

PUBLIC PROCUREMENT RE-EXAMINED

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ABSTRACT. Academically, public procurement has been a neglected area of study even though governmental entities and public procurement practitioners have diligently worked to improve public procurement practices. This article will identify common elements of public procurement knowledge through a brief analysis of the literature and will provide a summary of government efforts to improve public procurement practices. In addition, this article will comprehensively re-examine public procurement by using a systems approach as a method of inquiry. Finally, implications of the proposed public procurement system regarding future research and study will be discussed.

INTRODUCTION

In the public finance literature, government is involved in four major economic activities: (a) providing the legal framework for all economic activities, (b) redistributing income through taxation and spending; (b) providing public goods and services freely available to the public such as national defense, public safety, education, and infrastructure (bridges and roads); and (c) purchasing goods, services and capital assets.¹ In 1914, the Rockefeller Foundation funded a series of intensive studies regarding problems of public administration. *Government procurement*,² as one of four major economic activities of government, was also included in the study. As a result, a 275-page book, Principles of Government Purchasing, was published in 1919. Since then, there have been many developments in government procurement practices, including (a) numerous government

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procurement reforms; (b) the emergence of public procurement professional associations such as the National Institute of Governmental Purchasing, Inc. (NIGP) and the National Association of State Procurement Officers (NASPO); and (c) training programs delivered by NIGP, NASPO, the Federal Acquisition Institute, and the U.S. Defense Acquisition University.

Although public procurement is perceived as a major function of government, and although governmental entities, policy makers and public procurement professionals have paid a great deal of attention to procurement improvements or reforms, public procurement has been a neglected area of academic education and research. Indeed, no member of the National Association of Schools of Public Affairs and Administration offers a public procurement program even though over 103 colleges and universities offer courses, certificate programs, bachelor, master and Ph.D. in business programs with emphasis in purchasing, materials management, logistics, supply management, or related areas (Anonymous, 2000).

While governmental entities and public procurement professional associations have published numerous procurement reports and training texts, public procurement has been a neglected area of research interest by academicians. Recognizing the importance of academic research, NIGP has undertaken a series of academic initiatives by signing a partnership agreement with Florida Atlantic University's College of Architecture, Urban and Public Affairs in 1999. As a result of this agreement, the Public Procurement Research Center was created in 2000 (Carter & Grimm, 2001); a text writing project is in progress for fourteen scholarly books in the field of public procurement; a special symposium on public procurement was published in two continuous issues of the Journal of Public Budgeting, Accounting & Financial Management (Volume 12, Issues 2 and 3, 2000); and particularly the publication of the first scholarly journal in the field of public procurement, the Journal of Public Procurement.³

In general, government and public procurement professional organizations have worked to make the public procurement workforce more and more professional. Recently, the focus of these organizations has been on the professional status of public procurement.⁴

Instead of debating whether government procurement is a profession, this article will re-examine the scope of public procurement. First, it

identifies common elements of public procurement knowledge through a brief analysis of the literature and provides a summary of government efforts to improve public procurement practices. Then public procurement will be examined from the traditional or institutional perspective of systems approach; as such, public procurement is viewed as a system that is comprised of many elements. For analytical purposes, the institutional perspective of the systems approach holds all elements of the public procurement system constant. In reality, after these elements are assembled in a public procurement system, the system becomes dynamic and complicated. These “real-time” dynamics will be explored in a forthcoming article (Thai, forthcoming). Finally, implications of the proposed public procurement system will be discussed for future research and study.

OVERVIEW OF PUBLIC PROCUREMENT

Public Procurement Knowledge: Tracing Past Practices and Concerns

Public procurement has a long history. Written on a red clay tablet, found in Syria, the earliest procurement order dates from between 2400 and 2800 B.C. The order was for “50 jars of fragrant smooth oil for 600 small weight in grain” (Coe, 1989, p. 87). Other evidence of historical procurement includes the development of the silk trade between China and a Greek colony in 800 B.C.

In the United States, according to Page (1980), government procurement at the municipal level predates that of state and federal governments. In the settlements and colonies, printing was one of a few services contracted out by government. But there were no professional procurement officials; goods and services needed by government were supplied by commissioners or commissaries, who received a commission on what they bought for the militia or other administrative units. It was not until the late 1800s that state legislatures began to create boards or bureaus responsible for purchasing, but central purchasing was hardly a practice at that time. In 1810, Oklahoma was the first state government to create a board to procure centrally for all state departments and agencies (Page, 1980). Many local governments soon followed Oklahoma's example, according to Arthur Thomas (1919):

- S The City of Chicago. Illinois, has had “a degree of central purchasing for all departments since 1898” (Thomas, 1919, p. 27);
- S The City of Philadelphia, Pennsylvania, created a purchasing department in 1903;
- S The City of Minneapolis, Minnesota, created a department of purchasing by a December 22, 1911, ordinance;
- S The City of Cleveland, Ohio, provided for central procurement in its 1913 charter;
- S The City of Los Angeles, California, as authorized in its charter, created a department of supplies in 1916;
- S The City of Baltimore, Maryland, provided, in its charter, for a board of awards as a central purchasing agency; and on January 1, 1916, an assistant was appointed by the board to take over purchasing authority of several departments; and
- S The City of New York centralized its purchasing function in 1917 after two years of successful “cooperative contracting for all departments and offices under the mayor” (Thomas, 1919, p. 27).

Since then, centralized purchasing has gradually become common in state and local government. However, the centralization trend has been challenged in recent years. Many practitioners and researchers have contended that purchasing authority, especially in government, must be decentralized in order to provide more responsive support to end users, eliminate bureaucratic obstacles to program accomplishment, improve inter-departmental coordination, and empower service delivery managers to procure what they need without impediment by a centralized organization.

In addition to centralized purchasing, there was a movement toward adopting a uniform government procurement code. The American Law Institute and the National Conference of Commissioners on Uniform State Laws, with the endorsement of the American Bar Association, promulgated the “Uniform Commercial Code” (UCC) and completed it in the fall of 1951. Pennsylvania was the first state to enact the UCC; and by 1980, all states except Louisiana had adopted most provisions of the Uniform Code (Page, 1980). In 1979, the American Bar Association (ABA) issued The Model Procurement Code “after five years of intensive effort directed by a Coordinating Committee on a Model

Procurement Code” (American Bar Association, 2000, p. 101). In 2000, the ABA updated this publication and issued The 2000 Model Procurement Code for States and Local Governments.

At the federal level, the first purchasing action occurred in 1778 when the Continental Congress approved the appointment of purchasing commissioners, whose purchasing work was compensated by two percent of the value of their disbursements in support of the Continental army. But by the end of the year, as this arrangement led to excessive costs and possibilities of fraud, the purchasing officers were placed on salary. In 1792, the U.S. Congress passed a purchasing-related act that authorized the Departments of War and Treasury to make purchases in the name of the United States. The first significant procurement, made in 1794, was for a group of six large frigates for the new U.S. Navy. However, bad early experiences with this procurement procedure led to the 1795 passage of the first comprehensive procurement legislation, the Purveyor of Public Supplies Act, which became the basis for military procurement. Misconducts and abuses in federal procurement again led to an Act Concerning Public Contracts of 1808, prohibiting members of Congress from benefiting from government contracts and the Procurement Act of 1809, requiring competition in government procurement. Since then, a series of legislation and executive orders were passed or issued (Appendix 1).

Currently, there are 50 states and over 83,000 local procurement entities and as each governmental unit enjoys its autonomy, it is impossible to document various procurement laws and regulations in this article. In 1975, in a pioneering effort, the Council of State Governments published a report tabulating purchasing statutes and regulations of all states, major counties and cities.

In the last 20 years, environmental changes have had or will have great impact on government procurement theories and practices. First, the movement toward deregulation, paperwork reduction, government reengineering, and performance and privatization has led to a renewed concern about the cost of regulations. According to the U.S. Office of Management and Budget (1988), rough estimates have suggested the burden of federal regulations on the American economy ranged from \$50 to \$150 billion a year. Government procurement regulations and procedures have been one of the reform areas. In the early 1990s, the National Performance Review, under the leadership of former Vice

President Al Gore, focused on cutting federal government procurement red tape. Despite many government procurement reform efforts, it seems that all the following problems, as stated by Arthur G. Thomas (1919, p. 5) over eighty years ago, are still similar today, and will persist forever due to lasting unfavorable public perceptions and the nature of government:

[G]overnments have in the past with few exceptions notoriously failed as purchasers. [...] Dealers complain of red tape which hampers them in bidding, in delivering goods and in securing the payment of bills. Government executives themselves complain of delays between the issue of purchase acquisitions and the availability of goods for use. Citizens generally are prone to assert that graft and political favoritism taint a large part of government purchasing.

Public Procurement Knowledge: A Content Analysis of Selected Books

Content analysis is a useful research method for this article's purpose.⁵ Seven public procurement publications are selected, including an almost one-century-old text. The analysis is based on titles of book chapters, which address major themes or foci of the books. As shown in Table 1 (Panel A), procurement process, legal constraints and regulations are covered in each of the seven selected texts; procurement organization is addressed by five of the seven texts; ethics by three of seven texts; while only Sherman devotes a chapter to socio-economic issues of procurement. Because "chapter" is used as a unit of analysis, Table 1 ignores topics that are not covered in a whole chapter.

TABLE 1
Common Topics Covered by Selected Texts

Authors	Subjects Covered by Numbers of Chapters												
	Procurement		Regulations		Procurement		Ethics		Issues		Social/Econ.		Total
	Organization	Regulations	Process	Process	Ethics	Ethics	Issues	Issues	Others	Others	Total		
(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Panel A: Number of Chapters and Percentage of Topic Coverage													
FAI	2 (22.2)	1 (11.1)	4 (44.5)		1 (11.1)					1 (11.1)	9 (100)		
Kelman		1 (20.0)	2 (40.0)							2 (40.0)	5 (100)		
NASPO	1 (5.3)	1 (5.3)	7 (36.8)		1 (5.3)					9 (47.3)	19 (100)		
NIGP		2 (25.0)	5 (62.5)							1 (12.5)	8 (100)		
Page	3 (17.7)	1 (5.9)	12 (70.5)							1 (5.9)	17 (100)		
Sherman	2 (11.1)	1 (5.5)	4 (22.2)		1 (5.5)	1 (5.5)				9 (50.0)	18 (100)		
Thomas	1 (6.7)	1 (6.7)	12 (80.0)							1 (6.6)	15 (100)		
Panel B: Average Topic Coverage as a Percentage of Total Book Chapters													
Thomas	6.7	6.7	80.0							6.6	100.0		
Other Texts	9.4	12.1	46.2		3.6	1.0				27.6	100.0		

Notes: (1) = Number of book chapters covering the topic; (2) = Percentage of total book chapters covering each topic.

Sources: Federal Acquisition Institute (FAI) (1999); Kelman (1990); National Association of State Purchasing Officials (NASPO) (1996-97); National Institute of Governmental Purchasing, Inc. (NIGP) (1999); Page (1980); Sherman (1999); Thomas (1919).

For example, the Federal Acquisition Institute's text devotes a section, not a chapter, to the socio-economic issue. Similarly, NIGP's text has section on ethics and procurement organization.

Table 1 (Panel B) shows that Thomas's book focused greatly on the procurement process (80.0% of total book chapters), meanwhile current books, on average, pay more attention to procurement organization (9.4% as compared with 6.7% of Thomas' book), regulations (12.1% as compared with 6.7% of Thomas' book), and less attention to procurement process (46.2% as compared with 80.0% of Thomas' book). Moreover, contemporary government procurement is concerned with ethics and socio-economic issues.

PUBLIC PROCUREMENT KNOWLEDGE RE-EXAMINED

Knowledge consists of two types: tacit and explicit. Tacit knowledge can be defined as “personal, context specific knowledge that is difficult to formalize, record, articulate or encode.”⁶ Explicit knowledge, on the other hand, can be codified and transmitted into a systematic and formal representation or language” (Ramesh, 2001, p. 4). The process of formalizing tacit knowledge or converting it to explicit knowledge is called the knowledge building process (Nona & Konno, 1998). Whether public procurement knowledge has been well-recognized or explicit is not the focus of this article. The objective of this article is to re-examine public procurement knowledge. More than a quarter century ago, van Gigch (1974, p. 1) stated:

Life in society is organized around complex *systems* [author’s emphasis] in which, and by which, man tries to bring some semblance of order to his universe. Life is organized around *institutions* [author’s emphasis] of all sorts ... In every walk of life, whatever our job or our intent, we have to come to grips with organizations and with systems.

Traditionally, a system is defined as “an assembly or set of related elements” (van Gigch, 1974, p. 1, 2) or “institution.” But systems, particularly the public procurement system, are so dynamic that they cannot be understood just in terms of their elements or parts that make up an institution. Checkland and Scholes (1990, p. 19) stated: “The vehicular potential of a bicycle is an *emergent property* [author’s emphasis] of the combined parts of a bicycle when they are assembled in a particular way to make the structured whole.” Likened to a bicycle, public procurement should be defined by its emergent property, namely *system in action*. According to this systems view, a *system in action* – be it business process, public policy process, procurement process, or budgetary process – can be operationally defined as an abstract paradigm that represents the conversion of inputs into outputs (Childs, Maull, & Bennett, 1994; Childs, 1995; Dror, 1971; Kock & Murphy, 2001; Lineberry, 1977). This systems view has become a popular way of thinking, a practical philosophy, and a methodology of change not only for the public but the business sector as well.⁷

In this article, these two systems views are used to examine public procurement, which is more complicated than many scholars and practitioners have thought. The traditional systems view, namely

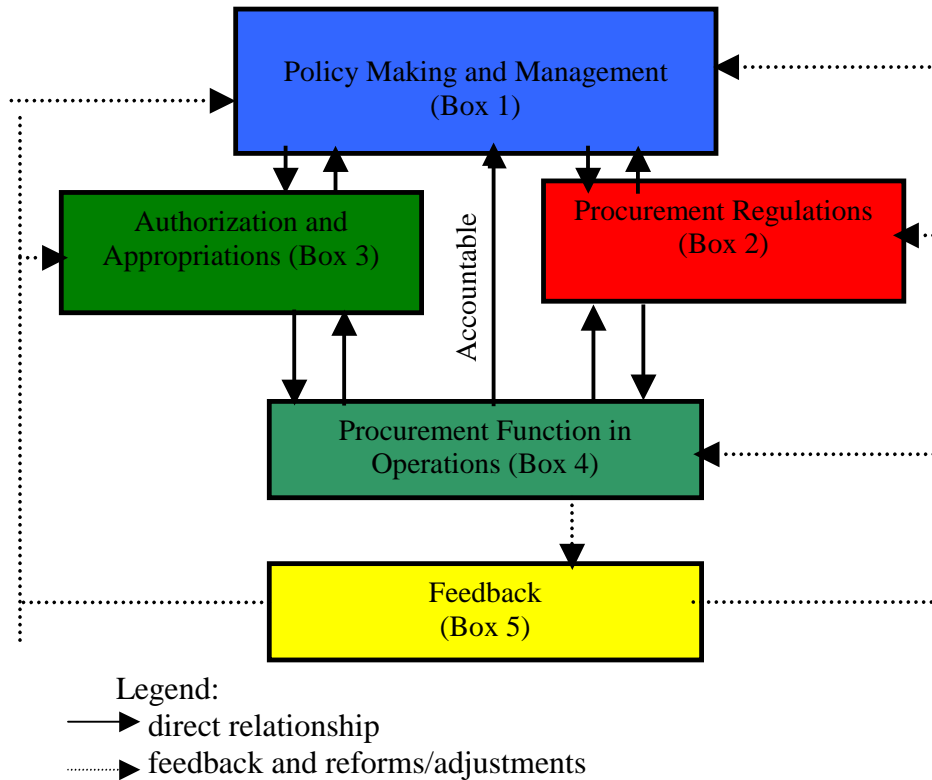
institutional approach, is used to examine elements of public procurement. The other view of the systems approach, namely the *procurement system in action*, will be used to examine the *emergent property*, or the “vehicular potential of a bicycle” (Checkland & Scholes, 1990, p. 19). In this view, public procurement is treated as a dynamic process.

Figure 1 depicts visually the whole scope of public procurement, which consists of five core elements: policy making and management (Box 1), procurement regulations (Box 2), procurement authorization and appropriations (Box 3), public procurement function in operations (Box 4), and feedback (Box 5). The “procurement regulations” element (Box 2), established by policy makers and management executives (Box 1), becomes the institutional framework within which public procurement professionals (be it contract officers, buyers, or procurement officers), and program managers (Box 4) implement their authorized and funded procurement programs or projects (Box 3), and also are accountable to policy makers and management executives (Box 1). Relationships between these four elements or Boxes are depicted by respective arrows. Finally, feedback (Box 5) will go to policy makers and management for possible adjustments or improvements in both Boxes 2 and 3, and to procurement professionals and managers (Box 4) for adjustments or improvements in procurement operations.

Policy Making and Management (Box 1)

In a democratic government system, although there is a distinctive division of powers between the legislative, executive and judiciary branches, procurement authorities and responsibilities vary among countries. Indeed, in countries such as the United Kingdom and Malaysia, where policy implementation is carried out by the executive branch through non-legal means, procurement organizational

FIGURE 1
Public Procurement System



structure and responsibilities are determined by executive orders. In many other countries, public procurements are regulated by formal rules and regulations. In the United States, the legislative branch, be it Congress, state legislature, local council or board of commissioners or directors, primarily influences public procurement systems through laws (by established procurement policies and regulations), and authorization and appropriations of programs leading to procurements. In addition, with large organization entities, the legislative branch may have a “watchdog” agency (such the General Accounting Office of the U.S. federal government, and the Office of Inspector General of South Florida

Water Management District) to audit and investigate agency programs and management, including public procurement.

In implementing procurement policies, the executive branch, headed by the president, governors, mayors or city managers, has a broad scope of managerial, and technical procurement responsibilities and procurement policy decisions, which may include, among others:

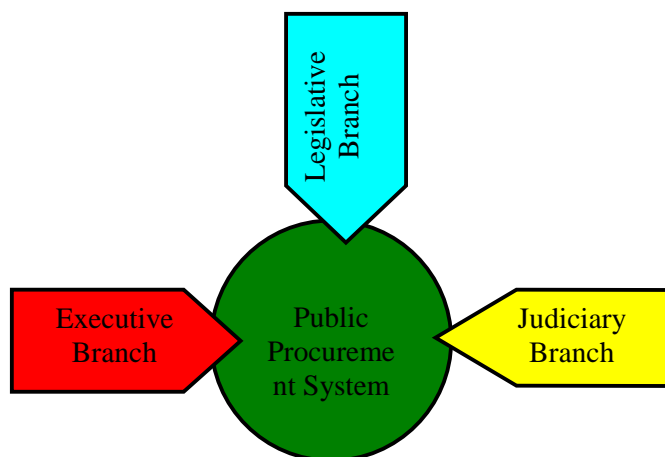
- Supplementing and augmenting statutory procurement policies and procedures through executive orders;
- Developing and maintaining statutory procurement policies and procedures; and
- Determining whether to meet program needs by in-house performance or by contracting out.

Public procurement organizational structures within the executive branch vary with the size of the governmental units, from a very complex to a very simple structure. In small towns and villages, there is no procurement structure as their part-time managers are responsible for all administrative functions of government including budgeting, accounting, and procurement. In contrast, with large governmental units the procurement organizational structure is extremely complicated. Thus, it is essential that each level of management have well-defined authorities and responsibilities delineated throughout the structure, from the issuance of policies, regulations and standards of performance to the supervision and management of the workforce.

In the United States, the federal government has a very complicated and fragmented procurement organizational structure. First, the federal procurement operates within a democratic framework, under the constitutional checks and balances powers of the three branches of government; legislative, judiciary and executive (Figure 2).

While the courts are not directly involved in setting procurement policies and rules, they try all legal cases that involve the federal government, including contract disputes, and their decisions become a source of federal procurement regulations. The Congress primarily influences the federal procurement system through laws, budget appropriations, and its oversight powers. Indeed, it passes laws establishing procurement policies and procedures, and appropriates

FIGURE 2
Public Procurement System: A Check and Balance Power



funds for procurement purposes, within the time and amount of funds specified. In addition, the Congress oversees federal procurements through its various standing committees, as shown in Table 3, and the U.S. General Accounting Office (GAO). It also authorizes GAO to recommend decisions to agency heads on contract award and non-award protests. These decisions also become a major source of federal regulations.

TABLE 3
Congressional Committees That Oversees the Federal Procurement System

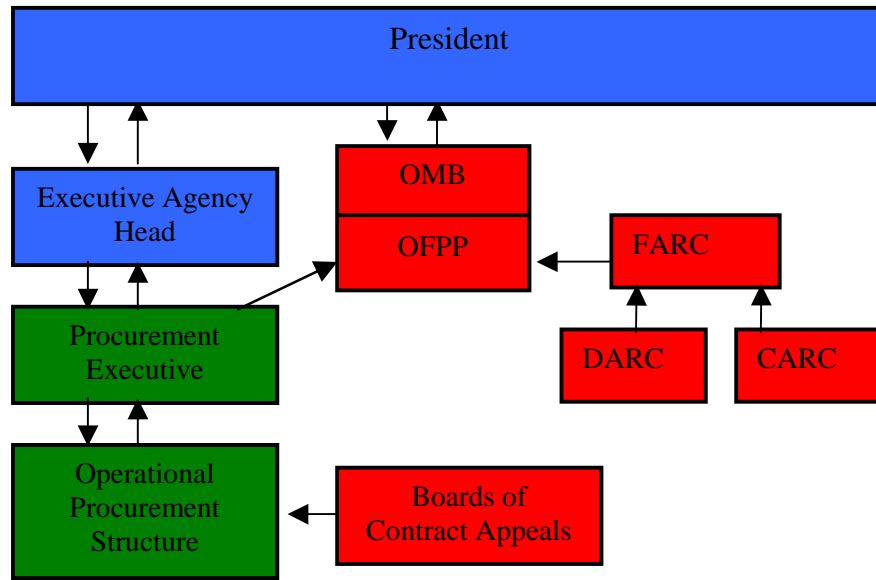
Senate Committees	House Committees
Armed Service	National Securities
Government Affairs	Government Reform and Oversight
Small Business	Small Business

Source: Federal Acquisition Institute (1999).

In principle, the president is responsible for implementing procurement statutes and procurement authorization and appropriations. He establishes government-wide procurement policies and procedures through executive orders, makes political and management decisions relative to procurement programs and appoints agency heads and other officials who have direct or indirect management control over procurement programs and procurement organization. As the federal government spends a large budget on procurement (over \$200 billion annually) and procures a great variety of goods, services and capital assets, its procurement administrative structure has a centralized structure to maintain a uniform standard and control, and a decentralized structure allowing for flexibility to meet unique requirements of over 60 federal agencies. Currently, the federal procurement structure within the executive branch is very fragmented, consisting of many executive agencies' decentralized procurement systems, and many procurement administrations, offices and councils as described below (Figure 3):

- The Office of Management and Budget recommends programs and funding levels for programs, including procurements; monitors programs and adjusts funding levels, if necessary; develops and issues, through the Office of Federal Procurement Policy, procurement policy guidance; and reviews proposed regulations for compliance with policy guidance.
 - The Office of Federal Procurement Policy, a part of the Office of Management and Budget, among other responsibilities, provides leadership in the establishment, development, and maintenance of federal acquisition regulations (FAR); coordinates the development of government wide procurement systems standards; and provides direction to the development of procurement systems of executive agencies. The Federal Acquisition Regulatory Council assists in the direction and coordination of federal procurement policy and regulatory activities.
- S There are three Acquisition Regulatory Councils: the Defense Acquisition Regulatory Council, the Civilian Acquisition Regulatory Council and the Federal Acquisition Regulatory Council. Chaired by the Secretary of Defense, and comprised of

FIGURE 3
Fragmented Federal Procurement System Within the Executive Branch



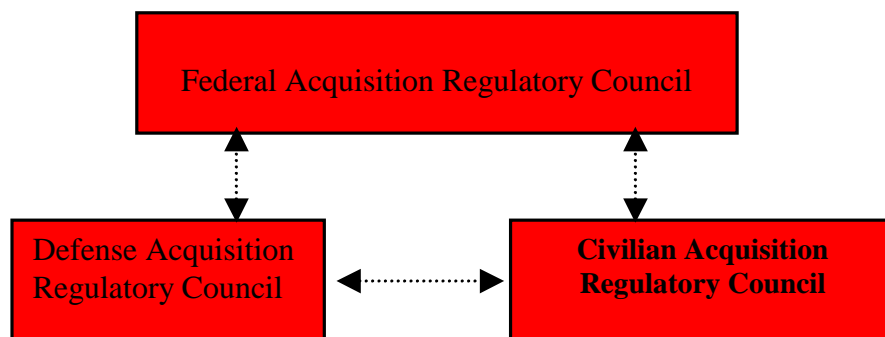
representatives from the Departments of Air Force, Army, Navy, the Defense Logistics Agency, and the National Aeronautics and Space Administration, the Defense Acquisition Regulatory Council is primarily responsible for defense acquisition regulations. The Civilian Acquisition Regulatory Council, chaired by the Administrator of the General Service Administration, and comprised of representatives from 21 civilian agencies, is primarily responsible for civilian acquisition regulations. The Federal Acquisition Regulatory Council consists of the Administrators of GSA, NASA and OFPP, and the Secretary of Defense. When one council develops a proposed amendment to FAR, the amendment is referred to the other council for review and concurrence. Prior to its issuance, the FAR amendment is reviewed by the OFPP Administrator and is jointly signed by all members of the Federal Acquisition Regulatory Council. The existence of the three acquisition regulatory councils (Figure 4) makes the procurement structure of the federal government further fragmented.

S Boards of Contract Appeals (BCA) resolve contract disputes between contract officers and contractors. Several of the large agencies have their own BCA. Agencies that do not have a BCA use the BCA of another agency when needed.

S Executive Agency Heads (be it Secretary, Attorney General, Administrators, Governor, Chairperson, other chief officials of an executive agency, or their authorized representatives) establish supplementary acquisition regulations and other internal policies and procedures, and are responsible for fulfilling agency procurement needs, and carry out FAR.

The above agencies and policy makers are involved in creating a uniform FAR system. As "there are nearly 500 statutes that apply to one or more aspects of federal government" (Federal Acquisition Institute, 1999, p. 3-15), a uniform FAR system is needed for all those who are involved in federal procurement. As mentioned above, the federal government acquires a wide variety of goods, services and capital assets to meet unique requirements of many executive agencies and their internal sub-agencies. Thus, the uniform FAR system allows specific internal guidance that individual executive agencies and their sub-agencies develop and are authorized to use.

FIGURE 4
Fragmented Federal Regulation Structure:
Three Acquisition Regulatory Councils



Of course, the internal agency guidance has to conform with prescribed FAR.

In general, the federal procurement structure is very fragmented with the active involvement of Congress in setting procurement policies and regulations and exercising its oversight and monitoring power. This fragmentation is seen in various standing committees of Congress, as mentioned above, and the roles of the General Accounting Office. Within the executive branch, the procurement organization is more fragmented as many agencies and boards are involved in the federal procurement system, particularly in setting acquisition regulations. Moreover, the fragmentation can be seen within each of over 60 executive agencies, which have many sub-agencies for different missions and with various procurement requirements. Thus, in the federal procurement system, decentralization is needed to meet the unique procurement requirements of numerous agencies. Although local governments are much smaller than the federal government, procurement decentralization is also needed. According to a 1997 survey by the National Institute of Governmental Purchasing, Inc. (1997), of 202 local governments (city, municipal, county and regional) 91 or 45.0% have a centralized procurement system, 100 or 49.5% have a partially decentralized system, and only 11 or 5.5% have a decentralized system.

Procurement Regulations Element (Box 2)

Public procurement is an important function of government for several reasons. First, the sheer magnitude of procurement outlays has a great impact on the economy and needs to be well managed. Indeed, in all countries in the world, estimates of the financial activities of government procurement managers are believed to be in the order of 10% – 30 % of GNP (Calender & Mathews, 2000). In the United States, the government sector procures between \$1.4 and \$1.6 trillion annually. The Federal government alone procured \$231.08 billion and made 33.19 million procurement actions in fiscal year 2000 as shown in Table 4. According to the Procurement Executives Council (2001, p. 29), the federal government made a purchase card payment every .31 seconds, and issued a standard form 281 every .77 second and a standard form 279 every 13.91 seconds per each working day. As state and local purchase

TABLE 4
Total Procurements by Reporting Methods

Reporting Methods	# of Actions	Dollars/Action	Total Dollars
Government Purchase			
Cards	23,343,003	\$523	\$12,231,491
Standard Form 281 (\$25,000 or less)	9,328,187	\$1,644	\$15,337,450
Standard Form 279 (Over \$25,000)	<u>519,780</u>	\$391,528	<u>\$203,508,288</u>
Total	33,190,879		\$231,077,229

Source: Procurement Executive Council (2001), *Fiscal Year 2001-2005 Strategic Plan*, p. 29. <www.pec.goc>.

expenditures are about six times more than the federal government purchase expenditures, and as their purchase thresholds are much smaller than that of the federal government, the amount of procurement actions should be enormous.

Secondly, public procurement has been utilized as an important tool for achieving economic, social and other objectives (Arrowsmith, 1998). In its report to the Congress, the Commission on Government Procurement states: “[T]he magnitude of the Government’s outlays for procurement and grants creates opportunities for implementing selected national policies” (Federal Acquisition Institute, 1999, p. 1-8). The World Bank’s *Procurement Under IBRD Loans and IBRD Credits* specifies following four major concerns or objectives of public procurement for projects funded by its loans:

- S Ensuring that the loan is used to buy only those goods and services needed for the project;
- S Ensuring fair competition for all qualified bidders from the World Bank’s eligible countries;
- S Promoting transparency or integrity, and

S Encouraging development of indigenous contractors and manufacturers by allowing local buyers to build in a margin of preference for local contractors and manufacturers (Tucker, 1998).

Finally, due to many reasons (including greater scrutiny of taxpayers and competing vendors), public procurement has been perceived as an area of waste and corruption.

Mention the subject of corruption in government and most people will immediately think of bribes paid or received for the award of contracts for goods or services, or--to use the technical term-- procurement. Whether this is really the most common form of public corruption may be questionable but without doubt it is alarmingly widespread and almost certainly the most publicized. Hardly a day goes by without the revelation of another major scandal in public procurement somewhere in the world (Transparency International, undated, chap. 2).

According to a series of surveys conducted in 1995 by Transparency International's national chapters, corruption in the public sector takes much the same form and affects the same areas whether one is dealing with a developed country or a developing one, and the areas of government activity most vulnerable to corruption include public procurement, rezoning of land, revenue collection, government appointments, and local government (Transparency International, undated). It is very difficult to assess the cost of corruption. In one example given by a Transparency International-UK's analysis, the bribes of £2.25 that Gordon Foxley, a civil servant at Britain's Ministry of Defense, took – and was imprisoned for four years-- caused up to £200 million in financial damage. This included the cost of job losses at the factory in Britain that failed to gain the orders (they went abroad), loss of profits leading to lower values for privatization exercises, the loss of highly-developed skills, the higher price paid than was necessary, and the purchase in at least one instance of a fuse that was useless as it was "ineffective in practice and battle conditions" (Anonymous, 1994; Transparency International, undated, chap. 2).

Thus, it is essential to establish a procurement system with clearly stated goals and policies. Due to its different economic, social and political environment, each country and even each governmental entity within a country has a different procurement goal or policy. In a government entity, be it a national, state or local entity, where corruption

is widespread, its procurement system may focus more on procurement integrity or transparency. In a governmental entity that has underprivileged ethnic groups, its procurement policies may focus on procurement equity. A government entity that deals with an ailing economy, may use its procurements as a tool for economic development or stabilization.

In developed as well as developing countries, disregarding their economic, social, and political environment, a sound procurement system seems to have two groups of goals: procurement goals and non-procurement goals. The procurement goals normally include quality, timeliness, cost (more than just the price), minimizing business, financial and technical risks, maximizing competition, and maintaining integrity. Non-procurement goals normally include economic goals (preferring domestic or local firms), environment protection or green procurement (promoting the use of recycled goods), social goals (assisting minority and woman-owned business concerns), and international relations goals. It is very difficult for policy makers and public procurement professionals to make an optimum decision as there are always tradeoffs between these goals.⁷

These procurement goals and policies are implemented either by non-legal means such as internal administrative circulars directing the actions of procurement officers (in the United Kingdom, and those countries under the U.K.'s influence such as Malaysia), or by formal statutes, rules or regulations (in France, many European countries and the U.S.). Over the last decade, a significant number of countries, particularly the transition countries, have adopted public procurement rules and regulations for the first time or have reformed their existing procurement legal provisions (Arrowsmith, 1998, p. 5). Moreover, it seems that the newer the constitution is, the more likely public procurement is provided. South Africa's 1994 Constitution (Section 187), for example, provides the following:

- S The procurement of goods and services for any level of government shall be regulated by an Act of Parliament and provincial laws, which shall make provision for the appointment of independent and impartial tender boards to deal with such procurements.
- S The tendering system referred to in subsection (1) shall be fair, public and competitive, and tender boards shall on request give reasons for their decisions to interested parties.

S No organ of state and no member of any organ of state or any other person shall improperly interfere with the decisions and operations of the tender boards.

S All decisions of any tender board shall be recorded.

Except in those countries that use non-legal means for procurements, sources of procurement regulations include constitution/charter, statutes (passed by legislative bodies), executive orders (issued by chief executives or their delegates), rules and regulations (issued by agency heads), and administrative law decisions (administrative decisions on claims, protests by independent units such as a board or committee of contract appeals, and the U.S. General Accounting Office). In addition to procurement goals, procurement regulations specify, among other things, the following:

- Procurement organizational structure, roles and responsibilities;
- Procurement phases and process; and
- Standards of conduct.

As public procurement is a very complicated system within which there are many conflicting interests, sound procurement regulations are needed in order to increase public confidence in the procedures followed in public procurement, and to ensure fair and equitable treatment of all persons who deal with the procurement system.

Many small governmental entities, where procurement budgets are small and procurement statutes hardly exist, do not have a procurement code. The absence of a procurement code, regulations, or manual may lead to unpredictable procurement problems.

Authorization and Appropriations Element (Box 3)

In the public procurement literature, this element has been neglected. All texts analyzed earlier in this article assume that the procurement process starts after a procurement budget is approved. In practice, procurement authorization and appropriations are integral parts of a public procurement system and determine procurement success. In many countries, construction projects face delays due to insufficient funds. For example, in Vietnam, Hanoi's new airport where construction began in 1995, was officially opened for business in October, 2001 after more than four years of delays. The sleek three-story, red-roofed terminal was supposed to be finished by late 1997, in time for a Francophone summit.

The opening was delayed by redesigns and funding shortages (Associated Press, 2001).

Actually, procurement professionals can provide policy makers with valuable information in the pre-procurement cycle phases, including needs assessment, and procurement program authorization and appropriations (Office of Management and Budget, 1997). In practice, they have been key players in early phases of procurement, including their participation in privatization, outsourcing or "make or buy" decisions. Moreover, as mentioned later, public procurement professionals, through their experience with the procurement regulation system, become a major source of feedback for procurement adjustment, improvement, or reform.

Procurement Function in Operations Element (Box 4)

This element has been the main focus of procurement practice and research; and in fact, is the most important and the most complicated element of the procurement system. It represents managers and procurement personnel, organizational structure, procurement process, techniques and methods.

Managers and procurement personnel, who procure goods, services and capital assets within the legal framework as provided in Boxes 2 and 3 and are accountable to actors in Box 1. Procurement professionals have dual responsibilities: they make sure that operational agencies comply with procurement regulations, and they are directly involved in procuring goods, services and capital assets as authorized and funded.

Organizational structure, which may be very simple or very complicated, depending on the size of government. Most state and large local governments have procurement divisions either within their finance or administrative services departments; and very few departments, except perhaps transportation or public works departments, have a procurement function or officer. In the federal government, there are different procurement sub-agencies within each executive agency, depending on each agency's missions. For example, the U.S. Department of Transportation's (DoT) general mission is implemented by nine major sub-agencies including the U.S. Coast Guard, Federal Aviation Administration, Federal Highway Administration, Federal Railroad Administration, National Highway Traffic Safety Administration, Urban Mass Transportation Administration, Saint Lawrence Seaway

Development Corporation, Marine Administration, and Research and Special Program Administration. DoT has a central procurement structure, namely the Office of Acquisition and Grant Management (OAGM). A member of the Civilian Federal Regulatory Council, OAGM is responsible for implementing and supplementing FAR, and for issuing and maintaining the Transportation Acquisition Regulation (TAR). It also has policy, management, and reporting authority and responsibilities for the nine DoT sub-agencies listed above (Federal Acquisition Institute, 1999).

The actual procurement work of DoT is performed by the various sub-agencies' procurement operations. Each of these sub-agencies has its own procurement organization. For example, the Federal Railroad Administration has the Office of Procurement Services, under the Associate Administrator for Administration). Each sub-agency also has its own procurement rules, which must not conflict with FAR and TAR. Finally, each sub-agency has its own procurement personnel. While most state and local governments in the United States have three types of procurement personnel: procurement executive, officers and buyers, the federal procurement professionals consist of:

- Senior procurement executives;
- Contract officers, comprised of three types: procurement contracting officers, administrative contracting officers, and termination contracting officers;
- Contract specialists;
- Contract negotiators;
- Contract administrators;
- Contract price/cost analysts;
- Contract termination specialists; and
- Procurement analysts (Federal Acquisition Institute, 1999).

Procurement techniques and methods, and process, which have been the core knowledge and skills that public procurement professionals need to have. All public procurement books, as analyzed early in this article, cover in detail these procurement methods and techniques (such as negotiation skills, price analysis and cost analysis) and procurement cycles. The procurement function in operations (Box 4 of Figure 1) vary with the types of procurement, from a very complicated cycle (such as

procuring a new defense weapon as described in “Department of Defense Instruction No. 5000.2,” January 4, 2001) to a very simple, standard cycle (such as procuring goods and services as prescribed by the American Bar Association [2000], or described by NIGP [1999], Federal Acquisition Institute [1999], and many local and state procurement manuals).

In brief, the procurement function in operations is the critical and complicated element of the public procurement system. Due to its complexity, the element is explored in a forthcoming article (Thai, forthcoming).

Feedback Element (Box 5)

Similar to other systems, the feedback element is very important for a sound procurement system. By continuously evaluating what is required to perform the whole procurement system, what happens to it and what results from it, policy makers and management can make required adjustments or reforms where they are needed (Office of Federal Procurement Policy, 1982). While much attention has been given to the procurement function in operations (Box 4, Figure 1), little attention has been paid to other elements of the system, including the feedback element (Box 5, Figure 1).

Feedback may indicate the need for adjustments to or improvements in all procurement system elements. In some cases, feedback may indicate that procurement regulations or policies and/or agency procurement standards are no longer current or suitable, and adjustments or reforms are needed. In other cases, feedback may prove that the procurement cycle does not work effectively, and needs to be improved in areas such as prompt payments, uses of new technology such as e-procurement and purchase cards.

Feedback normally comes from procurement professionals who may feel frustrated with the whole system, including unsuitable procurement regulations and process, and a lack of procurement integrity due to inferences of policy makers. Feedback may be provided by external government organizations such as legislative bodies and/or legislative committees, oversight bodies (e.g., GAO, internal auditors/inspectors) and special study commissions, committees or teams (such as the Congressional Commission on Government Procurement in 1970-72, and the Procurement Process Improvements Team created in 2000 at the South Florida Water management District [Office of Inspector General,

2001]). Feedback also may come from contractors or vendors, industry and professional organizations and the public.

Another source of feedback is from procurement research. However, public procurement research, particularly at the state and local levels, has been neglected. At the Federal level, the following statement, made nearly 20 years ago, is still valid:

To date, procurement research has been kept at a low priority due to personnel and funding limitations. Only DOD has research centers. The civil agencies, although the interest is high, have little or no personnel resources or funds to conduct procurement research (Office of Federal Procurement Policy (1982, p. 18).

In brief, without feedback, policy makers and management are not aware of procurement problems the public procurement system encountering.

ENVIRONMENT OF THE PUBLIC PROCUREMENT SYSTEM

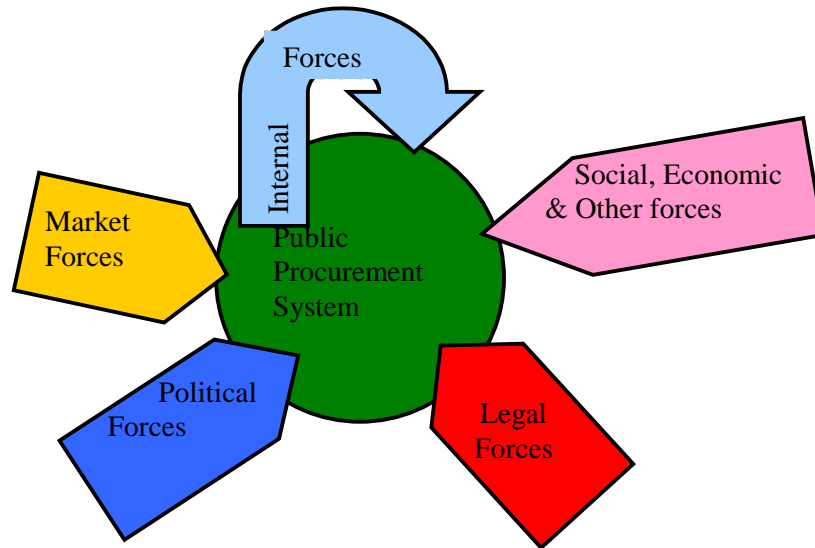
Similar to other systems, the public procurement system's ability to accomplish procurement policies/goals is influenced by its environment, and in turn, influences its environment (e.g., government procurement may improve socio-economic environment as intended). As shown in Figure 5, environment influencing the public procurement system includes many types: market, internal environment, legal environment, political environment, and socio-economic and other environment.

Internal Environment

The public procurement system's ability to accomplish procurement policies or goals is influenced very much by internal forces including:

- Interactions between various elements (as depicted by the five boxes in Figure 1) of the public procurement systems, various officials and organizations in the three branches of government, and various actors and sub-agencies within a department or executive agency and actors and organizations external to sub-agencies;
- Types of goods, services and capital assets required for an agency's missions;
- Professionalism or quality of procurement and procurement-related workforce;

FIGURE 5
The Environment of Public Procurement System



- S Staffing levels (e.g., ratio of procurement professionals to contract actions) and budget resources;
- S Procurement regulations, rules and guidance; and
- S Internal controls and legislative oversight.

Market Environment

Market conditions have a great influence over the public procurement system's effort to maximize competition. Moreover, the market determines whether or not socio-economic objectives of procurement are accomplished, whether or not a governmental entity can fulfill its needs; the timeliness of fulfillment; and the quality and costs of purchased goods, services and capital assets. As there are different levels of economic growth among countries in the world, market conditions are very favorable in industrialized countries, while they may be unfavorable in developing countries.

Even under a perfectly competitive condition like that in the United States, some supplies and services are required only by the government

(particularly for weapons systems) and are available in the market. This is a captive market which is limited in scope and competition.

Also as markets become more and more globalized through regional and international trade agreements and treaties, the public procurement system has to be adjusted (for example, the Trade Agreement Act of 1979 waiving the Buy American Act for certain supply contracts) and become more complicated. Indeed, public procurement professionals face additional challenges including communication, currency exchange rates and payment, customs regulations, lead time, transportation, foreign government regulations, trade agreements, and transportation. Thus, "before embarking on a foreign purchasing program, public procurement professionals must carefully assess the total cost implications and compare them to domestic costs" (National Institute of Governmental Purchasing, Inc., 1999, p. 34). Public procurement professionals are torn between free trade agreements and their countries' economic development/ stabilization policies when they face a hard choice between selecting domestic or foreign firms.

Legal Environment

Different from public procurement regulations and rules, the legal environment refers to a broad legal framework that governs all business activities including research and development (regulations dealing with safety and health of new products), manufacturing (safety and health regulations at workplace and pollution control), finance (regulations dealing with disclosure of information), marketing (regulations dealing with deception of advertising, disclosure of product characteristics), personnel (regulations dealing with equal opportunity for women and minorities), and contracts. Indeed, most aspects of contracts--public or private-- such as contract requirements, disputes, and breach of contract are governed under the same contract law. In developing and particularly transitional countries, where legal systems are not comprehensive, government contracts may need detailed provisions.

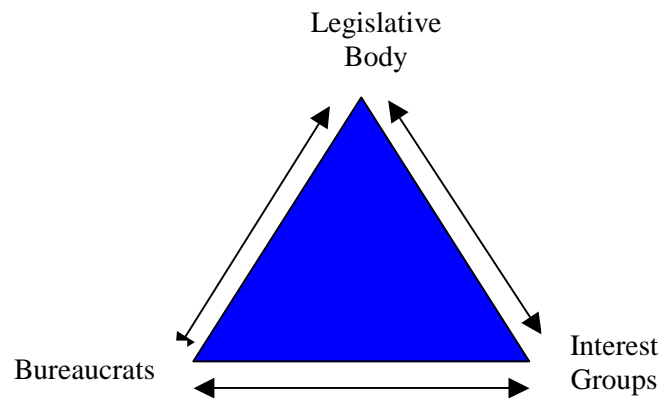
Political Environment

In a democracy many individuals, groups, and organizations in the private sector including trade associations, professional associations, and business firms or companies (commonly known as interest groups) are actively involved in all aspects of the public procurement system.

Having various interests, objectives and beliefs, interest groups are involved in the public procurement system in several ways such as lobbying legislative bodies to pass or alter procurement statutes, influencing implementation of these statutes, and influencing budget authorization and appropriations processes. Normally, a government program that is eventually adopted is a compromise among different views of interest groups, policy makers and management. In this democratic environment, there are cases of a strong coalition of policy makers, bureaucrats and interest groups in their effort to get their programs adopted. This coalition has led to the concept of the iron triangle (Figure 6), which is very popular in the area of defense procurement.

However, the iron triangle shifts immediately after the procurement program authorization and appropriations stages move to the procurement stage. As failure or success in winning large defense contracts has a great impact on a company, defense specialized companies compete against each other for these contracts. Public

FIGURE 6
The Politics of Procurement: An Iron Triangle Relationship



procurement professionals have choices as they face various political pressures as well as sound economic decisions. For example, should they be concerned with maintaining future business competition by

keeping some relatively weak companies in business or should they let these small weak firms go out of business and leave a few defense specialized firms to compete for contracts? This issue is more common in developing countries where perfect competition hardly exists. Large firms are more willing to make a small profit margin or even to take business losses by offering best bids. After small and weak firms are out of business, they will enjoy an imperfect competitive market.

Social, Economic, and other Environment Forces

While some countries impose social policies on their public procurement (such as a policy placing a fair proportion of government acquisitions with woman or minority-owned small business), most governmental entities --be it a developed or developing country or federal, state, and local governments-- use their large procurement outlays for economic stabilization or development purposes by preferring national or local firms over firms from other countries or other geographic locations. Public procurement professionals may be in a favorable or unfavorable environment that has a great impact on their practices as they may face an imperfect competitive market.

In addition to social and economic environment, public procurement professionals are under other external pressures such as an environment protection movement, and foreign policy.

Environmental Protection Concern or Green Procurement.

Environment protection has been present in every country-- developed and developing-- and environmentalists have placed a great deal of pressure on public procurement professionals. This type of pressure can be seen very frequently and in every country. In late 2001, the Vietnamese central government's State Appraisal Committee approved a controversial plan to route a new north-south highway through the country's oldest national park, a habitat for many rare and endangered plant and animal species. According to environmental groups, the plan to run the highway through the Cuc Phuong park, which starts about 56 miles south of Hanoi, posed a serious threat to endangered species. The Cuc Phuong park is a global center for plant diversity and home to Delacour's Langur, a critically endangered primate, as well as the grey-headed fish eagle, tigers and elephants. The committee had examined two options: to upgrade an existing road running through the west of the park into a 17 miles stretch of highway, or to build a new road, skirting the park. The latter road would be 12 miles longer, cost nearly \$20 million more and require the relocation of more than 900 families instead of 80. The Vietnamese government, concerned with cost savings, decided to build the new road.

Foreign Policy. Many countries have used public procurement as a foreign policy tool to achieve specific objectives. For example, in the 1980s, the Pakistani government bought 28 F-16 fighter jets, but the United States government withheld the contract because Pakistan was pursuing, against American wishes, the development of nuclear weapons. Public procurement professionals in poor and weak countries are frequently facing the problem of having to deal with foreign policy of other nations in their procurements.

Other Environmental Forces. The public procurement system is also influenced by culture and technology. In a culture where giving gifts is a common public relation practice, it is difficult to make a distinction between gifts and bribes. Moreover, rapidly advanced technology has forced public procurement to (a) adopt new procurement methods, such as the use of e-signature and purchase cards; and (b) be knowledgeable in how to procure information technology.⁸

Interactions of Environment Forces

Various pressures on the public procurement system, as described above, are not constant variables, but they interact with each other and become conflicting forces that public procurement professionals have to deal with. There are tradeoffs between the environment forces, and these professionals have to seek an optimum solution.

At this writing, the South Korean government is facing a difficult choice concerning one of the biggest arms deals in its history--the \$4 billion FX jet-fighter program. The South Korean government must choose between one of the four bidders--Boeing of the U.S., Russia's Rosvoorouzhnie, the European consortium Eurofighter and France's Dassault Aviation (Larkin, 2001a). In battling to win this multi-billion-dollar contract, each bidder plays up its strengths and uses whatever leverage it can. In 2000, French President Jacques Chirac visited Seoul with Serge Dassault, Chairman of Dassault Aviation. In early 2001, Boeing executives flew to Seoul to lobby. President George W. Bush pushed Boeing's bid to visiting President Kim in Washington in March, 2001; and Secretary of State Colin Powell did the same with then-Foreign Minister Lee Joung Binn. The F-15 assembly line in St. Louis, Missouri, could face closure if the Seoul deal is lost, after failing to win contracts in Greece and Israel. The Korean government's contract award decision comes at the worse time when relations with the United States

have deteriorated this year over the Bush administration's frosty attitude toward President Kim Dae Jung's engagement of North Korea. Rejecting Boeing's bid could widen the rift between the two allies over North Korea, but awarding the contract to Boeing could create the perception that Seoul caved in to the Washington lobby. Such a view would fuel anti-U.S. sentiment in Korea and damage the ruling party's liberal support base before a presidential election next year. In addition, reacting to the Korean aerospace industry's pressure to use this large purchase to foster its young industry, the Korean government, in April, 2001, raised the "offset" requirement from 30% to 70% (Larkin, 2001b). Through this offset requirement, the Korean government demanded that parts manufacture and maintenance by local companies be equivalent to 70% of the project's \$4 billion estimated price tag. Bidders must also demonstrate a willingness to transfer technology to local firms. According to Larkin (2001a), Korean President Kim Dae Jung may choose a politically safer decision by postponing the contract award decision until after the presidential election in December 2002.

CONCLUDING REMARKS

The institutional or element view of the systems approach used in this article must overcome several difficulties. First, the multiple definitions of institutions cause confusion. Some scholars use the term *institution* to refer to an "organizational entity," and some others use the term to "refer to the rules, norms, and strategies adopted by individuals operating within or across organization" (Ostrom, 1999, p. 37). In this article, since both definitions are used, some confusion cannot be avoided in this author's explanations of his proposed public procurement system.

Second, institutions are invisible because they are "fundamentally shared concepts," "exist in minds of the participants," and "sometimes are shared as implicit knowledge rather than in an explicit and written form" (Ostrom, 1999, p. 37). Despite its effort to depict visually the public procurement system (Figures 1 and 4, particularly), this article still leaves the workforce element out of Figure 1 as the workforce plays a critical role on the whole system or institution. A careful analysis of this element--the public procurement workforce-- will enable policy makers and management to better address the career development needs of the procurement workforce. In the past few years, the U.S. federal

government has been concerned with the shortage of a public procurement workforce (Gill, 2001; Acquisition 2005 Task Force, 2000). This shortage is real, particularly within the next five years, when governmental entities at all levels (federal, state and local) are facing the imminent loss, through retirement and attribution, of a substantial portion of its experienced workforce. In October 1998 the federal government's Procurement Executive Council launched the two-year government-wide Acquisition Management Internship Program in order to "stem the tide of losses in the acquisition community" (Dennet, 2001).

Third, public procurement is an extremely complicated function of government, as analyzed above, and public procurement requires interdisciplinary skills and knowledge (or multiple disciplines), including economics, political science, public administration, accounting, marketing, law, operations research, engineering, and architecture, among others. It is impossible to integrate these disciplines into the public procurement knowledge (e.g., students/practitioners are not expected to become experts in engineering, architecture, law, budgeting and accounting, operations research, and economics through their public procurement training and education programs). Thus, a very important task of public procurement professionals is to communicate effectively with those professionals who are involved in procurement projects. But according to Ostrom (1999), it is extremely difficult to achieve meaningful communication across these disciplines.

Fourth, the public procurement system as shown in Figure 1 is a nested structure of systems within systems (e.g., acquisition regulation making process, procurement cycle, and contract negotiation process), rules within rules (e.g., agency procurement rules within FAR), organizational structures within organizational structures (e.g., three branches within a governmental unit; procurement-related standing committees and GAO within Congress; the complicated structure of centralized procurement within the executive branch, and complicated structure of decentralized procurement within executive agencies), and many independent procurement systems within a country (e.g., in the United States, the federal government, 50 state governments and over 84,000 local governments have their own procurement systems). Multiple sources and levels of structure of the public procurement system are a particular analytical problem for those interested in public procurement. Ostrom (1999, p. 38-39) explained this problem as follow:

Studies conducted at a macro level focus on constitutional structures. These, in turn, affect the type of collective-choice decisions as they eventually impinge on the day-to-day decisions of citizens and/or subjects. Studies conducted at a micro level focus more on operational-level decisions as they are in turn affected by collective-choice and constitutional-choice rules, some, but not all, of which are under the control of those making operational decisions. Finding ways to communicate across these levels is a key challenge for institutional theorists.

Finally, this article has separated the public procurement system into elements, as depicted in Figure 1, that are analyzed independently. These elements, after being assembled into a system create, to use Ostrom's terms, "configural relationships" which make procurement reforms a more difficult task. Indeed, changing or modifying an element depends on other elements that may be affected by this change. In other words, these elements do not remain constant when that element is torn apart. For example, simplifying public procurement regulations depends on other elements of the system, including the willingness of policy makers to reduce the number procurement requirements such as social, or economic objectives of public procurement.

Despite the above difficulties, the institutional view of the systems approach is a useful approach to re-examine public procurement. The public procurement system discussed above proves that public procurement is very complicated, requiring a very broad-based or interdisciplinary knowledge.

The public procurement system as depicted in Figure 1 also refutes the traditional perception of the public procurement function as a clerical task of government. On the contrary, as shown though arrows originating from Box 4 of Figure 1, key players in this box (e.g., procurement function in operations) are not only procurement implementers but also are involved, to a certain extent, in Box 2 (procurement regulations) and Box 3 (procurement authorization and appropriations). Moreover, due to the importance of public procurement (in terms of the size of goods, services and capital assets purchased by governments; and the use of public procurement to achieve social, economic and other purposes), the public procurement function should be handled by a professional workforce equipped with needed skills and knowledge through training and education. Unfortunately, higher education institutions and

educators have not recognized the educational needs of public procurement professionals. At this writing, this author is not aware of any comprehensive public procurement program offered by any university in the United States.

Finally, as the scope of the public procurement system is very broad and comprised of many elements. Moreover, this article has treated all elements of public procurement as constant variables. In fact, the elements are interrelated. After being assembled, the public procurement system is similar to a car. The vehicular performance of a car depends on many factors, including the quality of its parts, engineering design, road and traffic conditions, and its driver. Similarly, the vehicular performance of a public procurement system depends on its elements, as depicted in Figure 1. As these elements vary among governmental entities, it is impossible to come up with a one-size-fits-all public procurement system as the performance of a system depends not only on its elements but also on its chemistry.⁹

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NOTES

1. See Stiglitz (2000); and Rosen (1999), for further explanation of the first two categories of government activities; the redistribution of income, and the production of goods and services.
2. The term “procurement” is consistently used throughout this article to include:
 - “buying, purchasing, renting, leasing or otherwise acquiring any supplies, services or construction;” and
 - S “all functions that pertain to the obtaining of any supply, service or construction, including description of requirements, selection, and solicitation of sources, preparation and award of contract, and all phases of contract administration” as defined by the American Bar Association’s Section of State and Local Government Law (American Bar Association, 2000, p. 7).

3. Academically, there has not been a generally accepted term to indicate public procurement. Quite a few terms have been currently used including the most popular terms “acquisition” used by the U.S. federal government, “purchasing” used by NIGP and NASPO (until several years ago, when the National Association of State Purchasing Officers was changed to the National Association of State Procurement Officers), and “procurement.” Upon the advice of Rick Grimm (personal communication, November 14, 2000), Chief Executive Officer of NIGP, “Public Procurement” was adopted for this new journal.
4. For further discussions about the public procurement professional status, see Callender and Mathews (2000), and Gordon, Zemansky and Sekwat (2000), and Thai and Grimm(2000).
5. As much of the tacit and explicit public procurement knowledge, along with the context associated with it, is lost after the procurement process is completed, procurement teams are unable to leverage knowledge actualized by earlier teams. Thus the Journal of Public Procurement is created and used as a repository of information and knowledge derived from many sources, including reprints of useful government publications, cases and academic manuscripts written by procurement practitioners and researchers. A comprehensive repository is needed in order to avoid the following problems in public procurement:
 - S Lack of shared information,
 - S Over-reliance on transmitting tacit information and knowledge,
 - S Repeated mistakes,
 - S Reinvention of solutions,
 - S Loss of skills developed due to collaboration,
 - S Inability to transfer existing procurement knowledge into other parts of the organization, and particularly, and
 - S Loss of tacit knowledge (See Ramesh [2001] for further explanations of these problems).
6. See Bailey (1978) and Patton and Sawicki (1993) for further information about this research technique.
7. Policy makers --be it legislators, chief executives, department heads and procurement executives-- are facing difficult decisions when they

assess tradeoffs between possible conflicting procurement goals and policies, including tradeoffs between cost and quality, timeliness, risk, economic goals, social goals, competition (see Federal Acquisition Institute [1999] for detailed explanations). Is it possible for procurement professionals to determine the optimum relationship between goals?

8. Many sports teams such as football or basketball teams that have many good players are not good teams due to a lack of chemistry.

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APPENDIX 1
Federal Procurement Statues

- S The Civil Sundry and Appropriations Act (1861), mandating formal advertising and competition;
- S The Anti-Deficiency Act (1906), prohibiting commitments unless funding is available and providing for personal liability;
- S The National Defense Act (1916), authorizing the President, in time of war or when war is imminent, to place military supply orders that would take precedence over all other orders and contracts;
- S The Davis-Bacon Act (1931), imposing minimum wage rates, benefits, and working conditions on construction contracts;
- S The Buy American Act (1933), prohibiting purchases of materials and products that are not produced or manufactured in the United States unless the price differential is deemed unreasonable;
- S The Anti-Kickback Act (1934 and amended extensively in 1946), prohibiting “pay-offs” to get government contracts, and other types of kickbacks such as subcontractors making payments to a prime contractor or a higher-tier contractors, and employees demanded to return to their employers any different portion of the minimum wages under the Davis-Bacon Act over the market wages;
- S The Miller Act (1935), requiring contractors to provide payment and performance bonds on government construction contracts;

- S The Walsh-Healy Public Contracts Act (1936), setting an overtime pay rate of time and one-half for all hours worked in excess of eight hours a day or forty hours a week, and setting minimum working ages for boys and girls;
- S The Wagner-O'Day Act (1938), requiring purchase of products made by blind and other handicapped persons;
- S The Assignment of Claims Act (1940), providing that claims against the government may be assigned to a financial institution;
- S The War Powers Act (1941), permitting the President to authorize certain departments and agencies to make procurements with no contract law requirements concerning the making, performing, amending or modifying contracts;
- S The Armed Services Procurement Act (1947), establishing authority for the Department of Defense to (1) contract for the acquisition of property and services needed for the national defense, and (2) write regulations to implement this act;
- S The Crimes and Criminal Procedures Act (1948), requiring mandatory purchases of specific supplies from Federal Prison Industries, Inc.;
- S The federal property and Administrative Services Act (1949), establishing the General Services Administration;
- S The Cargo Preference Act (1954), requiring shipment of all military and at least half of other goods in U.S. vessels;
- S The Truth in Negotiations Act (1962), introducing a requirement that prior to awarding any contract by negotiation procedures, contracting officers must hold discussions with all offerors in the competitive range;

- S The Service Contract Act (1965), mandating minimum wage rates, fringe benefits, and safe and sanitary working conditions for service contracts over \$2,500;
- S The Freedom of Information Act (1966), providing for making certain information on government activities including acquisition-related activities available to the public;
- S The Defense Production Act (1970), establishing a Cost Accounting Standards Board and authorizing the promulgation of cost accounting standards that apply to certain Federal contracts and contractors. (This board's authority now rests in the Federal Public Procurement Act of 1974);
- S The Clean Air Act (1970), prohibiting contracting with a company convicted of criminal violation of air pollution standards;
- S The Inspector General Act (1974), placing an Office of the Inspector General within each major procurement agency of the federal government as a reflection of concern over reported waste, fraud, and abuse;
- S The Office of Federal Procurement Policy Act (1974), creating the Office of Federal Procurement Policy within the Office of Management and Budget to provide central policy direction for procurement;
- S The Contract Disputes Act (1978), making significant modifications and formalizing the Federal contract dispute resolution system;
- S The Trade Agreement Act (1979), waiving the Buy American Act for certain supply contracts;
- S The Prompt Payment Act (1982), improving the federal government's responsiveness in paying bills;
- S The Competition in Contract Act (1984), promoting greater levels of competition for government contracts;

- S The Program fraud Civil Remedies Act (1986), strengthening the government's ability to prosecute contract-related fraud;
- S The Federal Acquisition and Streamlining Act (1994), requiring development of results-oriented acquisition guidelines;
- S The Clinger-Cohen Act (1996), (1) authorizing contract officers to limit the number of proposals in the competitive range, in accordance with the criteria specified in the solicitation, to the greatest number that will permit an efficient competition among the offerors rated most highly in accordance with such criteria; (2) permits excluded offerors to request pre-award debriefings and encourages use of alternative dispute resolution techniques for any protest based on such exclusion, and revises exceptions to requirements for certified cost or pricing data and prescribes other reforms;
- S The Acquisition Results Act (1998), improving the performance of the Federal procurement system by managing for results and by improving the capability of the Federal acquisition workforce to achieve the desired results.