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A Comparative Study Between U.S. and Brazilian Acquisition Regulations and Practices

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A COMPARATIVE STUDY BETWEEN US AND BRAZILIAN ACQUISITION REGULATIONS AND PRACTICES

THESIS

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Abstract

It has been widely recognized that effective purchasing and supply management can significantly contribute to organizational success not only in the private but also in the public sector. In this view, the researcher undergoes a tripartite comparative analysis approach using: (1) Brazilian Acquisition Law, (2) US Federal Acquisition Regulation and (3) Selected Articles from the European Journal of Purchasing and Supply Management (1996-2010). Specifically, the primary research question is: How does the Brazilian Law 8666/93 compare to the American Federal Acquisition Regulation (FAR/84)? Therefore, an in-depth assessment and analysis of the procurement systems of the United States and Brazil is executed in order to determine the different perspectives and policies adopted by these countries; and how differently each Government perceive the purchase function. An extensive literature review using selected articles from the European Journal of Purchasing and Supply Management (1996-2010) enabled the generation of 22 potential topics for comparative purposes. This research is qualitative in nature and two methods were utilized: Coding techniques and CRA (Center Resonance Analysis). A complete coding structure was developed using the Brazilian Acquisition Law as the primary basis, and two main coding structure parts were selected in an endeavor to answer the research questions. The set of analyses were facilitated through the use of the Crawdad Software, which applies text analysis techniques by representing the text as a network of essential linked concepts. Several lessons learned were collected that can be ultimately incorporated on the purchasing practices of the Brazilian acquisition system.

To my husband and son: For trusting and supporting me throughout this work.

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A COMPARATIVE STUDY BETWEEN US AND BRAZILIAN ACQUISITION REGULATIONS AND PRACTICES

I. Introduction

Purpose

Through comparative analysis, this thesis aims to describe and assess the Brazilian and American acquisition systems in terms of military procurement. Policies, procedures, and methodologies that contribute to effective implementation of the Brazilian and American contracting systems are also going to be considered.

Background

Since the mid-1980s, the strategic role of the purchasing function has received considerable attention in academic and trade journals (Carr and Pearson, 2002). It is widely recognized that effective purchasing and supply management can significantly contribute to organizational success not only in the private but also in the public sector. With the growing importance of supply-chain management, purchasing has assumed an increasingly pivotal role, evolving from an obscure buying function into a strategic business partner (Ellram and Carr, 1994; Cooper and Ellram, 1993).

Thus, technological developments related to strategic sourcing have challenged the Department of Defense of the United States and the Defense Ministry of the Federal Republic of Brazil to implement more innovative and efficient approaches for procuring technically sophisticated systems with less budget and personnel.

Therefore, an in-depth assessment and analysis of the procurement systems of the United States and Brazil can be a very useful tool to draw conclusions about the different perspectives and policies adopted by these countries, and how differently each Government perceive the purchase function.

Research Focus

The main objective of the present research paper is to analyze and compare the contracting systems of the United States of America and Brazil.

The secondary objectives of this research paper are as follows:

1. Provide an understanding of Brazilian and American contracting regulations in terms of organization and structure, highlighting the main objectives, systems, terms and definitions,
2. Establish the criteria under which the basis of comparisons between both regulations are going to be drawn, using coding techniques,
3. Undergo an extensive review of related literature, including major purchase practices that subsist in specialized purchase and supply management journals, books and theses,
4. Present an overview of the acquisition hierarchy and process both in Brazil and in the United States,
5. Conduct a comparative analysis of the Brazilian and the American regulations concerning the purchasing of military supplies and services, with specific focus on acquisition strategy and planning, solicitation process, supplier evaluation, negotiation and award phases,

6. Study the Brazilian and the American Air Force Strategic Plans and evaluate how the respective purchasing systems are meeting each country's strategic needs,
7. Identify the significant benefits and difficulties of the two contracting systems,
8. Present the research results, giving special attention to the advantages and disadvantages associated with each system;
9. Discuss potential future applications as well as recommendations for both countries.

Research Questions

1. Primary Research Question: How does the Brazilian Law 8666/93 compare to the American Federal Acquisition Regulation (FAR/84)?

2. Subsidiary Research Questions:

a) How do both regulations apply the worldwide practices found in the related literature?
b) What are the key purchasing concepts existing in American and Brazilian contracting regulations?
c) How do the United States and Brazil conduct procurement operations for major systems?
d) What are the significant contracting phases' differences between American and Brazilian acquisition regulations?
e) What are the strengths and weaknesses of the aforementioned differences?

Scope and limitations

This study primarily aims at understanding the Brazilian and American contracting systems, and identifying points of comparisons between their two acquisition regulations.

Furthermore, this research analysis involves the manipulation of many information and comparison criteria, resulting in the need for tools to help the researcher better grasp the most important concepts and contracting purchasing practices.

However, it is important to acknowledge that this study only includes comparisons between elements that are common between both Brazilian and American regulations.

Methodology

According to Ellram (1996), the research methodology or basic research design can be classified according to the type of data into modeling and empirical, and according to the type of analysis into primarily quantitative or qualitative.

Thus, the data used in this research is going to be primarily qualitative, and it will be basically collected though an in-depth review of the Federal Acquisition Regulation (FAR), the Brazilian Law 8666/93, textbooks, purchase and supply management journals, including research articles and related theses.

The Brazilian Law 8666/93 and the American Federal Acquisition Regulation are going to be analyzed through coding techniques. For purposes of this research, the European Journal of Purchasing and Supply Chain Management will be used to

develop the descriptive codes. Qualitative analysis will be performed in this research using the Crawdad Software.

At this point, it is important to highlight that if the explanation of a phenomenon is a goal, qualitative methods are preferred, because they provide an in-depth richness, allowing the researcher to really probe the 'how and why' questions and construct idiographic knowledge Ellram (1996).

In this respect, Melachrioudis and Min (2000) state that the researcher experience is an absolute must for the research interpretation and conclusion, mainly due to the subjectivity involved in the answers.

Benefits of the study

This study contributes to and extends a growing research documenting the strategic role of purchasing, specifically concerning the Brazilian and American public acquisition systems.

It is important to mention that both countries can benefit from this study, since they are going to be able to assess and, therefore, build up a more effective and efficient system to meet future requirements. Possible future joint acquisitions can be facilitated as a result of the present research as well.

Organization

The research will be organized in the following manner:

Chapter 1 presents the purpose and background of the study and outlines research objectives and problems, methodology, limitations and implications.

Chapter 2 outlines the conceptual foundation with an extensive literature review, building the basis for a broader understanding about purchase practices in the related literature.

Chapter 3 gives special attention to applying the methodologies that are going to be used in this present research. Coding techniques are going to be performed so as to compare and contrast the Brazilian and American military contracting regulations.

Chapter 4 analyzes the data collected in an attempt to revisit the problem and answer the research questions previously stated.

Conclusions and future recommendations are addressed in Chapter 5.

II. Literature Review

The literature review aims at presenting a series of studies that have already been accomplished about the subject, more specifically, related to the research problem. Following this guideline, the researcher intends to:

i. Address the concepts that will build the basis for comprehension of this study,

ii. Enable the study of the theoretical foundation that will be hereby developed in order to answer the research questions,

iii. Inform the reader about the necessary elements for the analysis of the relevance of both the problem and the methodology utilized.

The research methodology has its starting point in an in-depth theoretical study of the purchasing literature found mainly in the European Journal of Purchasing and Supply Management (1996-2002) later renamed to Journal of Purchasing and Supply Management (2003-present). Sixteen volumes containing four (or six) issues each – including a total of 424 articles, case studies and book reviews are analyzed with the purpose of highlighting the main themes (subjects of study) of each journal volume. These themes ultimately reflect the concerns and views of researchers and practitioners about purchasing problems related to each specific year period. They will ultimately form the basis for analysis using the coding and set of comparisons between the US Federal Acquisition Regulation (FAR, 2005) and the Brazilian Acquisition Regulation (Law 8666, 1993) undertaken in the following chapters.

First, we highlight that the term purchasing is sometimes referred to as procurement, materiel, materials management, logistics, sourcing, supply management, and supply

chain management (Leenders and others, 2006:4). This is because these terms are used almost interchangeably throughout the related literature, although according to Leenders and others (2006:4) some academics and practitioners limit the term purchasing to the process of "buying: learning of the need, locating and selecting a supplier, negotiating a price and other pertinent terms, and following up to ensure delivery and payment."

The DOD dictionary of Military Terms does not recognize the term purchasing, but it defines a purchasing office as "Any installation or activity, or any division, office, branch, section, unit, or other organizational element of an installation or activity charged with the functions of procuring supplies or services." The same dictionary also explains the term *general purchasing agents* as "Agents who have been appointed in the principal overseas areas to supervise, control, coordinate, negotiate, and develop the local procurement of supplies, services, and facilities by Armed Forces of the United States, in order that the most effective utilization may be made of local resources and production."

Instead of focusing solely on the definition of the word purchasing, it is also important to understand why it is so critical and the main benefits that organizations can realize from their focus on purchasing and supply chain management. Monczka and others (2002) stress that as companies strive to increase customer value by improving performance while simultaneously reducing costs, many companies are turning their attention to purchasing and to supply management. The authors point out some of the benefits from focusing on acquisition and supply chain management practices, namely: cost reduction or improvement; improved material delivery; shorter cycle time, including product development cycle times; access to product and process technology and quality improvement.

As much as it is possible to define purchasing, it is clear that the term is broader than it seems, and it can refer not only to the initial recognition of the need, but also to the search for potential suppliers, contract and supplier agreements, delivery of products and services, payment, receiving, inspection, storage, material handling, organization's customers, etc.

In military organizations the above functions are usually undertaken by a purchasing function that can assume numerous scenarios and names either in the US or in the Brazilian Air Forces. In the battlefield, the purchasing function can play an even more critical and strategically relevant role for a nation's success, constantly focused on innovative and effective means to support the war fighter.

Over the recent years we have witnessed a global change in the world economic scenario. In light of that, the Defense Acquisition Systems of both Brazil and the US have been facing various budgetary and policy challenges. This is due to the fact that they basically exist to manage the nation's investments in technologies, programs, and product support necessary to follow the National Security Strategy guidelines and support their Armed Forces. Public procurement needs changing and in the words of Welch (2003:17), "budget shortfalls are dictating reexamination of arcane buying practices".

According to the US Defense Procurement and Acquisition Policy, every acquisition program relies on a sound acquisition strategy reflecting a knowledge-based approach designed to inform decision making, reduce technology, integration, and manufacturing risk, and ensure program predictability. Likewise, strategic sourcing is a proven best practice and represents how the DoD acquires goods and services. It represents the collaborative and structured process of analyzing an organization's spend and using the

information to make business decisions about acquiring commodities and services more effectively and efficiently.

In this research, we discuss some of the main purchasing concepts and practices, through the lenses of the European Journal of Purchasing and Supply Management. This publication consists of a renowned research data base and it focuses basically on private sector practices and regulations.

It is interesting to notice that although the market system and the public policy differ according to their operating tenets, it is true that efficiency, productivity and growth are still sought by the public sector along with justice, equity and fairness. On one hand, in the military scenario, the government is responsible for dictating the rules according to the public interest. On the other hand, in private industries, the market system evolves its self-interest following the invisible hand rule – a term most often associated with Adam Smith's work *Wealth of Nations*, where the business profit is the ultimate reward (Leonard, 2002:143).

Strategic procurement, partnership sourcing and supply network strategies

In 1996, the authors of the papers and case studies published in the European Journal of Purchasing and Supply Management focus on the ever-changing business environment and how these changes affect the role, strategy and structure of purchasing and supply management. Special attention is given to the changing role of purchasing in two different sectors, i.e. the health sector and public sector. Karin Bryntse (1996) explores the nature of the purchasing function and in the purchasing of public services, based on empirical studies conducted in Sweden, England and Germany. Based on her findings,

the author challenges the idea that the purchasing process can be seen as sequential, with well-defined stages from specifications to a one-point delivery. Her analysis shows that the purchasing of technical services is very much dynamic, continuous and interactive. Purchasing processes accordingly should be illustrated more as circular processes, where different phases can be activated at different points in time. Strategic procurement, partnership sourcing and supply network strategies are some of the most important concepts scrutinized by the journal authors in the 1996 volume.

Lyne (1996) presents a substantially new view of the role of procurement in local government, introducing the concept of "enabling authority" based on strategic procurement development. The author studied the 1995 UK White Paper entitled *Setting New Standards: A Strategy for Government Procurement*, which contains executive policy to be implemented by UK commerce departments. Enabling authority is a term used by the author to refer to the government's role while exercising its function. Since the government is a huge buyer, it plays a capital role in the country's economy.

The new view of the role of procurement is based on a transformative approach. The author explains that this is more of a change in attitude than a renewing of structure. In his analysis, "a significant component of the transformation is that authorities are trying to improve their performance by taking the best of commercial ethos and practice and marrying it with the best of public sector ethos and practice."

The first change is related to business process reengineering - a technique that consists of refocusing companies onto the best value supply chain – adding value for the customer in the market-place, thus away from the old professional functions. Best value supply chains are grounded in a different set of assumptions and practices. Their focus is

on strategic supply chain management, or the use of supply chains as a means to create competitive advantages and enhance firm performance (Hult, Ketchen, and Slater, 2004; Upson, Ketchen, and Ireland, 2007).

The second change considers the local government's ability to deal with the commercial world in various aspects, ranging from negotiating long-term partnerships (for instance, in the outsourcing functions), to political imperatives, in other words, the need to address problems by public policy.

Finally, the third change is in management practices. Good management is not exclusive to any sector but it is fair to say that there has long been a migration of the best commercial management practices, into the public sector, and it continues. It is driven, as are the other changes, by the imperative of focusing on the citizen, of identifying the right things to do and then doing them as efficiently as possible; in short by the imperative of doing more less. Procurement has a particular interest in this change. Not only is more procurement being done than in the past, but more people are doing it because there is a drive to empower local managers to make decisions as close to the delivery of services as possible (Lyne, 1996).

Partnership sourcing is another key concept explained by Burned and New (1998) in their article *Understanding Supply Chain Improvement*. According to the authors, there is no widely agreed definition of the term, but it can be explained as:

> Where customer and suppliers develop such a close and long-term relationship that the two work together as partners. It isn't philanthropy: the aim is to secure the best possible commercial advantage. The principle is that teamwork is better than combat. If the end customer is to be best served, then the parties to a deal must work together- and both must win. Partnership sourcing works because both parties have an interest in each other's success (Partnership Sourcing Ltd, 1991:2).

According to Burnes and Whittle (1995), a partnership relationship is usually common where some or all of the succeeding characteristics are present: long-term commitment; proactive customers and suppliers; integrated key processes and activities between both parties as well as cooperation and close relationships; clear and well-structured cost, price, and profit framework for both sides; win-win philosophy and continuous improvement.

According to Hines (1996), the strategic importance of buyer and supplier working together within an ongoing relationship has been recognized by both practitioners and academics only recently. With few exceptions (such as Blois, 1972) it was not until the 1980s that the true strategic value of buyer-supplier relationships was being discussed in any depth. Supplier and buyer together realized they could reach an ongoing and extended time period commitment in which they agree on sharing information along with risks and rewards, so a shift from the traditional win-lose situation to a win-win relationship between both parties was made possible (Ellram, 1991).

Further development of this theme includes the study of supply network strategies. They were first addressed in the 1990s, but with little emphasis on the real world application of managerial solutions to support the concept. Harland (1995) attempts to provide not only a conceptual base on supply network strategies, but also a real world formulation applied to the case of health supplies. This formulation is presented in four main elements: first, the decision elements that comprise the strategy; second, a process by which these decisions can be taken; third, the division of the network strategy into an overarching strategy with a portfolio of substrategies; and fourth, a staged approach to

implementation. As the author states, these four main elements are derived from operations strategy, mainly the work of Hayes and Wheelwright (1984) and Hill (1989).

Decision elements can be subcategorized as structural and infrastructural. On one hand, structural decisions include those related to capacity: size, volume, timing; internal/external sourcing: do-or-buy; supply network actors and facility configuration, e.g. material handling systems. On the other hand, infrastructure decisions are basically related to human resource policies, quality systems, operations planning and control, new product/service development, as well as network organization and performance measurement. The important aspect of the study in this scenario is that the organization itself is considered a network that interacts and provides value to other networks. In other words, supply strategies are addressed in a more holistic standpoint with respect to the role each organization plays, and also to the interactions between the actors or players – buyers and suppliers (Hines, 1996).

A supply network strategy process accounts first for the core competitive supply network competencies of an organization. Decisions related to supplier base, or supplier reductions should be aligned to these core competitive competencies. This is only possible when the organization develops solid managerial decision making tools and policies that can be implemented and followed by every chain of the companies' hierarchy. Process improvement or continuous process improvement (*kaban*, from the Japanese) should be part of the planning and decision making of any organization that aims at working on inefficiencies and/or challenging old assumptions. More than effectiveness needs to be part of the decision process and organizations should target

teamwork interoperability – either within the organization and/or making use of cross-functional supply teams (Hines, 1996).

According to Fearon and others (2006), cross-functional teams consist of personnel from multiple functions focused on a supply-related task. It is generally believed that high-performing, cross-functional teams will get better results, with greater benefit to the organization as a whole, at lower costs, in less time.

A supply network strategy hierarchy approach deals with the fragmentation of the organization into chains of domain (divisions) – each chain has its own vision and strategy, but they are aligned within the organization's overall business strategy. As Harland (1996) points out the focal organization supply network strategy is seen as an overarching strategy within which product/service family supply network strategies are formulated. The overarching strategy should contain its overall business strategy, and issues of policy: for example, the network's environment policy. Underneath the overarching strategy there may be a portfolio of different strategies designed to serve specific end-customer segments.

Also according to Harland (1996), the supply network implementation has four main stages that can be identified. At stage 1 the supply network is functioning under crisis. Purchasing plays a more adversarial than supportive role, because buyers and suppliers cannot agree on basic product, delivery, transportation and other related issues. At stage 2 players in the supply network are still struggling to resolve collaborative issues. They are unable to work towards a common goal, because of lack of visibility throughout the whole supply network chain. As a direct and severe consequence, end-customers are not fully satisfied. At stage 3 supply network players have identified the main end-customer

requirements and have worked together towards a common strategy that perfectly fits the needs of the customer. A win-win situation can be established because suppliers transformed themselves to cope with competitive environment pressures and developed the ability to deal effectively with the differing purchasing styles and needs of their customers (New and Burnes, 1996). Finally, at stage 4 supply networks are willing to be more innovative and proactive and they can offer their customer's base a variety of customized products and services. This relationship tends to be an enduring partnership experience with mutual possibilities for both parties.

Supplier development, ethical challenges and strategic purchasing

In 1997, the authors of the papers and case studies published in the European Journal of Purchasing and Supply Management focus on critical elements of supplier development. Some perceptions of members of the Chartered Institute of Purchasing and Supply are also addressed as an empirically based operational definition of strategic purchasing. The authors Thompson and Cox (1997) and G Jones (1997) focus on contractual relations for construction projects and public service respectively.

First, the definition for supplier development can be understood as:

> Any effort of a buying firm with its supplier(s) to increase the performance and/or capabilities of the supplier and meet the buying firm's short – and/or long – term supply needs (Krause and Ellram, 1997).

Krause and Ellram (1997) stress the importance of supplier development and discuss some critical elements that appear to be essential for the effectiveness of the supplier development effort. Some of them include the following: Effective two-way, multi-functional communication; top management involvement; cross-functional teams;

emphasis on factors other than price; long-term perspective, purchasing a relatively large percentage of supplier's annual sales, supplier evaluation and supplier recognition.

Two-way effective communication is viewed throughout the literature as essential to successful supplier development (Lascelles and Dale, 1989; Hahn and others, 1990; Newman and Rhee, 1990; Galt and Dale, 1991). It is proven that the supplier's quality performance and competiveness are significantly superior whenever there are more opportunities to establish good communication between functions of both the buyer and supplier firms.

Top management involvement is also proven to be a potential critical element of supplier development, mainly because a great percentage of supplier development programs are 'in effect' at the divisional or corporate levels. Cross-functional teams have also been identified as important contributors to the success of such efforts as supplier selection, product design (Burt, 1989), just-in-time manufacturing, cost reduction, and total quality initiatives (Burt and Doyle, 1993; Ellram and Pearson, 1993).

Krause and Ellram (1997) also theorize that the higher percentage of a supplier's output purchased by any one buying firm, the more the buying firm can expect acquiescence to its wishes.

Another key concept that seems to be constantly revisited by purchasing authors and practitioners is professional ethics. Ethical issues will always permeate both the private and public sectors. Any behavior by purchasing personnel that is perceived to be, or is suspected to be, in conflict with the best interests of the organization and its owners presents purchasing management with an ethical problem according to Kauffman and Cavinato (1999).

Among the key ethical issues found during the research undergone by Kemp and others (1997), the authors include: failure to provide products and services of the highest quality in the eyes of the internal customers; failure to provide products and services of the highest quality in the eyes of the external customers; failure to provide prompt, honest responses to customer inquiries and requests; and false or misleading representation of supply requirements or interest in discussions with suppliers; allowing personalities to improperly influence the buying decision and showing partiality toward suppliers preferred by upper management. An additional three issues ranked in the top-ten for this research are closely related to problems facing public practitioners, mainly due to the strategic and sensitiveness of the information involved. These issues are: misuse of sensitive information belonging to suppliers or others; misuse of the organization's assets or property and lack of knowledge or skills to competently perform one's duties.

An empirically based operational definition of strategic purchasing is also addressed by Carr and Smeltzer (1997). In order to do so, they develop and test a model which resulted in four hypotheses. In other words, four factors were found positively related to the level of strategic purchasing: status of the purchasing function; purchasing knowledge and skills; purchasing willingness to take risks; and purchasing resources. The authors start their research by analyzing the evolutionary role of the purchasing function. They point out that before the 1973-1974 oil crises, top management didn't view the purchasing function as being proactive within the business organization according to Ammer (1989). A major shift in the recognition of the purchasing function role occurred when Porter (1980) included in his model the importance of the buyer in describing the five forces that impact the competitive nature of an industry.

Kauffman and Cavinato (1999) affirm that purchasing and supply affects the strategic capabilities in many ways. Whereas in the past many viewed it as a standalone function, it is now seen as a set of value-adding processes that link directly to the market and the organization's ability to innovate and deliver value in the marketplace.

It is important to highlight that 'strategic purchasing' (and not 'purchasing strategy' which means 'purchasing specific actions') relates to strategic planning or better yet strategic management. For this study, in order to better understand the term 'strategic purchasing', we consider the following definition:

> The process of planning, implementing, evaluating, and controlling strategic and operating purchasing decisions for directing all activities of the purchasing function toward opportunities consistent with the firm's capabilities to achieve its long-term goals (Carr and Smeltzer, 1997).

Total Quality Management (TQM)

The key theme discussed in the Fourth European Journal of Purchasing and Supply Management (1998) is total quality management (TQM) and its influences on the purchasing function. The role of buyer and supplier relationships in integrating TQM through the supply chain is also debated.

First, it is important to highlight that total quality management refers to a quality emphasis that encompasses the entire organization, from supplier to customer. TQM stresses a commitment by management to have a continuing companywide drive toward excellence in all aspects of products and services that are important to the customer. TQM requires a never-ending process of continuous improvement that covers people, equipment, suppliers, materials and procedures. The Japanese use the word *kaizen* to

describe this ongoing process of unending improvement – the setting and achieving of ever-higher goals. In the U.S., TQM and zero defects are also used to describe continuous improvements efforts (Render and Heizer, 2008).

Caddick and Dale (1998) on their paper '*The impact of quality management on the purchasing function: Influences and implications'* studied a four-part hypothesis related to the case that the role and activities of the purchasing function in an organization would be affected by the development of TQM practices. The four-part categorization included: supply market influence; changes in culture and organizational changes in purchasing; economics and costs; and a revised role for purchasing. This categorization was tested and proved in an engineering purchasing department of a major British Little organization; although little evidence was found in terms of a vision for a new role for purchasing.

The reorganization of the purchasing function with the development of the buyer's role vis-à-vis the supply market was a direct result of the perception of the supplier as a partner. In this sense, TQM is viewed as the springboard for the major changes experienced both in the purchasing department and the supplier base.

Caddick and Dale (1998) also point out that the purchasing function was clearly a catalyst for most of the changes perceived in the organizational culture in terms of enhancing internal supplier/customer relationships and cost reductions. All of these changes have been made as a result of the influences of TQM and quality thinking.

Carter and others (1998) study the benefits of quality thinking, but they particularly investigate the role of the buyer-supplier relationship in the TQM process. The authors study three hypotheses: (1) firms with successful TQM programs have more formal

mechanisms for interacting with suppliers; (2) business units with more successful TQM programs exhibit a greater degree of competitive focus and single sourcing; and (3) TQM adopters have higher level of understanding of internal and external customer needs. The study showed that the three hypotheses were supported proving that buyer-supplier relationships in firms with successful TQM programs are different than organizations with less reliable TQM initiatives.

One important factor to highlight in the design of an organization's supply chain - and that is intrinsically related to the aforementioned study on TQM practices - is supply base management. Some prior research discusses the supply base reduction suggesting that a prerequisite for developing a strong buyer–supplier relationship is to have a small number of suppliers (Cooper and Ellram, 1993; Parker and Hartley, 1997; Kauffman and Leszczyc, 2005; Sarkar and Mohapatra, 2006).

Ogden (2006) performed an empirical study on the critical success factors related to supply base reduction through case studies conducted within 10 organizations that have reduced their supply bases. Some drivers and/or benefits – not previously identified in the related literature – include: (1) good information system; (2) choosing the right supplier; (3) win-win relationships; (4) not driving compliance too far; (5) correct items on initial request for proposal; (6) hiring the right people for the project; (7) use of outside consultants; (8) not changing the supply base too abruptly; (9) long-term contracts; (10) utilizing total cost of ownership approach; (11) benchmarking; and (12) dedicating enough resources.

Strategic Management

In an age of downsizing, outsourcing, cross-functional team processes, increasingly sophisticated information and communication systems, and assessing every function in terms of how much value it adds to the firm, it is vital to examine how each group fits within the strategic orientation of the firm as a whole (Cavinato, 1999). In light of this, the fifth European Journal of Purchasing and Supply Management mainly focuses on strategy, namely: how to manage strategic partnerships, the relationship of strategic purchasing to supply chain management as well as how to fit purchasing to the five stages of strategic management.

Cavinato (1999) extends his research on strategic purchasing (Freeman and Cavinato, 1990) in order to analyze how the purchasing function fits into the fifth stage of strategic management – the knowledge-based organization – a concept first introduced by Peter Senge (Senge, 1990).

Most business companies follow a sequential four-stage path in their strategic management evolution: (Stage 1) basic financial planning; (Stage 2) forecast-based planning; (Stage 3) externally oriented planning; and (Stage 4) strategic management (Senge, 1990; Gluck and others, 1980). The fifth stage presented by Cavinato (1999) represents the knowledge-based business – the most advanced stage of the strategic management progression occurred in the late 1990s. As companies gradually move from stage 1 to 5, they shift from an inwardly focus on basic financial planning to excellent communication links into, within and outside the organization.

In the last stage, the purchasing function is the broadest possible way to create and facilitate networks of all types – it is responsible for all products from creation/innovation

through final use and disposition. When compared to the other stages, the knowledge-based business is not only concerned with supply chain management issues, but with leading with detected needs and opportunities.

As Cavinato (1999) ponders, the key measures involving in knowledge-based business are all-encompassing: the total chain costs are weighed against the total costs of competing chains. The budgetary approach examines future costs while developing inter-firm measures that bring about a proactive behavior as opposed to measuring standard cost centers created in the past. Some activity-based cost (ABC) analysis might as well apply in this scenario, since it accurately measures activity costs, allowing the reduction of costs by continuous and discontinuous improvements in the organization (Cooper and Kaplan, 1998).

Carr and Smeltzer (1999) refer back to their definition of strategic purchasing (Carr and Smeltzer, 1997) in an attempt to test four hypotheses concerning strategic purchasing: (1) it is positively related to the supplier's responsiveness to purchasing requirements; (2) it is positively related to changes in the supplier market; (3) it is positively related to the level of communications between firms in the supply chain; and (4) it is positively related to the firm's performance.

The research suggests that all the hypotheses are statistically significant, and amongst all the hypotheses tested, the positive relationship between supplier communication and strategic purchasing appears to be the strongest. This result perfectly alludes to the related literature which also implies that organizations need to move away from rivalry partnerships and select suppliers with whom they can build a win-win relationship as well as mutual cooperation. These relationships are to be built not only with the first, but also

with the second and third tier suppliers creating an environment of quick responsiveness to the organization's needs. An organization's capability to manage changes in the supplier market can also be more effective when they have developed strategic planning capabilities.

Supply Chain Management - outsourcing

In 2000, the authors of the papers and case studies published in the Sixth European Journal of Purchasing and Supply Management focus their attention to the new dimensions of outsourcing, developing strategic partnerships in supply chain – an analytical framework for critical literature review on SCM is also undertaken –, and re-engineering the purchasing function.

The new dimensions on outsourcing are discussed by Arnold (2000), who explains outsourcing from a transaction cost perspective and a core competency perspective. Although both perspectives are said to be complementary, the former deals with the specificity of goods and services. From a cost perspective, low specificity means that little information has to be exchanged with the transaction partner, so external outsourcing partners are able to bundle demand and to exploit economies of scale. On the contrary, high-specificity goods have extremely high transactional costs and only a few customers available to buy them. These goods and/or services are most likely based on the company's core competencies. Likewise, they shouldn't be outsourced but developed within the company.

Outsourcing goods from a core competency standpoint refers to the strategic importance that the specific good or service plays within the organization. A core

competency can be identified using two simple questions: 1) Is it a significant source of competitive differentiation? Does it provide a unique signature for the company that distinguishes it from its competitors? 2) Does it secure the organization by giving it competitive advantage and protecting it by imitation over time? (Prahalad, 1993).

The integrated outsourcing model described by Arnold (2000) introduces the concept of the de-materialized company as being the optimum of outsourcing – the more the company outsources its goods or services, the more it is going to be closer to the supplier. It is a company working both as a supplier and a customer management as well. It is clear there are some trade-offs to this point of view, since the company also loses some of its own flexibility if suppliers start to face problems developing or delivering the outsourced goods or services.

At the same time, little research has been conducted toward a thorough investigation of the skills and abilities that the purchasing personnel must develop to deal with acquisition-related situations (negotiations, contracting, bidding, etc). The most valuable asset a company has is its own employees – well-trained, skilled, motivated and qualified personnel can help the company achieve its business goal and also gain market competitive advantage. The constant changes in the purchasing function environment, including the development of partnerships with strategic suppliers depend upon the business, interpersonal and sometimes technical skills developed by the purchasing personnel.

Environmental purchasing and a comparison between private and government acquisition goals

Environmental concerns and basic different strategies between private and government purchasing when managing the supply chain are some of the issues addressed by the authors of papers in the seventh edition (2001) of the European Journal of Purchasing and Supply Management.

Environmental purchasing can be defined as the set of criteria under which buyers can categorize suppliers with respect to environmental issues and regulations, including: resource reduction, reuse, recycling activities, which drive effective and efficient management of reverse logistics. A more holistic view of reverse logistics includes the reduction of materials in the forward system in such a way that fewer materials flow back, reuse of materials is possible and recycling is facilitated (Carter and Ellram, 1998).

Environmental purchasing can be viewed not only from the perspective of the company concerned about taking a major managing posture toward environmental problems and regulations, but also from the standpoint of a business company interested in including environmental rating systems in their base supplier analysis. The latter seems to be the case of government purchases, although there seems to be little empirical research on the cost effectiveness of buying from environmentally-conscious companies.

Unfortunately, researchers have found that lack of resources, high costs of environmental compliance and lack of perceived benefits are some of the greatest obstacles for undertaking successful recycling systems (Murphy and others, 1995:32). Indeed, economies of scale are important for effective investment recovery activities.

Smaller firms may not be able to attain economies of scale to recoup value from their scrap to off-set transportation and transaction costs (Zsidisin and Siferd, 2001:67).

The main goal of Murray (2001:94) in his paper *Local government and private sector purchasing strategy: a comparative study* is to underline the main strategic acquisition goals of the local government and the private sector. Through a survey involving UK councils, the author identified some goals involving the local government: (1) local economic development; (2) environment; (3) customer focus in service delivery; (4) quality of life; (5) quality; (6) community development; (7) sustainable development; (8) staff development; (9) open government; (10) tourism; (11) cost reduction; and (12) recreation and leisure. Whereas those are the goals of the local government, the goals of the private sector business were found to be: (1) return on investment; (2) profit maximization; (3) sustainable competitive advantage; (4) survival; and (5) growth.

The research findings not only show that goals are significantly different when we compare private and public local sectors, but also purchasing objectives (see Table 1).

Table 1 – Comparison of the Purchasing Objectives of the Private and Public Sectors

	Private Sector	Local Government Purchasing
Purchasing Objectives	Cost reduction Quality improvement Innovation transfer Security of supply	Value for money/ "best value" Local economy development Environmental stewardship Quality of life Cost reduction Quality improvement Customer Focus in service delivery

Source (Murray, 2001:96)

Logistics service, outsourcing and target costing process

In 2002, the authors of the papers and case studies published in the Eight European Journal of Purchasing and Supply Management focus their research on procurement of logistics services and some issues related to the determinants of service quality. Long-

term inter-organizational relationships, outsourcing and supply management's involvement in the target costing process are some of the topics carefully presented in this issue.

Andersson and Norrman (2002) begin by describing and comparing the purchasing process for advanced versus basic logistics services, arguing that more differentiated purchasing strategies are required. Raeside and others (2002) attempt to carry out a study that draws a comparison between the theoretical literature framework and the findings of a survey into outsourcing activities of large organizations in Scotland. The critical role of the purchasing or supply management in the target costing process is also investigated by Ellram (2002).

Procurement of logistics services seems to play a decisive role in any business organization. Companies usually need to understand current and future business trends in order to rapidly develop the required resources, routine and competency to adapt to changes in procurement processes. These changes on buying process for logistics services relate to the fact that companies are increasingly buying not only goods but also services in big volume bundles (Berglund, 2000). At the same time, the purchasing process also increases in complexity because different IT and value-added services are included in those bundles, being handled in so-called third-party logistics relationships (Laarhoven and others, 2000). Andersson and Norrman (2002) state that the increasingly more advanced tasks companies are trying to outsource today (e.g. logistics management) are much harder to specify and the companies are also not used to doing this.

It is important to highlight the differences between basic and advanced logistics services. The former focus on single services, tangible services definitions, handling,

execution of activities and stable service definition; whereas the latter drives the degree of complexity through multiple and bundled services, intangible outcome requirements, value adding focus, management and development and re-engineering of solution.

As Andersson and Norrman (2002) emphasize business trends have quite an impact on logistics procurement driving business to more differentiated strategies and processes. Some examples of this changing context include: increasing globalization of supply and demand markets; focus on agility and core competency, leading to outsourcing; consolidation of the logistics markets (mergers and alliances); development of e-commerce and information technology; and future purchasing situations. These future purchasing potential outcomes include strategic alliances with few providers of advanced logistics services or multiple, "one-off" transactional relationships for leverage and non-critical items.

For business companies to understand current and future business trends, they also need to master the purchasing process of logistics. Although the purchasing literature highlights many aspects of the basic service purchasing process, it is common-sense that this includes the following eight phases: (1) service procurement; (2) clear and detailed definition or specification of the service; (3) perfect knowledge of the volume that is being bought; (4) internal standardization and simplification; (5) market survey; (6) request for information; (7) request for proposal; (8) negotiations and contracting.

Service procurement deals with the increasing need for more bundled and complex logistics services and the consequent need for more thorough and useful specifications. Axelsson and Wynstra (2002) also point out the importance to define what service is, what demand it should fulfill and what problem it should solve.

The request for proposal process for logistics services will usually result in two-three companies being investigated in-depth. Moreover, the development of the proposal and the selection of the supplier need to be defined not only around service prices, but also considering other performance factors. Some of them include cultural compatibility, financial strength, the quality of the management, flexibility in meeting new, unforeseen environments as well as information systems capabilities (Sink and Langley, 1997).

Negotiations and contracting seem to be a very important aspect of the service process. There are two contradictory and opposing views regarding the importance of contracts in deep partnerships according to Andersson and Norrman (2002): lack of contract is seen as a sign of strength in the relationship, or contracts are essential for the partnership success.

Contracts are usually used in order to safeguard both parties in a partnership. They include clauses with respect to specifications, lead time, customer service, etc. used to protect one's own interest and minimize risks. It is clear that contracts for purchasing complex logistics services or systems are much more detailed due to the scope of activities they encompass, but they also contain a myriad of problems dealing with unknown future issues and how to handle them.

In this concern, Monczka and others (2002) also stress that nonperformance on large contracts can usually cause severe problems. As a consequence, the purchaser may want to negotiate special safeguards to ensure the supplier recognizes the importance of performing exactly as required. In any case, reaching an agreement is not the end of the negotiation process. Rather, as agreement represents the beginning of the contact's performance for the item, service or activity covered by the agreement. A key part of any

negotiated agreement between parties is providing performance feedback. A purchaser must let the supplier know if the supplier is meeting its contractual requirements. Finally, it is a supplier's responsibility to let the buyer know if the buyer is meeting its responsibilities within the negotiated agreement. Both parties should work to build upon the success of a negotiation. Executing the agreement should reaffirm the commitment of the parties to work together to pursue future opportunities.

Raeside and others (2002) on their paper on outsourcing discuss the survey findings carried out on large Organizations in the Edinburgh and Lothian region of Scotland. Conclusions show that 70% of the organizations outsourced at least one activity, with cleaning, maintenance, catering, security, and manufacturing/operations being the most commonly found. This phenomenon is not new; in fact, it dates back to the 1960's and it has been influenced by management techniques such as business reengineering (Hammer and Champy, 1993).

It is important to acknowledge that a huge wave of outsourcing and privatization (mainly in the public sector) has hit almost all organizations during the last decade. In the urge to downsize, "right size", and eliminate headquarters staff, and to focus on value-added activities and core competencies in order to survive and prosper, public and private organizations have outsourced an extremely broad range of functions and activities formerly performed in- house according to Fearon and others (2006). A good example of this policy in the public sector is the BRAC movement that started during the 1990s - closure and realignment of various U.S. military organizations-, by order of the Department of Defense (Ewing Jr. and others, 2006:33).

Although there might be some controversy on what “core competencies” really mean, Prahalad and Hamel (1990) argue that companies can only fully succeed when you perform a limited range of ‘core’ activities to a world class standard.

Raeside and others (2002) found that the principal motivation for the organizations in the Edinburgh and Lothian region - reported in the paper – to outsource was to improve the quality and cost of the activity outsourced. The criteria for selecting contractors were reputation, cost, previous contacts and technical capability. Some of the benefits of outsourcing included reduced costs, improved quality of service, increased management focus on core activities, and access to new capabilities. The main issues were loss of control, poor supplier management and problems with confidentiality and opportunist exploitation by supplier.

The literature on the subject seems to be very consistent over the pros and cons related to outsourcing. Even the research and surveys based on real world case scenarios point to the same direction when it comes to evaluate the advantages and disadvantages of outsourcing. Another paper entitled “The deadly sins on outsourcing” (Barthélemy, 2003) shows that while outsourcing is a powerful tool to cut costs, improve performance, and refocus on the core business, outsourcing initiatives often fall short of management's expectations. The author conducted a survey on nearly a hundred outsourcing firms in Europe and the United States, and underlined some of the commonly failed outsourcing efforts: (1) outsourcing activities that should not be outsourced; (2) selecting the wrong vendor; (3) writing a poor contract; (4) overlooking personnel issues; (5) losing control over the outsourced activity; (6) overlooking the hidden costs of outsourcing (conversion

costs and unexpected fees or “extra use” charges); and (7) failing to plan an exit strategy (i.e., vendor switch or reintegration of an outsourced activity).

Fearon and others (2006) include some additional unintended drawbacks when firms decide to outsource which may include: exposure to supplier risks (i.e., financial weakness, loss of supplier commitment, slow implementation); attention required to senior management; possibility of being tied to obsolete technology; and concerns with long-term flexibility and meeting changing business requirements.

As some of these risks are sometimes overlooked, the role of the purchasing function in managing some of these uncertainties grows in importance. Indeed, it is true that organizations have gained a better knowledge and experience in making outsourcing decisions as well as in writing contracts.

Supply managers may also add value to the outsourcing decisions by simply: providing a comprehensive, competitive process; indentifying potential opportunities for outsourcing; envisioning a strategy to best select outsourcing candidates; assessing future relationship difficulties; proactively developing and negotiating the contract terms; and monitoring outsources’ performance on an ongoing basis.

Another very important subject discussed in the 2002 issue is *target costing*. Ellram (2002) investigates the role of purchasing and supply management in the target costing process conducting a case study of eleven firms that make use of this approach. Results show that the purchasing function plays a critical role in the target costing process, especially in the initial stages, when developing component level target costs. Surprisingly, all organizations studied also involved key suppliers in target costing during the concept/discovery phase or during very early specification development.

Fearon and others (2006) define target costing as an approach that starts with the selling price of a final product or service minus the desired operating profit to arrive at a pool of money available for all costs. Responsibility for cost breakdowns is allocated not only to the purchasing function, though, but also to other functions in the organization as well. Cross-functional teams of engineers, cost analysis, supply, and supplier personnel are often used to attain target costs.

According to the case studies developed by Ellram (2002), all the organizations used a team approach in target costing. The author also verified significant anecdotal evidence detailing problems that occurred when suppliers were involved at the product or service characteristics level, and supply was not: (1) unqualified suppliers were selected; (2) no price expectations were established, so no effort was made to manage costs; (3) suppliers would be "pre-selected" by Research and Development (R&D), then held "hostage" for a high price; (4) purchasing had no negotiating leverage when brought in during later stages; (5) R&D personnel had a closer working relationships and commitment to the supplier than purchasing and (6) product/service rollout was delayed when purchasing had to qualify "pre-selected" suppliers at later stages of the target costing process. It is clear that these negative externalities can be costly and time consuming leading the company to lose some of the benefits of the target costing itself.

The research also focused on the supply management's accountability in the target costing process. Given that the study was conducted from the perspective of supply management, it is unsurprising that it was indeed indicated as the principal function accountable for target costing in many organizations. Engineering, R&D, Marketing and lastly Accounting or Finance were also held operationally accountable for it, proving

again that the whole target costing philosophy is not a stand-alone tool and it is most successful whenever cross-functional teams work together to support the organizations' overall efforts to remain cost competitive while meeting the customer's needs.

Finally, Ellram (2002) summarizes some of the key supply management roles in target process, which also facilitates the early involvement of suppliers: (1) Identify potential suppliers; (2) prescreen suppliers; (3) participate in supplier audits/qualification very early in the product/service development process, before selection; (4) negotiate with suppliers regarding terms and conditions; (5) develop long-term agreements with suppliers; (6) work with suppliers on cost estimating and identify options for achieving target costs; (7) work with suppliers throughout the new product/service development process to ensure that the suppliers are on track; and (8) work with designers/other team members to explain and resolve supply issues.

Risk in supply networks; transaction costs, relational contracting and public private partnerships

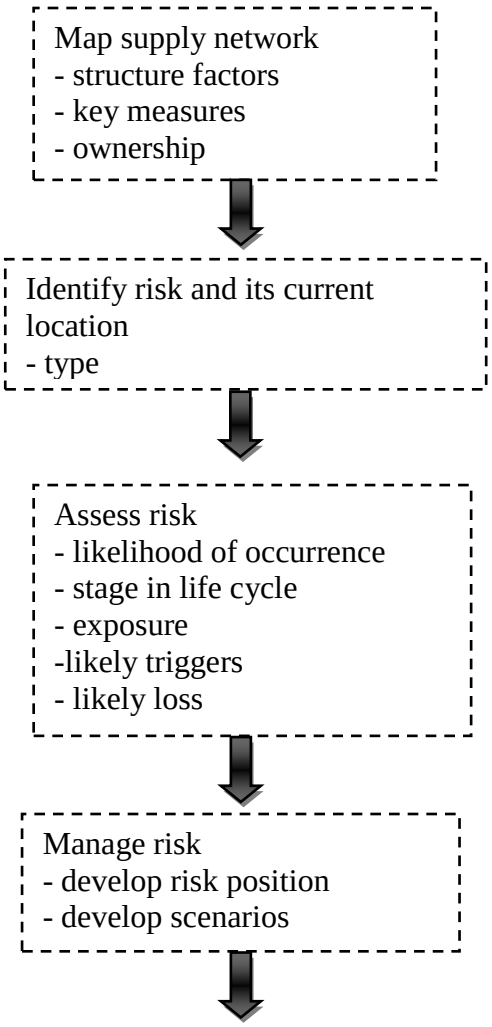
In an economy dominated by tangible assets, it is perfectly adequate for business companies to develop tools that enable managers to measure and record investments in inventory, property and equipments, for example. But today's economy, where intangible assets have become the ultimate source of competitive advantage, the urge for tools that analyze and measure knowledge-based assets is even more challenging and crucial (Kaplan and Norton, 2001:2).

In that vein, the authors of the ninth Journal of Purchasing and Supply Management concentrate their attention to the strategic relevance of the purchasing function

concerning managing risks on the supply chain in various ways so as to protect not only tangible but knowledge-based company assets as well.

Once supply networks have become more complex and multidisciplinary by nature, risk assessment has proven to be very important to provide insights to help managers to adapt and change whenever necessary to outlive in highly competitive markets.

Harland and others (2003:51-52) identified some drivers related to the growing complexity in supply networks: (1) increasing product/service complexity; (2) e-business; (3) outsourcing; and (4) globalization. The authors then developed a tool that constitutes an iterative six-step mechanism to identify, estimate and manage risk (see Figure 1).



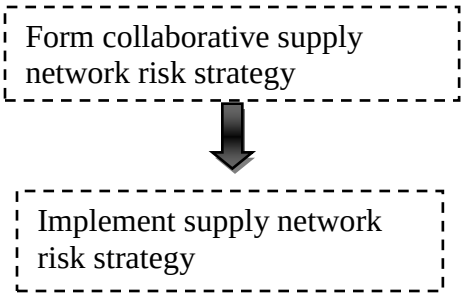


Figure 1 – Supply network risk tool (Harland and others, 2003:56)

Parker and Hartley (2003:97-108) undergo a research on the UK defense sector and their primary goal is to analyze the cost-effectiveness of the private public partnerships (PPP), since some concerns were raised about their resulting costs and benefits.

In 1992, when UK government started those partnerships with the private sector, the purpose was to provide more effective and efficient services as part of the policy of "privatization" ultimately based on reputation and trust. The question, though, was if the transactional costs being paid by the government were justifying the maintenance of these relationships overtime. By transactional costs we mean all the associated costs with acquiring goods or services that are in excess of the amount previously agreed with the supplier.

It is impossible to draw cost-benefit analysis on this matter without analyzing some key issues on the economics of contracting. In every contractual relationship between the government and the private sector involving specialized investments, there is going to be room for imperfect or asymmetric information. The inability or voluntarily refusal on the part of the supplier to share strategic information about product/ service development or other critical phases of the contract will automatically lead to higher transactional costs.

Three implications immediately result from this affirmation, namely: costly bargaining; underinvestment; and opportunism (hold-up problem).

Costly bargaining arises when parties negotiate over price, since generally there is not a “market price” for the input. Underinvestment occurs when the input produced is of an inferior quality, due to lower than optimal level of investment. If a supplier needs to invest in a specific machine (physical-asset specificity) to produce the input, chances are that the input is going to be of inferior quality, resulting in higher transactional costs. Opportunism or the hold-up problem arises when the buyer or seller may attempt to capitalize on the “sunk” nature of the investment (Baye: 2009, 207-211).

On reflection, the conclusions of the UK defense case study show that the use of PPPs didn’t necessarily led to increased economic efficiency in the defense procurement. The case study showed that the conventional governmental purchasing was preferred than the optional partnership with the private sector. This happened particularly with combat support vehicles, where an investment appraisal showed that a public partnership solution would not offer a better value for money than buying vehicles and using military personnel. On one hand, the UK Ministry of Defense and the Armed Forces are vertically integrated (public monopolies), in other words, they typically undertake training, repair and maintenance activities “in-house”. Such hierarchies are likely to be inefficient by nature and unlikely to produce better cost-effective results when compared to private opportunities. On the other hand, defense business companies willing to contract with the government need to engage in long-term relationships and provide a guaranteed number of operationally available front-line equipment (combat aircrafts, tanks, and warships) with maintenance and repair provided on a daily basis. These contracts require a clear

procurement policy with provision for changes, risk management, performance incentives, information sharing, partnership and exit strategies (Parker and Hartley, 2003: 101-107).

Regardless of the possibility of resupply by defense firms in case of long-term relationships, the question of risk and national strategy in situations like war and conflicts still points defense purchasing efforts to developing conservative and "in-house" procurement solutions. This is one of the fewest examples where the economic appraisal can be substituted for less efficient solutions, since the national security is at stake.

Public versus private sector purchasing of health services

Public procurement is very different from private sector purchasing in many different aspects, mainly when it comes to public regulations and laws. Public sector personnel can only perform what the law or regulation strictly allows them to do, in other words, they are politically constrained.

The main topic selected from the Tenth Journal of Purchasing and Supply Management was the comparison paper written by Lian and Laing (2004:247) where they compare and contrast health care service purchasing from the perspective of both the public and the private sectors.

Not surprisingly, the interesting point about this debate over the difference on purchasing practices is related to the posture taken by both government and private sector when it comes to engaging in relationships with suppliers. Much has been researched on the role the purchasing function plays in enabling long-term and successful partnerships with key suppliers, and it seems that the future does not envision a different approach on

that matter. Especially when so much empirical research has proven that outsourcing non-core competencies has may value for money advantages.

What Lian and Laing (2004:248) attempt to explore is the public purchasing behavior by a transactional framework standpoint. By transactional paradigm, the authors mean that it abides by neo-classical economic rules and assumptions, in particular that in a perfect market competition transactional purchasing is the most efficient form of exchange, promoting open competition.

Within the public arena, the transactional paradigm has been embraced as a guiding principle by many government institutions - the European Union and United Kingdom governments (HM Treasury, 1998); the Brazilian government (5th article of the Law 8666, 1993) and the United States Department of Defense (FAR, 2005: 1.1-1). Nonetheless, recent research has shown that beyond the public sector there is a changing emphasis in mutual, long-term, win-win supplier relationships instead of competitive practices as the means of optimizing procurement efficiency.

Among the factors accounting for differences in public sector purchasing, Lian and Laing (2004:256-257) found that the level of public sector regulation was identified as a major factor determining patters in purchasing. Also significantly, more public sector organizations made use of protocols when purchasing occupational health services than private organizations. Most interesting was that the public staff who contributed to the research was totally unaware that occupational health services were exempt from UK and EU competition regulations.

Two key contributions of the research were: (1) although transactions appeared to be open competition, managers used a list of pre-approved suppliers; and (2) there was a

tendency to move towards longer-term relationships, demonstrated by the renewal of contracts with the same supplier base. These findings reaffirm Smyth's (1997) conclusion that competition is usually more rhetoric than reality in public organizations, and that outsourcing is often accomplished without open competition.

Innovative practices in public procurement partnerships

The special issue on public procurement in the eleventh Journal of Purchasing and Supply Management arose from the discussions that took place at the International Public Procurement Conference (IPPC) held in October 2004 in Fort Lauderdale, USA. This was the first international multi-disciplinary conference with focus on public procurement. Many lessons learned can be identified through the papers presented in this journal, mainly related to innovative practices in the establishment of joint public-private partnerships.

As Lawther and Martin (2005:213) point out, public procurement partnerships appear to be the next evolutionary step in what might be called the '21st Century governance'. This new paradigm in government practices arises from the belief that the world is becoming too complex and risky, so that no single actor (public or private, government or market) is able to handle this diversity with its own capacity (resources, information, knowledge, personnel, technology).

In the traditional transactional public procurement, government attempted to transfer as much risk as possible to the supplier in the business relationship. Long and detailed contracts are needed in order to reinforce the supplier's penalties in case of non conformance with services or goods specifications. In the new view for public

procurement partnership, government and supplier share responsibilities, risks and rewards leading to long-term collaboration based on trust between buyer and supplier. Not only the borders between the public and private sectors are becoming more blurred, as suggested by Bryntse (1996:200), but risk and complexity have changed the way public and private sectors must interact in the business arena.

Conversely, Parker and Hartley (1997:124) critique those who use bias arguments against competition (adversarial) and in favor of partnership (beneficial co-operation) without adequate regard for the benefits of competitive and collaborative strategies and also the impact on the final consumer. From the authors' perspective, the search for supplier relationships is far from straightforward, and the lessons learned from the procurement in the UK defense sector particularly reaffirm this view.

Contractor bidding decision-making

In the twelfth Journal of Purchasing and Supply Management, Zitron (2006:53) extends the research on public-private partnerships in the UK Government's procurement focusing on how private sector bidders decide whether to bid for contracts.

First, the author stresses that although the term 'public-private partnerships' (PPPs) suggests collaboration and co-operation, all PPPs must go through a competitive tendering process to guarantee value for money and also the necessary transparency, one of the principles of public administration. Bidding is the *modus operandi* to guarantee competitive process in the public arena. By competition, we mean the participation of credentialed suppliers and enough acceptable bids. Thus, whenever the circumstances

leave the public administration having only one or two bidders, it can be said that the public sector is in a poor negotiation position.

Zitron (2006:55) also points out that the related literature indicates that the bidding routine is directly influenced by the commissioner's knowledge or insights of the market structure, not only by the nature of the project itself. This factor is one of the main contributors to the behavior presented by suppliers during the bidding development.

The results of the interviews undertaken by the author suggest that the factors that determine the risk of bidding are twofold: (1) an assessment of the probability of winning – availability of credible partners and opportunity cost of bidding; (2) level of trust in the commissioner's competence and level of commitment. In other words, the decision on whether to bid in public contracts depends basically on relationships and how suppliers manage risk within the organization, partners and also within the public sector (trust in the commissioner).

E-procurement in the public sector

E-procurement in the public sector is one of the main subjects discussed in the thirteenth Journal of Purchasing and Supply Management. Croom and Brandon-Jones (2007:296) develop a model based on an 18-month study of e-procurement deployment across nine UK public sector organizations. The article tackles five important aspects of this subject found in the related literature, namely: (1) system specification; (2) implementation management; (3) changes to organizational characteristics; (4) changes in total acquisition costs; and (5) changes to governance structures.

Before we explore the authors' findings, it is critical to highlight the main differences between governmental and private purchasing (Bright, 1994; Gordon, 1996; Panayiotou and others, 2004):

- The governmental purchasing process administrates the money that does not have a specific "owner" (it belongs to "all"), and the supply of goods and services is directed to the public needs.

- There are a number of procedures that are prescribed in laws, directives, regulations, and administrative or political decisions.

- The number of purchased products, customers (governmental agencies), and suppliers is much greater compared to the private sector.

- Transparency is a basic principle required from the public administration. The suppliers' objections are the common practice.

- The unified procurement plan for all governmental agencies and the information exchange between them is not so usual for the private sector.

Due to the aforementioned reasons, it is important to realize that public sector organizations need to avoid following private sector business models when it comes to e-procurement (Panayiotou and others, 2004:82).

In designing their research model, Croom and Brandon-Jones (2007:298-301) found that process cost improvements and purchase price reductions were significantly reduced in perfect alignment with what the literature forecasts on this matter. With respect to changes in organizational characteristics, process improvement was experienced mainly through constant user education and support to ensure the system was being used correctly and problems were solved in a timely manner. Compliance was found to have a

great impact on the efficient implementation of e-procurement. Regarding changes to governance structures, the authors commented that supplier's system compatibility has been recognized as a significant major constraint for thorough integration of e-procurement across the supply base. Some respondents expressed their concerns on the supplier inability to participate in the integrating process due to technical capabilities. In this matter, the study reinforced the contentions made in the related literature that e-procurement is capable of improving leverage and transparency in supply management. Also in line with existing literature, system specification was found to be critical to the operational performance of the e-procurement system. Finally, implementation management related to the strategy undertaken to implement e-procurement was studied, using a supply base roll-out starting with small groups of suppliers and users. This was found to be very useful for solving software integration problems, data management and the make-up of the project team.

Contractual and relational governance, construction contracts and critical success factors for managing purchasing groups

Zheng and others (2008:43) investigate in detail the dynamics of how contractual and relational governance mechanisms come into play when managing a complex, long-term public-private partnership.

Conceptual and practical findings confirm that both relational (interpersonal trust) and contractual governance (classical contract theory) are complementary forms of exchange governance but, more specifically, relational assumptions, experiences and intentions of all parties appear to actively frame if the contract itself or the contracting

mechanism is to be interpreted as a sign of distrust or a written manifestation of commitment (Zheng and others, 2008:52). In other words, proactive relational governance (management) needs to be enforced during the contract for the government to reap the benefits of the long-term commitment.

Austen and Seymour (2009:43-50) study the likely efficacy of government agencies using their contracting relationships with private business companies in order to bring about training outcomes in the construction industry. Specifically, it reports the findings of research of two training policies of the Western Australian government. Unfortunately, little evidence was found to support the positive impacts of the training public policy interventions on training results due to lack of industry commitment to policy objectives.

Finally, Schotanus and others (2010:51-60) study successful factors for managing purchasing groups. As the literature stresses the importance of using cross-functional teams for acquisition purposes, the authors undergo a large-scale survey comparing successful and unsuccessful purchasing groups from business companies in the Netherlands. By scrutinizing the existing successful factors found in the literature, the authors argue that these are the main critical successful factors found in the survey: (1) no enforced participation; (2) sufficient total contribution of efforts; (3) all members contribute with unique knowledge; (4) continuity in member representation; (5) fair allocation of gains and costs; and (6) communication. On the contrary, the success factors related to ‘inter organizational trust’, ‘formality of the group’, and ‘uniformity of the group members (e.g., ‘all members have similar organizational cultures and procedures’) cannot be considered as typical success factors for managing purchasing groups. These

are the main themes discussed in the Journal of Purchasing and Supply Chain Management - volumes 14, 15 and 16.

Conclusion

This chapter provided a review of the literature related to purchasing, addressing main concepts, models and applications developed throughout 1996-2010 on the Journal of Purchasing and Supply Management (Table 2 summarizes the overview of selected articles). The recognition of worldwide best practices in private acquisition challenges the study of public procurement, mainly when it comes to public policy, since this is the first constraint faced by the administrator (practitioner). Given these challenges, chapter 3 discusses the methodology used for coding and contrasting the Brazilian Acquisition Regulation (Law 8666, 1993) and the US Federal Acquisition Regulation (FAR, 2005).

Table 2 – (European) Journal of Purchasing and Supply Management Selected Articles

Author	***Contribution***	***Comment***
Viewpoint		
Colin Lyne (1996)	Discussed the strategic procurement in local government with the concept of *enabling authority*.	Viewpoint based on the 1995 UK White paper.
Papers		
Burnes and New (1996)	Discussed supply chain improvement describing the rationale behind partnership sourcing.	Case study of a manufacturer of pressed steel products.
Christine Harland (1996)	Proposed a supply network strategy conceptual framework and process.	Case study of National Health Supplies (NHS).
Karin Bryntse (1996)	Explored the nature of the purchasing function in a service context.	Empirical studies undergone in Sweden, England and Germany.
Krause and Ellram (1997)	Discussed the importance of supplier development. Potential critical elements of supplier development are also identified through the literature review.	Survey questionnaire analysis of 350 *Fortune 500* US buying firms.
Kemp and others (1997)	Identified the key ethical issues facing the purchasing and supply chain management profession.	Mailed surveys to selected groups of CIPS (Chartered Institute of Purchasing and Supply) members.
Car and Smeltzer (1997)	Developed an empirically based definition of strategic purchasing by developing and testing a model which resulted in four hypotheses.	Analysis of survey responses from 739 firms.
G Jones (1997)	Developed a methodology for application and recommended action to use incentives in public contracts – concept of "incentivisation".	Case study conducted by a research group on the UK White Paper 'Setting New Standards'.
Parker and Hartley (1997)	Illustrated the economics issues discussed by considering procurement in the defense sector.	Study from the Defense sector in UK.
Caddick and Dale (1998)	Assessed the role and activities of the purchasing function when affected by the introduction and development o Total Quality Management (TQM).	Case study on the purchasing of engineering, consumable materials and services in a British company.
Carter and others (1998)	Discussed the role of the buyer-supplier relationship in the Total Quality Management process.	Surveys to organizations from the US National Association of Purchasing and Management.
Cavinato (1999)	Presented analysis on how to fit purchasing to the five stages of strategic management – the knowledge-based organization.	Extension of 1990 research on strategic purchasing.
Car and Smeltzer (1999)	Tested four hypotheses on the relationship of strategic purchasing to supply chain management.	Mailed survey to a random sample of US Association of Purchasing Management members.
Croom and others (2000)	Reviewed the supply chain management literature and developed a framework for the categorization of literature linked to SCM.	Study based on the analysis of a large number of publications on SCM using a research data base.
Christopher and others (2000)	Described current practices in several industries that are managing integrated supply chains.	Group interviews and multiple case studies.
Humphreys and others (2000)	Developed a re-engineering view of the purchasing function with special emphasis on the roles and responsibilities of the purchasing personnel.	Application of the Maister's Professional Service Firm model in an aerospace company.
Ulli Arnold (2000)	Worked out an explanatory approach and concrete recommendations for outsourcing practices.	Conceptual development of an outsourcing model.
Siferd and others (2001)	Established a framework for current and future development of environmental purchasing theory.	Literature Review on environmental purchasing theory.
J. Gordon Murray (2001)	Built a comparison between local government and private sector purchasing goals, objectives and strategies.	Tripartite postal survey to council leaders, chief executives and purchasing managers.
Andersson and Norrman (2002)	Described and compared the purchasing course of action for advanced versus basic logistics services.	Conceptual article, but based on empirical material collected through research projects.
Raeside and others (2002)	Discussed the criteria used for selecting outsourcing contractors as well as the main benefits of outsourcing.	Survey conducted into the outsourcing activities of large organizations in Scotland.

Lisa M. Ellram (2002)	Investigated the role of purchasing/supply management in the target costing process.	Case studies of eleven firms that make use of target costing.
Harland and others (2003)	Reviewed definitions and classifications of types of risk, providing an holistic view of risk assessment and management.	Review of case studies of American and Dutch local firms.
Parker and Hartley (2003)	Discussed the nature of public private partnerships in light of potential transaction costs in defense procurement.	Case study of the UK defense contracting.
Lian and Laing (2004)	Determined whether differing public and private sector environments affects the purchasing of occupational health services.	Combination of questionnaires and in-depth interviews.
Panayiotou and others (2004)	Identified potential problematic areas in the analysis of e-procurement system for governmental purchasing.	Case study concerning the analysis of the Greek General Secretariat of Commerce.
Caldwell and others (2005)	Examined how public procurement agencies address establishing and maintaining competitive markets.	Case studies in public sector agencies in UK.
Elfving and others (2005)	Discussed the consequences competitive bidding have on lead time in project-based production.	Reported findings from a 4-year study on the delivery process of power distribution equipment.
Lawther and Martin (2005)	Presented innovative practices in public procurement partnerships in American agencies.	Two case examples of public procurement partnerships.
Jeff Zitron (2006)	Presented a model of how private sector bidders decide whether to bid for public contracts.	Empirical study based on interviews.
Croom and Brandon-Jones (2007)	Explored five key themes in e-procurement implementation and operation from an 18-month study.	Study of e-procurement deployment across nine UK public sector organizations.
Zheng and others (2008)	Investigated the dynamics of how contractual and relational governance mechanisms are deployed in managing public-private arrangements.	Empirical data from two UK Private Finance Initiative cases.
Austen and Seymour (2009)	Explored the efficacy of government agencies using their contracting relationships with private firms to affect training outcomes in the construction industry.	Empirical data from government's Tender Registration System between 1997 and 2006.
Schotanus and others (2010)	Identified critical success factors in managing small and intensive purchasing groups.	Questionnaire sent to all members of NEVI, the Dutch purchasing association.

III. Research Methodology

The process of coding and analyzing data is a critical part of qualitative research – it enables the researcher to make an original contribution to the study by making use of his/her own insights and background experience to address the research questions. Indeed, there are no right or wrong interpretations, but the literature review is going to play a critical role in the analyzing process.

For this reason, this chapter aims at explaining the coding method while identifying the main reasons for the researcher to choose this particular method to evaluate the proposed research questions. A vital part of explaining how to code data is achieved by streamlining the steps to effectively approach it, as well as addressing the main challenges facing the researcher during the coding process.

Center Resonance Analysis (CRA) is a text analysis method used to perform data analysis and interpretations. A brief summary of this method is also explained in this chapter. A key issue in coding is unitizing, in other words, breaking a stream of communication into codable units. In CRA, it is possible to unitize communication in terms of words. It identifies discursively important words and represents these as a network, then uses structural properties of the network to index word importance.

Research project and qualitative versus quantitative data

For Bartezzagui (2007:193-195), if methodological issues are very important in the development of any research endeavor, the choice between differing methods such as quantitative versus qualitative, is just one of the critical aspects. In this view, there is no method superior to the others in general. Ultimately, the appropriate class of research methods to choose from will depend upon the researcher's goal and the nature of the research question.

It is also known that quantitative and qualitative methods are not hierarchically ranked and one cannot be faced as being superior to the other in terms of research effectiveness. The progress of a discipline will not necessarily depend on the proportion of quantitative versus qualitative research, but instead will lean on the quality of the research projects and of their results, regardless of the methods employed. This is of course provided that methodological choices are coherent with the research design and the methods have been carefully and rigorously implemented. In other words, the discussion between qualitative and quantitative becomes a question of coherence with the specific research framework (Bartezzagui, 2007:193-195).

If explanation of a phenomenon is a goal, qualitative methods are preferred because they provide a depth and richness, allowing the researcher to really probe the 'how' and 'why' questions and construct idiographic knowledge (Ellram, 1996: 97).

In this respect, this thesis underlines three steps that are undoubtedly critical for any research project regardless of the nature of the research: (1) the definition of clear research questions, (2) the design of the research, and (3) the choice of the most suitable method for collecting and analyzing data (Bartezzagui, 2007:193-195).

Research questions

Before we outline the coding methodology, it is crucial to revisit the research questions. "The research question in a qualitative study is a statement that identifies the phenomenon to be studied" (Strauss and Corbin 1998: 53). "Without a research focus, it is easy to become overwhelmed by the volume of data" (Eisenhardt 1998: 536). According to Ogden (2005: 65), developing the research questions helps to provide this focus. "To determine the questions that are most significant for a topic, and to gain some precision in formulating these questions, requires much preparation. One way is to review the literature on the topic… Budding investigators think that the purpose of a literature review is to determine the answers about what is known on a topic; in contrast, experienced investigators review previous literature to develop sharper and more insightful questions about the topic" (Yin 1994: 9). The research questions related to the purchasing or contracting systems of the United States of America and Brazil – enumerated in Chapter 1 – are listed below and were carefully developed after the reviewed literature.

3. Primary Research Question: How does the Brazilian Law 8666/93 compare to the American Federal Acquisition Regulation (FAR/84)?

4. Subsidiary Research Questions:

f) How do both regulations apply the worldwide practices found in the related literature?

g) What are the key purchasing concepts existing in American and Brazilian contracting regulations?

h) How do the United States and Brazil conduct procurement operations for major systems?

i) What are the significant contracting phases' differences between American and Brazilian acquisition regulations?

j) What are the strengths and weaknesses of the aforementioned differences?

Research Design

The second critical aspect of any research project is designing the research. Every type of empirical research has an implicit, if not explicit, research design. In the most elementary sense, the design can be the logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions (Yin, 2008:26).

Many authors have different views about what research design is and the definition also might vary according to the methodology chosen by the researcher to analyze the data. In this thesis, the research design is going to be considered as a "blueprint" for the research, dealing with four key problems: 1) what questions to study, 2) what data are relevant, 3) what data to collect, and 4) how to analyze the results (Philliber and others, 1980).

Design of data collection

The next step in the research design is to plan what type of data is to be collected and how to collect and analyze it. There are three different portions of data that are going to be analyzed in this study: 1) Brazilian acquisition law; 2) US Federal acquisition

regulation; 3) selected purchasing articles from the Journal of Purchasing and Supply Management.

Figure 2 shows the relationship that will be formed amongst them in order to undergo the group of analyses (comparisons) and future recommendations. The former will be addressed in chapter 4, while the latter will be produced in chapter 5.

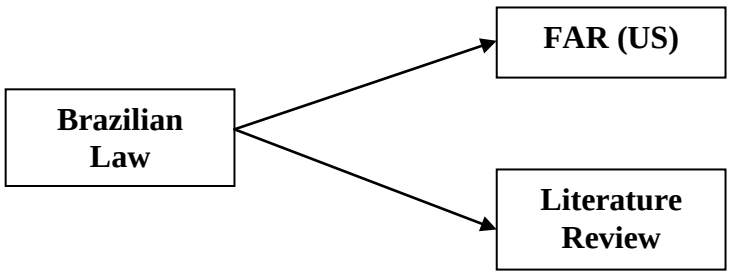


Figure 2 – Analysis Framework Model

The Brazilian Law is the main focus and the starting point of the set of comparisons. The reason why the researcher chose to proceed this way is three-fold: 1) As a Brazilian officer with more than 8 years of experience in the Brazilian Air Force acquisition arena alone, there are many important concepts and practices that the researcher is particularly interested in scrutinizing and learning – via rigorous methodology – if either or both the FAR and private practices can reaffirm or even improve them; 2) The opportunity to study the FAR in a military educational institution in the United States Air Force and to be able to present future recommendations related to Air Force acquisition practices is undeniably a rich source of research in the purchasing field; and 3) There is lack of

research about comparative acquisition practices between countries (Air Forces) and the main academic contributions in this subject can be found on the works of Wegler[1] (1998) and Rivas[2] (1999), both from the Naval Post Graduate School.

The coding analysis was implemented first on the Brazilian Law and then on the Federal Acquisition Regulation (Appendix A). In order to better develop the coding structure, the researcher recurred to the main topics selected during the literature review. They were not specifically used as coding identifications, but they helped in building and refining the coding structure. It is important to notice that the scope of the research does not include the comparison between the FAR and the literature review.

The challenge in this step was to have access to an English version of the Brazilian Purchasing Law 8666 (1993). Since there was no English version of it, the researcher translated the entire document from Portuguese into English. This will also constitute an important source for future research and it is already believed to be a contribution of this thesis *per se.*

Method for analyzing and collecting data

This is the last critical step to complete the research project. It includes the explanation about the specific method chosen by the researcher as well as the reasons for choosing it.

[1] *"Comparisons of the acquisition systems of the Federal Republic of Germany and the United States Government", Wegler (1998).*
[2] *"Military Acquisitions in El Salvador and in the United States of America: a comparative and critical analysis", Rivas (1999).*

What is a code?

A code in a qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence- capturing and/or evocative attribute for a portion of language-based or visual data. Code can sometimes summarize and condense data, not simply reduce it, although data reduction will be performed as an outcome (Yin, 2008).

According to Miles and Huberman (1994), data reduction refers to the process of selecting, focusing, simplifying, abstracting, and transforming the data, it occurs continuously throughout the life of any qualitatively oriented project. Even before the data are actually collected, anticipatory data reduction is occurring as the researcher decides which conceptual framework, which cases, which research questions, and which data collection approaches to choose. As data collection proceeds, further episodes of data reduction may occur (coding, for example).

Coding process

Many different approaches were taken in order to analyze and prepare data for appropriate interpretation. A simplistic way to explain the coding process approach is proposed by Foss and Waters (2003). The following system makes the process manageable and almost insures that the researcher will develop an original and sophisticated answer to the research question(s). This system can be applied to videotaped observations, interviews, written texts, visual images, or any interpretable artifacts, and follows the steps suggested below:

Step 1: Coding the Data

This step includes going through the data looking for key words that might provide tangible answers for the research question(s). The specificity and concreteness of the research question(s) can tell the researcher what to look for. The question(s) suggest what pieces of data need to be coded and what to leave by the wayside for another question. It is also advisable to write a paraphrase, phrase, heading, or label that describes what the researcher sees in that passage or chunk or quote that is most important. The label does not have to be very precise at this time – it is just a general indicator. Labeling the coded material with labels that do not directly relate to the literature review or the research question(s) might be appropriate, but this decision will depend on the ultimate goal of the research as well as other constraints, such as time.

In this thesis, the entire Brazilian Law was coded and the researcher followed the same coding pattern in the FAR. Because the Federal Acquisition Regulation is a much broader and extensive document, some groups of data were not coded. At this time, new observations and insights should produce new labels. While coding, the researcher should be tied to the data, so it is not advisable to try to relate it or categorize it according to theories that seem relevant to the data at this point.

Another recommendation is to avoid coding in consonance with what the researcher wants to find, by remembering that he/she will need to explain how he/she came to specific claims and conclusions from the data. The claims will obviously have to make sense to the reader. In order to code in this way, a good attempt is to code the data as a complete novice —someone with no extra knowledge, assumptions, or values besides what resides in the data. Coding with skepticism and trying to answer these questions can

be very helpful: Do the data really say this? Could I explain this to someone else using only this text?

Furthermore, there is no one right conclusion to get out of the data. Analysis will ultimately consist of co-creating a "story" (findings, lessons learned) with the data, discovering facts from it.

Step 2: Developing themes from the data

Some practitioners advise researchers to make another copy of the coded data. On one of the copies, physically cut out the sections you have labeled on your transcripts and save the other copy for future reference.

It can be helpful to sort the coded data into piles according to topics. All of the groups of data that have the same labels or closely related labels should be put in the same pile. After that, the researcher can label each pile with a word or phrase that captures the gist of the subject related to each pile.

Step 3: Develop a conceptual schema (coding structure) from the data

This is the critical step. The conceptual schema ties the data together, answers the research questions, is coherent, and goes beyond the obvious. This is what will enable the researcher to make an original contribution to the field. Playing around with different ways to organize the themes to create the final coding structure might also be appropriate. Are some of these themes major and some minor components of a schema? Can the researcher tell an interesting narrative with the themes? Ending the process of coding

with simply a list of themes is something to avoid in this step. The aim is to perform future analyses using those themes.

Step 4: Writing up the analysis

The analysis should be written so that it is driven by the conceptual schema (coding structure). They will consist of the inferences and explanations that are completely new and derived from the lessons learned by the researcher. Both theory and literature should be used to support the "ideas" (or complex interrelationships amongst the data).

Data Analysis and Interpretation

Another way to approach the coding system is summarized below where more detailed and specific explanation is presented about the researcher's choices in each phase. The steps are based on Strauss and Corbin (1998) and Ogden (2005) and consist of three main phases:

- Open coding – during this phase, data are broken down into discrete parts, closely examined, and compared for similarities and differences. In this phase, the coding structure was used to assist in coding and examining the purchasing laws from Brazil and the United States as well as the selected articles from the Journal of Purchasing and Supply Management (see Table 2). Data was coded on a paragraph-by-paragraph basis using the codes arranged in Appendix A.
- Axial coding – the main objective of axial coding is to begin the process of reassembling data that were fractured during open coding. In axial coding, categories are related to their subcategories or other categories to form more precise and complete

explanations about phenomena. After breaking down the data through open coding, the researcher begins looking for relationships between the various codes, creating the conceptual schema.

Selective coding – the process of integrating and refining the conceptual schema or the coding structure. The researcher elicited the help of other practitioners both from the US and the Brazilian Air Force during this phase. The purpose was to refine the process and not to settle on the most obvious schema in order to be done with it. The conclusions of this process are presented in Chapter 5. Although the coding process seems to represent a linear and sequential process, it is actually more of an iterative and concurrent process that took place throughout the data collection and analysis phases of the research.

Various charts, tables, figures and diagrams (see Miles and Huberman, 1994 and Ogden, 2005) were constructed as part of the data analysis. Charts, tables, and figures provide a good way of summarizing huge volumes of qualitative data. These various charts, tables, and figures were possible with the aid of the computer-based text analysis methodology called Centering Resonance Analysis (CRA).

Centering Resonance Analysis (CRA)

Computer-based text analysis methodologies are being used to examine large bodies of text, analyzing them for the purpose of extracting condensed meaning. These techniques have become quite sophisticated and successful for numerous tasks within the realm of information retrieval. It is possible that these techniques could be or are being adapted for the purpose of documenting educational knowledge outcomes (see Willis and

Miertschin, 2010). The computer-based text analysis methodology that is used in this research is centering resonance analysis (CRA).

According to Corman, Kuhn, McPhee and Dooley (2002), CRA uses linguistic analysis to identify important words in utterances and to link these into a network. Important words are those making up noun phrases, which are potential centers in the utterance. Accumulating these words and their links over a set of utterances making up a text (or segment of conversation) yields a network that represents the aggregate of intentional acts by the author or speaker to deploy words and connect them to other words. Some words in this network are especially influential due to their location in the structure, tying together many other words and helping organize the whole. Thus, by analyzing the CRA network structure, it is possible to index the structural importance of words without reference to other texts, corpora, rule sets, training data, and so forth.

CRA is grounded in a theory of communicative coherence, specifically centering theory (Grosz, Weinstein, & Joshi, 1995; Walker, Joshi, & Prince, 1998). CRA network can be derived for any text and abstractly represents its main concepts, their influence, and their interrelationships. A complete mathematical explanation on CRA is found in Corman, Kuhn, McPhee and Dooley, 2002).

The Crawdad Text Analysis System (Crawdad Desktop 2.0) is the software that was used to perform the qualitative analysis and text mining, enabling the exploration of the information and the complex interconnections established between themes in the three groups of text data. The software ensures that unimportant words (like prepositions) are not included in the analysis. Word influence values are statistically more sensitive than word frequency values, so more precise secondary statistical analyses are made possible.

Crawdad Desktop 2.0 also provides powerful analytical modules. These functions allow browsing and visualizing individual texts, comparing two texts, clustering a population of texts, performing a full-text search, and developing ontological themes. Additionally, it is also possible to perform future statistical analyses such as regression, ANOVA, and time series analysis in a specific statistical package, depending on the research purpose.

Reasons for choosing the Coding Method

Differently from other methodologies used for qualitative data, this thesis focus on a flexible and operational technique that enables the development of complex interrelationships (previously referred to as "ideas") based on the integration of purchasing concepts and practices in the private and public sectors.

The researcher believes that the coding process can always go through as much iteration as wanted in order to be redefined or, better yet, refined so as to present a good frame of the reality, as previously explained in the coding process steps. This flexibility and adaptability reflect the constant changes facing acquisitions practices and regulations. If specific purchasing practices are changed, this study can review the coding structure and reconsider recommendations. This is also possible through the participation of other analysts, researchers as well as practitioners interested in bargaining for new findings and for the development of new and "better" assumptions.

Moreover, the data analyses can easily be revisited using the CRA methodology. Another key advantage is that both software utilized in this study are quite inexpensive

and can potentially have a much broader use for complex text analysis in the acquisition or any other logistics field.

Theoretical background from the literature review

Finally, after the rigorous and extensive literature review - undertaken in chapter 2, the researcher selected 22 main subjects to confront with the coding structure developed in the Brazilian Law and the FAR. These topics (main themes) are listed below and they will be specifically helpful during the analysis performed in the following chapter.

- Strategic procurement
- Partnership sourcing
- Supply network strategies
- Supplier development
- Ethical challenges
- Strategic purchasing
- Total Quality Management (TQM)
- Strategic Management
- Supply Chain Management
- Environmental purchasing
- Logistics service
- Outsourcing

- Target costing process
- Risk in supply networks
- Transaction costs
- Relational contracting
- Public private partnerships
- Contractor bidding decision-making
- E-procurement in the public sector
- Contractual and relational governance
- Construction contracts
- Critical success factors for managing purchasing groups

Conclusion

This chapter discussed the methodology used for coding the Brazilian Acquisition Regulation (Law 8666, 1993) and the US Federal Acquisition Regulation (FAR, 2005). The computer-based text analysis methodology denominated Centering Resonance Analysis (CRA) is also briefly explained.

The next chapter will focus on the explanations and analysis performed using the coding structure presented in Appendix A and the selected themes provided by the literature review on purchasing practices in an attempt to collect lessons learned and make future recommendations.

IV. Results and Analysis

This chapter contains the results based on the tripartite analysis approach using the Centering Resonance Analysis (CRA): (1) Brazilian Acquisition Law, (2) US Federal Acquisition Regulation and (3) Literature Review - 22 topics (main themes). A detailed explanation about each main theme is presented, associated with the coding structure related to the specific purchasing theme. The attempt hereafter is marry the best of commerce with the best of public service practices, as well as to collect the different approaches and perspectives developed by the US and Brazil.

Coding Structure

The coding structure (Appendix A) was developed using the Brazilian Acquisition Law as the basis and then referring to the same topics in the US FAR, since the Federal Acquisition Law is much broader and extensive in scope. In order to focus on answering the research questions, the researcher concentrated the analysis on two main parts of the coding structure: 1 and 3.

Chapter 1 outlined specific research questions that are going to be attended to in detail. The first research question is:

k) How do both regulations apply the worldwide practices found in the related literature?

This question is answered in this chapter giving emphasis on the comparisons made between the Brazilian and US Acquisition regulations and the private sector practices

discussed in chapter 2. This emphasis is also going to be directed towards answering the other research questions.

l) What are the key purchasing concepts existing in American and Brazilian contracting regulations?

Coding structure (part 1) contains 13 codes and it is analyzed through theoretical lenses taking into account the acquisition practices by Brazil and United States as well as the main concepts originated in the literature review. The analysis provided from the study of the coding structure (part 1) attempts to answer the above question.

m) How do the United States and Brazil conduct procurement operations for major systems?

n) What are the significant contracting phases differences according to American and Brazilian acquisition regulations?

The two aforementioned questions are analyzed using the coding developed in part 3 of Appendix A. Likewise, the analysis contemplates the tripartite comparison: Brazilian Regulation, US FAR and literature review. In an effort to collect lessons learned as well as an in-depth contribution to both countries, the analysis presented in this chapter will ultimately lead to an endeavor to answer the last research question:

o) What are the strengths and weaknesses between the aforementioned differences?

This question is discussed in Chapter 5 where conclusions and future recommendations are also addressed.

Coding Structure Part 1 (Guiding Rules and Principles)

In order to provide an understanding of the Brazilian and the American contracting regulations in terms of organization and structure, highlighting the main objectives, systems, terms and definitions, it is important to refer to coding structure part 1 (13 codes shown in Appendix A):

(1) Scope of the law
(11) Definition of contract
(111) Bidding definition (and scope)
(1111) Guiding principles
(1112) Prohibitions for public agents
(11121) Competitiveness issues
(11122) Legal and commercial issues
(1113) Criteria for selection of winner
(1114) Secrecy
(1115) Formality rule
(1116) Pricing, cost and payment criteria
(11161) Pricing rates
(11162) Payment deadline

The coding structure part 1 basically deals with the purpose, authority and scope of both purchasing laws as well as the statement of principles that guide each country's federal acquisition systems. Bidding is thoroughly defined and explained beforehand in the Brazilian Law while the FAR refers to it only further on when describing the bidding process.

The Brazilian purchasing Law 8666, from June 21st 1993 - modified by the Laws 8.883/94 and 9031/95 and, more recently, by the Law 9648/98 – establishes general rules related to bidding and administrative contracts. Bidding is in the core of the Brazilian Law, it is a strictly formal procedure and it has existed in Brazil for 400 years. Since

1592, in a document called "Philippine Orders[3]", there has been a concern about "bidding the construction (or construction site) in the first place, in order to hand over the contract to the business that offers the best deal at the least total cost".

The Brazilian Law was inspired by the Decree-Law 2300/86, and it represents a landmark in terms of "moralizing" the Brazilian public treasury, public businesses and all sorts of administrative contracts. However, some scholars advocate that there are still attempts to "damage" the public Treasury, and that the purchasing Law would ultimately not offer many instruments to prevent such crimes from happening (Meirelles, 1983).

The main goal of the Brazilian Law in defining "bidding" is to link bidding procedures, bidder performance and contract terms or clauses to a formal document that would be roughly translated as Edict or bidding announcement. According to the Brazilian Administrative Code and the Brazilian Law, bidding is a mandatory process and aims to achieve the most advantageous conditions for the public administration; equity ("justice") for the selection of the winning bidder and ultimately savings for the public treasury. The process of selecting the most advantageous contracting or bidding conditions cannot be undertaken without specific procedures clearly prescribed in the purchasing law. If the bidder fails to follow these procedures; the entire bidding process is null as well as the consequent contract. For administrative or public contract, the Brazilian Law explains:

> It is the legal act that is formed by the joint manifestation of will between two parts, creating rights and obligations for both of them. It represents the ultimate will of the law to achieve the public interest. This

[3] *"Philippine orders consisted of a group of legislations that were revised for centuries and were applied by Portugal since 1603. They are called Philippine Orders, because they were promulgated by Philippe 1st, king of Portugal and Spain (Gusmão, 1914, apud Salla, p. 33)".*

> will is made possible by the public administration that aims at persecuting the desirable conditions for its own goals.

The constitutional legislator, in order to preserve the principles of legality, equality, impartiality, morality, probity and other principles determined that bidding is mandatory. The participation of the public administration is what really typifies and distinguishes the public contract from the private counterpart. In this legal relationship, the public administration has supremacy of power to set the initial conditions of the adjustment. In the former, the administration has the primary interest whereas in the latter the private party can control the rules, since there is no public interest. This distinction is crucial for a correct interpretation of public contracts.

In the US DoD, the FAR is the primary regulation for use by all Federal Executive agencies in their acquisition of supplies and services with appropriated funds. It became effective on April 1, 1984. The FAR precludes agency acquisition regulations that unnecessarily repeat, paraphrase, or otherwise restate the FAR, limits agency acquisition regulations to those necessary to implement FAR policies and procedures within an agency, and provides for coordination, simplicity, and uniformity in the Federal acquisition process.

Bidding is also the main form of purchasing for DoD purposes, but it is clear that the US FAR implements empowerment as the core of its legislation. Local officials can take independent action based on their professional judgment in order to fulfill public policy objectives. Innovation is highly recommended and indeed encouraged, so that contracting officials are able to take the lead in encouraging business alterations while ensuring that business decisions are sound. Cross-functional team approach is also a key feature

throughout the legislation, highlighting the need for communication among the members of the team in sharing the administrative vision (the one from the public Department or Air Force Base, for example) and achieving the acquisition goals of the best value to the customer. Some of the main differences between the regulations are explained later in this chapter.

Guiding Rules and Principles

The guiding principles for the Brazilian Acquisition Law are: (1) Fairness ; (2) Selection of the most advantageous proposal, (3) Legality; (4) Impersonality; (5) Morality; (6) Equality; (7) Publicity; (8) Administrative Probity; (9) Linkage to the bid announcement (Edict); (10) Objective Judgment. Other similar principles can be derived from the law, making clear to the bidder or public administrator that the law just cites some of them as exemplification.

The basic guiding principles for the US Federal Acquisition System relate to: (1) deliver on a timely manner; (2) the best value product or service to the customer, while (3) maintaining the public's trust and (4) fulfilling public policy objectives. It is interesting to notice that participants in the acquisition process "should work together as a team and should be empowered to make decisions within their area of responsibility."

The Federal Acquisition system is also fully explained in the coding structure part 1, and it ensures: (1) customer satisfaction in terms of product cost, quality, and timeliness – maximizing the use of commercial products and services, using contractors who have a successful past performance and evidence superior current ability to perform and promoting competition; (2) minimization of administrative operating costs; (3) business

conducted with integrity, fairness, and openness; and (4) public policy objectives fulfillment.

As stated before, the primary purchasing approach difference lies on the establishment of an "Acquisition Team". The Acquisition team consists of

> All participants in Government acquisition including not only representatives of the technical, supply, and procurement communities, but also the customers they serve, and the contractors who provide the products and services (FAR, 2005:1.1-1).

The role of each acquisition team member is to

> Exercise personal initiative and sound business judgment in providing the best values product or service to meet the customer's needs. In exercising initiative, Government members of the Acquisition Team may assume if a specific strategy, practice, policy and procedure is in the best interests of the Government and is not addressed in the FAR, nor prohibited by law (statue or case law) (FAR, 2005:1.1-1).

The whole basis of an acquisition team is completely understated in the Brazilian Acquisition Law, although the reviewed literature extensively refers to it as a "cross-functional team". On the other hand, the Brazilian law "ties" the will of the administrator to what the Law specifically states. There is no discretion (good or wise judgment) on the part of the bidder (public or administrative agent), so the Law plays a prohibitive role in the administration of business relationships in Brazil. A curious fact is that the statement of competitiveness, legal and commercial "prohibitions for public agents" (code 1112) is placed right in the beginning of the law. Rather than specifying the "do's" beforehand, the legislator chose to list the "don'ts" instead.

The main focus of the strategic procurement discussed in the Literature Review – relates also to "empower local managers to make decisions as close to the delivery of services as possible". Procurement is viewed as a key expertise of commerce dealing as a

core competence in the enabling authority focusing on: (1) managing for quality (a focus on achievement); (2) partnerships (with those whose agendas differ from the authority's); (3) political imperatives (to deliver policy achievement); (4) risk management (protecting the public investment and the authority's staff); and (5) rationing (the need to do more with less).

Using the Crawdad Software

In order to provide a grounded set of perspectives to the coding structure methodology, the researcher used the trial version of the Crawdad software, created specifically for Center Resonance Analysis (already explained in chapter 3). The researcher identified some limitations to the trial version when compared to the potential academic version capabilities. Nonetheless, basic network maps and comparisons using the coding structure (part 1) of the Brazilian and US Purchasing Regulations were successfully performed. The use of the software aimed at identifying potential topics (common words and pair of words) to perform the tripartite comparisons contained in the coding structure part 1.

Several text analysis techniques are based on the concept of representing the text as a network of essential linked concepts. The foundation of network analysis is that the co-occurrence of concepts within a textual artifact represents a network of meaning. The concepts in the text become nodes labeled with the word that represents the concept, and nodes are linked if their corresponding words (representing concepts) co-occur in the text. Once text is shaped into a network, the text can be manipulated and analyzed. The analysis using the Crawdad software breaks down a body of text and creates a network of

nouns and noun phrases linked based on CRA-specific linking rules. For each noun or noun phrase extracted, the software determines an index of betweeness centrality, referred to as “influence”. The betweeness centrality index is a measure of the influence that certain nouns and noun phrases have in channeling the flow of meaning in a text document. Table 3 presents the results derived from the coding structure (part 1) assessment of Brazilian and US regulations. The software can also provide a concept map visualization of individual word networks that illustrates the most influential words in the document. The researcher found the visualizations useful and revealing.

Prior to producing any CRA statistics or visualizations, the individual parts of the Brazilian and the US FAR legislations (corresponding to coding structure part 1) had to be converted to text files with tables, illustrations, repeated numbering and diagrams removed. Crawdad coverts the set of text-only files extracted from formatted student reports to Crawdad-specific format (.cra) which includes the network data structure. The special format files are then used in the remaining analyses devised by the software. Using the Crawdad module called Visualizer, a concept map of influential words (based on the influence of measure) together with a list of influential words were produced for each law (coding structure - part 1). Figures 3 and 4 better illustrate them. It is noticeable that both the US and the Brazilian laws focus on the following key concepts: (1) contract; (2) service; (3) government; (4) contractor; (5) term; (6) administration and (7) quality. This provided insight to comparative sources that are shown in table 3 below.

Influential words	FAR_Part_1	Law_8666_Part_1
Contract	0.1222	0.36827
Service	0.07158	0.05086
Government	0.08256	0.00752
Contractor	0.05866	0.0289
Term	0.0043	0.05828
Administration	0.0013	0.10851
Quality	0.00085	0.00041

Table 3 – Betweeness Centrality Index

Brazilian Acquisition Regulation – Network Map

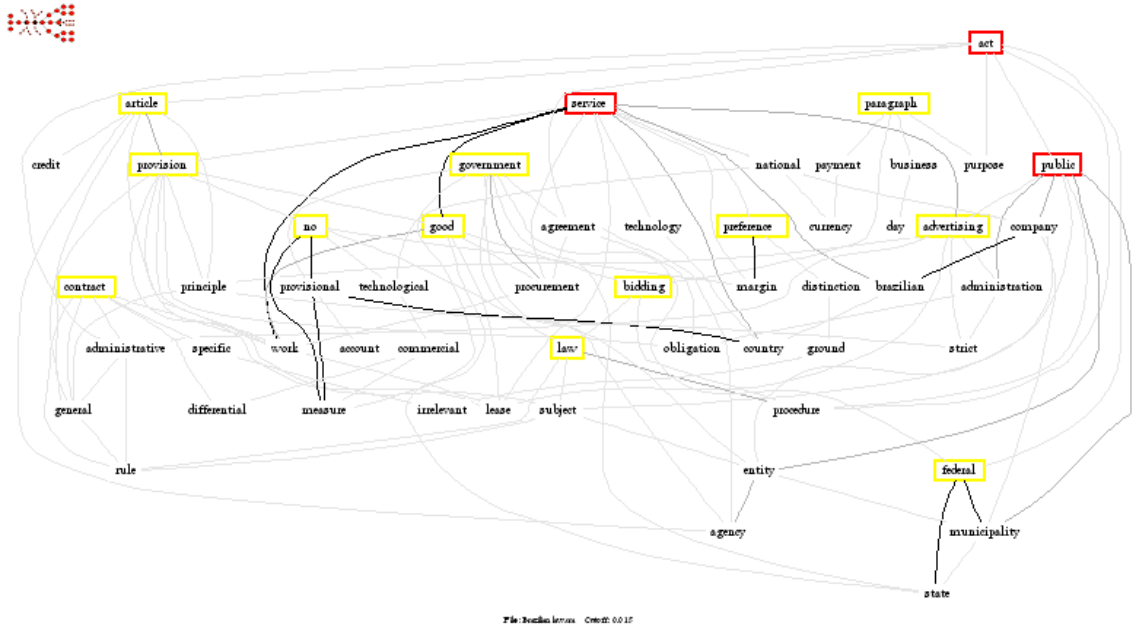


Figure 3 – Brazilian Acquisition Regulation Network Map

US FAR – Network Map

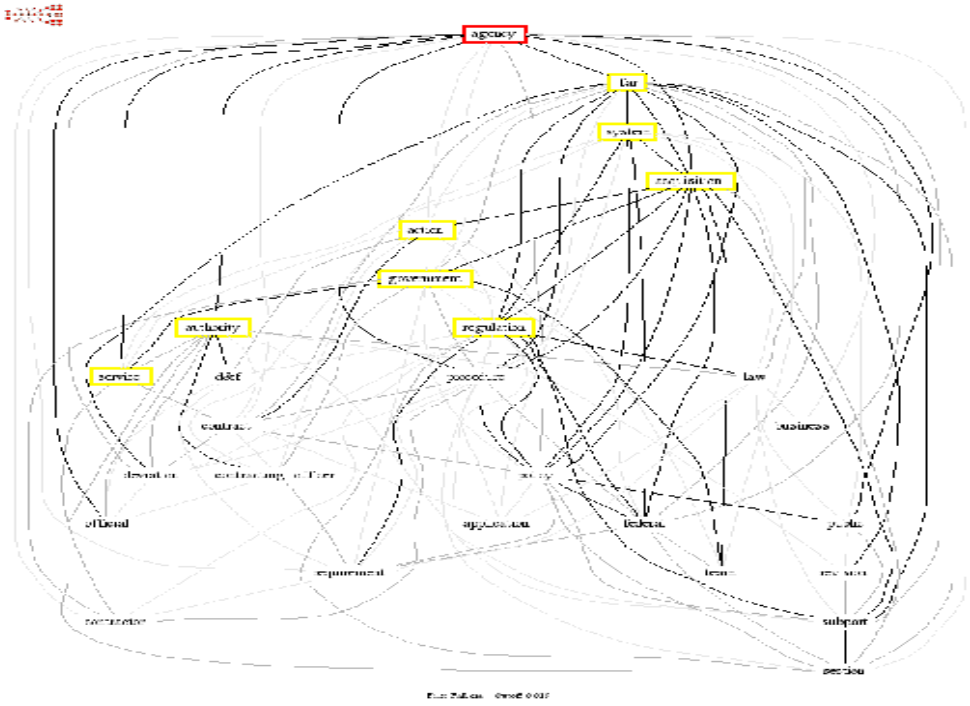


Figure 4 – US FAR Acquisition Regulation Network Map

After analyzing (1) the coding structure (part 1), (2) the insights from the software regarding the purchasing system of both Laws as well as (3) the guiding principles of acquisition practices found in the related literature, the following considerations can be clearly identified in Table 4:

Guiding Rules and Principles	Brazilian Law	US FAR	Literature Review
Fairness			
Bidding participants have the same fair treatment	**X**	-	**X**
Timeliness			
Customer satisfaction in terms of needs, concerns and feedback – responsiveness	-	**X**	-

Quality			
Maximizing the use of commercial products and services	-	**X**	**X**
Policy			
Fulfilling public policy objectives – legality	**X**	**X**	**X**
Interpretation – absence of direction means room for innovation and sound business judgment	-	**X**	**X**
Group Framework			
Business accountability within a group framework or cross-functional team approach	-	**X**	**X**
Performance			
Acquisition standards are clearly defined, so performance can be measured	-	**X**	**X**
Acquisition based on previous contractor performance	**X**	**X**	-
Rationing			
Minimizing administrative operating costs	-	**X**	**X**
Maximizing commercial products and services in meeting Governments requirements	**X**	**X**	**X**
Competition			
Promoting competition as a fair business relation between suppliers	**X**	**X**	-
Risk Management			
Managing the risk associated with empowering officials	-	**X**	**X**
Systemic perspective			
System that works better and costs less from the taxpayer's perspective	-	**X**	**X**
Planning			
Flexibility to accommodate changing or unforeseen mission needs – advance planning is required	-	**X**	-
Uniformity			
Uniformity where it contributes to efficiency or where fairness or predictability is essential	-	**X**	**X**
Standardization as a principle	**X**	-	-
Innovation			
Encouraging innovation and local	-	**X**	-

	adaptation where uniformity is not essential			
Cooperative Relationships				
	Cooperation between government and its contractors consistent with its overriding responsibility to the taxpayers	-	**X**	**X**
Ethics				
	Integrity, fairness and openness in conducting business	**X**	**X**	**X**
Empowerment				
	Acquisition team (cross-functionality) is empowered to make decisions within their area of responsibility	-	**X**	**X**
Pricing				
	Following acquisition and payment conditions similar to those practiced in private business	**X**	**X**	**X**
	Price Register System – previous market analysis	**X**	-	-
	Highlighting adjustment for inflation	**X**	**X**	-

Table 4 – Comparison of Acquisition Guiding Rules and Principles

Fairness

As far as "Fairness" is concerned, the Brazilian law is incisive about giving bidder participants the same fair commercial opportunity, whereas the FAR understands that the process of selecting contractors follows the rule of successful past performance or demonstration of current superior ability to perform.

It is evident that not only the FAR but also the literature on strategic procurement are aligned in the sense that the public administration should seek relationships (and even partnerships) with business organizations that can endure and offer good expertise, market knowledge and lifetime cost effectiveness to the defense procurement.

Timeliness

Timeliness is a concern whenever acquisition, supply chain management or logistics operations are involved. The Federal Acquisition Regulation is also very straightforward about timeliness regarding the federal acquisition system, especially because it focuses on the customer's perspective. "Satisfying the customer" is the ultimate goal and the verbiage used in the FAR. The Brazilian Regulation addresses the same concept only when it highlights the penalties suffered by the contractors that do not deliver the product/service on a timely manner.

As far as penalties are concerned, there is an entire section (part III) of the Brazilian Acquisition law that targets crimes and penalties, while the FAR gives a broader approach to the theme where it reads that the "costs of fines and penalties resulting from violations of, or failure of the contractor to comply with Federal, State, local, or foreign laws and regulations, are unallowable except when incurred as a result of compliance with specific terms and conditions of the contract or written instructions from the purchasing officer".

Quality

Quality standard issues are assessed throughout the Brazilian and US legislations as well as in the selected articles from the Journal of Purchasing and Supply Chain Management. In the first coding part, the Brazilian regulation does not emphasize quality assurance as the Federal Regulation does. Though the Brazilian bidding law discusses this subject later on when contract rules are assessed.

In the FAR, customer satisfaction is measured in terms of cost, quality, and timeliness of the delivered product or service by, for example: (1) Maximizing the use of commercial products and services; (2) Using contractors who have a track record of successful past performance or who demonstrate a current superior ability to perform; and (3) Promoting competition.

Policy and Innovation

The most important policy difference between the US and the Brazilian legislations dwells in the principle called legality. It is a constitutional (guiding) principle (article 37 of the Brazilian Federal Constitution) that rules the bidding process.

In the Brazilian public law, there is no room for innovation or creativity on the part of the public administrator. The administration needs to abide by the law and formal rules; any deviation is deemed arbitrary. Conversely, the legality principle also applies to the document called the Edict or bidding announcement, which restricts the will of the public agents and - if not strictly followed - it drives the whole bidding process to complete invalidity.

Interpretation and good judgment are highly recommended in the US FAR - as well as throughout private company practices transcribed in the reviewed literature - whenever there is absence of direction. In this case, empowerment comes to play once again allowing the public official or team to come up with sound acquisition initiatives. In the FAR, the acquisition system should also, however also encourage innovation and local adaptation where uniformity is not essential.

The literature review also points out that as services are increasingly delivered by contract rather than by direct employment, the role of procurement manager in arranging and running those contracts becomes crucial to the achievement of policy objectives.

Group Framework and Empowerment

Cross-functionality as a team approach is a topic totally unsettled in the Brazilian Law when compared to the US Federal Acquisition Regulation. There is neither incentive nor any mention on the importance of a team effort in the Brazilian Law in order to conduct a good assessment of the purchasing function when determining a baseline of current performance and identifying opportunities for improvement.

Using teams to buy resources is viewed as a profitable way to take key programs from planning through implementation as well as empowering officials to make decisions within their areas of responsibility. The acquisition team usually consists of representatives from other key functions of the organization. Once the competition process is completed, the winning contractor should also become an integral part of the team. These principles are clearly reflected in the FAR when it: (1) acknowledges that teams must include not only representatives of the technical, supply, and procurement communities but also customers they serve, and the contractors that provide the products and services; (2) outlines procurement policies and procedures that can be followed by members of the acquisition team. The FAR also specifically recommends that contracting officers “should take the lead in encouraging business process innovations and ensuring that business decisions are sound.”

Likewise, the purchasing and the Supply Chain literature focuses extensively on the need for conducting regular assessments of the business functions of an enterprise or a Supply Chain. The benefits for any business (agency), especially the Air Force in moments of budgetary constraints are countless.

In this vein, the Air Force can be viewed, for instance, through the Supply Chain network model[4] lenses, where the management functions (including the purchasing function) need to be assessed on a group basis. The richness of the group approach resides not only in the capacity of consensus building among the participants but also on the discussion between participants about other methodologies to solve and/or prioritize the acquisition of goods and services. Since representatives from other corporate functions are encouraged to participate in the Acquisition Team, they can provide their own perspectives on the acquisition process as a whole (considering and reviewing suppliers' and the Air Force Bases' needs, for example).

The same trend is evident in the private sector. The reviewed articles from the literature review emphasize that the "best practice model for strategic procurement embodies a team approach, led by the senior practitioner of the service in question". The leader sponsors the project and answers politically for performance. The procurement manager is a core member of the team. His or her contribution is to secure value for money and quality or performance through negotiation and monitoring. He or she is a key player in establishing the basis of the commercial partnership, promoting interests and reconciling conflicting ones. The technical contribution embraces market knowledge

[4] *In this thesis, the Supply Chain Model used is based on the studies of Douglas M. Lambert, Martha C. Cooper, and Janus D. Pagh, "Supply Chain Management: Implementation Issues and Research Opportunities," The International Journal of Logistics Management, vol 9. No 2 (1998), p. 10*

(both product/service and suppliers), lifetime cost analysis, risk protection and supplier development, so generating service innovation and greater cost effectiveness. The external role is to lead is the management of service suppliers, and the internal role is to challenge and strengthen the quality of service specifications and performance measurement. Contributing in this way, procurement is a major technical expertise with a direct and significant impact on service achievement.

Performance

Performance is addressed in different sections in the Federal Acquisition Regulation: (1) Acquisition planning – contractor versus government performance, (2) Market Research – delivery or performance schedules, (3) Contract Financing – performance-based payments, (4) Service Contracting – performance-based acquisition, and (5) contract administration and audit services – contractor performance information.

Nonetheless, acquisition standards are clearly defined as well as the expected performance standards, so both contractor and government performance can be effectively measured. Developing a framework of metrics is one of the key strategic processes developed by private companies and it is recurrent in the supply chain management literature. This approach seems to be completely neglected in the Brazilian Acquisition Law. There is no reference about measuring government's performance or an outlining framework of metrics.

Acquisition based on previous contractor performance is another facet of performance measurement that both the Brazilian and the US acquisition laws address. The literature

review does not particularly emphasize previous a contractor's performance in this respect.

Rationing

Minimizing costs and maximizing benefits seems to be a dual concern highlighted in the purchasing literature and in the US Federal Acquisition Regulation. On the contrary, the Brazilian Acquisition Law seems to focus on minimizing costs when they are directly related to standardization of products and services.

The Brazilian legislator establishes the prerequisites of the selection of the most advantageous proposal and they are prescribed in specific documents such as the bidding announcement. So, the Brazilian administration opens a bidding process for construction or services whenever there are the following elements: (1) a basic project (formal document) signed by a specific authority – this document should be open for scrutiny by any citizen who is interested in the bidding process (this is commonly called the Publicity Principle according to the Brazilian Bidding Law); (2) a detailed budget provision expressed in spreadsheets that shows the composition of unitary costs; (3) provision of budget resources that assure the payment of contracting obligations derived from construction or service agreements. These obligations need be executed in the beginning of the fiscal year, according to a previous approved timeline schedule; (4) the existence of previous provision in the Multiannual Plan. This plan is a document that contains the acquisition goals in terms of contracts that take longer than a year to be fulfilled.

Competition

Competition is also in the core of both the Brazilian and the US Regulations. Promoting competition means enabling the bidding participants to have a fair participation in the acquisition process. The Brazilian bidding Law translates it in terms of three important principles: Impersonality, Equality and Objective Judgment.

Equality is also a constitutional principle stated in the 5th article of the Brazilian Constitution: "everybody is equal under the law". It is also called formal equality, since absolute equality is virtually impossible. In other words, this means that bidding participants are under the same circumstances. The public administration needs to be impartial and unbiased towards the bidders, looking only for the "Selection of the most advantageous proposal" (another principle consecrated in the Brazilian Law) so that it can act with transparency in handling public funds.

The FAR states that each contract awarded without providing for full and open competition shall contain a reference to the specific authority under which it was so awarded. Moreover, effective competition is defined as:

> "Effective competition," as used in this part, is a market condition that exists when two or more contractors, acting independently, actively contend for the Government's business in a manner that ensures that the Government will be offered the lowest cost or price alternative or best technical design meeting its minimum needs (FAR 2005: 34.1-1)

Contracting without providing for full and open competition shall not be justified on the basis of: (1) a lack of advance planning by the requiring activity; or (2) concerns related to the amount of funds available (e.g., funds will expire) to the agency or activity for the acquisition of supplies or services. When not providing for full and open

competition, the contracting officer shall also solicit offers from as many potential sources as is practicable under the circumstances.

Risk Management and Cooperative Relationships

One fundamental characteristic present on both the FAR and the acquisition literature is the focus shift from procurement solely by contract to management by relationship. Managing risks associated with empowering officials is only a concern when the management efforts are focused on the outcomes that come from relationships with partners and also within functions in the same organization.

Brazilian contracting rules are so strict and formal, that they make it difficult to work on long-term relationships based on performance and continual commitment. For both DoD and the Brazilian Air Force Command, cooperative relationships with the private industry sector seem to be a vision for the years to come especially in times of budgetary pressures.

In the past, contracts have focused solely on the administration side, making it difficult for industries to rely on long-term cooperation as well as clear and well-structured cost, price and profit framework for both sides. Contracts should be used to safeguard both parties in a cooperative relationship/partnership, and to protect interests and mitigate risks.

Systemic Perspective

The systemic vision recognized by the Federal Acquisition Regulation ensures that all participants in the System are responsible of marking decisions that deliver the best value

product or service to the customer. Best value must be viewed from a broad perspective and is achieved by balancing the many competing interests in the System. The result is a system that works better and costs less. The FAR also point out that the system must be responsive and adaptive to customer needs, concerns, and feedback.

Lyne (1996), for instance, highlights in his strategic procurement model in local government that strategic procurement reflects a systemic approach that deals with: (1) local and regional operations; (2) diverse public services; (3) a large annual spend; (4) a new market-led culture; (5) a high service component; (6) a substantial internal market; (7) a large supplier base; and (8) business accountability within a group framework. This model takes into consideration a systemic perspective that refocuses the company away from professionally based functions and onto value chains, which run horizontally through the organization. New academic models incorporate best value supply chain analysis that are also in consonance with systemic perspectives, where the functions work together as a network of goods, services and information based on relationships.

The challenge, at least for the Brazilian perspective, is to develop better supply chain organizational mapping, identifying the key partners (suppliers, other organizations, customers) in order to work as a system instead of focusing on sparse improvements in specific organizations.

Planning

There is not a single time the Brazilian Acquisition Law cites the word “planning” in its entire text. Planning seems to be taken for granted during the contracting phases

prescribed in the legislation, although no specific guidance is left for the contracting official.

The FAR defines acquisition planning as:

> the process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive plan for fulfilling the agency need in a timely manner and at a reasonable cost. It includes developing the overall strategy for managing the acquisition. (FAR, 2005:2.1-1).

The FAR give some general procedures about acquisition planning (part 7), giving a team work perspective to it. “Agency planners” is also a common word used throughout the law to refer to the specific tasks developed by purchasing officers in this respect. According to the US law, it should begin as soon as the agency (military organization) need is identified, preferably well in advance of the fiscal year in which contract award or order placement is necessary. In developing the plan, the planner shall form a team consisting of all those who will be responsible for significant aspects of the acquisition, such as contracting, fiscal, legal, and technical personnel. The planner should review previous plans for similar acquisitions and discuss them with the key personnel involved in those acquisitions. At key dates specified in the plan or whenever significant changes occur, and no less often than annually, the planner shall review the plan and, if appropriate, revise it.

On the other hand, the Brazilian Law associates the acquisition planning with specific “bidding instruments or documents”, such as: (1) Basic Project, (2) Multiannual Plan and (3) Edict. All of them are very formal in procedure and they depend on a specific

authority to be made valid so that the acquisition officer may plan acquisitions throughout a certain fiscal year.

Uniformity

Both the Federal Acquisition Regulation and the literature on strategic sourcing view uniformity as an advisable practice where it contributes to efficiency or where fairness or predictability is essential.

However, the Brazilian Law states that the acquisition officer shall, whenever possible, undergo the bidding or acquisition of goods and services following the standardization principle.

Standardization consists of selecting similar technical and performance specifications, observing the conditions of personnel training, maintenance, technical assistance and warranty offered.

Ethics

The Brazilian Law commonly relates ethics to the Administrative Probity principle. A far as ethics are concerned, it represents a trademark not only in the purchasing law, but also across the revised literature. For professional procurement, performed to the highest ethical and commercial standards, it is the best vaccination against the ills that potentially attend to the spread of empowerment.

Pricing

The purchase, whenever possible, shall: (1) answer to the principle of standardization, which requires compatibility of technical specifications and performance, observing, where appropriate, conditions for maintenance, service and guarantee offered; (2) be processed through the system of prices registration; (3) be submitted to purchase and payment procedures similar to the ones practiced in the private sector; (4) be divided into as many portions as necessary to seize the peculiarities of the market economy; (5) beacon to the prices prevailing in the bodies and entities of public administration.

The prices registration will be preceded by extensive market research. This is a common practice noticed in both acquisition regulations. The reported prices are published quarterly for the administration by the purchasing officer. In Brazil, the system of prices registration is regulated by a decree, attending regional peculiarities and the following conditions: (1) selection made by competition; (2) prior stipulation of the control system and updating of prices registration; (3) validity of registration, not exceeding one year.

Best practices in Federal Acquisition

Bob Welch (2002), former senior procurement executive at the US Department of Commerce and Treasury wrote a procurement management vision in his paper "Best Practices in Federal Acquisition" in order to outline some best DoD acquisition practices. Some of them are perfectly aligned with the guiding principles studied so far and they better summarize the content of Table:

> The shop will have a highly respected senior-level leadership that will; have access to the head of the organization; significant plans and policies to attract, reward, develop, and put people into teams who are excited about finding new best practices and who are empowered to make decisions; a passion for effective accomplishment enabled by relentless and skillful use of outcome-oriented performance measures; information and technology that produce real-time management information and sound decisions made from that information; and clear and unambiguous means for holding people accountable Bob Welch (2002).

Coding Structure Part 3 (Contracting or Bidding Phases)

In order to provide an understanding of the Brazilian and the American contracting systems, a comparative analysis of their acquisition regulations is conducted concerning the purchasing of military supplies and services as well as major acquisition systems. For a specific focus on acquisition strategy and planning, solicitation process, supplier evaluation, negotiation and award phases, it is important to refer to coding structure part 3 (15 codes shown in Appendix A).

Using the crawdad software

Similar to the coding structure part 1, the researcher used the betweeness centrality index as measure of the influence found in the regulations' texts related to coding structure part 3 (Table 5). The software also provided the concept map visualizations of individual word networks from both purchasing laws. The following table illustrates the main influential words in both laws. It is interesting to notice that both network maps show that contract is the main focus of both laws and therefore the contracting phases and methods are going to be addressed in this part.

Influential words	FAR_Part_2	Law_8666_Part_2
Contract	0.1035	0.13855
Performance	0.13274	0.00631
Project	0.11847	0.10898
Requirement	0.02844	0.00053
Information	0.02823	0.00752
Technical	0.02132	0.01567
Equipment	0.00958	0.02449

Table 5 – Betweeness Centrality Index

Brazilian Acquisition Regulation – Network Map

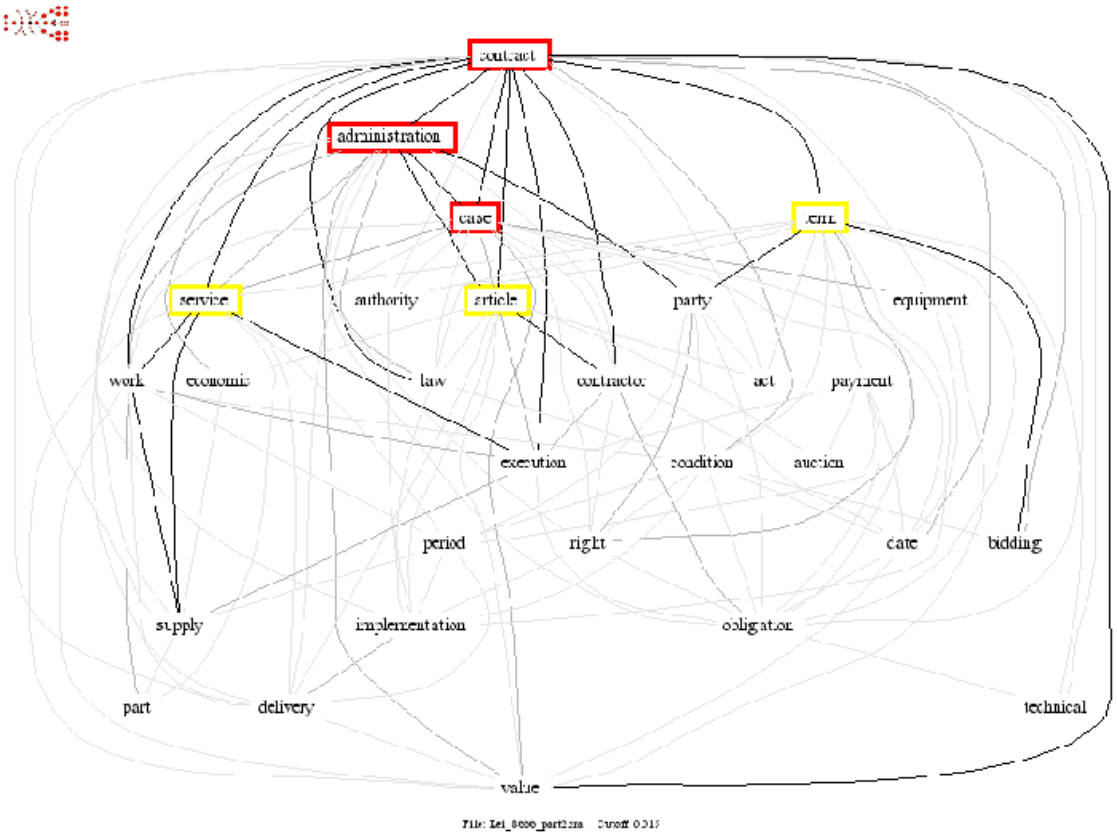


Figure 5 – Brazilian Acquisition Regulation Network Map

US FAR – Network Map

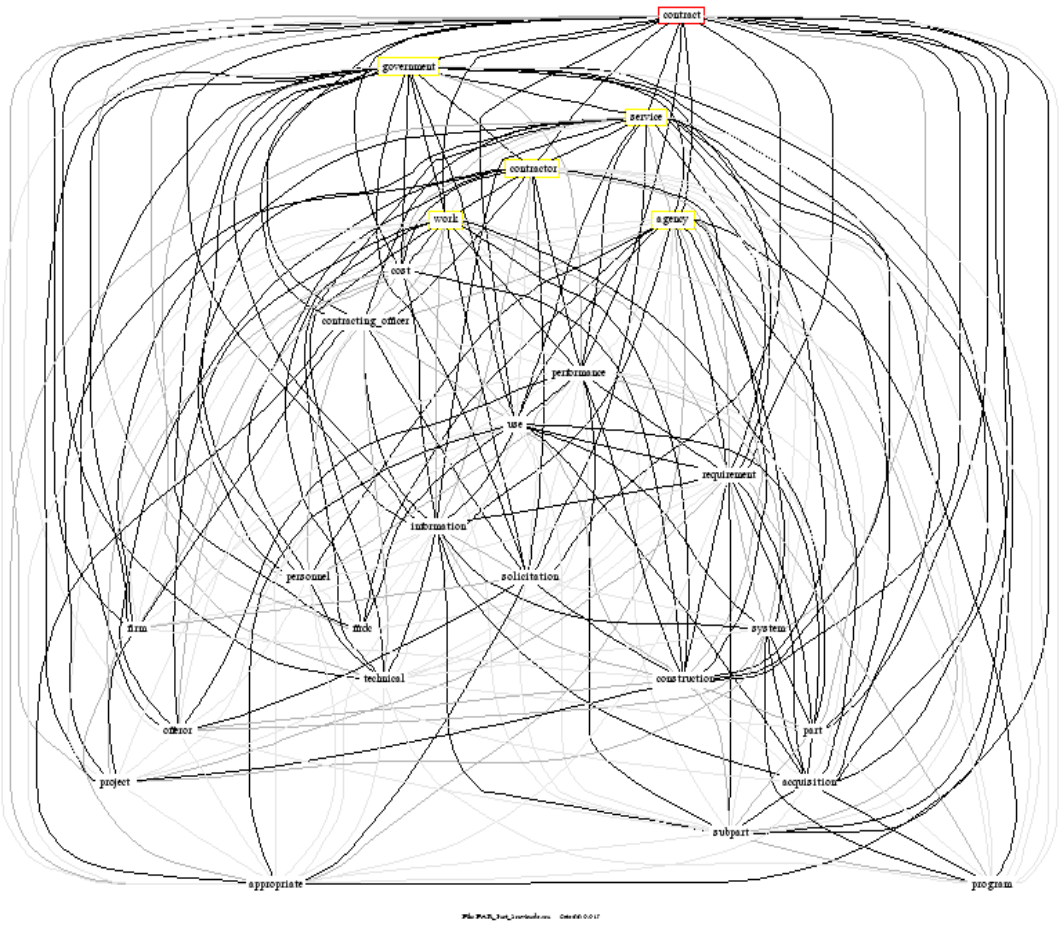


Figure 6 – US FAR Acquisition Regulation Network Map

When accessing major systems contracts, the US FAR establishes general policies that are worth stating. The policies related to this subject are designed to ensure that agencies acquire major systems in the most effective, economical, and timely manner. Agencies acquiring major systems shall also: (1) Promote innovation and full and open competition in the development of major system concepts by: (a) Express agency needs and major system acquisition program objectives in terms of the agency's mission and not in terms of specified systems to satisfy needs; (b) Focus agency resources and special

management attention on activities conducted in the initial stage of major programs; and (c) Sustain effective competition between alternative system concepts and sources for as long as it is beneficial.

It is interesting to notice that both the US and the Brazilian regulations use monetary expenditure and decision authority as the primary guide for determining the appropriate acquisition category. Moreover, any acquisition process cannot be completed without oversight. In the US, this oversight is conducted by the Legislative Branch of the government to ensure that the Executive Branch is meeting the objectives of the people. For large programs, the US system requires notification of Congress for procurement and final selection of the contractor. In Brazil, the Congress is informed annually about the Air Force Acquisitions Planning on the basis of the annual Public Budget. This enables the Brazilian Congress to review all the projects in context and to ensure there is sufficient funding. Similarly to the US, Brazil's defense budget is continually under reduction pressures. Therefore, the budget must prioritize acquisitions and reprogramming of funds from other projects to offset cost growth in a particular project.

On one hand, both United States and Brazil utilize a centralized approach to major systems acquisition mainly to increase flexibility and improve the user's (or customer's) representative to influence the procurement. However, this proves to be a very costly approach that requires multiple buying activities that specialize in the procurement of similar systems.

On the other hand, when looking at the US and Brazilian philosophies for procuring subsistence, consumables, and office supplies, the situation is quite different. The US conducts centralized purchases through DLA (Defense Logistics Agency) and GSA

(General Services Administration) for many of these items. The Brazilians procure most of these items locally through their decentralized (local) buying offices using an e-procurement system called COMPRASNET (the acronym in Portuguese stands for Federal Government Buying Network) that is accumulating great success in the past few years.

The literature review underlines the important to realize that public sector organizations need to avoid following private sector business models when it comes to e-procurement. Nevertheless, process improvement can be experienced mainly through constant user education and support to assure that the system is being used properly and problems are resolved in a judicious manner.

Contracting Phases

The main contracting phases identified through the study of the US and Brazilian Acquisition Laws are: (1) Acquisition Planning, (2) Solicitation Process, (3) Source Evaluation, (4) Negotiation, and (5) Contract Award. Each one of these main phases has sub-phases or sub-processes that present peculiarity issues that will be described and analyzed. Some of the sub-phases can be identified in the US FAR, but not in the Brazilian Law (and vice-versa). Whenever required, supplementary acquisition private practices resulting from the literature review will be introduced in order to enrich the set of analyses, although more emphasis will be given to the Purchasing Laws of each country.

Acquisition Planning Phase

Once a good or service is required and cannot be satisfied “in house”, the procurement process of both countries is activated. Since this process is complex and time intensive, it requires a cross-functional team of experts from several business functions to ensure its success. As previously demonstrated, the team approach is extensively explained in the US FAR, although there is no mention to it in the Brazilian Acquisition Law. The public agent (purchasing officer) is the eventual responsible for all the purchasing acts, although there is a bidding commission that reinforces his procedures. The bidding commission, however, does not proceed like a purchasing team in practice. This commission represents a formal modus operandi prescribed by the Brazilian law to authorize the bidding rite.

Brazilian acquisition strategy and planning is responsibility of the Aeronautical Major State (EMAER). The Aeronautical Finance and Economy Secretary (SEFA) executes program-related negotiations with users and potential providers to evaluate the technological, financial, and economic feasibility of proposed programs. If it is determined that technological requirement can be attained, budget estimates are prepared and submitted to the EMAER’s budget division to integrate the Defense budget. Each Air Force Agency receives a pre-approved authorization to use a specific amount of that budget and the purchasing officer is the ultimate responsible for planning the annual purchases.

In the US process, the program manager and contracting officer have the authority and responsibility for acquisition strategy and planning. The program manager is held accountable for the implementation of the program and the contracting officer has a

similar responsibility to ensure that all laws and regulations are complied with prior to signing the contract. The value of the acquisition team is measured by its ability to satisfy the requirements of the customer. Conversely, commitment and professionalism need to be deeply embedded in a well thought out and comprehensive plan, without which most procurement endeavors are intended to fail. Therefore, exchanges between the Government and industry are encouraged from the original identification of a requirement through receipt of proposals. This can identify and resolve concerns about the appropriate acquisition strategy, including proposed type, term, and conditions of the contract, and acquisition planning schedules. Some methods of conducting exchanges are (based on Wegler, 1998:64):

- Draft Request for Proposal (RFP), which is used by government in negotiated procurements to communicate government requirements to industry and solicit proposals from industry to those requirements;
- Industry or small business conference;
- One-on-one meetings with potential offerors;
- Requests for Information and technical proof;
- Public hearing;
- Site visits; and
- Market Researches.

Solicitation Process Phase

This phase aims at identifying the primary contracting method recommended in the Brazilian and American Acquisition Regulations. There are five contracting methods

prescribed in the Brazilian Acquisition Law: (1) Competition; (2) Price registration, (3) Invitation, (4) Contest and (5) Auction. All of them are based on monetary value, so the public administration follows the procedures of the specific contracting method according to the total contract expenditure.

However, Brazil's most important contracting method is not mentioned in the Brazilian Acquisition Law 8666 (1993). It is similar to the US Sealed Bidding, and it can be roughly translated as Competitive Bidding (in Portuguese: *Pregão*) introduced by the Law 10520 (2002) in order to undergo prices registrations that can be used by various different public agencies for specific goods and services. Thus, through a single bid, various requests from different agencies can be fulfilled, streamlining procedures and avoiding several bids for the same type of product or service. Agencies can profit from the same bidding edict during a one-year period that can be revalidated for another year.

The choice of this "new method" is not related to the monetary expenditure of the contract itself, since it is appropriate for contracts that focus on common goods or services (standardized products). In other words, the criterion for choosing the Competitive Bidding is qualitative rather than quantitative. According to Coelho and others (2002), since the implementation of this new bidding methodology in the Federal Administration, a reduction of 25% (difference between initial price and final price) in the average price of goods and services was measured by the Brazilian Planning Ministry. The total time spent during the bidding auction has also been reduced to approximately 20 days, whereas other contracting methods such as Competition would last about 4 months.

Thus, Competitive Bidding is just another form of bidding and may be used in situations where Competition, Price Registration or Invitation could be appropriate. It is interesting that the choice for using Competitive Bidding is optional, it does not exclude the possibility of adopting the other bidding methods listed in the Law 8666 (1993), but it is intended to replace the choice of such procedures by the Administration, whenever deemed appropriate and cost-effective. Moreover, this new bidding procedure - open to any interested offeror - does not impose so many requirements of qualification on the part of suppliers, or sophisticated demands about the goods or services specifications.

In the US, sealed bids and competitive proposals lay amongst the most important competitive procedures prescribed in the Federal Acquisition Regulation. For sealed bids, the US FAR highlights that contracting officers shall solicit them if: (1) Time permits the solicitation, submission, and evaluation of sealed bids; (2) The award will be made on the basis of price and other price-related factors; (3) It is not necessary to conduct discussions with the responding offerors about their bids; and (4) There is a reasonable expectation of receiving more than one sealed bid. Contracting officers may request competitive proposals if sealed bids are not appropriate under the four circumstances previously stated.

The US's competitive proposal method is used for the acquisition of goods and services when it is a less distinctive requirement. Often times, more developmental work is required and greater consideration must be given to performance risk, technical approaches, and past performance. This course of action permits the government to

have industry develop conceptual or actual solutions to the problems and present them in the form of proposals before funds are committed to the acquisition.

Source Evaluation Phase

The objective of source selection is to select the proposal that represents the best value. In the US, once the proposals are received, opened, and reviewed for completeness, they are broken down and distributed to the particular experts who only see and appraise the narrow piece of each proposal, which pertains to their area of knowledge. This ensures that the level of work required is not more than one individual can effectively handle, and makes certain that the individual conducting the assessment can best judge the respective areas.

The second major group involved in the source selection process is the sourcing selecting authority commission, which is composed by high-level acquisition professionals. These members are often selected by the agency sourcing selecting authority, who have the overall responsibility for ensuring the acquisition approach is sound and that the integrity of the process is maintained. The leaders of the source evaluation teams must support the other the other members, manage the dynamics of the process, and provide leadership. They must also create a vision, inspire commitment, state performance objectives, answer questions, explain why the products and services and the selection process are so important, direct efforts to a common purpose, and encourage hard work and enthusiasm of their members. The results of successfully implemented leading function of management can ensure that the integrity of the

procurement process is maintained and that the necessary products and services are procured for the user.

The Brazilian law has a different approach for the source evaluation phase when it comes to gathering source selection groups. The law prescribes the existence of the bidding commission who is responsible for all the bidding procedures, unless one member formally disagrees with a specific decision.

Negotiation Phase

This phase of the contracting process is utilized more often in the US than it is in Brazil. The purchasing literature defines negotiation as the process of communication between two parties, who have their own interests, viewpoints, concerns, and objectives. The negotiation process attempts to reach a "mutually satisfactory agreement" which best achieves each party's goals. From the government's perspectives, the primary objective of negotiations is to maximize the government's ability to obtain the "best value".

Under the US system, this is accomplished when the contracting officer and the offeror negotiate an acceptable fair and reasonable price for the good or service. This does not necessarily mean that the parties reached agreement on each cost element. Reasonable compromises may be necessary. This may lead to bargaining which includes persuasion, alteration of assumptions and positions and may apply to price, schedule, and technical requirements. This is necessary since detailed elements of proposals may be interpreted differently by the Government's and contractor's specialists. It is important to understand that the recommendations presented by

specialists, including auditors, are advisory only. As a result, the contracting officer is responsible for exercising good judgment and is exclusively responsible for the final pricing decision. The negotiation of a contract type and price are related and are entwined with the risk and uncertainty facing the Government and the contractor. For this reason, the contracting officer should balance the contract type, cost, and profit or fee negotiated to achieve a fair and reasonable price.

Although the Brazilian law does not divide the negotiation phase into sub-phases, it is noticeable that the objectives of the US and the Brazilian procurement officials are accomplished through a four element negotiation process. This process includes fact-finding, developing a negotiation strategy, conducting the negotiation session, and preparing post negotiation documents. Under both systems, the fact-finding is utilized to identify and obtain information to complete the evaluation of the proposals. Fact-finding should not be one sided. Both parties, Government and contractor, should view fact-finding as an opportunity to exchange information and elucidate any misunderstandings or incorrect assumptions that could impede a negotiation session.

The literature review undertaken in Chapter 2 is insightful about potential benefits of public-private partnerships, partnership sourcing as well as negotiating long-term partnerships (for instance, in the outsourcing functions). Defense business companies ready to contract with the government have to to take on long-term relationships and provide a certain number of operationally available front-line equipment (combat aircrafts, tanks, and warships) with maintenance and repair provided on a daily basis. These contracts require a clear procurement policy with provision for changes, risk management, performance incentives, information sharing, partnership and exit

strategies. All these requirements can be negotiated during this phase, but both parties need to be responsive and willing to take risks as well as to be adaptive to specific purchasing policy procedures.

Contract Award Phase

Under the American system, once the proposals are collected, they are evaluated against the criteria established in the Acquisition Planning Phase. While conducting this evaluation, the evaluation team must understand the conventional evaluation criteria and ensure that it is being used in the assessment of proposals. The proposals are forwarded to the sourcing selecting authority commission, who independently approves the winning proposal. Under this system, the winning proposal should provide the "best value" for the Government and this decision is formally documented. The Brazilian Acquisition Law has similar approach, but once again the bidding commission is responsible for this specific phase as well.

After the contract award, both countries have requirements to advertise the contract award and notify those unsuccessful offerors who requested direct notification. The US also embraces the debriefing concept, gathering offerors willing to discuss bidding outcomes. This concept is not formally described in the Brazilian Purchasing law, although it is common practice.

Conclusion

This chapter assessed the main comparisons among the Brazilian Acquisition Regulation (Law 8666, 1993), the US Federal Acquisition Regulation (FAR, 2005) and the literature review, using coding methodology and a computer-based text analysis technique called Centering Resonance Analysis (CRA).The next chapter will address lessons learned and main future recommendations.

V. Lessons Learned and Future Recommendations

After careful examination of the significant elements of comparisons between the Brazilian and the US Acquisition Laws, there are undoubtedly many similarities and differences. Many of the similarities stem from historical tenets of a good common sense approach to doing business and often incorporating and following commercial purchasing practices. Assessing the origins and reasons for some of these differences is more difficult to determine. Evaluating the benefits and disadvantages for some of the contracting practices prescribed in the US and Brazilian acquisition regulations would require a broader analysis and/or different methodological approaches. These are just some of the potential limitations for this research project and also possible sources of future research in this topic.

After assessing the coding structure part 1 from a tripartite standpoint: US FAR, Acquisition Regulation and Literature Review (22 topics), it is evident that many lessons learned can be derived, especially for the Brazilian purchasing practices. The fact that the bidding process derived in Brazil during the Portuguese colonization might be one of the reasons why it is still so attached to formal procedures. Legal rites are very important in guiding the public agent or the purchasing officer. Both the Brazilian and the US laws have distinct contracting phases and events, but the respective legislations observe some principles and guidelines that direct how each country conducts business operations.

Some recommendations would apply for the Brazilian acquisition system regarding the guiding principles and rules analyzed through the coding structure part 1:

- **Timeliness**: although the use of the "new contracting method" called Competitive Bidding introduced by the Brazilian Law 10520 (2002) attempts to speed up the bidding process, there is still much room for improvement. In order to deliver the goods or services in a timely manner to the customer, other key issues such as group framework, and/or constant purchasing function assessment and planning also need to be observed. These guiding principles mostly derived from the Supply Chain and Purchasing Management literature were readily incorporated by the US FAR with time. On the contrary, the Brazilian Law does not appear to grasp these capabilities, issuing complementary laws and regulations to keep up with business practices changes. Ideally, the Brazilian Law could be broader in scope not only in terms of formal and legal procedures, but also in terms of business vision and strategy.

- **Quality and Cooperative Relationships**: In the US FAR, customer satisfaction is measured in terms of cost, quality, and timeliness. One of the key ways to practice it is by using contractors who have a track record of successful past performance. This, for instance, is a practice totally inhibited by the Brazilian Acquisition regulation due to focusing solely on competition standards. Although suppliers do have a record history that can be accessed over time, practice shows that it is advisable for Brazilian purchasing officers to widen their suppliers base whenever possible to prevent later scrutiny. Unfortunately, this practice is not aligned with private sector practices and it does not incentivize public-partner relationships. The Brazilian law should find better ways to integrate this procedure in its legislation so as to cope with the lack of focus on enduring partnership benefits.

- **Policy and Innovation**: The basic difference between the Brazilian and the US FAR acquisition policy is also the main source of discrepancy found during the researcher analyses phase. The fact that the US public agent and the purchasing team have open capability to innovate might be the key to many successful acquisitions undergone by US agencies. Although it is hard to predict the specific variables that influence successful acquisition contracts, it can be said with certainty that whenever a group of people have opportunity to come together, share their own expertise and develop ideas there is always opportunity for brilliant outcomes. The Brazilian legislation may be concerned with guiding the purchasing agent behavior, but it should not impede him/her to bring innovation and extraordinary solutions to contracting acquisitions.

- **Group Framework and Empowerment**: Although the Bidding Commission on the part of the Brazilian Acquisition law can be considered an example of a cross-functional team, the group framework is not fully addressed in the Brazilian law as it is in the US FAR. The guiding principles prescribed by the Brazilian law do not take into consideration the importance of sharing ideas but only sharing responsibilities. The Brazilian law should incorporate this principle so as to profit from more sound and cost-effective purchasing solutions. Empowering officials to generate solutions within their areas of responsibility can prove to be a successful strategy advantage.

- **Performance**: The total lack of well-defined purchasing metrics is also another key subject to be implemented by the Brazilian Purchasing law. By performance metrics this researcher endeavors to focus on the agency or business viewpoint. Supplier

performance is attended to in various ways by the Brazilian legislator, but the purchasing officer's perspective is not taken into any consideration. For the Brazilian Air Force, developing purchasing practices mean not only having a complete understanding of different agents' strategy, but also considering metrics other than just cost-driven. This is a topic that the Brazilian Air Force should concentrate on, and it is only made possible through continuous purchasing function assessments, cross-functional team environment as well as the development of tailored corporate vision and strategy.

- **Rationing and Uniformity**: Standardization of products and services is the main concern of the Brazilian public administration. By introducing the Competitive Bidding contracting method, Brazil shows that it is moving its focus to big and customized acquisitions that can serve to various different sources in the Defense Ministry. It seems inevitable that budget constraints lead the Brazilian acquisition process in this direction. Consequently, the Brazilian Purchasing Law should ultimately incorporate this new bidding method and enable an environment of standardization that can also maximize benefits not only for the Government but also for the contractor.

- **Risk Management**: Managing risks associated with empowering officials is another key aspect studied in the US FAR. The Brazilian Acquisition law does not envision risk management related to evaluating relationships with partners or within functions in the same organization. The Brazilian law may appraise potential sources of risk and create a mechanism of risk assessment be enabled within agencies. This can be developed by Brazilian Air Force initiative in conjunction with key Air Force agencies.

A far as coding structure part 3 is concerned, it is apparent that both the US and Brazil use a centralized approach to major systems acquisition mainly to increase flexibility and improve the user's (or customer's) representative to influence the procurement. However, this proves to be a very costly approach that requires multiple buying activities that specialize in the procurement of similar systems. The direct approach would be retain the expertise for procuring systems in commodity areas – aircraft, ships, tanks – at the main department and consolidates orders when appropriate. While this approach is less connected to the user, it can improve interoperability among Services, process efficiency and cost reduction.

While this thesis does not investigate the acquisition and budget process in detail, more research should be conducted to determine if there is quantifiable data to indicate whether one process is more efficient or effective. One should understand the difficulty in comparing and evaluating the processes due to complex historical, political, cultural, technological and economic differences. These differences can significantly influence the inputs, internal processes, and the outputs related with the procurement of goods and services. Comprehensive variations that entail consideration include – the size of industrial base, the degree of legislative oversight, and the amount of funds allocated to defense. Finally, the budget process and the authorization for spending public monies are the primary factors hindering comprehensive procurement agreements.

It quickly becomes clear that the US has a very structured planning part in the acquisition process, but that the policies governing the execution of the process lend themselves to tailoring its realization to the type of procurement.

Finally, future research possibilities include focusing on other parts of the coding structure show in Appendix A. Since the Federal Acquisition Regulation is an extensive document, there are many potential topics for comparisons and possible implementations. Quantitative analysis can also be performed evaluating selected agencies performances in the US and Brazilian Air Force community. Private sector companies that undergo public-private business relationships with Brazil and US could also be researched in order to identify other key areas for improvement and collect specific variables that influence successful business practices for each country.

Appendix A: Coding Structure

Coding Structure (Part 1)

(1) Scope of the law
(11) Definition of contract
(111) Bidding definition (and scope)
(1111) Guiding principles
(1112) Prohibitions for public agents
(11121) Competitiveness issues
(11122) Legal and commercial issues
(1113) Criteria for selection of winner
(1114) Secrecy
(1115) Formality rule
(1116) Pricing, cost and payment criteria
(11161) Pricing rates
(11162) Payment deadline

Coding Structure (Part 2)

(2) Definitions of the law
(21) Construction and services
(211) Main sequence and formal elements
(212) Formal procedure
(213) Restrictions
(2131) Basic Project
(2132) Budget allocation and resources
(2133) Competitiveness violation
(2134) Accountability and nullity of acts
(2135) pricing and monetary updates
(21351) publicity
(2136) Participation personnel or organizations
(214) kinds of dispensability
(215) execution timeline
(2151) unfounded delay
(216) construction and services destined for the same purpose
(217) requisites of basic and executions projects
(22) Purchasing
(23) Selling
(24) Warranty
(25) High cost construction and services
(26) Execution
(261) Direct

(262) Indirect
(2621) Global-price Construction
(2622) Unit-price Construction
(2623) Task
(2624) Integral-price Construction
(27) Basic Project
(28) Executive Project
(29) Other definitions

Coding Structure (Part 3)

(3) Contracting Methods and Contracting Types

(31) Types, limits and dispensability
(311) Location for the bidding process
(3111) Formal procedures
(31111) Edict Publication and Publicity
(32) Contracting Methods
(321) Location for the bidding process
(3211) Definitions
(32111) Monetary values
(322) Dispensability
(323) Formal documents for the bidding process
(324) Contracting and bidding phases
(3241) Contracting clauses
(3241) Judgment
(3242) General

Coding Structure (Part 4)

(4) Types of contracts

(41) Contract clauses
(411) Policies
(4111) Formalities
(42) Factors in selecting contracting type
(421) Methods of settlement
(4212) Termination
(4213) Non - execution
(4214) Limitation
(42141) Rescission

Coding Structure (Part 5)

(5)	Penalties and penalties
(51)	Types
(511)	Applicability
(5111)	Edict Publication and Publicity
(52)	Judicial procedures
(521)	Administrative resources
(522)	Final dispositions
(5221)	Other considerations

Appendix B: Blue Dart

Since the mid-1980s, the strategic role of the purchasing function has received considerable attention in academic and trade journals. It has also been widely recognized that effective purchasing and supply management can significantly contribute to organizational success not only in the private but also in the public sector. Thus, technological developments related to strategic sourcing have challenged the Department of Defense of the United States and the Defense Ministry of the Federal Republic of Brazil to implement more innovative and efficient approaches for procuring technically sophisticated systems with less budget and personnel.

An in-depth assessment and analysis of the procurement systems of the United States and Brazil was executed in order to determine the different perspectives and policies adopted by these countries; and how differently each Government perceived the purchase function. In this view, the researcher undergoes a comparison of Brazilian purchasing practices with US Federal Acquisition Regulation and the European Journal of Purchasing and Supply Management which exposed several deficiencies in Brazilian practices.

The researcher used a qualitative approach along with two methods: Coding techniques and CRA (Center Resonance Analysis). A complete coding structure was developed using the Brazilian Acquisition Law as the primary basis, and two main coding structure parts were selected in an endeavor to answer the research questions. The set of analyses were facilitated through the use of the Crawdad Software, which applies text analysis techniques by representing the text as a network of essential linked concepts. Several lessons learned were collected that can be ultimately

incorporated on the purchasing practices of the Brazilian acquisition system and some of them include:

- Brazilian Acquisition Law Policy and Innovation are too restrictive – Brazilian Acquisition Law is extremely limiting, almost to a fault, and specifies exactly what a contractor must do with little or no room for good judgment and innovation.
- Brazilian Acquisition Law lacks group framework and empowerment. The Brazilian bidding commission does not require utilization of inputs from various disciplines like engineering, project management, and contracting. Cross-functionality as a team approach is a topic totally unsettled in the Brazilian Law when compared to the US Federal Acquisition Regulation. There is neither incentive nor any mention on the importance of a team effort in the Brazilian Law in order to conduct a good assessment of the purchasing function when determining a baseline of current performance and identifying opportunities for improvement.
- Using teams to buy resources is viewed as a profitable way to take key programs from planning through implementation as well as empowering officials to make decisions within their areas of responsibility. The acquisition team usually consists of representatives from other key functions of the organization. Once the competition process is completed, the winning contractor should also become an integral part of the team. These principles are clearly reflected in the FAR when it: (1) acknowledges that teams must include not only representatives of the technical, supply, and procurement communities but also customers they serve, and the contractors that provide the products and services; (2) outlines procurement policies and procedures that can be followed by members of the acquisition team. The FAR also specifically

recommends that contracting officers “should take the lead in encouraging business process innovations and ensuring that business decisions are sound.”

- Brazilian Acquisition Law lacks useful metrics to evaluate contractor performance - Developing a framework of metrics is one of the key strategic processes developed by private companies and it is recurrent in the supply chain management literature. This approach seems to be completely neglected in the Brazilian Acquisition Law. There is no reference about measuring government’s performance or an outlining framework of metrics.
- Brazilian Acquisition Law lacks a useful risk management tool - Brazilian contracting rules are so strict and formal, that they make it difficult to work on long-term relationships based on performance and continual commitment. For both DoD and the Brazilian Air Force Command, cooperative relationships with the private industry sector seem to be a vision for the years to come especially in times of budgetary pressures. In the past, contracts have focused solely on the administration side, making it difficult for industries to rely on long-term cooperation as well as clear and well-structured cost, price and profit framework for both sides.

The Brazilian purchasing practices can be greatly improved by implementing lessons learned from US Federal Acquisition Regulation and European Journal of Purchasing and Supply Management. The suggested improving way is for the Brazilian legislation to incorporate these principles in its legislation, so that purchasing officers can develop tools and other techniques to implement these changes. This research identified

the main potential topics for improvement and future researches might tackle each one of the aforementioned problems in greater detail.

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Vita

Captain Kesia Guedes Arraes Gomes graduated from the Brazilian Air Force Academy in Pirassununga, São Paulo. She graduated as the top student of her class and she was assigned to the Afonsos Air Force Base in 2000.

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13. SUPPLEMENTARY NOTES

14. ABSTRACT
The researcher undergoes a tripartite comparative analysis approach using: (1) Brazilian Acquisition Law, (2) US Federal Acquisition Regulation and (3) Selected Articles from the European Journal of Purchasing and Supply Management (1996-2010). Specifically, the primary research question is: How does the Brazilian Law 8666/93 compare to the American Federal Acquisition Regulation (FAR/84)? Therefore, an in-depth assessment and analysis of the procurement systems of the United States and Brazil is executed in order to determine the different perspectives and policies adopted by these countries; and how differently each Government perceive the purchase function. An extensive literature review using selected articles from the European Journal of Purchasing and Supply Management (1996-2010) enabled the generation of 22 potential topics for comparative purposes. This research is qualitative in nature and two methods were utilized: Coding techniques and CRA (Center Resonance Analysis). A complete coding structure was developed using the Brazilian Acquisition Law as the primary basis, and two main coding structure parts were selected in an endeavor to answer the research questions. The set of analyses were facilitated through the use of the Crawdad Software, which applies text analysis techniques by representing the text as a network of essential linked concepts. Several lessons learned were collected that can be ultimately incorporated on the purchasing practices of the Brazilian acquisition system.

15. SUBJECT TERMS
US Federal Acquisition Regulation, Brazilian Acquisition Law, Purchasing Practices, Acquisition, CRA (Center Resonance Analysis), Coding Techniques

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