

United States Army Materiel Command

Contracting XXI Industry Survey

Final Report
March 3, 1998

Prepared Under:

Contract Number GS23F9796H
Delivery Order DASW01-98-F-0387

Prepared for:

Army Materiel Command
5001 Eisenhower Avenue
Alexandria, Virginia 22333

Please refer questions regarding this report to:

KPMG Peat Marwick LLP

J.M. Geiger, Principal	(703) 541-3717	jgeiger@kpmg.com
Todd Cebriak, Senior Manager	(703) 541-3707	tcebriak@kpmg.com
Greg McCaffrey, Manager	(703) 465-4079	gmccaffrey@kpmg.com

Federal Services Group, 7025 Newington Road, Suite 201 Lorton, VA 22079

Army Materiel Command

COL Mark Flavin,
Chief Contract Operations Support (703) 617-6741 mflavin@hqamc.army.mil

Emily Clarke	(703) 617-9404	eclarke@hqamc.army.mil
Steve Knight	(703) 617-9351	sknight@hqamc.army.mil

AMC, Attn.: AMCRDA-AC 5001 Eisenhower Ave. Alexandria, VA 22333

Contracting XXI Blueprint Industry Survey

Contents

1	Executive Summary		1.1
	Background	1.1	
	Methodology	1.1	
	Industry Findings		1.2
	Government Findings	1.2	
	Recommendations	1.3	
2	Introduction and Methodology		2.1
	Background	2.1	
	Methodology	2.2	
3	Industry Input		3.1
	Organizational Overview	3.1	
	Purchasing/Contracting Department		3.7
	Personnel	3.18	
	Use of Information Technology	3.21	
	Industry Analysis	3.25	
4	Government Input		4.1
	Organizational Overview	4.1	
	Purchasing/Contracting Processes	4.3	
	Personnel	4.6	
	Use of Information Technology	4.7	
	Government Analysis	4.8	
	Summary	4.12	
5	Comparative Analysis		5.1
	Industry Direction	5.1	
	Government Direction	5.2	
	Key Differences	5.3	
6	Recommendations		6.1
	Organization	6.1	
	Policy	6.1	
	Information Technology	6.2	
	Business Processes	6.2	
	Personnel	6.2	
	Summary	6.3	
7	Appendix		7.1
	Industry Survey Questionnaire	7.1	

SECTION 1: EXECUTIVE SUMMARY

KPMG Peat Marwick LLP (KPMG) was engaged by the U.S. Army Materiel Command (AMC) to survey private industry and government agencies in an effort to identify innovative best practices as well as approaches to managing procurement and purchasing functions. This report addresses specific challenges faced, and lessons learned, by both industry and government. These findings are then translated into a recommended approach which AMC can evaluate for possible implementation.

Background

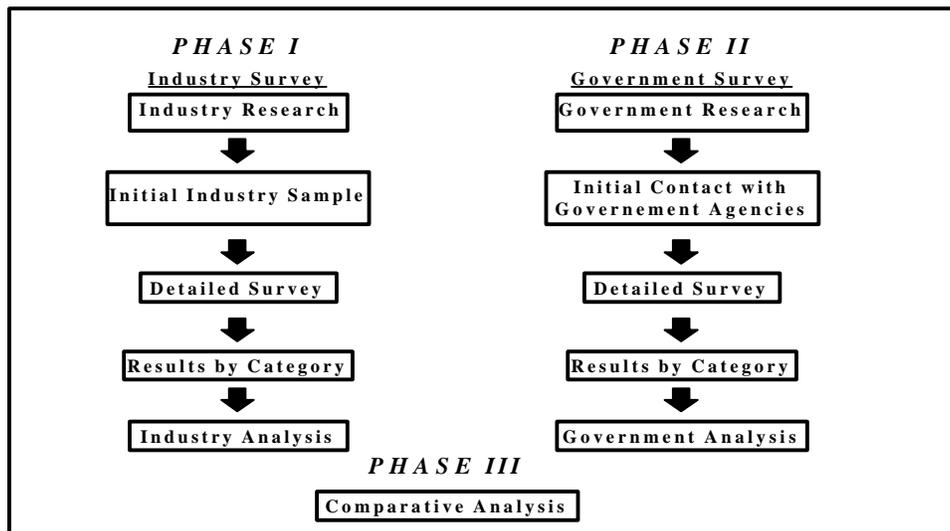
AMC is the Army's principal materiel developer. Headquartered in Alexandria, VA, AMC accomplishes its mission through 10 major subordinate commands that direct the activities of numerous depots, arsenals, ammunition plants, laboratories, test activities and procurement operations. AMC has 285 locations worldwide, covering 42 states and more than a dozen foreign countries. AMC has a work force of over 60,000 dedicated employees, both military and civilian, many with highly developed specialties in weapons development and logistics.

In order to ensure that AMC remains the United States Army's Center for Excellence in contracting, AMC is preparing a Contracting XXI Blueprint. This report, identifying industry and government contracting and procurement best practices, will be used as input to the Contracting XXI Blueprint.

Methodology

KPMG implemented a three phased research approach to provide an accurate account of industry initiatives to improve the procurement and contracting functions. The methodology is depicted in Exhibit 1-1 below.

Exhibit 1-1, Three Phased Approach



Phase I and Phase II were conducted in parallel so that results and observations would be as comparable as possible. Phase I of the approach included research of industry data, an initial sample of major corporations, a detailed survey, documentation of results by category, and an analysis of the data collected.

Phase II of the approach dealt with government agency research. It included an initial gathering of public domain agency data, initial contact by AMC with agencies that have completed or have planned procurement

process reengineering, detailed survey, documentation of results by category, and an analysis of the government data collected.

Phase III, the comparative analysis phase, looks at the strong similarities in the industry and government data. It identifies significant macro similarities, examines the business supply chain as compared to the government procurement processes, and shows similar environmental forces and trends.

Industry Findings

The study team identified and contacted 50 potential participants for an industry survey of which 42 responded. The companies represented a wide variety of commercial business, extending from automotive manufacturing to financial services to entertainment. The individual company average is nearly \$53 billion in annual revenue, supported by nearly \$10 billion in annual procurements. Analysis of the survey responses allowed the study team to identify industry best practices, innovative approaches to change, and lessons learned through implementation of new processes.

Based on responses to the survey, KPMG identified several major developments among industry procurement practices. The results indicated a strong move toward cross-functionally integrated procurement teams which would parallel a move toward total business operations solutions. Furthermore, industry respondents emphasized the need for organizational changes (centralized regulations combined with decentralized actions), leveraged information technology, reengineered business processes, and multi-disciplinary procurement personnel.

Government Findings

In addition to the industry survey, KPMG also surveyed various Government agencies by applying the same survey used for the industry analysis. Input was gathered through site visits conducted by AMC and KPMG personnel. This information was analyzed and used for comparison with the industry findings.

The results indicated that Government respondents are concerned with many of the same issues as industry and are currently changing or improving their processes. Government agencies also face additional factors which impact their business environment. Some of these issues include the changes to the Federal Acquisition Regulations (FAR), competition and fairness requirements, and budget limitations.

Government agency participants are faced with reduction in manpower requirements and have implemented components of the Federal Acquisition Reform Act (FARA) and Federal Acquisition Streamlining Act (FASA) in order to streamline their procurement processes, obtain best value items and services, reduce non-value procedures, and to move towards best practice commercial procedures. These steps also result in greater decentralization of procurement authority.

Several initiatives are underway among government agencies, including AMC. Many of these are related to cutting edge industry best practices, including cross-functional procurement teams, decentralized procurement vehicles, strategic vendor relationships, integrated informational technology systems, and utilization of the internet, EDI, and other technology improvements. Other initiatives, already in use among much of industry, are growing among government agencies due to new procurement regulations. Initiatives include blanket purchase agreements, oral presentations, and purchase cards.

Recommendations

Based upon data obtained from industry participants, compared to the data provided by government agency participants, AMC should continue to examine the full integration of the procurement function into the overall

business supply chain process. This involves the integrated evaluation of all business processes (including legal, logistics, accounting, engineering, operations and other applicable areas), mapping of the overall process and implementing appropriate change.

KPMG recommends a plan to further infuse commercial business practices into AMC contracting that result in increased mission effectiveness. The key to success is a focused, dedicated approach at the senior management level that emphasizes coordinated change in the following areas to achieve improvements similar to those noted in the Industry Findings above.

1. Organization
2. Policy
3. Information Technology
4. Business Processes
5. Personnel

Coordinated change throughout these areas could result in increased effectiveness which is achieved by:

- cross-functionally integrated procurement teams
- centralized regulations guiding decentralized procurement actions
- leveraging commercial information technology
- streamlining outcome-based processes
- fostering multi-disciplinary procurement personnel

SECTION 2: INTRODUCTION AND METHODOLOGY

This report presents the results of KPMG’s survey of commercial and government procurement process and delivery systems conducted for the U.S. Army Materiel Command (AMC). The purpose of this study is to document organizational approaches to changing contracting and purchasing functions. These innovative approaches have occurred in both government and industry and have included such things as downscoping and outsourcing of component functions. In addition, this report summarizes, analyzes and compares the data collected so that the applicability of the differing change management approaches can be evaluated for possible implementation by AMC.

Background

AMC is the Army’s principal materiel developer. Headquartered in Alexandria, VA, AMC accomplishes its mission through 10 major subordinate commands that direct the activities of numerous depots, arsenals, ammunition plants, laboratories, test activities and procurement operations. AMC has 285 locations worldwide, covering 42 states and more than a dozen foreign countries. Manning these organization is a work force of over 60,000 dedicated employees, both military and civilian, many with highly developed specialties in weapons development and logistics.

AMC’s mission is best summarized by its three core competencies: Acquisition Excellence, Logistics Power Projection, and Technology Generation and Application. AMC acquires the ammunition for all of the U.S. military services, manages the multi-billion dollar business of selling Army equipment and services to friends and allies of the United States, and negotiates and implements agreements for co-production of U.S. weapons systems by foreign nations. AMC also provides numerous acquisition and logistics services to the other components of the Department of Defense and to many other government agencies.

Major directives, legislation, and studies that affected the decision of AMC to examine different methods in contracting and procurement include:

- Quadrennial Defense Review (QDR)
- President’s Budget Guidance (PBG)
- GAO Workforce Reduction Study
- Prime Vendor Support (PVS)
- M109 Fleet Management

In order to ensure that AMC remains the United States Army's Center for Excellence in contracting, AMC requires the following as inputs to its Contracting XXI Blueprint:

1. Identification of commercial and government best practices in contracting and procurement.
2. Collection, summarization and comparison of commercial and government initiatives in downscoping and outsourcing as they are applied to contracting and purchasing functions.
3. Identification of lessons learned in the form of specific challenges encountered, essential analysis and implementation steps, and noted actions with adverse effects.

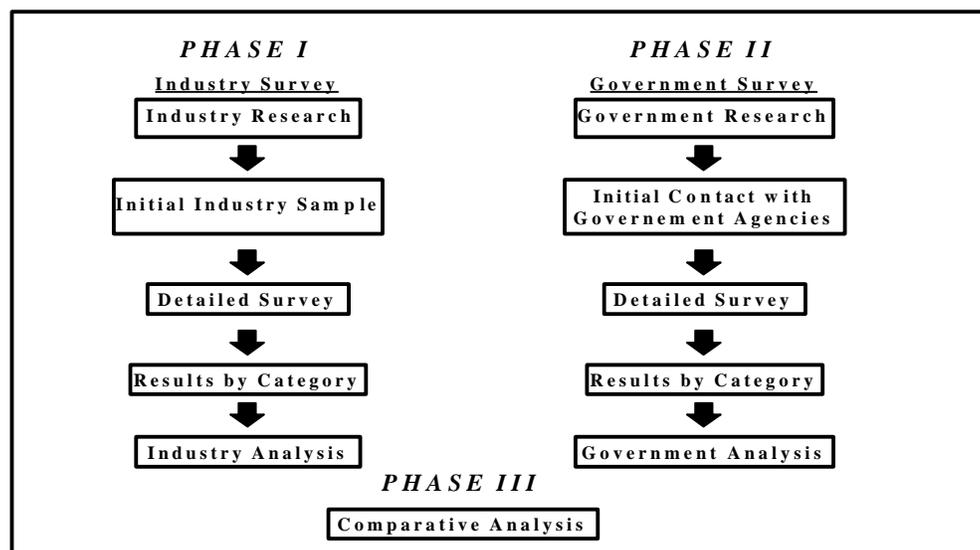
The understood aspects of these inputs will assist AMC in the evaluation and implementation of necessary changes to its procurement and contracting processes.

In summary, AMC is a large highly specialized workforce which is facing internal and external pressures to challenge the way that it completes its work. It is essential that any review of the contracting and procurement functions performed by AMC not be singularly focused on only the internal processes. Such reviews must also identify and comply with the requirements external to AMC. KPMG's task in AMC's review process is to assist in the summation and analysis of applicable internal and external data.

Methodology

KPMG implemented a three phased research approach to provide an accurate account of industry initiatives to downscope, outsource, and improve the procurement and contracting functions. The methodology is depicted in Exhibit 2-1 below.

Exhibit 2-1, Three Phased Approach



Phase I And Phase II - Industry and Government Surveys

Phase I and Phase II were conducted in parallel so that results and observations would be as comparable as possible. Phase I of the approach included research of industry data, an initial sample of major corporations, a detailed survey, documentation of results by category, and an analysis of the data collected.

Phase II of the approach dealt with government agency research. It included an initial gathering of public domain agency data, initial contact by AMC with agencies that have completed or have planned procurement

process reengineering, the same detailed survey that was applied to industry contacts was used, documentation of results by category, and an analysis of the government data collected.

Industry and Government Research. The focus of the research component was to identify commercial and government best practices, initiatives in downscoping, and initiatives in improving contracting and procurement functions. The industry component was accomplished through interviews with experts from industry trade associations. The associations contacted were the National Contract Management Association (NCMA) and the International Contract Management Association (ICMA) in Vienna, VA. The information gathered from these associations provided the historical characteristics as well as current practices and future direction of the contracting and procurement processes.

In addition, research was conducted through searches of large databases of corporate information. Its focus was to document innovative approaches to contracting and procurement, as well as specifically identifying examples of large corporations that have downscoped or outsourced all or part of their operations.

Databases that were searched include:

- Benchmarking and Best Practices database - KPMG International Knowledge Center
- Lexis/Nexis
- Dun & Bradstreet
- International Benchmarking Clearinghouse

AMC conducted research of government agencies' procurement centers and identified four that had completed some portion of restructuring. The external agencies identified were Naval Sea Systems Command (NAVSEA), Air Force Materiel Command (AFMC), National Aeronautics and Space Administration (NASA), and Federal Aviation Administration (FAA).

Initial Industry Sample and Contact with Government Agencies. Our initial task was to survey major industry participants. These participants were selected based upon the following general criteria:

- Diversity of business operations - not entirely United States government in nature
- Covering the entire spectrum of business - including companies from the services, aerospace, construction, entertainment, and financial sectors
- Undergoing organizational change due to mergers and acquisition, corporate restructuring or business refocus

AMC contacted the identified government agencies by intergovernmental memorandum. AMC requested that the agencies allow team members to visit them on-site and to participate in a detailed survey.

Detailed Survey. Both industry and government participants received and replied to the same detailed survey. Of the 50 total corporations that were asked to participate in the research, 84% responded with at least one respondent from each major category of corporations. Although confidentiality concerns prohibit us from specifically mentioning individual corporate names in this report, the following is a breakdown of the companies addressed. These are listed in Exhibit 2-2.

Exhibit 2-2, Commercial Firms Contacted

Industry	Number of Companies
International automotive manufacturers	3
Aerospace manufacturers -- airframes	3
Aerospace manufacturers -- avionics	3

Computer hardware manufacturers	4
Information technology service companies	4
Construction	3
Engineering	2
Telecommunications	6
High technology	4
Manufacturing	5
Financial services	4
Manufacturing, Retail, Distribution	3
Transportation	2
Professional services	1
Entertainment	2
Oil, Gas, Natural Resources	1

In addition to the four external agencies, AMC tasked all of the subordinate commands to complete the survey.

Results by Category

The detailed survey focused on the key areas of the procurement and contracting within each corporation and government agency. Data was gathered through person-to-person interviews and the results were grouped by categories:

- Organizational Structures - Focus on the size and structure of the corporation as a whole
- Contracting and Procurement Functions Conducted - Answers to the following: what are the policies and procedures utilized; start/end of the procurement process; decentralized/centralized procurement operations; internal metrics; use of competitive procedures; use of best practices; lessons learned
- Personnel Characteristics - Qualifications and profile of the workforce; training
- Application of Information Technology - What is used and what are the benefits of automation in procurement/contracting
- General Observations - As required, based on the above findings

Industry and Government Analyses. After all of the results were recorded by category, an analysis of the data was conducted. The industry analysis identified commonalities of all, or large portions of, the respondents, industry trends, innovative strategies, and key factors of world class procurement systems. The government analysis identified environmental factors affecting restructuring, initiatives in paperless contracting, intergovernmental strategic alliances, and trends towards adopting commercial practices.

Phase III - Comparative Analysis

The comparative analysis looked at the strong similarities in the industry and government data. It identified significant macro similarities, examined the business supply chain as compared to the government procurement processes, and showed similar environmental forces and trends.

The report details the Industry Input, the Government Input, and then proceeds with the Comparative Analysis. A section detailing KPMG's recommendations concludes the report.

SECTION 3: INDUSTRY INPUT

Information was collected from 42 respondents representing a wide variety of commercial businesses. Of these total participants, two provided very general information and stated that their main reason for participation was to gather data associated with the defense agency (Army Materiel Command) review of procurement and contracting procedures. The participant chart in Exhibit 3-1 demonstrates the spectrum of industry activities covered, however, individual companies are not mentioned.

The outline of this section follows the format of the U.S. Army Materiel Command Contracting XXI Blueprint Industry Questionnaire - Detailed Questionnaire, located in the Appendix of this report. In order to identify and gather accurate and relevant data, questions, responses, and findings were grouped into the following five major areas of evaluation:

1. Organizational overview
2. Purchasing/contracting department
3. Personnel
4. Use of information technology
5. Industry analysis

Organizational Overview

Question 1.1 of the survey deals with the basic identification of the industry contacts with procurement responsibility and oversight within all of the industries. The responding contacts were primarily from the financial management and procurement offices of each company.

Of the respondents, the following key corporate personnel have overall responsibility for procurement within their organizations:

■ Chief financial officer or financial management:	16
■ Chief of procurement:	16
■ Chief administrative officer:	3
■ Chief of manufacturing or supply management:	6
■ Other:	1

As indicated on the “Commercial Firms Contacted” chart (Exhibit 2-2), respondents cover the overall business spectrum from automotive manufacturing to entertainment services. The numbers of responding participants in each category that provided data are identified in Exhibit 3-1.

Exhibit 3-1, Commercial Participants

Industry	Number of Companies
International automotive manufacturers	3
Aerospace manufacturers -- airframes	3
Aerospace manufacturers -- avionics	3
Computer hardware manufacturers	3
Information technology service companies	4
Construction	2
Engineering	1
Telecommunications	6
High technology	4
Manufacturing	5
Financial services	1
Manufacturing, Retail, Distribution	3
Transportation	1
Professional services	1
Entertainment	1
Oil, Gas, Natural Resources	1
Total Respondents	42

Input was also obtained from functional members within each company, as recommended by our prime contact. Information was collected from areas such as engineering, quality control, legal, manufacturing and business operations. All respondents have formed their own version of cross-functional process teams to examine their overall procurement processes. **All 42 respondents stated that the major new direction for procurement staffing and organization will be towards the area of overall business management in varying degrees.**

Thirty-two respondents stated that their organizations' procurement functions are becoming centralized in general policy guidance but decentralized in application. An example of this is centralized policy development by a vice president of global procurement or chief financial officer. The general policies are established in the central location. These policies are then distributed to personnel in the field, either to project managers or to decentralized procurement personnel.

All respondents have procurement functions. Twenty-eight stated that these functions may be broken down into two major categories; end product support (production) and operational support (nonproduction).

End Product Support (Production). This category covers procurement support for end-products intended for consumer sale. An example of this would include a computer manufacturer purchasing microchips from an outside supplier for use in a computer end-product. Procurement activity is largely decentralized in this category.

These procurements may be made via central corporate contracts that are issued and administered at headquarters level for company-wide common purchases. However, the actual procurement activity can be executed at lower levels. There are three levels of such contracts:

1. Corporate level
2. Division or company level
3. Plant level

Depending on an individual company's business structure, these contracts may be further executed on a regional basis. This also helps selection of contract suppliers and teaming arrangements. For example, purchasing for certain large-cost items for an entire region may be more efficient and economical than having items sent from an overseas to individual locations. This is an approach many of the multi-national corporations we surveyed have adopted.

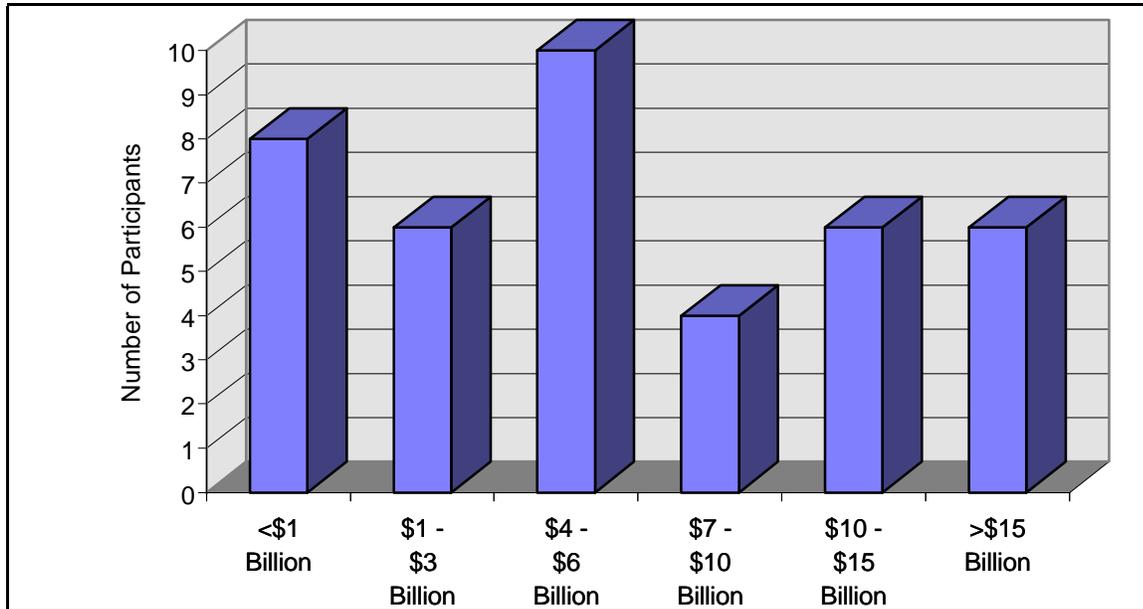
Operational Support (Nonproduction). The second category covers procurement support provided to operations of a plant or company. Examples of this would be procurement support for company-wide travel services and purchasing of office supplies. Procurement activity here is more centralized than the above process. All 28 respondents providing data for this category indicated that this type of contracting support qualifies as corporate or centralized procurement support. The same stratification approach to corporate contacts as in the previous category also applies here.

Responses to question 2.1, regarding corporate size (revenue) for comparative purposes, indicate that industry participants vary considerably in size depending upon the industries or the markets served. **Overall, the average annual revenue is \$52.8 billion per year and approximately 89% of business is performed in the non-government sector.**

- The smallest participant reported annual revenues of \$490 million
- The largest participant reported annual operating revenues of \$168 billion

As illustrated in Exhibit 3-2, industry respondents can also be stratified into the following levels of procurement activity, with the largest number of them falling into the \$4-6 billion range.

Exhibit 3-2, Procurement Activity by Company



The mean procurement activity is \$9.6 billion per year.

- Greatest procurement activity: \$78 billion
- Smallest procurement activity: \$210 million

Of the respondents, 31 have ongoing United States government contracts and 18 have had contracts with the Department of the Army within the past year.

In response to question 2.4, identifying major internal clients, participants specify the following, in number of responses:

- Stakeholders/investors: 40
- Accounting: 30
- Engineering: 40
- Quality control: 32
- Project management: 40
- Suppliers: 40
- Internal supply/stock control: 25

Data gathered in response to question 2.4 helps map out the procurement process and participant involvement. When asked to provide an organizational breakout of procurement structures within their organizations, the following responses were provided:

- Procurement functions are performed solely by dedicated procurement staff: 4
- Procurement functions are performed by mutlidisciplined teams: 38
- * Of the above, the following members are involved:
 - Engineering: 34
 - Accounting: 30
 - Quality control function: 20
 - Business process improvement teams: 10
 - Suppliers: 29
 - Other personnel: 15
 - Legal: 27
 - Marketing: 26

All 42 respondents stated that internal and external customers must be involved in the successful evolution of any procurement function. Procurement and contracting cannot be viewed as a single stand-alone function but rather as part of the larger overall business process. Respondents also stated that suppliers are important internal customers because their procedural involvement is crucial to the timely delivery and cost effectiveness of procured items.

Data gathered in response to question 2.6 was used to identify where purchasing authority resides in industry. Organizational charts are very fluid but reflect the movement to a centralized global contracting office with a contracting head and individuals in the field assigned either regionally, functionally, or on a project-by-project basis. Therefore:

- Central contracting policy is established at the executive management office
- Authority is then infused into the overall manufacturing/service/production process at the following levels, in the following level of order flow-down:
 1. Business division/company
 2. Plant

As demonstrated in Exhibits 3-3 and 3-4, only four respondents stated that all their procurement functions are performed by dedicated procurement staff. Purchases for routine common items or services are handled by core procurement staff and do not require participation of multi-disciplined teams. Respondents stated that such teams are required only to plan complex or first time buys. However, the majority use multi-disciplinary teams.

Exhibit 3-3, Structure of Procurement Staff

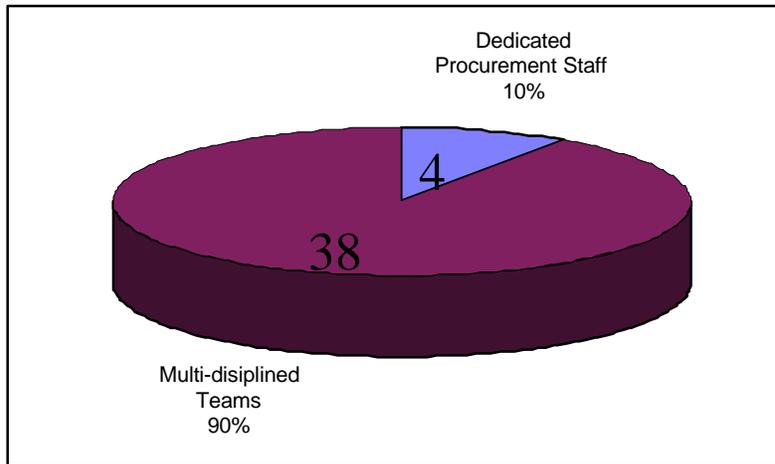
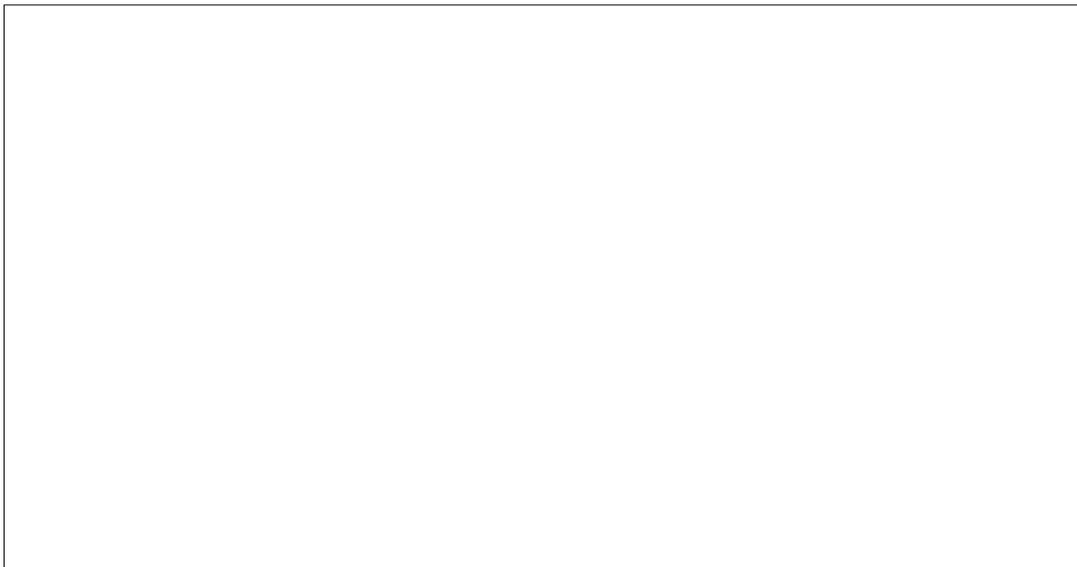


Exhibit 3-4 further demonstrates the use of multidisciplinary teams in the overall procurement process. These teams are comprised of personnel with the expertise and insight required to best plan procurements from an overall business standpoint.

Exhibit 3-4, Members of Multidisciplined Teams



When asked if they thought that their own individual organizations successfully practice integrated customer involvement in procurement planning, the following responses were provided:

- Currently comply with this statement: 29
- Require greater customer involvement: 11

Supporting Observations

- A. An aerospace manufacturer stressed that suppliers must be involved in any procurement organizational change process in order to achieve success. This company requires select suppliers to continually develop marketing and business plans which are then evaluated against the goals of the company itself.
- B. A high technology company reported that business process teams are comprised of procurement, quality, program management, and inventory personnel. The organization utilizes virtual teams, with leadership rotating on a frequent basis (usually on a project basis).

Purchasing/Contracting Department

Information gathered in response to question 3.1, relating to the establishment of procurement procedures in the contacted companies, revealed the following:

- Some type of written procurement policy: 40
 - For centralized corporate procurement: 27
 - For decentralized procurement: 20
- Detailed regulations FAR-like in structure: 0

Thirty-one industry respondents with United States government contracts stated that they are required to maintain more complex procurement regulations associated with their government business due to contract compliance requirements. These include personnel and procurement processes and operating procedures for the following:

- Data rights: proprietary data in the commercial environment
- Certifications: a duplication of existing laws
- Cost and pricing data: not disclosed in the commercial environment
- Socio-economic programs: not required in commercial business
- Cost Accounting Standards (CAS): not a common commercial practice

The above requirements make it necessary for companies to maintain two sets of regulations and procedures, one for government work and another for commercial business. Consequences of this include:

- Government contract work requires the addition of personnel which are not necessary for commercial work, resulting in costly support infrastructures, contracting personnel, legal experts, compliance officers, engineers, and program administrators.
- Respondents estimated that this government contract compliance burden adds an additional overhead ranging from 5 to 30 percent on contracts valued in excess of \$100,000. This overhead does not apply to commercial business.

Further comparative analysis of procurement procedures is illustrated in Exhibits 3-5 and 3-6. Exhibit 3-5 illustrates the multifunctional areas considered as key components to the overall procurement process. Exhibit 3-6 illustrates the use of formal written procedures further broken out into two major types; centralized and decentralized procurement.

Exhibit 3-5, Key Business Components in the Procurement Process

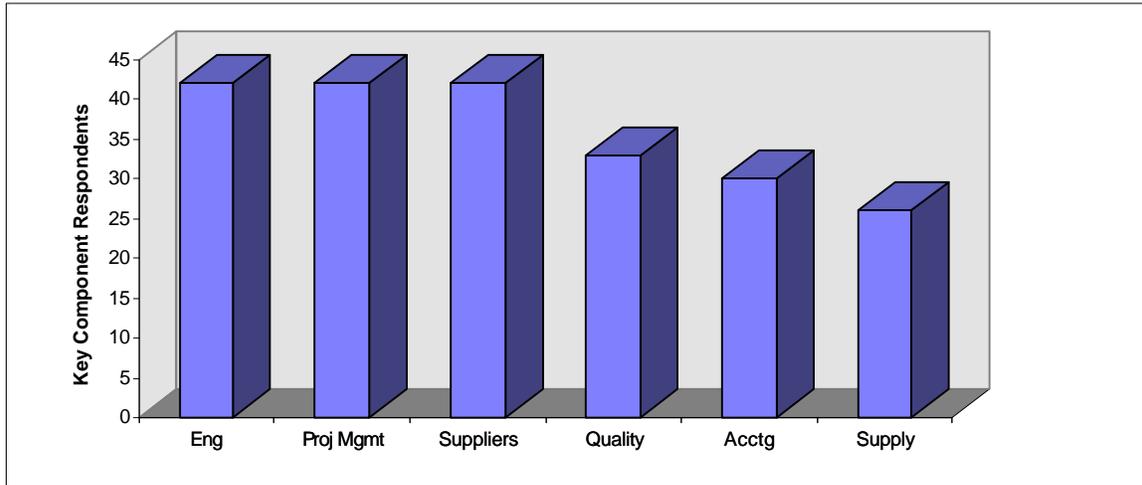
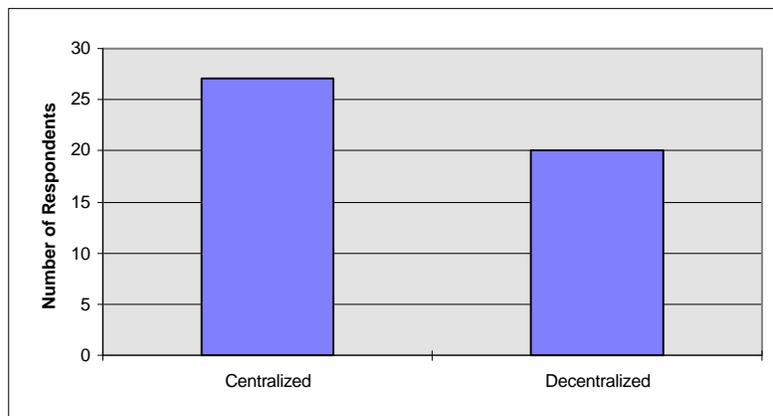


Exhibit 3-6, Types of Formal Written Procedures



Additionally, 34 of the respondents maintain official written procurement policy procedures of less than ten pages in length for their procurement functions associated with commercial-only business. However, these same companies are confident that acquisition reform, the increased use of single process initiatives, and decreased use of MILSPECS will enable greater migration to commercial procurement regulations and procedures. This will be driven by the following:

- Increased development of information technology systems which incorporate procurement into the overall planning/award/manufacturing/quality control process
- Increased use of strategic suppliers which will become more involved in the procurement planning process. This reduces the supplier base and business uncertainties are addressed early in the procurement planning stage.

All 42 respondents stated procurement organizations and functions are changing from a procurement-specific function to a part of the overall business supply chain process.

- Twenty-seven have conducted a review process over the past four years
- Six are planning to conduct follow-up reviews within the year

Exhibit 3-7 illustrates the ongoing process review of procurement by the industry participants.

Contracting goals (questions 3.2 and 3.20) are measured directly against business unit or project unit/division goals.

- Measurement against business unit goals: 40
 - Associated with business lead-times
- Internal contracting organization effectiveness goals: 38
 - Associated with reduction in lead-times

All participants use centralized corporate contracts. Exhibit 3-7 illustrates the number of respondents utilizing the leading requirements met by these contracting vehicles.

Exhibit 3-7, Centralized Corporate Contract Types

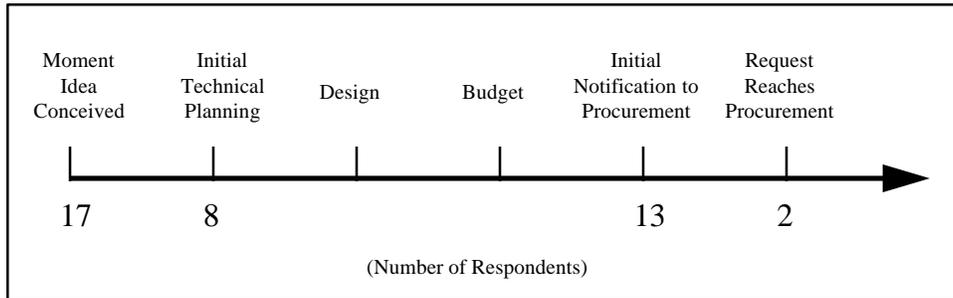
Requirement Type	Number of Companies
Office support services (paper, office products and supplies)	42
Temporary help (secretarial and administrative)	33
Building maintenance	12
Common-item purchase (for example, production associated items such as computer microchips for computer manufacturers)	40
Food services (cafeteria)	9
Advertising	27
Legal services	32
Information technology services	17
Financial (accounting, audit, tax)	22
Management consulting	29

The end-product oriented centralized contracts differ on a wide scale depending upon industry. Ten of the respondents could further provide a percentage breakout of their commercial contracts. On the average, 35 percent of procurements performed by these respondents are done on a standardized corporate level. The remainder of the activity is done by individual business units and product teams.

When asked at what stage the procurement process begins (question 3.3), the following replies were provided. This is further illustrated in Exhibit 3-8.

- At the moment a request is planned: 17
- At the design and budget allocation stage: 8
- At the moment a request is planned involving procurement planning: 13
- When a request reaches a buyer: 2

Exhibit 3-8, Stage When the Procurement Process Begins



Although all respondents indicated that the procurement process needs to begin as early as possible, fifteen respondents stated that their current processes do not classify a “start” until the procurement office receives initial notification of a requirement. One method to begin the procurement process earlier is to empower end users with decentralized authority.

When asked at what stage the procurement process ends (question 3.4), the following replies were provided:

- When an item is received by the user: 11
- When the user states that the need has been met: 20
- The process does not end as it is continuous: 7
- This is officially being determined via internal planning teams: 2

This survey asked respondents to identify their main selection criteria associated with procurement actions (question 3.8). All 42 respondents stated that the over-riding procurement selection criteria are based upon best value as a whole. Formal continuous competition processes are not as detailed and procedural in nature as government procedures, as contracts are established for several years (three to five years on the average) and are continually renegotiated. Value and general price ranges are established during this initial contract establishment. Companies constantly look for best value and the nature of relationships with suppliers is not binding.

Best value is determined as a mix of:

- Delivery
- Cost as an independent variable
- Quality of goods/services
- Warranty
- Reject rate
- Past performance
- Possibility of long-term strategy and alliance with supplier

Although best-value is the over-riding consideration, 30 respondents stated that price is the leading factor for small-dollar, repetitive purchases (under \$2,500 in value).

In order to determine the number of contracting offices providing support to each company, we asked each participant to identify those internal organizations classified as “procurement” in function (question 3.5). The number of procurement offices providing support varies by industry and size of company as well corporate legal and financial reporting requirements. For example, several respondents are comprised of more than two independent companies, each operating in a different type of business. Each of these companies have their own individual management structures, including procurement.

- International automotive manufacturers average 49 procurement offices but undetermined number of decentralized procurement authority

- Aerospace manufacturers average 39 procurement offices for products
- Telecommunication manufacturers have an average of 15 procurement offices
- Manufacturing participants have an average of 10 procurement offices

Regarding contracting centralized and decentralized authority:

- All respondents with centralized procurement functions for central corporate contracting stated that these types of activities are centralized in establishment. But decentralized orders may be placed against them by authorized personnel.
- **Although 38 respondents issue credit cards for travel and associated expenses, only 23 use credit cards for procurement activities.**
 - Average procurement authorization is \$1000
 - These cards are used to purchase routine items where use of corporate contracting may be impractical due to urgency or remote location
 - Although use is limited at this time, these participants plan on expanding their programs over the next few years
 - An additional 15 are examining the use of this program

Data we obtained from participants in response to organizational change (question 3.19), increase in efficiency (question 3.20) and process flow (question 3.22) identified several common developments and practices. The most common practices driving organizational change as reported are:

- Activity based costing: 17 respondents have tried this with 6 stating that there have been reportable improvements as part of larger reengineering efforts (not quantifiable).
- **Continuous use of benchmarking in order to track industry standards.** As indicated earlier, one hundred percent of the respondents state that this is key.
- Twenty-six employ full-time benchmarking staff reporting to the top procurement authority in the company
- Twenty have multidisciplined teams operating in a “virtual” organization
- **Use of empowered teams and empowered employees to make decentralized procurement decisions.** All respondents have stated that they have either adopted this approach or are in the process of doing so. Of these, 27 stated that these teams are most greatly used in the operational, non-centralized procurement area.
- **Use of integrated product teams from the onset of procurement planning.** Twenty-nine respondents have stated that they formally employ this process, seven are in the process of doing this on an ad-hoc basis, and the remainder are examining this area to better improve their processes in this area.
- Use of just in time supplier (JIT) process, based upon established relationships with select suppliers. All respondents stated that they employ this in one form or another. Ten of the participants stated that they employ a formal JIT process. However, all participants with long-term strategic alliances with suppliers employ some components of JIT throughout their procurement process.
- **Partnering with suppliers and subcontractors for long-term “evergreen” contracts which are general in nature and subject to continuous price and value negotiation.** All respondents stated that they do this.
 - Twenty-seven respondents indicated that they maintain these types of contracts for more than three years
 - Fifteen require their suppliers to meet certification requirements such as ISO 9000 or other standards
 - Twenty-two report a savings of 10% due to the use of these alliances
 - Five report a savings of 15%
 - Two report a savings greater than 15%

- Top reasons for strategic partnering:
 - Quality improvement
 - Advice on alternate design/effective design
 - Better product manufacturing procedures
 - Cost savings associated with identification and avoidance of potential engineering/technical errors
- **Continuous reengineering of business processes, with procurement as part of that process.** Thirty-six respondents have some type of continuous reengineering process. As a whole, 24 started their reengineering efforts five-to-six years ago.
- Attention to risk management as part of the overall business planning process is an area that is receiving increased formal attention. Twenty-four respondents stated that they have formal mechanisms in place to specifically identify and track risk associated with the procurement process. However, all respondents stated that this is an area requiring greater attention. Five of those who do not formally employ this mechanism stated that this is a “priority” area.
- **The creation of virtual contracting organizations linked via the internet and intranet to maximize the use of information technology.** All of the respondents utilize information technology and e-mail to prepare procurement strategy, create contract vehicles, and make award determinations.
 - This electronic communications process is utilized by all of the participants full-time to create virtual procurement organizations, including integrated teams for both corporate centralized requirements and decentralized operational activities

Several of the respondents are acquiring one another (in the aerospace and defense sectors) and are merging procurement organizations. Five are in the process of merging and are evaluating their overall procurement and business structures associated with such activity.

As identified earlier in this study, there are two general types of contract support; end product and operational. Based upon the data we gathered, we found that within these categories, procurement activities fall along two major lines:

- **Corporate Contracting** - All 42 industry respondents perform some type of centralized corporate contracting. These contracts include both commodity-type and service-type support. The general common functions occurring at these corporate centers (by response):
 - Purchasing
 - Expediting and order follow-up
 - Customer service
 - Compliance with socio-economic programs, as required
 - Terms and conditions compliance oversight and management
 - Supplier relations
 - Accounting interface (cost management and forecasting)
 - Proposal preparation
- **Business Unit Contracting.** This is more decentralized and consists of contracting support relating to product purchase or service provided to customers. This is often delegated to project managers who are held responsible for bottom line financial results.

Additionally, the move of non-corporate contracting authority to decentralized locations and authority is designed to reduce costs and improve procurement decision-making efficiency. Procurement planning is handled by personnel with a greater understanding of the complete business process of their organizations or project teams and procurement quality is infused from the onset of a requirement concept.

Corporate contracts are task order based and general in nature. Commercial contracts do not require detailed clauses covering competition and socio-economic programs. These resulting contracts are flexible enough in order to meet changing industry and market demands.

Companies which have not moved to a variation of the above structure are experiencing long procurement lead-times. One of the largest respondents is still operating with a centralized procurement control for all purchases, resulting in lead-times in excess of 6 weeks for commercially available non-standard items with values in excess of \$25,000.

All respondents have some type of small business procurement plan (question 3.18). However, the level of use varies considerably. But, the key factors behind these plans are:

- Thirty-one respondents maintain such plans for purposes of participation in either ongoing or potential government contract work
- Promotion of local small business makes the company more visible in the local community
- In some areas, local small businesses may be the most responsive provider. Examples include grounds maintenance and building maintenance services

Thirty-six respondents stated that the key to process change and improvement is the initial knowledge and the use of “industry best practices”. Some of the practices include documenting detailed procurement process flows while others require only an overall analysis and tracking of critical procurement components.

Maintaining documentation of best practices and use of benchmarks allows companies to use them as:

- Measurement tools against the industry as a whole
- Measurement tools against the overall business reengineering effort within the company as a whole
- Key procurement metrics for:
 - Procurement lead-times
 - Overall procurement process review
 - Use of information technology
 - Integration of government and procurement functions into a single system
 - Use of strategic suppliers

It was pointed out by all respondents that procurement metrics alone are virtually useless if not incorporated and viewed as part of the overall business process within the company. A common statement is that in order for any significant improvements to be made in the procurement process, it must have full senior management recognition and support. Additionally, all process participants (engineers, quality control, legal, etc.) must also participate in this process.

A great deal of effort is spent examining industry best practices. All companies surveyed have “procurement best practices” organizations/divisions which continually look at both commercial and industry best practices. However, the best companies look at the overall business process model, not just one slice of the procurement function.

Those companies which do not have available technology to gather benchmarking and best practices information on their own initially turn to several of the public benchmarking institutes to gather information.

Twenty respondents stated that they continually gather best practices data in order to determine what other companies are doing to consolidate and “rightsize” procurement functions - via decentralization of general contracting authority, use of corporate contracts, and other factors.

Formal customer satisfaction varies considerably. As a result of continuous overall business process improvement, the procurement strategy is continually monitored as part of this process, not procurement as a stand-alone function.

Supporting Observations

- A. An international automotive manufacturer requires suppliers to be "company" certified in order to ensure that highest level of quality is provided to the company as well as the ultimate commercial end-user.
- B. A large airframe manufacturer developed an automated evaluation system which continually evaluates suppliers from technical compliance, timely delivery, and overall responsiveness points of view. This on-line database provides information on supplier performance on an individual transaction, yearly, and 36 month score and allows for buyers to have quick access to past performance data for quick buying decisions. The first part of the company's overall business process analysis was to flowchart the entire process, resulting in elimination of 25% of the process steps, including procurement, accounting, and supply.
- C. In a large multinational aerospace company, all material acquisition processes have consolidated into a central business process involving planning, procurement, vendor ordering, receiving, assembly. This process was further automated and can be accessed from any corporate facility located around the world. The process also allows for virtual contracting modeling for planning purposes.
- D. A major avionics company stated that a critical step associated with procurement improvement is to re-evaluate non-value added contract requirements (less restrictions may result in more, best value suppliers).
- E. **A large international avionics manufacturer has formed commodity groups consisting of a buyer, quality engineer, material planner, and functional engineer to develop purchasing strategy for items such electronic components.** The group focuses on the use of supplier partnership to reduce costs and promote long-term teaming; leadership of these groups is rotated on a routine basis and allows different components of the corporate business chain to develop common understanding and objectives. The group meets only one hour per week.
- F. **A leading global information technology service company replaced a 52 volume procurement guide with a single three page document** outlining general procurement principles (responsibility is for "timely" and "most cost effective" procurements with key business managers held accountable for overall program success). It is estimated that new processes have reduced the overall procurement lead time for \$100K procurements for non-corporate contract items from four weeks to three days. A virtual contracting organization has been created as a result and it is staffed by procurement personnel assigned to business units; all corporate contracts are negotiated and awarded by the central procurement office while the personnel in the field/on projects can place orders against these master contracts.
- G. **A multibillion dollar information technology service company has 950 procurement personnel who handle procurement in decentralized teams at program sites;** a major process change is ongoing. The procurement process starts at the moment a procurement is initially planned by the internal customer and ends when the customer is satisfied (this process is being examined as the larger business process).
- H. A large information technology service company handles procurement on a geographical level broken down into two major areas: production and nonproduction. Production purchasing is centralized and is for product parts and involves the use of selected suppliers under long-term agreements; nonproduction

is for support services and is very decentralized. Industry benchmarking and best practices is handled by a dedicated division located at the central global procurement office.

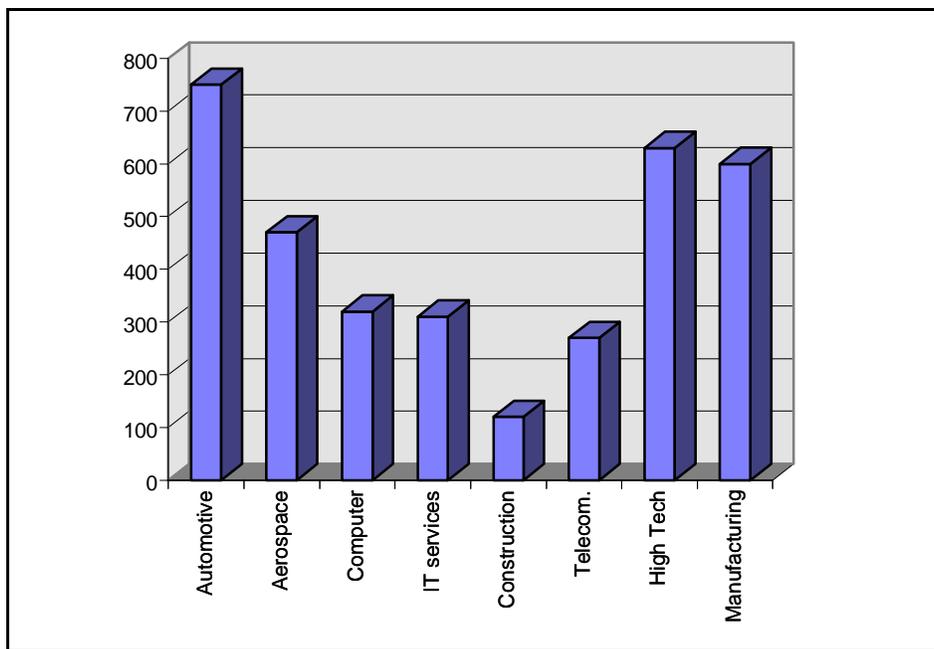
- I. A large engineering firm established corporate contracts with suppliers to negotiate price and value based upon volume, supplier cost savings methodology and other mutual business benefits.
- J. A high technology firm reported that the increased use of centralized requirements contracts for the purchase of computer software contracts alone has reduced software package costs up to 30% and has promoted standardization within the company.
- K. A leading high technology company has created centralized purchasing teams for commodity types for common buys (corporate contracts); these central groups promote understanding of the marketplace by focusing efforts. Benefits include the elimination of redundant contracting worldwide, the reduction of staff by more than 50%, increase in leverage buying, ease of EDI due single procurement center focus for commodity types.
- L. Within a global high technology firm, two commodity teams were formed to monitor supplier base management and performance. These teams are multidisciplinary and all purchases are categorized as strategic, major or other. Metrics established include: small business participation of 50%, supply acceptance rate of 98%, on-time delivery of 90%.
- M. A leading manufacturing company found that the major issue requiring attention, as it determined the overall procurement flow of its business, was determining what was bought and why. This required users to rethink purchasing and use strategies.
- N. As part of the process to enhance shareholder value, a large national manufacturing corporation sees that an overall business process improvement effort, involving the consolidation of five separate operating companies into two fully integrated, required the reduction from five to two purchasing centers and wide use of standardized corporate contracts.
- O. **A leading products firm strategic plan to save over \$200 million in annual savings by the year 2000 centers around the centralization of global procurement processes via the use of centralized global contracts which allow for leverage of economies of scale and strategic alliances with suppliers and shared research.** This involves the creation the position of senior vice president of procurement; operations and procurement organizations will focus on cost competitiveness and service while business units focus on consumer and customer satisfaction.
- P. A national manufacturing, retail, and distribution company has hired a management consulting firm to work with senior management to redefine the overall corporate structure with a stress on the use of a centralized procurement program.
- Q. A global manufacturing, retail, and distribution company has developed and put into place an advanced acquisition planning process incorporating the following: 1) coordination and integration of all plant assembly functions requiring outside acquisition; 2) establishment of acquisition milestones and values within the planning process; 3) assignment of personnel responsibilities in teams; 4) planning and scheduling steps in the overall business process; 5) consolidation and use of corporate contracting vehicles; 6) monitoring of master project scheduling; and 7) delivery of constant industry benchmarking data. Additionally, the company has moved towards maximizing the use of task order corporate contracts; since 1994, the number of suppliers has been reduced from 4000 to under 2500 and acquisition cycle times have been reduced by 50%.

- R. A major distribution company has established effective delivery processes with selected suppliers, allowing for reduction in the need to maintain extensive warehouse stock via same day delivery; as cost of inventories is approximately 10-15% of total sales (\$500 million), up to \$75 million is saved.
- S. Within a multinational entertainment company, internal customers and external customers are sent a quality questionnaire for every procurement transaction valued in excess of \$10,000; these are tracked and rated on a monthly basis.

Personnel

In Section 4 of the survey, we asked respondents to provide data pertaining to their procurement personnel and training procedures. The number of procurement personnel differs by industry and size of procurement activity. **On average, the number of procurement personnel makes up less than one percent of total corporate staffing.** This figure does not include decentralized authority. The figures illustrated at Exhibit 3-9 and include personnel classified as buyers or procurement professionals.

Exhibit 3-9, Average Procurement Personnel by Industry Group



Our latest figures indicate that there are two tracks merging in the core procurement personnel professional profile breakdown. **All 42 respondents stated that the move is toward the role of business managers** with the following responsibilities:

1. Contracting and procurement for projects on a regional or project-class basis covering a wide range of contracting types
2. Accounting responsibility and project/business unit profit and loss tracking
3. Employee oversight and human resource functions and responsibilities
4. Program management

All 42 respondents stated that they maintain some type of procurement training program mandatory for personnel who perform procurement functions. On an average, this training ranges from four to ten hours of

basic training. Twenty-nine state that this training has become standard for business unit managers with procurement authority. Training also extends to personnel with decentralized procurement authority. Some key observations are:

- Thirty respondents stated that the use of standard evaluative formats is decreasing.
- All respondents stated that there is/will be increased emphasis on general business principles related to job duties.
- Thirty-two respondents stated that training is essential to make procurement personnel more effective through the increased knowledge of general business operations and functions, which has resulted in increased morale.

Additionally, 20 respondents have stated that they have/are establishing training programs for procurement employees in order to expose them to engineering, legal, accounting and general business functions of the company. Twelve already have rotational-based programs in place ranging from two months to two years in duration.

All 42 respondents stated that compensation and reporting is an area where there is a great deal of concern and discussion.

- Twenty-four respondents stated that personnel are evaluated against team performance and are rated by the team/business unit leader as well as a central procurement manager. Compensation is also often tied to the overall success of the individual business team. Performance goals are tied directly to team assignment goals and differ by person.
- Thirty respondents stated that they are moving away from standard personnel evaluation programs which are procurement focused.

All respondents stated that they have experienced reductions in personnel. **There has been an average reduction of 20% across the respondents.** This has been accomplished via a mix of attrition and corporate retraining.

Twenty-five respondents stated that they are in the process of hiring new entry-level procurement personnel with undergraduate degrees in a technical area related to their area of business. Twenty of these also look for personnel with graduate degrees in business.

With the migration of the procurement function to that of an integrated business management function, participants are not planning on outsourcing such a key component of their business process. Business managers are involved in all aspects of internal business planning and this function involved the planning, including planning and accessing confidential data. However, support functions are outsourced:

- Thirty respondents indicated that they outsource procurement support functions, including routine buying of small dollar items
- In context of this section, 35 respondents view procurement as an essential function
 - Twenty-seven respondents state that repetitive, central procurement functions can be outsourced
 - Thirty-five respondents state that the procurement information technology systems/support function may be outsourced

Nineteen respondents state that suppliers provide key outsourced support functions in the procurement process through detailed participation from initial procurement planning to delivery

Supporting Observations

- A. An information technology service company stated that procurement personnel are moving toward a "business manager" path.
- B. A telecommunications firm reported that its procurement personnel are technically skilled with about 35% MBAs. They spend two years in a rotating program with time in legal, program management and accounting before assignment as a contracting professional. After training, the professional becomes a business manager and is assigned to large projects (may handle up to ten projects at a time).
- C. **A leading computer manufacturer has linked procurement employee competition to business team success and encourages competition between teams.** This program is managed by team members, and 50% of all employees since 1990 have received incentive awards.
- D. Within a financial services company, procurement functions are fulfilled by business managers who have project success responsibility. This has eliminated two layers of staffing and puts procurement decisions into the hands of personnel who understand the overall strategy of project/business units.
- E. A telecommunications firm reports a 40% procurement staff reduction over the past four years. Tasks have been transferred successfully to project/business unit managers. This resulted in a lead-time savings of 60%.

Compensation and reporting is an area where there is a great deal of concern and discussion. Most personnel are evaluated against team performance and are rated by the team/business unit leader and a central procurement manager. Compensation is also often tied to the overall success of the individual business team. Performance goals are tied directly to team assignment goals and differ by person. The use of standard evaluative formats is decreasing.

The movement to a general business manager function demonstrates the overall movement to a centralized corporate contracting structure.. This structure focuses on the overall business process and decentralized authority to decision makers in the field. These personnel have a financial (compensation-linked) interest in the overall success of a program.

Traditionally, procurement was viewed as a "support" function. The new focus on the overall business management role has changed this. As a result, business managers are involved in all aspects of internal business planning. This function now involves the planning and access of confidential data and is therefore not outsourced.

There is some outsourcing occurring as the companies hire consulting firms to map out their overall business processes. Information and procurement support may be outsourced, but the crucial program management and business management is not.

Use of Information Technology

In Section 5 of the survey, we explored the use of information technology and how it has been used to improve procurement processes.

All respondents expressed that the use of information technology has a profound influence on the efficiencies of the procurement and business management functions. It must be pointed out that the successful use of information technology involves the analysis of the entire business process, including accounting, inventory control, and program management in addition.

All respondents are either in the process of fully automating their procurement process as part of the overall business supply chain or are planning to do so. Industry movement over the past five years has been towards overall

business supply chain and process improvement involving procurement, engineering, accounting, legal, program management, and other key areas of the process. This has resulted in the remapping of processes and additional investment as information is migrated from existing stand-alone procurement systems to newer comprehensive systems. **The bottom-line industry recommendation is to incorporate procurement processes as part of an integrated process and system.**

- Thirty-five respondents stated the development of integrated procurement systems resulted in increased efficiencies
 - Thirty-four respondents stated they employ automated procurement systems, 20 off-the-shelf and 14 custom systems incorporating off-the-shelf technology
- Twenty-nine respondents have web access capability
- Thirty respondents expressed that the successful use of IT involves the analysis of the entire business process, including accounting, inventory control and program management as well as procurement
- Twenty respondents stated that their systems are paperless and fully integrated with accounting, legal, suppliers, and customers
- Fourteen respondents have stand-alone procurement systems but are planning to move towards fully integrated systems within the next few years
- Twenty-five respondents have hired management consulting firms to provide an initial business process analysis and conduct information technology planning and implementations

Thirty-one respondents provided a key “lesson learned” in response to question 5.8. They advise against installing stand-alone procurement systems for the following reasons:

- Considerable time and effort (as well as cost) was invested in stand-alone procurement systems that did not result in major increases in overall business efficiencies
- Procurement personnel did not gain increased visibility nor responsibilities in the overall business decision-making process

All respondents state that is the largest of investment area from a cost and resource standpoint. Companies are investing a great deal of time gathering intelligence to determine what is the best path to take for this area. All of this migration is still in the earliest stages of evolution.

Information technology has been used to accomplish the following:

- **Fully automate the entire business process, including procurement**
- **Establish virtual contracting organizations linked via internet and intranets**
- **Establish internal databases linked to best practices and virtual contracting forums**
- **Automate purchasing and order tracking as part of overall project management by establishing electronic links directly to suppliers and customers**
- **Track overall business at any given stage**

All respondents state that technology allows for the development of virtual contracting organizations and assists with decentralization of contracting authority and increased use of corporate contracting.

- Seven have developed smart systems which allow for complete business process modeling as well as automated purchasing to select vendors. Contracting and business management personnel do not need to see every order. These also happen to be the largest of the participant companies in our survey.

It is important to note that all respondents with large production contracts with the United States government expressed that the computer-aided acquisition and logistics system (CALS) process developed by the Department

of Defense is an effective program management tool. Several of the automotive and aircraft manufacturers participating in this program are evaluating the use of components of CALS in their commercial business.

From all respondents, “lessons learned” concentrate on the effective implementation of any selected system based upon a thorough understanding of first the business process and then the enabling system/software. Since system implementation tends to be costly, companies are cautious about the approach.

Supporting Observations

- A. **A leading aerospace firm has used CALS as a foundation for a larger paperless procurement system.** This will promote the use of virtual contracting, cultural change and increased process efficiencies.
- B. **A large multinational has created a fully automated purchasing system which allows for overall business project modeling as well as fully automated on-line paperless procurement for suppliers.** Additionally, this system automatically rates vendor performance based on quality, delivery, and price. Vendors are ranked monthly against other vendors. This process has resulted in the lead time reduction of complex acquisitions from more than six months to less than one month. Supply on-time availabilities increased by up to 90% and acceptance error rates decreased by up to 90%.
- C. A large technology leader developed an electronic purchasing catalog database as part of a fully automated procurement system, geared towards purchasing of high-volume, small-dollar commodity items. It incorporates automated vendor price updates. The system fully automates the order entry and transmission, order tracking, and payment process, saving up to \$3 in cost per line item.
- D. **A large information technology service company invested over \$1 billion over the past five years to fully automate the procurement, accounting, and inventory control process as a whole. Initial piecemeal attempts were not successful. This has resulted in a reduction of purchasing lead-times by 60%, an increased use of corporate contracting, and an increase in supply chain efficiency.**
- E. A global information technology service company is now using electronic funds transfer for all bill payments with vendors with web-enabled payment tracking capability.
- F. A leading global information technology company feels that full business process cycle automation and integration is inevitable in commercial industry. Those who do not adopt it within the next decade will be out of business.
- G. A major international telecommunications company implemented a full business process management automated system, combining procurement and materials management functions.
- H. A growing international telecommunications company wants to become more competitive in the global market. It found that a need to reduce staff and overhead to increase efficiency and promote a complete cultural change. The implementation of an integrated business process system, including purchasing as an integrated component, is enabling the company to meet financial and market objectives.
- I. **A leading telecommunications corporation states that prior to the implementation of an integrated financial and procurement system, these functions were viewed as overhead rather than part of the crucial business process. The new system places information into the hands of participants and has allowed these functions to play a key part of the competitive strategy.**

- J. For more than ten years, a leading high technology organization has had over 2000 personnel connected to a paperless information management system incorporating purchasing, program management, and communications resulting in standardization, virtual teaming, and information management.
- K. A high technology company found that by moving towards centralized procurement centers for commodity types, the use of EDI with suppliers was greatly enhanced, reducing overhead associated with repetitive buys. Vendors deal with one center for a certain type of commodity. Additionally, suppliers are paid electronically, instead of by check, through an automated clearing house system, allowing for immediate payment and improved cash forecasting.
- L. A major multinational high technology firm is implementing a new world-class procurement system. It will further be customized for sale to the travel and hospitality industry. The system is linked to supplier networks and provides real-time on-line procurement and electronic funds transfer. This internally developed product is envisioned to be the leading product in the industry when fully implemented.
- M. A national manufacturing company feels that the key to providing, developing, and implementing a seamless supply chain system is forming alliances with "best practice" technology partners. It also feels that the Open Buying on the Internet (OBI) standard will become the web-enabled buying standard.
- N. A leading manufacturing company has implemented a procurement system as part of the overall business planning process. It incorporates the use of "procurement cycle models" which are used for both planning and actual buying purposes as part of overall project management. Specific procurement plans may be developed on-line and incorporate a critical path method which calculates procurement action impact on overall project life-cycle. The company tried earlier to implement a stand-alone procurement system but this was not successful because it did not include overall program management issues. The new system identifies constraints within the overall project flow and demonstrates where procurement methods may be modified in order to assist with project efficiency. It promotes understanding and communication among all team members from the start of the process. It results in better value procurements.
- O. A large manufacturing, retail, and distribution company realized savings of up to 15% of total annual costs due to a reduction in warehousing costs and associated overhead by automating its integrated procurement and logistics process.**

Industry Analysis

The overall analysis of the commercial industry identified several major developments, such as the integration of procurement processes and functions into overall business operations. This transition is fostered through the process of business process engineering for all functions, including accounting, manufacturing, engineering and other disciplines. The ultimate goal of process improvement is to make manufactured items and services competitive in the marketplace. Fundamental observations include:

- Procurement is no longer a separate entity of business operations but is a part of the overall business process. It is infused in the planning/manufacturing/buying and delivery process chain.
- Procurement personnel are becoming overall business managers with responsibility assigned to profit and loss of the company.
- Regulations and operations are becoming very decentralized, with a central office to establish and monitor general policy and authority delegated to individual business managers and unit leaders.
- Increased use of selected vendors under long-term agreements and vendor screening.
 - Use of trusted strategic partners. This can result in annual savings of 10-15% of overall cost due to inventory reductions.

- Use of best value procurement decision making process and reduction in product development cycles.
- Maintaining a team of select qualified suppliers. This reduces the need for continuous supplier evaluation.
- Strategic teaming with vendors and suppliers. But, keep pushing for better business arrangements. Supplies must be flexible enough to meet any change in requirements in the delivery process chain.
- The driving factor and measurement is ultimate shareholder value and return. To maximize efficiency, use centrally established corporate contracts with decentralized ordering ability as part of continued business process improvement.
- Decentralized authority, where the person ultimately responsible for business performance is making key procurement decisions raises the review threshold considerably. The level of this authority depends upon the company and business, but generally involves only two layers of review.
- For contractors with a mix of government and commercial business, the movement to have one process flexible enough to meet both needs is being developed. Changes to federal procurement regulations allow greater latitude for such integration.

Although industry is continually striving to improve efficiency, many industry participants are just starting to aggressively improve their procurement functions within their overall business processes. They are using enablers such as business process reengineering and use of emerging information technology. They are also in a state of flux with procurement organization downscoping, consolidation, and general business realignment in order to become more competitive globally. Several of our respondents stated that due to commercial market forces, their procurement processes must be refined within the next few years. A major force is the globalization of business, resulting in:

- Sourcing issues - geographic considerations
- Cultural differences and perceptions
- Regulatory requirements in different countries
- Diverse business types and operations in multinational corporations

It is interesting to note that several of the respondents are not fully automated, but they are planning to become fully automated and web-enabled in the next few years. This includes a mix of semi-automated procurement systems. They are in their decision paths to determine the best approaches.

Expectations associated with overall business process improvement cover the entire spectrum of business operations. As procurement becomes a fully integrated process, companies aspire to leverage synergy among all components of their operations in order to maximize their competitive position in the market.

This change starts by examining the entire business operation using integrated multi-disciplinary teams in order to map out the overall business process. This involves the establishment of metrics used to measure efficiency and benchmarking against industry best practices in order to gauge market competitiveness. Companies are able to identify core functions. Also, they can identify which may be consolidated in order to leverage buying power and improve the time it takes to get a manufactured item.

The result is the establishment of long term strategic alliances with suppliers. Companies determine how to strategically identify supply and service requirements and enter into these alliances accordingly. Suppliers are screened up-front and must comply with industry (ISO 9000, for example) and individual corporate requirements. This results in developing a teaming approach with trusted suppliers and increased cooperation and communication, and the elimination of redundant steps associated with their procurement functions.

Developments in information technology allow for increased access to information and the ability to accurately capture and report information. New systems allow for the full integration of all business functions. The use of EDI and integrated systems cuts down on paperwork and reduces business transaction times significantly.

This overall evolution is not a simple process and requires significant business operating cultural change. Investment of resources and time must be wisely accomplished in order to effectively reduce costs, improve quality, and increase efficiency associated with the production of goods or provision of services to the marketplace.

SECTION 4: GOVERNMENT INPUT

This section discusses findings from government organizations surveyed for this effort. Input was gathered during field visits conducted by AMC and KPMG personnel. This information was used for comparison against industry findings to identify best practices.

Organizational Overview

Participants from AMC subordinate commands participated and provided information in response to the government survey. Information was provided by representatives of the Head of Contracts (HCA).

U.S. Army Materiel Command (AMC) - Subordinate commands were tasked to provide information for this survey

- United States Army Tank-Automotive Command (TACOM)
- Army Materiel Command (AMC) Acquisition Center
- United States Army Communications-Electronics Command (CECOM) Acquisition Center
- United States Army Aviation and Missile Command (AMCOM) Acquisition Center
- Army Research Laboratory (ARL)
- Industrial Operations Command (IOC)
- Army Research Office (ARO)
- United States Army Soldier Systems Command (SSCOM)
- United States Army Chemical and Biological Defense Command (CBDCOM)
- United States Army Test and Evaluation Command (TECOM)

Other Army Organizations

- Forces Command (FORSCOM)
- Training and Doctrine Command (TRADOC)

Other Agencies

- Naval Sea Systems Command (NAVSEA)
- United States Air Force Materiel Command (AFMC)
- National Aeronautics and Space Administration (NASA)
- Federal Aviation Administration (FAA) Acquisition Center

The surveyed government agencies share similar duties and responsibilities. Nonetheless, they do vary in both size and organization structure. Annual procurements at the agency level range from \$275 Million to \$31 Billion. Almost all business is performed in the government sector. See Exhibit 4-1 for an analysis of procurements by agency.

Exhibit 4-1, Procurement by Agency

Agency	Number of Procurement Personnel	Number of Contract Actions	\$ Value of Procurement (in Millions)
TACOM	819	*	\$4,100
AMC Acquisition Center	112	11,453	710
CECOM Acquisition Center	623	29,655	4,366
AMCOM (only actions greater than \$25,000)	729	17,122	2,783
ARL	44	8,482	275
IOC	191	1,098	1,200
SSCOM	52	2,233	950
FORSCOM (excluding credit card actions)	565	111,644	1,075
AFMC	*	*	31,400
FAA	293	675	1,775

* Information not provided

The primary external clients include:

- All branches of the military
- Other federal government agencies such as FBI and DEA
- Aerospace and Defense contractors

The organization structure of the procurement function varies greatly within the various government agencies. Many agencies are decentralized, allowing individual sites to procure their own needs and manage their own contracts. However, some agencies have certain dollar value thresholds where the higher dollar contracts must be approved by the central office.

As with industry, the main lesson learned is the value of involvement from customers, both internal and external, in the design of the procurement practice. The procurement department must understand their customers' needs in order to design a system that effectively and efficiently meets those needs. The procurement system must also be integrated with other systems within the agency to create a cohesive and efficient operation.

Examples of initiatives undertaken at government agencies to improve operations include:

1. TACOM involves both its internal and external customers in the development of the acquisition system;
2. AFMC has empowered its employees by placing authority, responsibility, and accountability at lower levels in the organization;
3. SSCOM maintains a positive customer focused teaming approach which improves relationship between all parties; and
4. As a result of continuous interaction and partnering or teaming with customers, CECOM has reduced solicitation cancellations to less than 4%.

Purchasing/Contracting Processes

Several agencies have implemented new initiatives to improve the time and cost associated with federal procurement transactions. The use of purchase cards for small dollar value procurements has greatly increased throughout the government. Generally, there are caps on the amount that can be purchased with a card, but the time to obtain materials is greatly reduced. NASA has implemented a new process for mid-range procurements that has reduced lead times by as much as 84%. The FAA has changed the way it presents requirements to

potential contractors and has adopted the use of oral proposals to significantly reduce the solicitation process. NAVSEA has used Blanket Purchase Agreements (BPAs) to reduce both the cost and lead time of procurements.

Purchase Cards

The use of purchase cards by the Army has been very successful. A recent 1997 audit conducted by the U.S. Army Audit Agency found that the Army is saving labor money costs and reducing the procurement lead times. Since FY 1995, the Army was responsible for 22 percent of all International Merchants Purchase Authorization Card (IMPAC) purchases by the federal government. Some key findings:

- More than 49,000 cards have been issued to Army personnel
- Approximately 1.5 million purchases were made using these cards in FY 97 alone
- Use of the card program equates to a savings of \$93 per purchase

Likewise, a 1995 Department of Treasury study on the use of purchase cards for micro purchases found similar results:

- A cost benefit study across Departments of Commerce, Treasury, Interior, Health and Human Services, Transportation, Energy, State, GSA, OPM, FEMA, DEA, and Federal Prison Industries found on the average the following costs:
 - Cost associated with the preparation of a purchase order: \$94
 - Cost of the same purchase using the credit card program: \$40
 - Cost savings through use of the card *per transaction*: \$54
- Elimination of non value added purchase steps and lead times.
- Use of the card program promotes change of the federal procurement culture with buying authority given to direct line clients. This requires customer education programs as well as procurement organizations giving up traditional procurement authority.

Mid-Range Procurements

NASA created a policy and process to examine midrange procurements in the \$25,000 to \$500,000 range (representing 80 percent of procurements as well as 11 percent of dollars obligated). This process establishes an effective and efficient process for midrange procurements and improved several major areas.

Prior to reform, midrange procurements were excessively bureaucratized and subject to the same processed applied to more complex million dollar procurements. On average, procurements less than \$25,000 required 30 days and 3 pages of documentation while those greater than \$25,000 took 126 days and 72 pages of documentation.

NASA's streamlined midrange procurement procedure was established in 1993 with the objectives to reduce lead times, increase competition, meet socio-economic business goals, and increase flexibility in regulation interpretation and application.

NASA is moving toward full automation of its integrated business process including: accounting, procurement, travel, and asset management. Initial delivery is expected in mid-1998.

Ad-hoc buying teams, comprised of technical and procurement personnel, have been empowered to make procurement decisions with minimal management oversight. Despite initial resistance within the workforce, this approach is presently working with apparent success

Some key lead-time (days) procurement metrics associated with the successful implementation of this program pre- and post- program:

<u>Date</u>	<u>SBIR R&D</u>	<u>Competitive Supplies</u>	<u>Competitive R&D</u>
FY 92	524	73	248
FY 94	83	13	176

Requirements Presentation and Oral Proposals

The Federal Aviation Administration (FAA) has worked aggressively to revise its overall procurement process for the past several years. As part of this process, results identifying improvements are continually presented to personnel both within and outside of the agency on public Internet sites. Two success areas are 1) changed the way requirements are communicated to industry, and 2) use of oral proposals in the solicitation process.

The FAA lacked effective communication with industry necessary for conveying complex requirements. This resulted in an inaccurate understanding of what industry could provide to the FAA. Awards often resulted in expensive modifications or delays in implementation. By changing the way requirements are presented to industry, including the marketing of requirements and advance identification of potential sources, the FAA has shortened the solicitation process while maximizing competition.

- The FAA found that industry input is required to identify what is achievable to identify requirements needing reduction of excessive costs and time; make improvements to non-value added steps; and finally determine what is available off the shelf or require greater development.
- Specific benefits include more focused proposal efforts from industry, significant reductions in the number of RFP questions and amendments issued, reduction in RFP response time from 90-120 days to 60 days, and reduction in RFP protests as deficiencies and overly restrictive specifications are reduced.

The FAA adopted the United States Air Force's practices in the area of oral proposals. The USAF tried out proposals on a foreign military sale in 1991 for a \$5 billion command and control buy on behalf the Royal Saudi air force. What would have taken 21 months under normal procurement processes was reduced to 7 months. This involves the use of videotaping of oral presentations. Review has been reduced from 2-3 months to 2-3 days. NAVSEA has also used oral presentations and has reduced the source selection cycle from two years to six months.

By using the oral approach during the solicitation process, The FAA has achieved a more open communication with industry resulting in more efficient evaluation of vendors. As a result, the FAA has replaced the traditional formal RFP solicitation process with the following:

- Replace the traditional formal solicitation process with the screening information request (SIR)
- Down select vendors based upon technical merit rather than price -- price is considered after down select rather than throughout
- Replace controlled and written communication with open and verbal
- Negotiate on target requirements rather than set requirements
- Rewrite statements of work to fit the actual proposed products
- Conduct product testing during competition rather than after award

Implementing these measures and this overall process, the FAA achieved the following:

- Cut in procurement costs by 75 percent
- Reduction in procurement lead time from 11 to 7 months
- Reduction in post-award deployment from 2 to 1 year

Blanket Purchase Agreements

NAVSEA uses Blanket Purchase Agreements (BPA) to reduce the cost of purchasing items used in volume. BPA's are used to maximize the savings for recurring needs. NAVSEA negotiates better pricing based upon cumulative or aggregate volume. Currently, there are no dollar limitation restrictions on BPA's.

NAVSEA provided an example of using a BPA to acquire several thousand Self Contained Breathing Apparatus (SCBA) units. By purchasing commercial off-the-shelf (COTS) units, NAVSEA ensured that the vendors developed product improvements rather than the Government paying for costly R&D. The BPA permitted NAVSEA to obtain a price reduction of approximately 50% off the list price of the SCBA and reduced the procurement lead time from 5 months to 3 weeks. BPA's also offer just-in-time deliveries, eliminating warehouse, spare and repair parts costs.

Personnel

A Department of Defense process action team was chartered in May 1997 to examine the management, education and training, and organization of the DoD acquisition workforce. The review committee concluded that the existing education and training system must be changed and that the existing Defense Acquisition University (DAU) consortium should be replaced before Year 2000. The current programs lack organization, do not employ the effective use of technology based training, and have a poor curriculum design process.

As a result of acquisition reform and implementation of commercial industry business practices, the replacement program (proposed Defense Acquisition Institute) should implement the following in order to reduce personnel and support infrastructure, cut travel costs, and provide high quality education services:

- Maximize the use of technology-based education
- Use of competitively contracted education to reach a greater student base
- Possible outsourcing of education and training functions based on best value

For comparative purposes, the Australian State Supply Commission published a profile for a contract manager which reflects evolution of the contract manager into a business manager. As a business manager, the former contract manager must possess professional knowledge and management skills.

- Professional Knowledge requires an *understanding* of the types of contracts and contract law; purchasing process to include creation of specifications and advanced contract planning; pricing methods; market supply and demand conditions; and methods associated with continuous improvement of the contract management process. Professional Knowledge also requires an ability to define overall business needs and development of contract strategy; implement and foster supplier relationships; and conduct risk management
- Management Skills require an *understanding* of the use of benchmarking and business performance management techniques required to monitor performance and best value; quality assurance (including the ISO 9000 series); and government accounting and financial management techniques.

Personnel Best Practices Observations

- AFMC uses the IPT management philosophy which allows for unconstrained input by individuals, providing a feeling of empowerment to each employee. As downscoping occurs, each and every person is involved in determining new ways of doing business, adding another sense of participation.
- **As part of its move to improve midrange procurement processes (see 3. Purchasing/Contracting Processes), NASA found that change can only be accomplished through extensive training of its personnel.** Initial training has been spent on basic computer application skills as procurements have become increasingly internet based. Although training on new procedures is straight-forward, teaching management and leadership principles is more difficult.

Use of Information Technology

The Government recognizes that effective use of information technology is crucial to the acquisition reform process. This includes the study of the open-system approach to both software and hardware implementation and upgrades. This approach has been the norm in the commercial industry sector and is starting to be accepted in government circles.

Most government agencies included in the survey are developing and implementing technology to improve operations and reduce paperwork. The tool most cited was the internet, which is used to post solicitations for potential contractors to view. The result has been an expanded vendor list and greater competition for contracts. In addition the amount of paperwork and administrative work has been greatly reduced. Federal agencies are using the internet to improve several tasks including market research and procurement coding, reducing costs, and contract administrative lead time.

Some agencies are actively using the Federal Acquisition Computer Network (FACNET) which goes beyond posting solicitations to allowing the agencies to receive proposals electronically. FACNET can also be used to exchange information with contractors, such as modifications, Purchase Orders, etc.

Except for IOC, all agencies indicated that they are implementing the Standard Procurement System (SPS). The SPS was cited as a tool used to achieve paperless contracting, integrate procurement with finance, shipping, and logistics systems, and achieve compatibility with commercial systems.

The one valuable lesson mentioned by almost every agency was the need to adequately train personnel, particularly as new software and hardware systems are implemented. Although no agency quantified how much training is necessary, each agency specifically cited the importance of the role of training as federal agencies reduce staff and change processes.

In 1995, The Environmental Protection Agency (EPA) developed the ADP Information Resources Management Support (AIRMS) system prototype allowing for maximum handling capability among the various commercial and government prototypes. Use of the internet as the medium for communication with vendors realized the following benefits:

- Protested risk reduction
- Reduced lead times
- Cost savings via overall process reengineering associated with the implementation of this process and reduction of time intensive “standard” proposal procedures
- Open and immediate communication with commercial industry

Personnel Best Practices Observations

- By using the internet and an intranet, TACOM has reduced Administrative Lead Time (ALT)/Procurement Lead Time (PLT) by 62% and is able to handle higher workloads with a 50% reduction in staff.
- The FAA is developing an integrated acquisition system that ties together electronic PR preparation, routing, award, and electronic obligation of funds.
- AFMC is working towards posting all solicitations on the internet, and then receiving all bids electronically, in its efforts to work towards a paperless system.
- By using FACNET, SSCOM has been able to expand its vendor base and meet competition requirements on its solicitations.

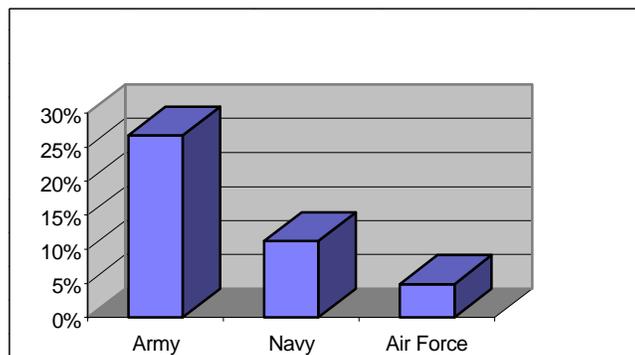
Government Analysis

In addition to the previous government input, the government is undertaking new initiatives in order to position itself for the future. Such initiatives include:

- Fewer military specifications
- Smaller in-house technical capability and infrastructure
- Increased simulation used to replace testing and evaluation
- Fewer prime contractors
- Decreased monitoring of prime contractors and subcontractors with less contact between the Government and subcontractors
- Increased use of performance standards
- Increased use of commercial standards, such as ISO 9000

For instance, according to the GAO's briefing to the Army Materiel Command on December 11, 1997, the Army has experienced more reduction in procurement staff than any of the other armed forces, between FY 1995-1997. During this period, the reduction in procurement personnel at the Army has been more than double that of the Navy, and five times greater than the Air Force (Exhibit 4-2). The various government agencies have implemented several initiatives to handle increased work loads with less resources. This section presents how various government organizations are preparing for these challenges.

Exhibit 4-2, Personnel Reductions in DoD's Acquisition Organizations FY 1996-97



Paperless Contracting

The government is moving towards a paperless contracting system that automates many functions through the use of integrated systems. Some best practices learned by all the government procurement practices surveyed include using the internet in the solicitation and award process and providing adequate training to all employees. Most agencies now post solicitations on the internet for all prospective bidders to view. Many agencies accept questions about the solicitations through electronic mail, and then post the questions and answers on the internet for all bidders to view, creating an even playing field. Some agencies receive bids through the internet or EDI.

Strategic Alliances

Many government agencies are establishing strategic alliances with preferred vendors and reducing their acquisition cost. However, these relationships often result in less competition for contracts and sometimes prohibit compliance with Small Disadvantaged Business contractual regulations.

As government agencies adopt commercial practices, training must be provided to all employees. Some agencies have found the best way to encourage employee acceptance of new policies and procedures is to involve the employees in the design and implementation of commercial practices. The use of IPT's has proved very successful in this area.

The following is an analysis of procurement reform at several different agencies.

AMC

AMC has improved its cycle time and reduced procurement problems by involving users, vendors and lawyers early in the acquisition process. Agencies within AMC have established strategic alliances with preferred vendors and continuous interaction with vendors, resulting in reduced cycle and delivery time and lowering solicitation cancellations.

Through the use of the internet, AMC has reduced ALT/PLT by 62% and achieved an equitable workload distribution, equitable training distribution, and reduction of administrative lead time and costs with a staff that has been reduced by 50%. The internet and FACNET have also expanded the vendor base and increased competition.

AMC has also used credit cards and just-in-time (JIT) contracts on a limited basis to improve procurement efficiencies. Some agencies within AMC have employed the use of commercial off-the-shelf software to ensure commercial and federal system compatibility. By automating and consolidating some activities, AMC agencies have achieved integrated business practices, saving time and money and meeting goals with a reduced work force.

FAA

The FAA has developed the Acquisition Management System (AMS) as its procurement standard policies and procedures. The goals of the AMS include reducing acquisition cycle time by 50% and reducing acquisition cost by 20%, both within three years (ending April 1, 1999). The FAA has reduced the procurement lead time on acquisitions greater than \$100,000 from 169 days in FY 1996 to 64 days in FY 1997.

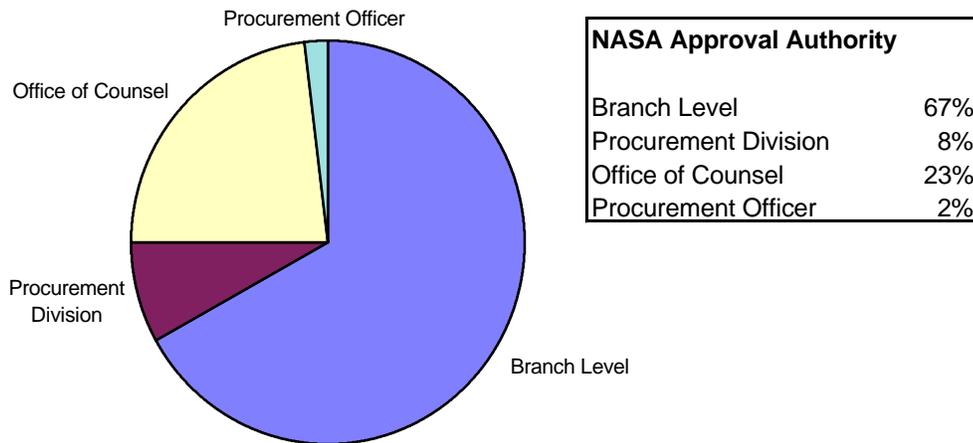
The focus of FAA acquisition reforms has been on employee empowerment and adoption of commercial best practices. One of the primary tools used to empower employees has been the credit card. The use of credit cards is vigorously encouraged and authority to use a credit card may be granted for some purchases up to \$25,000.

The primary obstacles faced by the FAA in the implementation of its AMS is reluctance of employees to accept the authority, responsibility and accountability that comes with employee empowerment. In addition extensive training is required to change to culture from the traditional FAR driven procurement method to a modified commercial practice.

NASA

As illustrated in Exhibit 4-3, NASA has greatly decentralized the authority to contract with vendors with minimal management oversight. Approval authority is based on the dollar value of contracts. 67% of contracts were approved at the branch level, 23% by the Office of Counsel, 8% by the Procurement Division, and 2% by the Procurement Officer.

Exhibit 4-3, NASA Approval Authority



Goddard Space Flight Center (GSFC) has consolidated its three procurement divisions into one division allowing a 25-33% reduction in staff with little or no affect on quality of work. The consolidation has created more opportunities for employees working in procurement at GSFC.

NASA works very closely with its top suppliers. The top 25 GSFC contractors belong to the Goddard Contractor Association, which meets with GSFC Executive Management monthly to discuss topics of mutual interest. NASA has also developed a Scientific Engineering & Workstation Procurement (SEWP) contract vehicle which provides a quick method for engineers and scientists to obtain IT tools from preselected vendors. The SEWP has reduced lead time from 210 to 13 days for actions less than \$100K.

NAVSEA

The Navy has incorporated two primary tools to reduce the time and cost of procurements. The first tool is the use of oral presentations in the bidding process. Each respondent to the solicitation is given the opportunity to present an oral presentation, upon which the respondent will be evaluated. NAVSEA offered many recommendations concerning the process of evaluating oral presentations including clearly defining the rules of the presentation and videotaping the presentation. The benefits have been reducing the source selection cycle from two years to six months.

Another tool used by NAVSEA to improve the efficiency of acquisitions is the use of Blanket Purchase Agreements (BPAs). BPAs are used for commercially available high volume items. NAVSEA has realized high administrative and purchasing savings along with volume discounts through the use of BPAs. The Navy puts pressure on vendors to improve technology, thus saving the Navy R&D investment in upgrading the equipment at a later date. Along with BPAs, the Navy has used just-in-time delivery of commercial items on BPAs reducing warehousing and spare parts costs.

U.S. Air Force

The Air Force has embraced employee empowerment as a key tool to reform the procurement process. The process is decentralized to its 19 operating centers, but the Air Force still maintains dollar value thresholds on contract action review and approval as follows:

- >\$500M, HQ AFMC/PK (Director of Contracting)
- >\$50M and <\$500M, Senior Center Contracting Official
- <\$50M, Chief of the Contracting Office

Another tool the Air Force has developed is the Contract Repair Enhancement Program (CREP). CREP applies just-in-time principles to contracts for repairs. It has proven to be much more cost efficient and more responsive to the needs of the end user.

The Air Force has established a set of metrics that are tracked and reported quarterly to measure performance. The indicators include spare parts delivery contractor performance, contractor performance assessment cycle time, undefinitized contractual actions, contracting lead time, competition in contracting, and small business participation.

Processes such as Earned Value Management (EVM) and Cost as an Independent Value (CAIV) help promote overall program stability through the identification and application of best value criteria. These have been successfully employed in such programs as the C-17 and F-22 aircraft programs.

The Air Force believes its employees must develop multi-functional skills as downscoping continues. Training is needed as reviews are streamlined and employees are empowered with greater responsibility. The Air Force also recommends the use of commercial, open solutions to technology issues.

Summary

All government agencies contacted are in the process of improving their procurement and acquisition processes as a result of force cuts. Major changes in the way the government does business have been laid out in changes to the Federal Acquisition Regulation (FAR) through the Federal Acquisition Streamlining Act (FASA) and Federal Acquisition Reform Act (FARA). These changes enable government agencies to improve the way they purchase items and services associated with providing the best support possible to their clients. These agencies are embracing several tools to improve the procurement process.

- Internet/EDI
- Strategic alliances with vendors
- Oral presentations
- Blanket Purchase Agreements
- JIT deliveries
- Automation of processes
- Integration of systems

- Employee empowerment
- Training on the overall business process
- Purchase cards and decentralized procurement

The large-scale change to the way government does business requires significant cultural change. As a result, many agencies are mapping out their processes and are comparing findings and observations. Success stories are being shared and increased intra-agency cooperation is helping to promote this overall process.

SECTION 5: COMPARATIVE ANALYSIS

Industry developments in procurement are driven by increases to efficiency brought on by increased global competition. Government developments tend to be driven by reductions in manpower in addition to efficiency. This section will compare and contrast the industry and government analyses.

Industry Direction

There are many similarities between the federal government and commercial industry in the area of procurement reform and change. One commonality is that both industry and government are focused on doing business smarter and in a more cost effective manner. The following trends are being led by industry. Government agencies are beginning to pursue these, as well.

1. Procurement is seen as part of the overall business process as opposed to a stand-alone function within the organization.
2. Procurement personnel are evolving into overall business managers with responsibility assigned to the profit and loss of the company. This fosters greater diversity among traditional procurement personnel.
3. Regulations and operations are becoming very decentralized, with a central office to establish and monitor general policy and delegated purchasing authority to individual business managers and business unit leaders. There is movement toward the implementation of performance standards as opposed to “commercial specifications.”
4. Increased use of selected vendors under long-term agreements. This is accompanied by increased use of vendor screening.
5. Strategic teaming with vendors and suppliers. This does not prevent companies from continually seeking better business arrangements.
6. Redefining procurement as a larger part of the overall business process evolves hand-in-hand with the increased leverage of information technology through Electronic Data Interchange. By moving to central contracting for routinely purchased items, often by center of excellence, corporations are able to negotiate corporate-wide contracts with select vendors and establish business with those who have EDI and on-line transaction capability. This commodity focus greatly expedites the procurement lead-time and delivery process.

DoD is driven by force cuts and consolidation of procurement functions as a result of base closure and mission realignments. All of the above observations in industry also apply to the government in various stages.

Government Direction

Government requirements and other cultural issues are also driving the following trends which must be integrated with commercial best practices. But, the increased use of EDI, Cost as an Independent Variable (CAIV), performance standards (instead of adopting “commercial specifications”), and decentralized purchases via credit cards are real success stories.

1. Procurement is becoming a part of the overall business process with the contracting officer becoming the overall business leader. But, there is still a great deal of “rice bowl” planning, where planning is done by area (accounting, contracting) rather than the entire business process.
 - Government procurement agencies are becoming more competitive. Procurement centers are competing to remain in business in the downscoping military environment.
 - This internal competition has resulted in various agencies and commands posturing themselves to become centers of excellence. This has involved extensive use of benchmarking and industry best practices.
 - One challenge is internal marketing of the overall value of procurement reengineering within commands and agencies. These organizations are accustomed to accepted practices based upon decades of “business as usual” and taking the lead in defining the overall business strategy.
 - Government contracting functions have become the crucial link to commercial business in the area of information management through EDI/Internet and automated systems.
 - Government procurement agencies also have “stakeholders,” the end user who needs to be part of the procurement reengineering process.
2. There is a move from strict oversight to team action, with the increased use of delegated contracting authority and multidisciplined management of procurement programs.
3. Procurement personnel are becoming more diverse and multifunctional with the increased use of decentralized procurement, through charge cards and limited warrants. The customer becomes the buyer. There remains greater flexibility in the commercial sector to grant someone comprehensive procurement authority. But, large scale procurement card use by the government appears to be leading industry.
4. Although regulations and socio-economic programs are changing, they remain less flexible than in the commercial sector.
5. The use of marketing and pre-proposal reviews of prospective suppliers is growing, but remains more rigid than commercial industry.
6. Processes such as Earned Value Management (EVM) and CAIV are moving the government towards strategic teaming with vendors. But, commercial firms may select a limited number of suppliers (one or two) on which to focus, while the government must meet more diverse competitive requirements.
7. Movement towards commodity centers of excellence is one of the options currently contemplated by AMC. As with industry, this may facilitate the increased use of EDI and associated process efficiencies.

Procurement activities and volume of many government agencies exceed those of many Fortune 500 companies. AMC is one of those agencies. A key factor, in the larger requirements, is that government procurement entities have both peace time and wartime readiness missions.

Key Differences

Several key areas are associated with government contract compliance which industry respondents identified as high-cost and non-value adding:

- Data rights: proprietary data in the commercial environment

- Certifications: a duplication of existing laws
- Cost and pricing data: proprietary and not disclosed in the commercial environment
- Socio-economic programs: not required in commercial business
- Cost Accounting Standards (CAS): not a common commercial practice

The above requirements add to the costs and lead-times associated with the procurement of goods and services. FARA and FASA have been implemented in order to make these processes less cumbersome. Additionally, these significant instructional and procedural changes to the way government agencies can do business place increased ability and empowerment for change with the agencies themselves. As we have seen, agencies such as NASA and the FAA have aggressively adopted new practices in order to improve efficiency and to analyze their overall business process, not just procurement and contracting.

SECTION 6: RECOMMENDATIONS

KPMG recommends that AMC develop and implement a plan to adopt commercial industry best practices. The following areas should be considered in the AMC plan:

1. Organization
2. Policy
3. Information Technology
4. Business Processes
5. Personnel

When considering these areas, a multi-functional approach should be taken involving all key participants in the procurement process from accounting, legal, personnel, engineering, quality, logistics, operations, procurement and other functional areas with a role in the AMC procurement process. This integrated approach will allow for the identification of overall resource management, funding and program management influences on the procurement process.

Organization

Focus on centralized policy and decentralized execution. Industry response indicates that centralized procurement responsibilities company-wide are being identified and awarded from centralized procurement offices. The awards are for common supplies and services. These task order blanket purchase agreement-type of arrangements allow for decentralized procurement authority provided to end-users.

Business teams. AMC should map out its business process and look for opportunities to integrate stove-piped functions into flexible multi-functional business teams that support project management, business units and corporate objectives. This approach leverages the combined expertise of the various specialties into a business process focused on established goals.

Policy

Take advantage of the Federal Acquisition Reform Act (FARA) and Federal Acquisition Streamlining Act (FASA). Both FARA and FASA allow greater flexibility for the use of procurement procedures used in commercial industry. Industry participants with both government and commercial business suggest that AMC evaluate the use and improvement of the following procurement processes in light of FARA and FASA:

1. Data rights
2. Certifications
3. Cost and pricing data
4. Socio-economic programs
5. Cost Accounting Standards (CAS)

Implement best value evaluation procedures. Rather than focus on price, AMC should establish and implement procedures for best value procurement. Industry participants have found that focusing on, and demanding, best value performance from their suppliers results in a reduction of oversight requirements, increased efficiency and total cost savings.

Streamline existing procurement regulations. There are many examples in industry of the efficiencies and reduction of paperwork gained from streamlining existing procurement regulations. For example, a leading multinational company reduced its procurement regulations from over 50 volumes down to a three page document by identifying what was really determined to be core-procurement in nature. Combined with the

decentralized approach to procurement, procurement policies and regulations are integrated throughout the business supply chain. Through the successful implementation of programs such as the use of credit cards to reduce procurement lead-times, AMC is taking steps to make the procurement process more efficient.

Information Technology

Implement an integrated supply chain information technology system. Findings from industry demonstrate that the planned and integrated use of information technology systems and processes is crucial to the success of effective procurement reform. Procurement cannot be viewed as a stand-alone process. It is important that procurement be examined as part of the integrated supply chain (non stove-pipe), to include accounting, production, legal, program management, and logistics components.

Electronic transactions with coordination between functional and technical personnel and suppliers via open systems is also important as it enables organizations to create real-time procurement processes within the integrated business supply chain. This allows for instant supplier interface and the capture and presentation of accurate financial and program management data associated with procurements.

Business Processes

Implement strategic sourcing. Industry participants are partnering with strategic suppliers in order to reduce cycle time and reduce inefficiencies. AMC can partner with industry through long-term relationships and teaming. This will further streamline business processes and allow for the early identification of alternative approaches and solutions to needs. Strategic sourcing also allows for instant access to the latest developments in industry through open dialogue.

Personnel

Promote the development of multi-disciplined personnel. Industry participants have stated that procurement personnel are evolving into multi-disciplined personnel capable of performing a variety of different business duties such as program management, quality control and engineering in addition to procurement. These multi-role personnel have a thorough understanding of their business functions and can infuse procurement quality throughout each process they participate in.

AMC should examine the evolution of procurement personnel into business managers. This requires an examination of existing training and education programs and may require the development of a new personnel profile. Personnel may take part in a multi-functional training program in legal, accounting, program management, and logistics.

Summary

Pursuing the recommended plan to infuse commercial business practices in AMC contracting can result in increased mission effectiveness. Publicly promote successes associated with increased efficiency - such as the use of procurement credit cards and best value contracting. The key to success is a focused, dedicated approach at the senior management level that emphasizes coordinated change in the following areas:

1. Organization
2. Policy
3. Information Technology
4. Business Processes
5. Personnel

Coordinated change throughout these areas could result in increased effectiveness which is achieved by:

- cross-functionally integrated procurement teams
- centralized regulations guiding decentralized procurement actions
- leveraging commercial information technology
- streamlining outcome-based processes
- fostering multi-disciplinary procurement personnel

U.S. ARMY MATERIEL COMMAND CONTRACTING XXI BLUEPRINT INDUSTRY QUESTIONNAIRE - DETAILED QUESTIONNAIRE

1. CONTACT INFORMATION

- 1.1. Agency/Organization:
- 1.2. Name of Contact/Position:
 - a) Phone/Fax/E-mail:
 - b) Date of information:

2. ORGANIZATION

- 2.1. Approximately how large is your corporation (revenue)?
- 2.2. In what industries does your organization participate?
- 2.3. How much of your business is commercial and federal in nature?
 - a) Federal:
 - b) Commercial:
 - c) How much of your business is international?
- 2.4. Major internal clients/customers:
- 2.5. Major external clients/customers:
- 2.6. Please provide an organizational chart:
- 2.7. What lessons have you learned as your organization has evolved?

3. PURCHASING/CONTRACTING DEPARTMENT

- 3.1. Does your organization have a set of procurement standard policies and procedures?
Please describe.
- 3.2. What are your purchasing/contracting goals? How are they measured?
 - a) What shortfalls exist in the practical execution of those goals?
- 3.3. At what stage does your procurement process begin?
 - a) What are the challenges (e.g., date of involvement of procurement in the early planning process which may result in a procurement plan requiring multiple user clarifications)?
 - b) What are the segments of your procurement process in terms of their function and average cycle time?
- 3.4. At what stage does your procurement process end?
- 3.5. How many different procurement/purchasing offices support your agency/organization?
- 3.6. Is award authority centralized or decentralized? Is this dependent upon the dollar value or complexity of a purchase?
 - a) What is the dollar threshold review/approval level?
 - b) What internal organizations (if any) have decentralized procurement authority?
 - c) Does this result in unnecessary process redundancy?

- 3.7. What oversight functions exist?
 - a) Who is involved in this process (positions, not by name)?
 - b) Which review layers may be improved/streamlined and why?
- 3.8. What selection criteria is most prevalent on contracts issued - cost or best value?
 - a) What type of contract vehicles are used depending upon contract type/value?
 - b) What review/proposal preparations are associated with the above?
- 3.9. How many purchasing/contractual actions (and associated dollar value) are performed on an annual basis?
 - a) Initial orders:
 - b) Modifications:
 - c) Cancellations:
 - d) What has been tried over the past three years? Provide data if available.
- 3.10. What percentage of purchasing/contracting awards are for:
 - a) Services:
 - b) Supplies:
 - c) Construction:
 - d) Research and development:
 - e) Special programs:
 - f) What has been tried over the past three years? Provide data if available.
- 3.11. What is the average procurement lead time from the moment a procurement professional starts working on an authorized and funded request to contract award for procurements valued in excess of \$100,000 for the following:
 - a) Services:
 - b) Supplies:
 - c) Construction:
 - d) Research and development:
 - e) Special programs:
 - f) What has been tried over the past three year? Provide data if available.
- 3.12. Does your corporation solicit requirements on a competitive basis? What percentage of that total is that?
- 3.13. Does your organization manage any just-in-time (JIT) contracts?
- 3.14. Has your organization established any strategic alliances with preferred vendors?
 - a) If so, then what type?
 - b) Are these suppliers demonstrating world class service?
 - c) What are the benefits associated with this streamlined/refined use of limited vendors?
 - d) What are the problems?
- 3.15. Have you consolidated/merged any activities? What are the benefits? What have been the problems?
- 3.16. What percentage of your contracts fall into the following categories:
 - a) Less than one year in duration?
 - b) Between one and three years in duration?
 - c) Between three and five years in duration?
 - d) More than five years in duration?
- 3.17. Is purchasing demand cyclical? If so, then what is cycle?

- a) What key factors drive this cycle?
- b) What improvements can be made?
- 3.18. Does your organization have any preferred purchasing programs (e.g., small business)?
- 3.19. Has your organization examined procurement industry best practices and/or implemented change management?
 - a) Was this study performed by internal or external resources?
 - b) What were the findings?
 - c) If changes were implemented, then how was this accomplished (process, involvement, training of procurement personnel)?
 - d) What are the “lessons learned”?
- 3.20. What challenges to efficiency have your recently faced or are currently facing?
 - a) How do you plan on addressing them?
 - 1. Short term performance goals:
 - 2. Long term performance goals:
 - 3. Stretch performance goals:
- 3.21. What is your organization doing at this time to monitor industry best practices?
- 3.22. Please describe your procurement process flow in detail, showing initiations of proposals, proposal planning, reviews, awards, administration and close-out.
- 3.23. What are the key procurement milestones and how are they monitored?
- 3.24. Does your purchasing organization measure customer satisfaction?
 - a) If so, then how?
 - b) Describe purchasing teaming with internal functions
- 3.25. If so, do you involve customers? How? What key metrics are employed to monitor procurement efficiency?
- 3.26. What lessons have you learned as your purchasing/contracting department has evolved?

4. PERSONNEL

- 4.1. How many purchasing personnel does your agency/organization employ as a whole?
 - a) What types of functions do they perform (e.g., contract specialist, legal review, cost review)?
 - b) Education and position title/rank by function:
 - c) Incentive programs, if any:
- 4.2. What metrics are used to evaluate the performance of procurement personnel (e.g., actions per year, dollars awarded, number of contracts handled)?
- 4.3. Does your organization have a formal purchasing training program?
 - a) Please include a training program if available:
- 4.4. Is there an established career path for purchasing personnel?
- 4.5. Has your purchasing department experienced a reduction in size in the past three years?
 - a) How was this handled (reduction in force, attrition, other):

- 4.6 Has your company outsourced any parts of the purchasing function or purchasing support?
 - a) In what areas (i.e., administration, information technology, others) and why?
 - b) What are your lessons learned, good & bad:
- 4.7. How would you categorize morale and why?
 - a) Suggestions for improvement:
 - b) Employee incentive programs:
- 4.8. What lessons have you learned as your personnel structure and process has evolved?

5. USE OF INFORMATION TECHNOLOGY

- 5.1. What continuous improvement process is employed as the organization evolves? What options did you consider? How long has it been in use? What are the benefits?
 - a) Commercial developed software solution package:
 - b) Custom developed software solution package:
- 5.2. What other initiatives are you pursuing to achieve paperless contracting?
- 5.3. Is your procurement system integrated with the corporate finance, shipping, and logistics systems?
 - a) How do you ensure adequate information technology support for your operation?
 - b) How do you plan for future requirements?
- 5.4. Do you use EDI and the internet to announce/advertise requirements?
 - a) Your use of internet/intranet and securenet:
 - b) How do you address information security?
- 5.5. Please compare the “before” and “after” benefits of implementing this system.
 - a) Include process improvements, increase in efficiency, etc.:
- 5.6. What steps are you taking to address commercial and federal system compatibility, compliance and cooperation regarding the procurement process? Is there a bridge (communication, like-processes) between both?
- 5.7. What are your future plans in this area?
- 5.8. What lessons have you learned as your use of information technology has evolved?

6. TEAM ANALYSIS/SITE VISIT

- 6.1. Perspective of senior leadership on acquisition best practices implementation:
- 6.2. Agency/Command commitment on acquisition best practices implementation:
 - a) Include copy of plan with objectives/milestones:
 - b) Challenges and benefits:
- 6.3. General observations:
 - a) Include process improvement studies with summarized observations:
 - b) How these could apply to AMC - identify where they could be applied with benefits and required process implementation approach:
- 6.4. Would you like to comment on any other innovations, lessons learned, or issues that were not addressed above?

