Effect/Event\Unleash new buying needs	Sometimes it happens to be the supplier to issue a call to go see equipment running in the installation of another customer. It is not often, but it happens, especially with the most innovative equipment (e.g. cables OPGW and heat-resistant cables). In these cases the suppliers are interested in promoting conversations between potential and existing customers. There are examples with REN of this kind of visits which have given way to the acquisition of equipment.
Effect/Event\Vendors assessment	Benefits: Assessing the reputation: I agree; it means the history of the provider, to confirm the person's style which is ahead of us ... (confusion) Sometimes there is a lot of gossip and suppliers tend to badmouth each other.
Effect/Event\Vendors assessment	Credibility: It is not a reference; it is a last-resource.
Effect/Event\Vendors assessment	Competence: Yes, depending on the client type which is displayed.
Effect/Event\Vendors assessment	References allow to evaluate the experience and knowledge (know-how) of suppliers
Effect/Event\Vendors assessment	Competence is valued.
Effect/Event\Vendors assessment	Reputation - Yes, if there is consistency in providing for a type of customers who deserve recognition by REN.
Effect/Event\Vendors assessment	Credibility - Yes, they can also be
Effect/Event\Vendors assessment	Competence – Yes
Effect/Event\Vendors assessment	The main benefit of customer references is the credibility / competency / risk. To elect one is credibility. The main benefit of customer references is the credibility / competency / risk. (probing) To elect one is credibility.

Effect/Event\Vendors assessment	I consider that customer references are relevant and important for the analysis of a supplier, assessing its credibility and competence. However, they should not be considered unique, because it is not just a list of customer references that makes the decision to qualify or disqualify a vendor. They allow predicting the degree of intervention that will be in the audit process at the factory.
Effect/Event\Vendors assessment	In the consultation process customer references were applied to similar projects suppliers: List of similar work in EPCs. The purpose was to assess the suppliers' experience in similar projects. The fact that a supplier in possession of a technology does not mean that you have already installed somewhere.
Effect/Event\Vendors assessment	Customer references allow assessing the ability of a supplier to deliver a determined project / technology.
Effect/Event\Vendors qualification	It is the responsibility of Purchasing Department to check the customer references. It is within the pre-qualification process, or qualification after having been received the proposals.
Effect/Event\Vendors qualification	One of the criteria in the contract documents is the obligation of the supplier to submit its list of customer references for similar supplies, with the same content, the same size and with evidence. Otherwise, they may be excluded.
Effect/Event\Vendors qualification	For the contest it was formally requested a list of customer references. It is part of the documentation to deliver for the contest.
Effect/Event\Vendors qualification	The customer references allow clean out those without qualifications. EDP is not concerned with the customer references of Audrtithz, Alstom and Voith, but it is concerned when it appears an unknown supplier. In such a case, EDP wants to clean out these pseudo manufacturers as soon as possible. Customer references allow protecting EDP from providers that are not on the usual list.
Effect/Event\Vendors qualification	Customer references are requested in the supplier qualification process. A lot of the qualification of suppliers is based on customer references. It is one of the most important issues to qualify suppliers. A supplier without customer references is not qualified.

Effect/Event\Vendors qualification	Specifically, on the Hyundai supplier were made direct contacts with TSO counterpart (Spain) for your qualification process. The need (Qualification) was explained. He wondered what they were doing with Hyundai? How it is going on? The Spanish explained what was happening.
Effect/Event\Vendors qualification	The qualification of suppliers is the responsibility of Purchasing Department. Where they are more proactive on checking customer references.
Effect/Event\Vendors qualification	Customer references can be complemented by audit visits to the factory of a potential supplier to qualify it. The request for customer references is one of the requirements of the qualification process.
Mechanism\Causal Power	Usually we send emails to the referenced entities if we have doubts or any question (...) and they answer us. The area is small enough for us to know everything.
Mechanism\Causal Power	When things go well no one talks ... there is only talking about vendors to say 'yes I have' or to say very badly about them. There are no talks about them as being excellent or fantastic because that's what everyone expects them to be. The language between CPOs has its own linguistic codes.
Mechanism\Causal Power	When the supplier is good, compliant and transparent it is normal hearing the purchasing department saying that of him. It is also common to hear good things from suppliers' counterparts' colleagues.
Mechanism\Causal Power	When we talk with the technician, who does the operation or maintenance of the equipment, the answer is very transparent and objectively he says just yes or no on the supplier's reference. I trust these opinions because normally these technicians have no commercial filter.
Mechanism\Liability\Aggregation to other marketing resources	Customer references are always seen as one more evaluation element for the supplier and per se, isolated, they have a low value.
Mechanism\Liability\Aggregation to other marketing resources	Voith did the work of getting information from Japan. To this end, companies rely of connection companies, like Fuji.
Mechanism\Liability\Aggregation to other marketing resources	If they had been purists about customer references, the only provider that could have been considered had been Audrithz, given the path that had already been travelled together in the preparation of the contract documents / contest and the Solution

	design.
Mechanism\Liability\Consistency	Other important elements are the dates (years) in which the supplier did the job.
Mechanism\Liability\Consistency	The analysis of the supply during several years is important because it allows evaluating the consistency of the supply. This consistency translates confidence on the supplier.
Mechanism\Liability\Consistency	An opinion type pronounced on the consistency or not of the list of customer references, as well as their recognizable quality requirement.
Mechanism\Liability\Consistency	Technical areas do not proceed to a confirmation of customer references, but rather to an analysis of them, to confirm their consistency. If this consistency is not present, they sometimes request clarification from the vendor, for example asking you to complete this list of customer references. The supplier sometimes completes a list of customer references and also gets to send statements of good supply and customer satisfaction for those already served.
Mechanism\Liability\Consistency	Reputation- Yes, if there is consistency in providing for a type of customers who deserve recognition by REN.
Mechanism\Liability\Consistency	The lack of consistency in suppliers list generates distrust.
Mechanism\Liability\Content	Customer references are important for Purchasing Department not in the perspective of having many names there, but in the perspective of being possible to check them. It is important that the customer reference discriminates the work. The information that a supplier worked for someone else is not enough. The Purchasing Department needs to confirm the type of works that have been done for that client and what had been the repercussion (if it does a good job or not). It is customary for Purchasing Department to ask for references to providers when they enrol in the suppliers list / database and when the Purchasing Department is doing consultation for a specific project it also calls for customer references related to the project. Another important element is the dates (years) in which the supplier did the job. It allows evaluating its professional skills. They ask for similar projects and the volume of the project in euros.

Mechanism\Liability\Content	Note: Luis Ferreira is sceptical about customer references provided by supplier shareholders.
Mechanism\Liability\Content	One of the criteria in the contract documents is the obligation of the supplier to submit its list of customer references for similar supplies, the same content, the same dimension and proven evidence.
Mechanism\Liability\Content	The customer references of ABB were not considered to be of good quality, because it does not reflect counterparts customers to REN's reality (same size / Geography).
Mechanism\Liability\Content	The portfolio of customers that a potential supplier can present is scrutinized (assessed) according to customers of recognizable importance and affinity with REN.
Mechanism\Liability\Content	The customer references should list clients, quantities supplied and the years of supply. The analysis of years of supply is important because it allows evaluating the consistency of the supply. This consistency translates confidence in the supplier.
Mechanism\Liability\Content	This supplier presented references. However, there was no reference in the European market.
Mechanism\Liability\Content	An important data requested in the customer references is the installation date and the number of hours the machine was in operation.
Objects\Reference List	Customer references are always the most relevant. One of these criteria in the contract documentation is the obligation of the supplier to submit its list of customer references for supplies.
Objects\Reference List	The list of customer references is a table / list with local, country, power, number of groups, customer, machine type, and contact.
Objects\Reference List	For the acquisition procedure of transformers were ordered references that would discriminate the number of units sold and for which client besides customer contacts.
Objects\Reference List	In the consultation process, customer references were applied to similar projects suppliers: List of similar work in EPCs.
Objects\Reference Visit	EDP will have visitors from all over the world as long as the project is in production. For example, it is expected that in one of the next European Congress of Hydro Electricity (Hydro 200X) takes place in Portugal and includes a visit to Venda Nova III.

Objects\Reference Visit	When you have to confirm some customer references, the most common practice is to do it by email. However, the best method is to visit as was done with Godisthal. In this case, EDP was invited to visit the German central. We were Audrtithz guests, which was careful enough to call a project leader, who was already retired, to be present. We were greeted by the Central Director with an open mind. At the time questions were asked to Central employees about the satisfaction that had concerning the various suppliers, including Voith. All showed great openness to answer the questions.
Objects\Reference Visit	The engineering team visited Goldisthal 2 times.
Objects\Reference Visit	Customer references can be complemented by audit visits to the potential supplier factory.
Objects\Reference Visit	Sometimes it happens to be the supplier to issue a call to go see the equipment running in an installation of another customer. It is not often, but it happens, especially with the most innovative equipment (e.g. cables OPGW and heat-resistant cables). In these cases, the suppliers are interested in promoting conversations between potential and existing customers. There are examples at REN of visits of this type which led to the acquisition of equipment. This applies to the first purchase of thermo-resistant cables that REN did last year. This visit promoted the interest of REN by the new technology and accordingly opened a contest in which the supplier has won.
Objects\Reference Visit	We have received many visits, even outside Portugal, colleagues who want to know the EPC environment. Of all visits, a couple were promoted by the supplier.
Objects\Reference Visit	When the European Directive of the exit there was still plenty of experience with similar equipment. In Spain there was none, and so it was strange to Endesa. In Portugal also there was none. Existed in France and through the GDF visited a facility
Objects\Workshop	A supplier who has success or a new product is normal to go sell to EDP. They ask for a meeting and come to make a presentation.
Objects\Workshop	Outside the scope of qualification of suppliers, it is customary to do workshops (meetings) with suppliers to present new products or new case studies. They did it because of that and were able

	to solve this problem and managed to save 'x'.
Objects\Workshop	Customer references can be complemented by audit visits to the potential supplier factory.
Objects\Workshop	Some vendors do a marketing effort. For example they come to REN to present their products and they bring technicians and real customers. The operational areas are present.
Structure	The supplier of Hyundai sent a lot of information on similar projects, with photos and detailed descriptions.
Structure	I do not feel that suppliers do a high marketing effort.
Structure	Cannot be said, say that had a decisive influence. It was another element of analysis.
Structure	The procurement director asks for customer references by using the following formulation: what work of this type have you done in the last five years? To whom, where and what value? To prove it I ask the supplier who should I contact. "How did they behave and what problems did you have" are some questions placed to referencing customers.