



Calhoun: The NPS Institutional Archive
DSpace Repository

NPS Scholarship

Theses

1986-03

An analysis of acquisition strategy planning for major Navy information systems

Haima, John O.

<https://hdl.handle.net/10945/22603>

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

Downloaded from NPS Archive: Calhoun



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

<http://www.nps.edu/library>



DUDLEY WALKER LIBRARY
NAVAL POSTGRADUATE SCHOOL
MONTEREY, CALIFORNIA 93943-5008

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

AN ANALYSIS OF ACQUISITION STRATEGY
PLANNING FOR MAJOR NAVY INFORMATION SYSTEMS

by

John O. Haima

March 1987

Thesis Advisor:

N. F. Schneidewind

Approved for public release; distribution is unlimited.

T230605

REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION unclassified		1b RESTRICTIVE MARKINGS	
2a SECURITY CLASSIFICATION AUTHORITY		3 DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution is unlimited.	
2b DECLASSIFICATION/DOWNGRADING SCHEDULE		5 MONITORING ORGANIZATION REPORT NUMBER(S)	
4 PERFORMING ORGANIZATION REPORT NUMBER(S)		5 MONITORING ORGANIZATION REPORT NUMBER(S)	
6a NAME OF PERFORMING ORGANIZATION Naval Postgraduate School	6b OFFICE SYMBOL (if applicable) 54	7a NAME OF MONITORING ORGANIZATION Naval Postgraduate School	
6c ADDRESS (City, State, and ZIP Code) Monterey, California 93943-5000		7b ADDRESS (City, State, and ZIP Code) Monterey, California 93943-5000	
8a NAME OF FUNDING/SPONSORING ORGANIZATION	8b OFFICE SYMBOL (if applicable)	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c ADDRESS (City, State, and ZIP Code)		10 SOURCE OF FUNDING NUMBERS	
		PROGRAM ELEMENT NO	PROJECT NO
		TASK NO	WORK UNIT ACCESSION NO
11 TITLE (include Security Classification) AN ANALYSIS OF ACQUISITION STRATEGY PLANNING FOR MAJOR NAVY INFORMATION SYSTEMS			
12 PERSONAL AUTHOR(S) Haima, John O.			
13a TYPE OF REPORT Master's Thesis	13b TIME COVERED FROM TO	14 DATE OF REPORT (Year, Month, Day) 1987 March	15 PAGE COUNT 64
16 SUPPLEMENTARY NOTATION			
17 COSATI CODES		18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	acquisition strategy; information systems; Navy; automated information systems	
19 ABSTRACT (Continue on reverse if necessary and identify by block number)			
Information systems are an integral part of the United States Navy. The effectiveness of the Navy's administrative/logistic information systems is dependent on the Navy's ability to acquire, develop and maintain them.			
This thesis will review current acquisition strategy guidelines, policies and the resulting acquisition strategy plans for major Navy administrative/logistic information systems. An attempt will be made to determine changes which can be made to improve the system and enable the Navy to keep pace with technology advances.			
20 DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS		21 ABSTRACT SECURITY CLASSIFICATION unclassified	
22a NAME OF RESPONSIBLE INDIVIDUAL Prof. N.F. Schneidewind		22b TELEPHONE (Include Area Code) (408) 646-2719	22c OFFICE SYMBOL Code 54Ss

Approved for public release; distribution is unlimited.

An Analysis of Acquisition
Strategy Planning for Major
Navy Information Systems

by

John O. Haima
Lieutenant Commander, Supply Corps, United States Navy
B.A., St. John's University, Minnesota, 1976

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN INFORMATION SYSTEMS

from the

NAVAL POSTGRADUATE SCHOOL
March 1987

ABSTRACT

Information systems are an integral part of the United States Navy. The effectiveness of the Navy's administrative logistic information systems is dependent on the Navy's ability to acquire, develop and maintain them.

This thesis will review current acquisition strategy guidelines, policies and the resulting acquisition strategy plans for major Navy administrative logistic information systems. An attempt will be made to determine changes which can be made to improve the system and enable the Navy to keep pace with technology advances.

Thesis
4/11/15
81

TABLE OF CONTENTS

I.	INTRODUCTION	8
	A. DISCUSSION	8
	B. SCOPE OF THESIS	9
	C. METHODOLOGY	10
II.	ACQUISITION PLANNING	12
	A. INTRODUCTION	12
	B. FRAMEWORK	13
	C. REQUIREMENTS INSTRUCTIONS	15
	D. PROCUREMENT IMPACTS	18
	E. SCOPE	20
III.	OVERVIEW OF MAJOR INFORMATION SYSTEMS	25
	A. DEFINITIONS	25
	B. SYSTEMS AND DESCRIPTIONS	26
	C. DISCUSSION	27
IV.	ACQUISITION STRATEGY ANALYSIS	32
	A. INTRODUCTION	32
	B. BASIC ELEMENTS/ COMPONENTS	33
	C. CONCEPTUAL FRAMEWORK	34
	D. PROBLEMS/SUCCESSSES	36
V.	PROPOSED ACQUISITION STRATEGY	39
	A. INTRODUCTION	39
	B. PROPOSED ACQUISITION STRATEGY	41
VI.	CONCLUSION	45
	APPENDIX A: LIST OF ACRONYMS AND ABBREVIATIONS	46

APPENDIX B:	REPRESENTATIVE MAJOR NAVY INFORMATION SYSTEMS	49
APPENDIX C:	MAJOR IS ACQUISITION REFERENCES	50
APPENDIX D:	ACQUISITION MANAGEMENT AND SYSTEM DESIGN PRINCIPLES	52
APPENDIX E:	ONASINST 5000.29 ACQUISITION STRATEGY	54
APPENDIX F:	DAR PROCUREMENT STRATEGY	55
APPENDIX G:	FAR ACQUISITION STRATEGY PLAN	56
APPENDIX H:	A-109 ACQUISITION STRATEGY	58
APPENDIX I:	NARSUP ACQUISITION STRATEGY PLAN	59
	LIST OF REFERENCES	61
	INITIAL DISTRIBUTION LIST	63

LIST OF FIGURES

2.1	Acquisition Planning Process	22
2.2	Basic PPBS Process	23
2.3	Basic ADP System Acquisition Process	24

ACKNOWLEDGEMENTS

I would like to acknowledge the support provided by the personnel of DSAC and CDR Jim Parham; without whose help this thesis would not have been accomplished. In addition, I would like to thank Professor Schneidewind and LCDR Ray Smith for pulling me through this process.

I. INTRODUCTION

A. DISCUSSION

The Federal government is facing a phenomenal growth in the use of automated systems. This growth has resulted in an increasing reliance on data processing and telecommunications technology to support government programs [Ref. 1: p. 1]. Not surprisingly, this growth has resulted in the use of automated systems in the Federal government expanding to such a degree that the Federal government is totally dependent on these automated systems [Ref. 2: p. v].

The fact that this growth of automated systems has all occurred within the last three decades [Ref. 3: p. 16] compounds the pressures faced by all branches of the Federal government. The Department of the Navy (DON), as one branch of the Federal government, must develop and maintain both it's hardware and it's software under ever expanding demands for their use. Indeed, the total demand for software within the Department of Defense (DOD) is anticipated to increase at a rate of twelve percent per year for the next two decades [Ref. 4: p. 30].

While the growth in scope and complexity of these automated systems has been phenomenal, the management problems/challenges this growth has engendered are not unique. Private industry has, and is facing similar growth issues [Ref. 5: p. 1]. The problems of incompatible data, functionally obsolescent hardware and inefficient software are only some of the factors compounding the Navy's IS growth issues [Ref. 6: p. VIII-55]. The shortfall in software professionals, available to meet the increasing demands of private industry and the Federal government, is predicted to reach one million by 1990 [Ref. 4: p. 30].

For the Navy, these problems are compounded by it's own regulations [Ref. 6: p. VIII-86]. Regulations which often result in increased complexity and frustration for government IS managers [Ref. 7: pp. 12-13]. Criticisms of the DOD acquisition process "have focused on the acquisition's taking too long, costing too much, and resulting in operational systems that do not perform as expected [Ref. 8: p. 1-1]. How the Navy tackles these problems and the problems of aging hardware [Ref. 9: pp. 5-8] and obsolescent software [Ref. 10: pp. 55-56] will determine how efficient the Navy is in the future.

The way automated systems and computers are viewed is changing just as rapidly as the number of computers and systems. The distinction between automated data processing (ADP), word processing (WP), and data communications are increasingly being blurred [Ref. 5: p. 28]. The change of emphasis, within DOD, from automated data systems (ADS), to automated information systems (AIS), to information systems (IS) is indicative of this change.

IS is the term now being used, by the Navy, to identify automated computer systems. IS, with its focus on the end product (information), is changing the way the Navy views system acquisition. Acquisition Strategy, as a portion of the total Life Cycle Management (LCM) effort, must (by necessity) adapt to this focus on the end product (information).

B. SCOPE OF THESIS

The scope of this thesis is limited to an analysis of major Navy administrative logistics information system acquisition plans.

The definition of a major system is a system which exceeds eight million dollars in life cycle cost over a five year period [Ref. 11: p. i]. This definition will be dealt with in more detail in Chapter III.

An administrative logistic system is defined as a system which deals primarily with administrative logistic functions (e.g. payroll, finance, personnel management, inventory control and supply). From a hardware perspective, administrative logistic systems are associated with ". . . general purpose, commercially available, mass produced automatic data processing components and the equipment systems created from them . . ." [Ref. 12: p. 2].

SECNAVINST 5231.1B uses this classification-by-function for all IS's [Ref. 14: pp. 2-4]. Functional class "A" roughly equates with the administrative logistic systems this thesis deals with.

The reasons for dealing with only administrative logistic systems is: (1) to narrow the scope of research and, (2) to isolate those systems which are most closely aligned with systems found in private industry. The belief is that current acquisition strategies do not provide the flexibility that private industry utilizes, and that consequently Navy acquisition strategies are not as effective as those possible in private industry. The challenge is to identify those aspects of Navy acquisition strategy which add to flexibility and to emphasize their use.

The tactical systems orientation of functional classes "B" and "C" (refer to SECNAVINST 5231.1B) introduces a bias in comparison with private industry which is much more complex to isolate. Additionally, the waivers and exceptions which are encountered in dealing with tactical systems (e.g. the Warner Amendment) make acquisition strategies in this realm more flexible, and therefore not as significant an impediment to effective systems acquisition as the narrower guidance allowable for non-tactical systems.

The result of this dichotomy between tactical and non-tactical is that while most administrative logistic systems are non-tactical in nature, a number of administrative/logistic systems are classified as tactical systems. Although only a hypothesis, it can be conjectured that some administrative/logistic systems are classified as tactical systems in order to obtain the benefits associated with the more flexible tactical environment.

C. METHODOLOGY

The methodology utilized in this thesis is fourfold and cumulative in nature. First, a review of current directives, instructions and guidance on the acquisition of major automated systems was conducted. Second, interviews with various program managers and contracting officers were conducted. Third, a review of current major system acquisition plans was conducted. Fourth, using the results of steps one through three, an analysis of current acquisition plans was conducted in an effort to identify areas for potential improvement in the acquisition strategy process.

During the interview phase, two general questions were posed:

- (1) What instructions, directives, references are pertinent to the development of a major system acquisition strategy plan
- (2) What problems, if any, are faced by personnel developing major information system acquisition strategy plans

Additionally, individuals were asked to forward a copy of any major systems acquisitions they were currently working on.

At the beginning of the discussion/interview, which was not structured beyond raising the questions identified above, it was necessary to define an acquisition strategy plan. For this phase an acquisition strategy plan was broadly defined to be that plan being used by the PM to guide his acquisition (regardless of the referential basis for the acquisition strategy plan).

Interviews revealed general agreement on which references were pertinent, but surprisingly many individuals were not in possession of the most recent versions of the references they cited. Problems identified during the interviews were generally minor and centered on operational questions.

Some ideas for improvement were provided and ranged from better enforcement to scrapping of guidelines. These ideas were considered and certainly influenced the proposed changes developed in Chapter V.

While primarily Navy oriented, research included personnel, directives and acquisition strategy plans from the Defense Logistics Agency (DLA), the Air Force, the Army and private industry. This external review was not exhaustive and was conducted for purposes of comparison and potential solution generation.

A list of acronyms and abbreviations is provided in Appendix A.

II. ACQUISITION PLANNING

A. INTRODUCTION

Acquisition planning is the process of integrating and documenting the efforts needed to acquire material resources for a program into a comprehensive acquisition strategy plan. The principal objective of acquisition planning should be the statement of acquisition and contracting objectives. This objective must convey concisely and clearly the user's needs, uncluttered by the technical details of contractual "legalize".

The program manager (PM) is responsible for the development of the acquisition strategy plan. He/she accomplishes this development through the acquisition planning process. Williams and Knittle identified the basic acquisition strategy planning process used in DOD in 1981 [Ref. 16: p. 9]. The process they identified is essentially the same today. The basic acquisition planning process is depicted in Figure 2.1.

While superficially straightforward, few individuals understand the nuances of acquisition planning. The list of these nuances and details involved in acquisition planning results because of the varying references and interpretations concerning the acquisition planning process. These nuances, in part, have resulted in the misunderstandings and conflicts identified in the public literature.

The Chief of Naval Operations (CNO) recognized the misunderstanding surrounding the development of an acquisition strategy and issued a memorandum to clarify what an acquisition strategy is [Ref. 17: p. 1]. Specifically, the CNO stated that "the purpose of the acquisition strategy is to provide a succinct summary of what is, or what is intended to be, in the acquisition plan" [Ref. 17: p. 1].

While not illuminative, this clarification does minimize the scope of an acquisition strategy to a specific document recognized by PM's within DOD. The system acquisition strategy plan is referred to in numerous documents and this chapter is intended to (1) discuss the framework encompassing acquisition strategy development, (2) outline the references pertinent to acquisition strategies, (3) highlight the contractual procurement aspects of an acquisition strategy, and (4) discuss the scope and limitations of current acquisition strategy concepts.

B. FRAMEWORK

In order to understand how acquisition strategy is developed, it is necessary to understand the context within which the acquisition planning process takes place.

Acquisition planning begins with the documentation of a program need. Thus, an acquisition strategy plan is prepared concurrently with a program's inclusion in the Program Objective Memorandum (POM) process. It may be helpful to view acquisition planning from two perspectives--a financial perspective and an acquisition perspective.

These two perspectives are mirrored by the two major processes which encompass the information system acquisition process: (1) the Planning, Programming, and Budgeting System (PPBS), and (2) the ADP system acquisition process. These two processes are parallel, but overlapping efforts. The primary area of overlap occurs in the analysis and approval of the mission need. Given an approved need, the alternatives to satisfy that need are investigated. For example, a specific mission need may best be satisfied by a change of regulations/directives, by redeployment of existing resources, by training, or by a new major system acquisition. Only if the alternative selected is to use "acquisition" is the ADP system acquisition process triggered.

The PPBS process identifies the need, translates that need into resource requirements, then into budget proposals and finally into programs. Inputs to the PPBS process are Joint Chiefs of Staff (JCS) and Military Department planning documents, Military Departments Program Objective Memoranda (POMs) and budget estimates. Outputs are the Defense Guidance (DG), the Five-Year Defense Plan (FYDP) and the DOD portion of the President's budget. Anyone entering the system acquisition arena must have a working knowledge of PPBS. This thesis does not assume to present the level of understanding needed, but only a basic overview. The basic PPBS process pertinent to system acquisition is depicted in Figure 2.2.

The ADP system acquisition process begins when a Mission Element Needs Statement (MENS) has been approved by the agency head. This approval occurs at Milestone 0. At this point a program manager (PM) is normally assigned to the system acquisition effort. Alternatives are explored, considered and the acquisition strategy for the desired alternative is developed. It must be remembered that during this time the acquisition process is overlapped with the PPBS process. The PPBS process incorporates strategic planning prior to dealing with need and alternatives, and then places it's emphasis on financial aspects. The ADP acquisition process begins with

the need and alternatives, and then passes financial requirements back and forth with the PPBS process.

Upon approval of the requirements in the PPBS process, the PM initiates the actual acquisition planning efforts and manages this effort until completion. This basic ADP acquisition cycle is also referred to as the life cycle of an AIS. The basic phases of the ADP acquisition cycle are:

- (1) Mission Analysis, Project Initiation
- (2) Concept Development
- (3) Definition Design
- (4) System Development
- (5) Deployment Operation [Ref. 18: p. 2]

This basic ADP system acquisition process is graphically depicted in Figure 2.3.

The basic ADP system acquisition cycle is dynamic in nature. The PM is allowed to combine milestones, phases as long as this action is included in his documentation at Milestone 0 and approved. The ability of the PM to adapt (within parameters) the ADP acquisition process to suit his/her particular program is a valuable tool for achieving flexibility.

What must be remembered is the overall objective/s the PM is trying to achieve. The total acquisition planning process seeks to achieve the following objectives:

- (a) Assure management accountability for the success or failure of AIS developments and identify the roles and responsibilities of functional, telecommunications and ADP managers throughout the life cycle of an AIS.
- (b) Establish a control mechanism to assure that an AIS is developed, evaluated and operated in an effective manner at the lowest total overall cost.
- (c) Provide visibility for all resource requirements of an AIS and communicate with Congress early in the acquisition process for a major AIS.
- (d) Promote cost effective standardization of AISs for use throughout the Department of Defense [Ref. 18: p. 2].

Unfortunately, these objectives may conflict, and the PM must recognize the need for prioritizing goals based on a trade-off analysis. Tradeoffs are often overlooked as the PM attempts to satisfy written instructions, as opposed to establishing a general direction for the acquisition planning effort.

SECDEF establishes acquisition policy to ensure that major programs are being pursued in response to identified needs and using good management practices. As part of the acquisition process, a Defense Acquisition Board (DAB) was established to review programs and make recommendations to SECDEF on program accomplishments.

C. REQUIREMENTS/INSTRUCTIONS

The acquisition process utilized today is a result of initiatives of the 1970's. Secretary of Defense (SECDEF) Packard initiated DOD Directive 5000.1 and the associated 5000 series instructions that followed. These documents layed the foundation for the acquisition policies of today.

A review of the directives, instructions and guidance pertinent to the acquisition of major automated systems yields an extensive library of materials. In 1979, the library pertinent to major system acquisition included "one public law, eight Office of Management and Budget (OMB) circulars, forty-four Federal Information and Processing Standards (FIPS) publications, twenty-eight Government Accounting office (GAO) reports and studies and a multitude of other directives and regulations [Ref. 3: pp. 7-8]. The number has not decreased, rather it has increased. In 1982, there were over 114 directives related to acquisition [Ref. 19: pp. 12-17]. Navy instructions use three page enclosures merely to list the references that are pertinent to systems acquisition [Ref. 14]. This plethora of guidance often overlaps and routinely causes outsiders to question the need for so much bureaucratic overhead.

Interviews with program managers and contracting officers, who should be conversant with this material, reveals an additional problem. Only two-thirds of the individuals interviewed had up-to-date copies of the references they were utilizing. The fact that not all individuals maintained all the references is understandable. The fact that they were not aware of revisions is not understandable.

Navy instructions are generally used to implement higher authority directives and guidance. This practice, of implementing higher authority directives, is not unique to the Navy, the other military services follow the same procedure. The use of implementing instructions allows the addition of tailored information and specificity, which supposedly makes subordinate's jobs easier. Unfortunately, this often is the cause of conflicting guidance because implementing instructions are not kept current with higher authority directives. While most personnel involved in major system acquisition are relatively senior and therefore more conversant with the necessary references, the ability to stay abreast of changing conditions and or references does not differentiate by seniority. Personnel involved in major system acquisition must understand both the source and intent of major system acquisition guidance in order to effectively acquire systems in today's environment.

To achieve this understanding of system acquisition planning it is necessary to understand the contents of the key documents contained in appendix C. Appendix C provides a listing of the principal references needed to understand major IS acquisition planning. The following paragraphs provide a summary of the contents of the key documents associated with major IS acquisition planning.

Public Law 89-306 (Brooks Bill)

The Brooks Bill made the General Services Administration (GSA) responsible as the sole procurement agent for the Federal government for all ADP acquisitions. This responsibility is delegable and is recognized as procurement delegation authority (PDA) within DON. The National Bureau of Standards (NBS), under the Department of Commerce was made responsible for Federal ADP standards. These standards are known as Federal Information and Processing Standards (FIPS). The Office of Management and Budget (OMB) was made responsible for ADP policy formulation and for solving inter-agency disputes with GSA.

Public Law 96-511 (Paperwork Reduction Act)

The Paperwork Reduction Act requires the creation of a senior official in each agency to be responsible for information resource management, including computer processing resources. The Act recognizes the convergence of ADP and Telecommunications. It excludes tactical systems from the scope of the Act. It establishes the Office of Information and Regulatory Affairs within OMB, to be responsible for government-wide information resource management.

Title 10 U.S.C. 2315 (Warner Amendment)

The Warner Amendment exempts tactical computer-based systems from the requirements of the Brooks Bill.

Federal Acquisition Regulation (FAR), Part 7

The FAR establishes procedures for developing acquisition plans. Requires procedures to promote and provide for full and open competition. It specifies the content of written acquisition plans. Provides milestones for the acquisition cycle and other considerations pertinent to the acquisition planning process. It identifies guidance pertaining to the decision to acquire equipment by lease or purchase.

DOD FAR Supplement, Part 7

The DOD FAR Supplement implements FAR requirements within DOD. It establishes dollar thresholds requiring written acquisition plans. It requires written acquisition plans to be keyed to the Department of Defense Five Year Defense Program (FYDP), applicable budget submissions and the Decision Coordinating Paper Program Memorandum, as appropriate. It differentiates between system acquisition plans and acquisition plans (allows for breakouts). It requires "design-to-cost" considerations (DODD 4245.3). It incorporates life-cycle-cost criteria.

DODD 5000.1 (Major System Acquisitions)

DODD 5000.1 implements OMB Circular A-109 and Public Law 98-191. It promotes decentralization and delegation to the maximum extent feasible. It stresses operational effectiveness and operational stability. It establishes milestone decision points for acquisition process within DOD. It sets criteria for major system designation as a system whose estimated cost exceeds \$200 million (RDT&E) or \$1 billion in procurement funds, or both.

DODD 5000.2 (Major System Acquisition Procedures)

DODD 5000.2 implements DODD 5000.1. It establishes procedures for the Defense Acquisition Board (DAB). It discusses the integration of the PPBS with the ADP system acquisition process. It sets forth principles that shall be considered in planning any major system acquisition (see Appendix D).

DODD 7920.1 (LCM of AISs)

DODD 7920.1 establishes policy governing the life cycle management and control of automated information systems. It defines major automated information systems for DOD. It sets purpose and content of the life cycle phases for AISs. It provides the format and concept supporting the use of the Mission Element Needs Statement (MENS). It is tied to DODD 5000.1.

DODD 7920.2 (Major AIS Approval Process)

DODD 7920.2 provides the approval process for those AISs which do not meet the thresholds of a major system provided in DODD 5000.1, but still considered as major information systems within DOD.

The NARSUP implements the FAR within the Navy. It expands the content of the written acquisition plan required by the FAR. It differentiates between the thresholds for acquisition plans between NAVSEA/NAVAIR and all others.

SECNAVINST 4210.7

SECNAVINST 4210.7 establishes a Navy-wide priority, when procuring hardware/software, to use non-developmental items (NDI). It requires acquisition plans to describe the extent to which NDI is proposed and to clearly justify where use of NDI is not feasible or cost effective.

SECNAVINST 5000.1B

SECNAVINST 5000.1B implements DODD 5000.1. It establishes Acquisition Categories (ACATs). ACATs determine the level of review and decision authority appropriate for programs.

ONASINST 5000.29A

ONASINST 5000.29A promulgates policy for the development of acquisition strategy papers. It requires acquisition strategy documentation within 90 days of program initiation (POM approval). It identifies the use of acquisition strategy papers as the basis for development of other program documentation, e.g. SCP, NDCP, DCP, TEMP.

SECNAVINST 5231.1B

SECNAVINST 5231.1B provides standards for managing all IS projects. It adapts SECNAVINST 5000.1B for IS projects. It incorporates ADP, WP, and data communications within the definition of IS. It permits IS projects under \$100K to be managed under a one stage LCM strategy, using an ASDP. It establishes the IS Executive Board to perform NSARC functions for IS programs.

D. PROCUREMENT IMPACTS

The most documented and controversial aspect of acquisition planning is the aspect of procurement. While procurement is not a mandatory element of a system

development, all major IS projects currently include over half of the estimated cost as part of a contracting effort. Within the Navy, the procurement contracting effort has become highly technical and specialized [Ref. 21: pp. 40-42]. The PM, having developed the acquisition strategy, interfaces with the contracting officer (KO) to develop specific contracting strategies to support the acquisition strategy plan.

While “. . . the contingent nature of acquisition contract planning . . .” [Ref. 16: p. 14] mandates flexibility, flexibility is not the sole goal of the KO. The KO must satisfy the PM’s requirements within the guidelines of the law. The PM needs to remember that the KO has these two, often opposing, goals. The KO selects a contracting strategy which provides the optimum balance of the following:

- (1) Minimized total system life cycle.
- (2) Minimized DON risk, liability, and obligation under contract.
- (3) Maximized flexibility to meet changing DON requirements.
- (4) Maximized ability to take advantage of advances in ADP technology. [Ref. 15: p. 4]

The KO does not develop the contracting strategy independent of the PM. The degree of teamwork evidenced between the KO and the PM during this phase of the acquisition process will often reflect the success of the overall program. The frustration end-users experience is generally aimed at the KO simply because the end-users are the most divorced from the functional process in the contracting arena. The PM must bridge the gap between the end-users, the sponsors and the KO. All of the participants in acquisition planning need to appreciate the parameters the KO works within. The acquisition strategy plan is the physical document acting as the bridge between the end-user’s need and the contract’s.

The KO must interchange certain key information with the PM. This information includes the the system alternatives to be pursued, the related acquisition methods, the prioritized system objectives, and the relevant conditions which affect the acquisition [Ref. 16: pp. 16-18].

Based on this key information, the KO (in concert with the PM) determines the contract type most appropriate for each deliverable identified in the system acquisition strategy plan.

The following are the basic contract types available to the KO:

- 1) Firm Fixed Price
- 2) Fixed Price Incentive
- 3) Fixed Price with Economic Price Adjustment

- 4) Cost Reimbursable
- 5) Cost Plus Fixed Fee
- 6) Cost Plus Award Fee
- 7) Cost Plus Incentive Fee

This determination is only the 'tip of the iceberg', the KO must also consider the following contract provisions when developing a contract:

- 1) Warranty Issues
- 2) Pre-Production Evaluation
- 3) Investment Protection
- 4) Design To Cost
- 5) Value Engineering
- 6) Data Rights Clause/s
- 7) Pre-Award Survey
- 8) Post-Award Conference

The complexity does not diminish, the PM and KO must also acquire the resources needed within the timeframes desired by the users, within the guidelines provided by higher authority, within the parameters of competition and under the constant eye of public scrutiny.

E. SCOPE

The scope of IS acquisition planning is limited by a number of parameters. First, it does not apply to the development of all information systems. Extensive maintenance and 'minor' revisions to existing information systems are allowed. There are no specific thresholds defining where system improvements transition from revision to new development. Acquisition planning is not required for minor revisions, it is for new development.

Second, the definition of information systems is a factor limiting the scope of IS acquisition planning. Information systems definitions vary widely, but contain a common thread. That common thread is that an information system must use ADPE to store, manipulate, transmit and or receive data/information. Recent amendments to the Brooks Bill have clarified it's scope to mesh with this wider definition of an IS. This clarification reflects the merging of ADP and communications technologies [Ref. 23: p. 759]. The current definition of ADPE has been broadened " . . . to mean any

equipment or interconnected system or subsystems of equipment that are used in the automatic acquisition, storage, manipulation, management, control, display, switching, interchange, transmission, or reception of data or information, including communications" [Ref. 23: p. 759]. IS acquisition planning for tactical systems is the most significant area excluded due to current definitions.

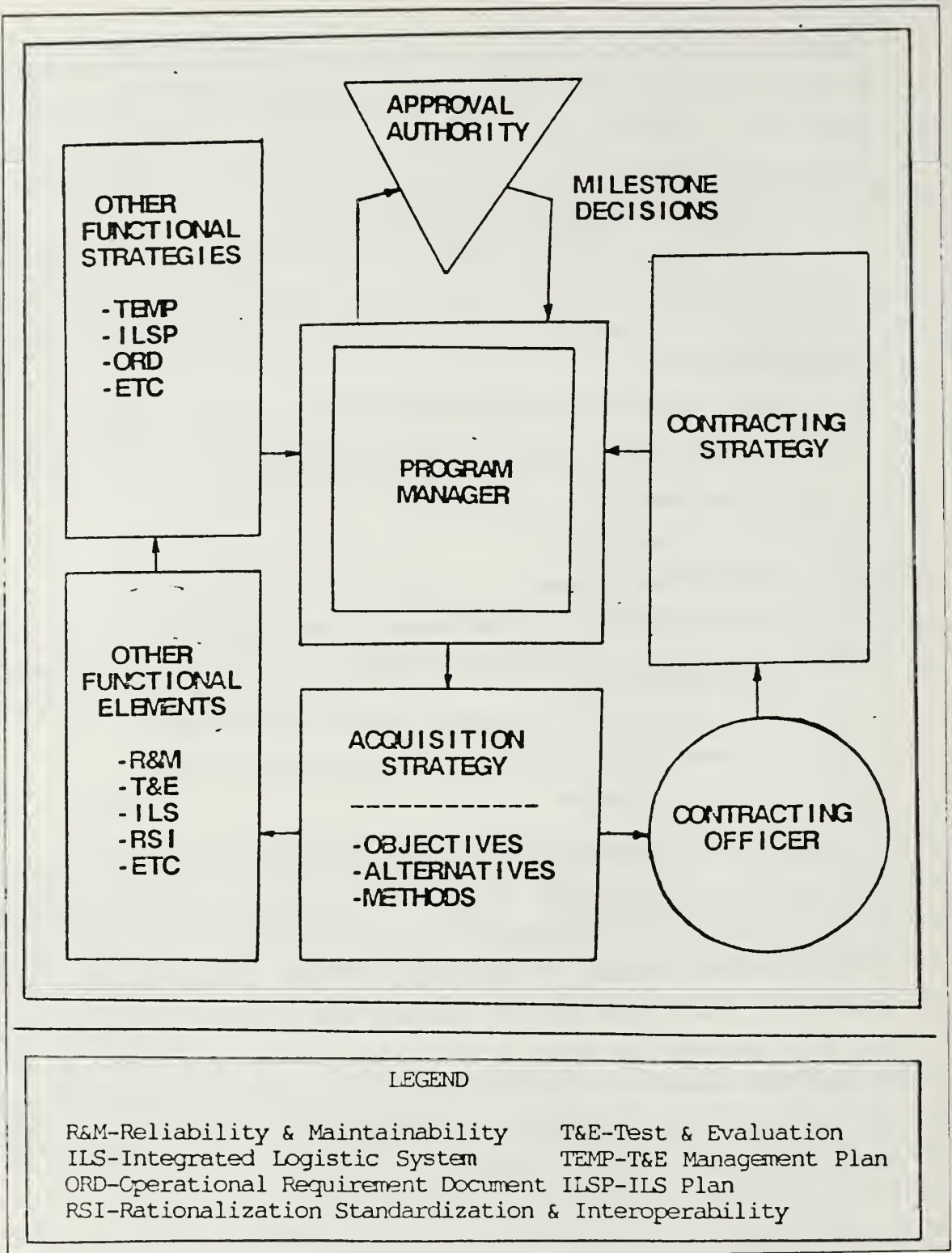
Third, a formal acquisition strategy plan is not required for all IS developments. The question of applicability is not precise, but is basically bounded by the regulatory requirements for an acquisition plan. The FAR and NARSUP require that acquisition plans be prepared for:

- (1) Any development acquisition whose total cost exceeds \$2 million.
- (2) Any production acquisition whose contractual cost exceeds \$15 million for total life cycle of \$5 million for any single fiscal year.

Acquisition plans are not required for:

- (1) Military Construction
- (2) Spare and Repair Parts
- (3) Overhaul, Repair and/or Modification of Naval Ships and Craft
- (4) Component Overhaul Maintenance: Repair at the Depot, Intermediate or Organizational Level
- (5) For Acquisitions Which Represent a Final or One-time Buy
- (6) For General Service Contracts, such as an Omnibus Contract
- (7) Commercial Activities

Finally, the scope of acquisition planning is limited in its distribution. The fact that the contents of acquisition strategy plans is considered privileged information limits the dissemination of these plans. This also implies that acquisition strategy plans should be prepared internally to DOD (SECNAVINST 5570.2B provides amplifying information). This business sensitivity associated with acquisition strategy plans means that DOD personnel are limited in what, when and how they discuss acquisition strategy with contractors. Neither the information contained in an acquisition strategy plan nor copies of an acquisition strategy plan may be provided to contractors (if this information could provide an advantage to a contractor).



LEGEND

R&M-Reliability & Maintainability	T&E-Test & Evaluation
ILS-Integrated Logistic System	TEMP-T&E Management Plan
ORD-Operational Requirement Document	ILSP-ILS Plan
RSI-Rationalization Standardization & Interoperability	

Figure 2.1 Acquisition Planning Process.

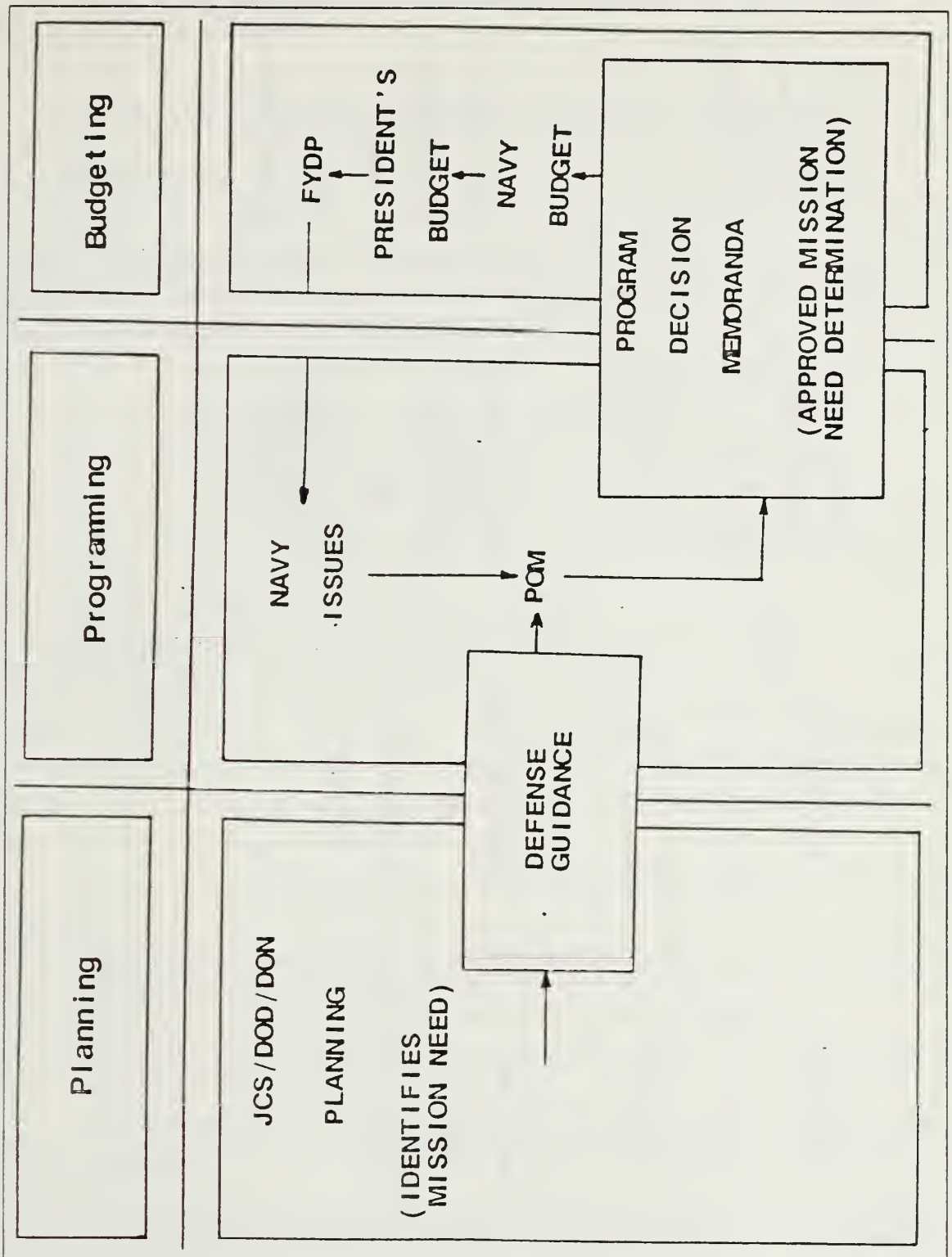


Figure 2.2 Basic PPBS Process.

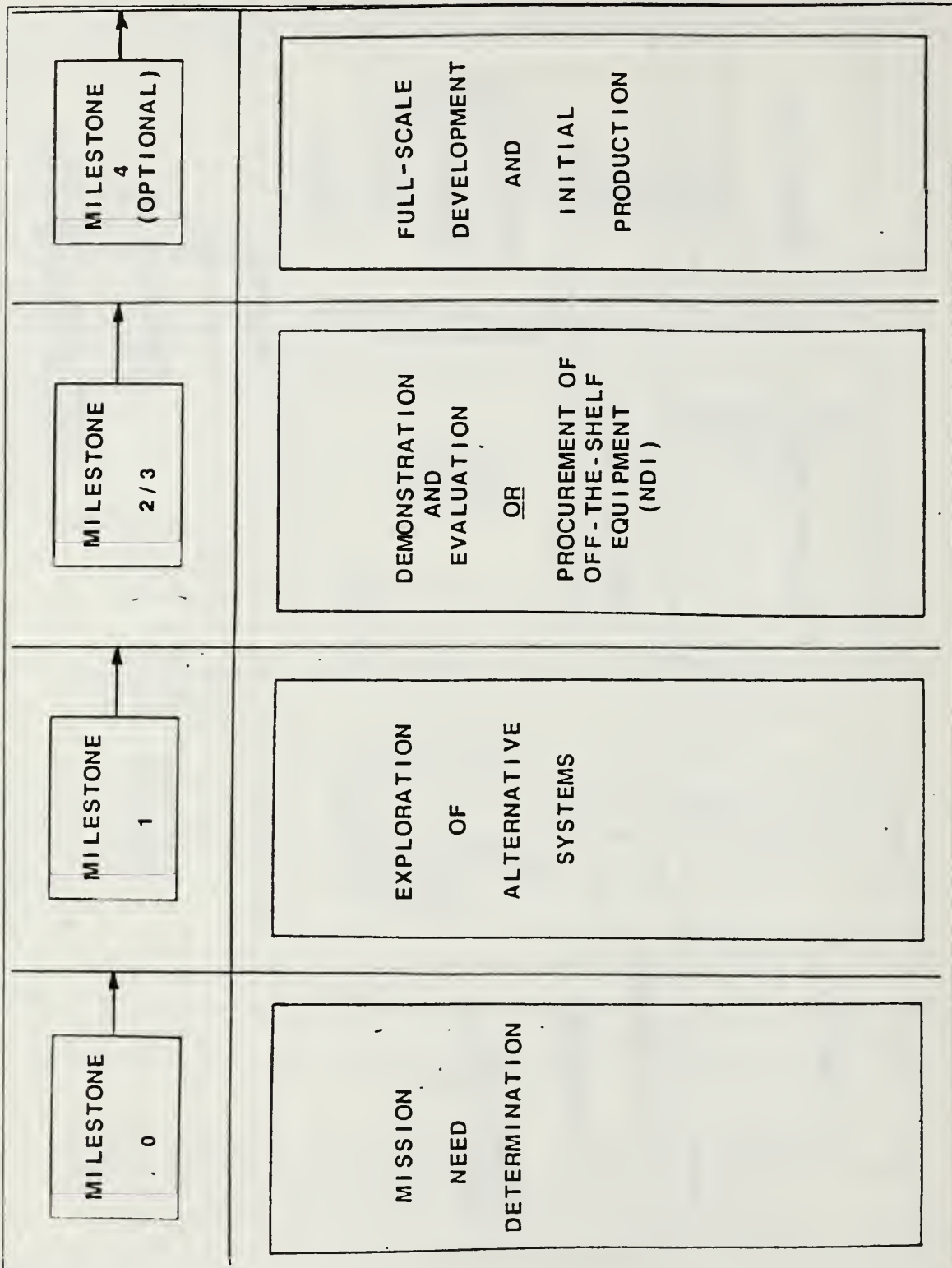


Figure 2.3 Basic ADP System Acquisition Process.

III. OVERVIEW OF MAJOR INFORMATION SYSTEMS

A. DEFINITIONS

In order to analyze major information system acquisitions it is necessary to define what a *major* information system acquisition is. The Office of Management and Budget (OMB) and the General Services Administration (GSA) jointly publish a compilation of Federal executive agency plans for major acquisitions of information technology systems, facilities, and related services. The acquisition plans listed cover computer and telecommunications systems as defined in Section 43 of OMB Circular No. A-11. This compilation is documented annually as a five-year plan [Ref. 24: p. i]. Volume II of this document deals with major information technology systems acquisition plans. Major systems acquisition plans for the Department of Defense are defined in this volume as "acquisitions which have a five year planned cost of more than . . . eight million dollars " [Ref. 24: p. 1].

There are numerous other definitions of a major information system. The Department of Defense defines a major automated information system in DODD 7920.1. DODD 7920.1 identifies an automated information system (AIS) as "a collection of functional user and ADP personnel, procedures and equipment (including ADPE) which is designed, built, operated and maintained to collect, record, process, store, retrieve, and display information [Ref. 18: p. 2].

A *major* AIS, per DODD 7920.1, is an AIS which meets any one of the following:

- (1) Has anticipated costs in excess of \$100 million from Mission Analysis Project Initiation through Deployment.
- (2) Has estimated costs in excess of \$25 million in any single year.
- (3) Is designated as being of special interest by the Office of the Secretary of Defense (OSD) [Ref. 18: p. 3].

Quixotically, the Department of Defense defines major systems separately from major information systems. DODD 5000.1 designates a system as a major system based upon:

- (1) Development risk, urgency of need or other items of interest to the Secretary of Defense.
- (2) Joint acquisition of a system by the Department of Defense and representatives of another nation, or by two or more DOD components.

- (3) Estimated costs in excess of \$200 million (RDT&E) or \$1 billion (procurement).
- (4) Significant congressional interest [Ref. 25: pp. 5-6].

This variance between a major system and a major information system causes additional confusion. The life cycle documentation required for a major system is similar, but not identical to that required for a major AIS.

The Department of the Navy adds to this confusion. The Navy identifies an information system based on a functional classification. Using this classification, all ISs which use computer resources are assigned to a specific Navy directive. The appropriate directive is either SECNAVINST 5000.1B or SECNAVINST 5231.1B, based on:

- (1) ISs designated as major systems by SECDEF using DODD 5000.1 use SECNAVINST 5000.1B regardless of functional classification.
- (2) ISs in functional class 'A', administrative logistic systems and all ISs not classified elsewhere, use SECNAVINST 5231.1B.
- (3) ISs in functional class 'B', cryptologic and non-direct support intelligence and communications systems, use SECNAVINST 5231.1B.
- (4) ISs in functional class 'C', weapons, command and control, direct-support intelligence and communications, operations, surveillance, reconnaissance and electronic warfare, use SECNAVINST 5000.1B.

The PM faced with a multiplicity of references must be familiar with all the references. Indeed, the applicability of references often varies during the life of a system based upon higher authority interests.

B. SYSTEMS AND DESCRIPTIONS

DON major information systems acquisition plans for the period 1986-1991 number one-hundred thirty-one (per OMB and GSA). These plans encompass both tactical and non-tactical systems [Ref. 24: pp 37-61]. This number is somewhat deceptive. A major system acquisition, such as the Uniform Automated Data Processing System - Inventory Control Points (UADPS-ICP), encompasses multiple major system acquisition plans. UADPS-ICP includes four separate major acquisition plans: (1) ICP Resolicitation - Office Automation, (2) Competitive Replacement of Central Computing Facility, (3) Minicomputers to Support DDN Interface and (4) ADPE Time. This example clearly illustrates the fact that the number of major information systems is significantly less than the the number of acquisition plans. Part of the confusion occurs because of terminology differences. For ease of understanding,

equate acquisition strategy plans with the acquisition of a major system, and acquisition plans with the contracting plans for subsystems of that major system.

The total number of administrative logistic major systems listed by OMB and GSA was twenty-one. Acquisition strategy plans for seven of these were obtained in time to be analyzed for this thesis. Appendix B lists the representative major systems considered for this thesis [Ref. 24: pp. 37-61]. Discussions with personnel familiar with the acquisition plans not received revealed similar acquisition strategy plan content.

C. DISCUSSION

Current major information systems encompass a wide variety of acquisition planning considerations. This section is intended to identify those aspects of current major system acquisitions which are judged by their respective PMs as successful. Observations and conclusions are drawn from these comments to identify generic trends and actions which could be incorporated in future major information system acquisitions.

The major system acquisition plans were similar in format. All plans were contract oriented (i.e. over fifty percent of the plans' content dealt with contractual issues). Contracting is a subset of acquisition, but is differentiated herein for purposes of analysis. Contracting deals with the details of preparing the actual contract and the contract itself. The remainder of the acquisition strategy plan deals with strategy issues. Strategy issues are concerned with system objectives and alternatives, such as in-house versus contractor developed software. It is primarily these strategy issues which this thesis addresses.

The acquisition strategy plans for major information systems can be grouped into three categories:

- (1) Hardware-oriented acquisitions.
- (2) Application-oriented acquisitions.
- (3) Combination of hardware-oriented and software-oriented acquisitions.

Hardware-oriented acquisitions are represented by ICP RESPRO, SPAR and SPLICE. Application-oriented system acquisitions include APADE, UADPS-ICP, UADPS-SP and CAIMS. Combinational system acquisitions are best represented by SNAP I and SNAP II.

This categorization particularly highlights the question of competitiveness. The application-oriented system acquisitions are relatively free of the pressures to obtain 'free and open competition'. This is as a result of structure. Applications-oriented systems posit a fixed operating environment and then solicit vendors who can satisfy a requirement. Hardware-oriented systems can not present a fixed environment without vendors challenging competitiveness.

How current major information system acquisitions have dealt with the question of competitiveness is varied. One trend which has gained significant support is the use of 'plug compatibility'. By specifying the need for hardware, system software to be plug compatible with existing hardware the PMs have argued that sufficient competition is available to meet Congressional requirements. This has not been conclusively documented, but the trend to use plug compatibility in acquisition planning is evident. The use of plug compatibility is thus one improvement evidenced in current acquisition planning.

The ICP Resolicitation project (ADPSO Project Number 81-35) introduced a number of improvements to the ADP system acquisition process. The application of weapon system acquisition techniques to the ADP acquisition process has been the most successful of these improvements. The use of a two-phase procurement and a twenty-four year system life with technology updates are the primary features of this approach. A reduced technological life for information systems is viewed as necessary by most PMs.

The use of the 'single vendor responsibility' concept is displayed in the ICP RESPRO acquisition. This feature provides for a system integrator, whereby the chosen vendor is required to provide the complete integrated hardware and system software environment. The chosen vendor also serves as the 'single point of contact' with the government regarding all aspects of the operating environment. This 'single vendor' and system integration have become generally accepted in information system acquisitions.

The specifications for the ICP RESPRO hardware, systems software telecommunications system were defined as an aggregate of the functional requirements from other major system efforts. These functional requirements, expressed in the individual requirements statements (RS), were developed for each module application of the CAIMS and UADPS-ICP systems. Then these separate RSs were combined in order to justify the sizing of the ICP RESPRO effort.

SNAP II is procuring non-developmental item (NDI) hardware and developing the application programs in-house. The hardware contract was awarded under the provisions of Section 8(a) of the Small Business Act. The vendor was designated as the single system integrator. The use of a single system integrator is increasingly being used to ease IS management problems. The use of a single system integrator relieves the government of the major problem of integrating hardware, system software and peripheral equipment from multiple vendors.

The grouping of hardware requirements for multiple major application systems is increasing. The Stock Point ADPE Replacement (SPAR) project uses a similar justification for upgrading the hardware and the system software at the Navy stock points. APADE makes use of hardware system-software being acquired under the Stock Point Logistics Integrated Communication Environment (SPLICE) project.

The Shipboard Non-Tactical ADP Program (SNAP) is a two-part program. SNAP I is replacing the hardware and system software on large ships, Marine Air Groups and selected shore sites. SNAP II is providing the initial non-tactical ADP capability to all other ships and submarines that do not have this capability.

This segregation by ship size was believed to ease competing political pressures. The segregation, by diversifying interests, was able to group similar ships based on similar requirements. Each community (e.g. submarines, destroyers, carriers, etc.) has identified unique requirements. The ability to provide for these requirements within system boundaries is difficult.

One means of dealing with unique requirements has been by incorporating varying configurations within one major system. The SNAP II submarine configuration has incorporated the use of intelligent terminals (microcomputers) as integral to the design configuration. This use of intelligent terminals vice the 'dumb' terminals in surface ships adds flexibility for the applications designers and handles the unique requirements of the submarine community.

SNAP I was awarded competitively with a firm fixed price contract. The use of firm fixed price contracts is increasingly being used in the acquisition strategies for administrative logistic information systems. This has been possible due to two primary factors: (1) the ability to use plug-compatible specifications, and (2) the ability to logically separate design phases in IS development. Integrated Logistic Support (ILS), including site preparation and installation support being provided by a separate vendor in the case of SNAP I is one example. ILS is now considered a mandatory element of any major information system acquisition.

SNAP I is also obtaining the hardware to support the Naval Air Logistics Command Management Information System (NALCOMIS). The issue of coordination between major systems is a vital aspect of current acquisition strategies. This meshing of various major information systems does blur individual system boundaries. Risk for both projects is thus magnified by increasing the mutual dependencies of both. Most PMs favor this due to the reduction of aggregate risk. If any one project is successful it can serve as justification for continued support of other projects, because of inter-dependencies.

The Automation of Procurement and Accounting Data Entry (APADE) system meshes contractor and in-house efforts very successfully. A competitive contract was awarded to prepare the Data Requirements Document (DRD), System/Subsystem Specifications (SS) and Database Specifications (DS) draft documents for the system. This portion of administrative/logistic systems development is normally done in-house. For APADE, these documents were developed given a government-imposed operating environment (hardware and system software).

The Conventional Ammunition Integrated Management System (CAIMS) uses a two-phased process for acquiring applications software. Hardware and system software is being provided under ICP RESPRO. CAIMS illustrates the redesign of an existing system. The Functional Descriptions (FD) and System Subsystem Specifications (SS) are being developed in-house. Contractor support is being used for programming and the remaining life cycle management documentation. This illustrates the general use of contractor support in Navy administrative/logistic system development.

The use of contractors in more of the phases of information systems development is not a uniform trend, but it is a trend. The ability to obtain the correct mix of technical skills quickly and easily using contract line items is almost a necessary requirement.

The Fleet Material Support Office (FMSO) is designated as the Central Design Agency (CDA) for APADE. As a CDA, FMSO is responsible for design, development and implementation of the system. FMSO is designated the Navy CDA on most major administrative/logistic information systems.

The Defense Logistics Agency (DLA) uses a single CDA for all major information system developments. The Navy uses multiple CDAs. The benefits associated with a single CDA or multiple CDAs is beyond the scope of this thesis. The

use of a CDA is, however, a necessary element of a successful major information system.

The use of contractor-provided software maintenance is widely used in major weapon systems. It is generally not used for applications-oriented information system development. APADE incorporates contractor-provided software maintenance for one year after implementation of the APADE system at the last APADE site. Although not an ongoing effort, APADE's use of contractors for software maintenance is a good example of the diversity of contractor support available.

The SPLICE project consolidates the telecommunications hardware at various Navy activities. The use of a centralized distributed processing network using a standard protocol is the primary benefit of SPLICE. The success of SPLICE could provide a model for future integrated system efforts.

The fact that the major information systems reviewed for this thesis were limited in number is a pertinent fact. It is somewhat compensated for by the observations provided by the PMs. These observations encompassed Navy-wide trends and used individual major information systems primarily as examples.

The discussions with the PMs also introduced the question of applicability. The extent to which current major systems apply new acquisition planning trends is often a result of higher authority, as opposed to a PM's innovation. In other words, senior Navy officials pick developing projects and encourage the particular PM to use a specific strategy as a test. This was not able to be substantiated, but fits observed acquisition efforts.

IV. ACQUISITION STRATEGY ANALYSIS

A. INTRODUCTION

Within DOD there is no standard acquisition strategy. "There is no common working definition of 'acquisition strategy', or any consistent agreement on its structure and composition; nor is there comprehensive guidance on how to proceed in developing and executing an acquisition strategy" [Ref. 8: p. 1-1].

Acquisition strategy for major systems is generally embodied in a physical document called the acquisition strategy plan. The acquisition strategy plan may vary in length, but generally is contained in less than twenty pages. It describes the resources required for the system and how those resources will be acquired. The acquisition plan is a roadmap to assist the PM in obtaining the necessary resources for his her program.

Various instructions detail the content of an acquisition strategy plan. Appendices E through I identify the varying contents of acquisition plans. The contents are based on various acquisition planning regulations within the Federal government. As is readily apparent, no single guidance encompasses all the requirements a PM must consider. The fact that a PM must select the appropriate format from among varying options adds to the difficulty of a PM's job. It should be remembered that the selection of the appropriate format is not a question solely of choice. The selection and application of the varying guidance and formats is primarily driven by the program itself. The scope, thresholds and interest a particular program generates is the determinant (as previously discussed).

Difficulty in developing an acquisition strategy is a common problem. The starting point for most PMs is the acquisition strategy plan. PM's generally begin with the mission need determination. This provides the PM with a rough approximation of the system's cost. The PM, in most cases, also knows the how the sponsor's want the acquisition strategy designated. This occurs because the functional sponsor assigns the PM. From this point on, the PM must walk a fine line. Most PMs have succeeded because they were able to handle tradeoffs between sponsor's wants and the systems requirements.

B. BASIC ELEMENTS/ COMPONENTS

The basic elements of an acquisition strategy plan vary. The variations are primarily a matter of specificity (compare appendices E through I). NAVDAC includes the acquisition strategy plan as an annex to the Project Management Plan (PMP) [Ref. 26: p. ii]. Whether as part of a PMP or as part of a SDP, the acquisition strategy plan encapsulates the basic components of acquisition planning. The following outlines the basic content of an acquisition strategy plan at the various stages in the life cycle of an information system:

1. Milestone I Documentation Requirements
 - a. Acquisition Description (limit to four or five sentences)
 - b. Resource Sources (contractor versus in-house)
 - c. Cost Estimate
 - d. Proposed Funding Method
 - e. Estimated Contract Life
 - f. Acquisition POA&M, showing projected completion dates for the following:
 - (1) Specifications
 - (2) Obtaining Delegation of Procurement Authority (DPA)
 - (3) Issuing Requests for Proposals (RFPs)
 - (4) Awarding Contract
 - (5) Installation and Acceptance (ADPE/data communications equipment only)
2. Milestone II Documentation Requirements
 - a. Update acquisition descriptions from Milestone I, considering the following:
 - (1) Updating definition
 - (2) Updating resource sources
 - (3) Is a conversion study required
 - (4) Means for obtaining resources; e.g. turn-key, requirements contracts, GSA schedule, full competition, limited competition, or sole source.
3. Milestone III Documentation Requirements
 - a. Update to show contract award (which should be accomplished at this stage)
 - b. Update to reflect implementation schedule

4. Milestone IV Documentation Requirements

- a. Update installation schedule
- b. Identify planned technology updates
- c. Schedule exercising contract options
- d. Identify contract replacement/renewal date [Ref. 26: pp. 37-39]

Remember, the acquisition strategy plan is a separate document from the acquisition plan. The acquisition plan is a subset of the acquisition strategy plan. The acquisition strategy plan is developed by the Program Manager (PM), whereas the acquisition plan is developed by the Contracting Officer (KO). Every major system has an acquisition strategy plan and generally multiple acquisition plans for the various phases/steps in the acquisition strategy plan.

C. CONCEPTUAL FRAMEWORK

The conceptual framework for the development of an acquisition strategy for major Navy information systems is to view the development process as an iterative process of tailoring. The acquisition strategy plan should provide a matrix for the integration and coordination of the efforts of all personnel engaged in the management of the acquisition. Using the guidance provided by DOD and DON instructions, a PM should develop an acquisition strategy plan with the intent to describe the resources required and how those resources are going to be obtained for the specific system required.

The acquisition strategy plan itself which accomplishes this should:

- (1) describe the acquisition
- (2) identify the source/s of resources
- (3) estimate costs
- (4) define funding methodology
- (5) project estimated system life
- (6) develop a POA&M for the acquisition

In tailoring an acquisition strategy plan to a specific program, the PM is provided with an acquisition team. While the size and composition varies with the monetary size and importance of program, it is the responsibility of the PM to form the team.

The acquisition team should reflect, and if possible integrate the interests and skills of the following:

- 1) a knowledgeable contracting officer
- 2) a functional user representative s (both management and end-user)
- 3) a technician s (systems analysts and developers)
- 4) a business financial manager
- 5) any other parties who have a vested interest in the system

The PM, as the leader of the acquisition team, has significant responsibilities. He she must develop a charter, thereby obtaining authority and defining responsibility. The PM must lay the groundwork and obtain resources from the program sponsors in a matrixed environment, competing with other programs for limited resources. The PM must be the program's principal advocate and at the same time comply with the myriad rules and regulations surrounding him her.

The PM must integrate the many diverse functional requirements and at the same time provide for meeting the regulatory guidance concerning:

- (1) Competition
- (2) Concurrency
- (3) Data Rights
- (4) Design-to-Cost
- (5) Incentives
- (6) Source Selection

The PM is given extensive lists to aid him in developng an acquisition strategy plan. Appendix D illustrates one such list from DODD 5000.2. What none of these lists, regulations or guides provide the PM with is the skills.knowledge experience needed to imbue an acquisition strategy plan with the tenets required for success. The best assistance provided to the PM are lists, requiring that the acquisition strategy reflect such aspects as:

- (1) Realism
- (2) Stability
- (3) Flexibility
- (4) Resource Balance [Ref. 8: p. 3-9]

While these aspects of the development effort are not only needed to satisfy a written requirement, but ultimately determine the success or failure of the PM, they have minimal meaning out of context. The program, the sponsors, Congress, and the other environmental factors generally determine the meaning of realism, stability, etc.

The best the PM can do is measure success or failure based on personal, subjective grounds. To a large extent, this is indeed what happens. Systems are implemented and then those aspects of the acquisition strategy which retrospectively worked are deemed to be successful elements and are perpetuated.

D. PROBLEMS/SUCSESSES

A program's success or failure must be judged based upon some criteria. The most important criteria is the implementation of a system. The criteria which best ensures implementation of a system are:

- (1) Realism
- (2) Stability
- (3) Flexibility
- (4) Resource Balance [Ref. 8: p. 3-9]

The following paragraphs discuss how these criteria can be integrated into an IS acquisition strategy plan.

Realism

Realism is a measure of confidence. It is not easily quantified, but it does have measureable properties. Ranking and statistical tools are used to measure confidence in a plan's likelihood of being implemented. This is critical in order to obtain continued support during the approval process. The use of third-party validation of requirements and estimates is the most accepted means of proving realism. The use of government laboratories and uninvolved contractors for independent confirmation is another useful proof of realism. The acquisition team's composition can be loaded with recognized experts, to add to the plan's reflecting realism. Increasingly, the use of third-party validation is essential to demonstrating realism.

Stability

Stability is the measure of an information system's sensitivity to internal and external flux. An acquisition strategy for ISs must be insulated from this flux to the

maximum extent possible. Without this insulation, the system is too easily overturned. IS programs need to be self-contained. The program should be a total system, including both hardware and software. Dependence on existing resources and or external support increases risk to the program. Stabilization of requirements can be achieved by properly fencing the IS program. Contractual guarantees can be used to ensure life cycle support of contractor-provided critical items. The use of structured analysis and design techniques is appropriate to add to the stability of in-house software development.

Resource Balance

An IS project should be composed of both in-house and contract facets. The ability to augment a project can only occur if the project has inherent growth potential. Since adding in-house personnel is difficult, the involvement of contractor personnel insures the ability to quickly respond to any developing crises. The broadened base of personnel possible by involving both in-house and contractor personnel in all phases is highly beneficial. Those systems which have included the widest diffusion of resources have also proven to be the most successful.

Flexibility

Flexibility is the most important aspect of an acquisition strategy plan. Flexibility is critical to achieving realism, stability and resource balance. Contract flexibility can be achieved by dual-sourcing. The use of pre-planned product improvement is absolutely essential due to the rapidity of technological change. The most successful systems currently being developed use an eight year life cycle. The Defense Logistics Agency (DLA) has improved upon this by using a five year technological life for hardware-only acquisitions. Previous systems used a fifteen year life cycle. The eight year life cycle adds significantly to flexibility. It is more flexible because it more closely matches the technological life of computer hardware development. Contractual provisions which allow for interim technology upgrades are invaluable today. Contracts using these provisions are one of the few means allowing the Navy to stay abreast of technology advances.

The differentiation between tactical and non-tactical evidences the recognition of varying requirements. How well the PM matches requirements with the acquisition strategy plan determines the success of the system. The more differentiation the system allows, the more flexibility the PM can use in his/her acquisition planning.

Another example of flexibility is the use of "specialized acquisition procedures". The use of 'specialized acquisition procedures' exists today. The wider use of these procedures has been endorsed by Senator Sam Nunn [Ref. 19: p. 15]. This procedure allows wider latitude to the PM in documenting and streamlining the acquisition process. The PM is essentially exempted from meeting the requirements of existing regulations. Although primarily used for classified systems, the recognition of these procedure's benefits establishes the rationale for expanding it's use.

The Navy has succeeded in a number of ways. The ICP Resolicitation has succeeded in establishing a precedence for long-term hardware and system software support. The revisions and updates to the various directives which have integrated ADP, OA and telecommunications show the Navy's adaptability. The variance in the acquisition strategy plans themselves reveals the Navy's flexibility.

The senior management in the Department of Defense recognize the importance and the challenges of being a PM [Ref. 22]. This recognition adds support to the ongoing enhancements now occurring in the Navy IS acquisition arena.

V. PROPOSED ACQUISITION STRATEGY

A. INTRODUCTION

Proposed changes to the Navy's acquisition process have been numerous. This thesis was originally intended to propose sweeping changes as well. However, during the research and formulation of this thesis it became increasingly clear that the bureaucratic system (so often criticized) is at the very least a dynamic system. The system is improving, adapting and evolving to mesh with the requirements of today.

The comparison with private industry is not totally valid. The oft-used comparison with private industry must be viewed in it's proper light. The Federal government's information systems " . . . dwarf those of even the largest private sector users" [Ref. 6: p. VIII-14]. This size, coupled with the extreme degree of visibility under which government activities take place, makes comparisons difficult. It doesn't make them impossible.

Some authors have argued that this size and visibility coupled with extant procurement laws and regulations preclude the Navy from emulating private industry [Ref. 7: pp. 8-9]. This argument has minimal merit. The Navy doesn't have to emulate private industry in order to benefit from the experience of private industry. Navy procurement laws and regulations are continually being adapted. These adaptations have generally been to infuse private industry techniques into the Navy. The use of NDI is one clear example of the Navy's using private industry experience. The merging of ADP, OA, WP and telecommunications is another example.

Additionally, the Department Of Defense has made significant improvements in the IS acquisition process Recent DOD efforts to improve the IS acquisition process have included the following:

- (1) Establishment of the Software Engineering Institute (SEI), with the intention to foster software technology transition breakthroughs.
- (2) Issuance of DOD-STD-2167, to provide a standard management framework for defense IS systems (specifically addresses post deployment software support (PDSS) issues and reduces the number of data items required for developing software from 100 to 25).
- (3) Use of ADA as standard high order language for all weapon systems [Ref. 4: p.30].

Not all of these efforts have come to fruition. SEI is not fully established and the use of ADA is only required for new requirements. Existing non-ADA systems are not identified for conversion. Efforts are not sufficient alone, execution must be effective and consistent.

The list of actions to improve the IS acquisition process at the Navy's level is also significant. Recent Navy actions include the following:

- (1) Centralization of acquisition strategy policy formulation under ASN(S&L).
- (2) Acquisition streamlining efforts, such as the emphasis on NDI.
- (3) The consolidation and clarification of directives.
- (4) Recognition of the merging of ADP, OA, WP and Telecommunications.

The President's Task Force on Automated Data Processing/Office Automation found that the Federal government had failed to develop a coherent system for ADP planning and management [Ref. 6: p. VIII-14]. The President's Task Force on the Department of the Navy recommended that the ". . . Navy improve management of ADP assets and functions by consolidating reviews for the ADP-approval cycle, encouraging purchase of general purpose computers, making full use of delegated procurement authority and umbrella contracts, and establishing an office with overall responsibility [Ref. 6: p. VIII-88].

The Navy is addressing these concerns aggressively. The recent revisions of Navy and DOD regulations have streamlined ADP planning and management. The placement of the Contracts and Business Management (CBM) organization (what was ONAS) directly under the Assistant Secretary of the Navy for Shipbuilding and Logistics has increased the visibility and scope of the acquisition planning effort in the Navy. Further, almost all of the Navy regulations on planning and management of ISs has been revised in the last year.

The Task Force on ADP/OA also identified the fact that the average age of government computers is almost twice that of the private sector experience [Ref. 6: p. VIII-15].

The current hardware-oriented major systems will replace over ninety per cent of the mainframes in the Navy administrative/logistic area. Thanks to 'technology upgrades' and other initiatives, the excessive age of Navy computers should not reoccur.

The efforts within DOD to improve the acquisition planning process are paying dividends. Publications such as the Program Manager and the Acquisition Strategy

Guide (although weapon system oriented) provide a wealth of information to assist the PM [Ref. 8]. These basic guidelines lay a solid foundation for the PM, but it is still the PM's responsibility to selectively activate those principles and tenets which will make his her acquisition a success.

The acquisition strategies being used in the Navy today are continually evolving. The challenge facing the Navy is to effectively execute the principles of acquisition strategy development which have been identified. The argument that regulations are too restrictive is merely an excuse. If regulations are too restrictive, then it is the Navy's responsibility to modify the regulations through action.

B. PROPOSED ACQUISITION STRATEGY

The proposed acquisition strategy which provides the best means of combating the problems the Navy faces is not a new strategy at all. Rather, the proposed acquisition strategy is one which changes the emphasis within the DON. The emphasis must be changed to one of clarifying and refining the the regulations and guidance already extant. In other words the emphasis must be placed on execution.

Specifically, initiatives in the following areas will provide the emphasis needed to improve the Navy's IS acquisition planning:

- (1) Simplification of acquisition planning requirements.
- (2) Continued expansion of the use of NDI.
- (3) Expanded use of automation
- (4) Easing of overly restrictive contracting regulations.
- (5) Expanding the use of contractor support.

The following paragraphs will discuss each of these initiatives individually. One common theme throughout the initiatives is flexibility. Flexibility must be inherent in IS acquisition strategy development.

Simplification

The acquisition strategy plan itself needs to be simplified. Of all the services, the Navy requirements for the content of acquisition strategy plans is by far the longest and most complex. The Army's AR 70-1 requires seven elements be addressed in an Army acquisition strategy plan. The Air Force's AFR 800-2,3 requires thirteen elements be addressed in an Air Force acquisition strategy plan [Ref. 8: pp. 1-4 - 1-5].

Compare this with the twenty-three elements required by ONASINST 5200.29 (Appendix E), or the thirty-one major elements required by NARSUP (Appendix I). Admittedly, simply comparing line-items does not demonstrate that the Navy acquisition strategy development process is more complex. However, the combination of the number of line-items and the subjective comments from Navy PMs does indicate less flexibility than is available to the PMs in the other military services.

The required content of an acquisition strategy plan should be as minimal as possible. Each individual information system acquisition should be individually tailored to it's own unique requirements. The use of extensive guides should be at the discretion of the responsible PM. The Navy should properly place the responsibility and the commensurate authority on the PM's shoulders and allow him/her to function. Most PM's do not require, nor do they desire having their hands held.

The most critical aspect of an acquisition strategy plan should be some type of milestone chart. A milestone chart introduces discipline into the process in a graphic and concise form. It forces consideration of all factors involved in the acquisition and also provides a visual portrayal of the decisions needed to achieve the program's objectives.

The specific format of the milestone chart should be as unrestricted as possible. Regimentation and uniformity have their place, but the acquisition strategy development process places a higher premium on flexibility and adaptation. Milestone charts currently only identify large phases. The expansion and decomposition of the milestone chart should be linked to the system's development. Currently this link is not required. But, this link must be accompanied by an attitude of understanding. If higher authority uses the milestone chart as the sole means of judging a PM's success, no improvement to the acquisition process is possible. Not meeting a deadline must not be viewed as failure.

NDI

"The procurement of NDI has been proposed for many years as a way to reduce program costs, shorten the time required to field operational equipment and reduce program risk" [Ref. 27: p. 1]. The use of NDI can significantly shorten the acquisition time and increase the scope of competition available in an acquisition. Whereas in previous years the use of NDI was rarely used, most of the current systems reviewed in this thesis incorporate NDI in the hardware portion of the acquisitions.

Indeed, the SECNAV policy is now to “. . . institutionalize NDI considerations during the acquisition process to such an extent that it’s use becomes the rule rather than the exception” [Ref. 27: p. 1]. This policy should be expanded to encompass more than hardware. The use of NDI in the area of application software is ripe for expansion.

Automation

The use of automation in the acquisition process needs to be emphasized. Current efforts to provide the PM with a decision support system (DSS) should be expanded. The Program Manager’s Support System (PMSS) is one DSS under development [Ref. 28: p. 47]. It is intended to assist PMs in their decision-making process. This Defense-level effort should be mirrored within the Navy and assigned to a specific Navy office for further development and tailoring.

Contracting

Improvements in the area of contracting are sorely needed. Estimates for obtaining a system are still measured in years. The requirements to maintain competitiveness and allow for review and oversight are still valid. The Navy must innovate.

Specific improvements should center on reducing the approval process. The use of a long (twenty-plus years) contract life combined with frequent (five year or less) ‘technology updates’ is an effective approach. Most importantly the DOD and Congress must recognize a technological life of no more than five years for IS hardware and system software. IS technology is changing too fast to place a bias towards purchase and long-term capital depreciation.

There are other innovative ideas prevalent. Ideas to shorten the announcement process in the Commerce Business Daily by proposing an on-line system is one idea [Ref. 29: pp. 40-44]. The base for this and other acquisition improvements was laid in 1981, and are commonly referred to as the Carlucci initiatives [Ref. 30: pp. 54-75]. While a great number of Mr. Carlucci’s initiatives have been implemented fully, others still remain. It is the responsibility of all Navy acquisition personnel to further this base.

Contractor Support

The increased use of contractor support throughout the spectrum of stages in the development of information systems should be explored. Past uses of contractor support have centered on the later stages of software analysis and design (i.e. programming and implementation). The whole spectrum of the analysis and design effort should be used. APADE is a good example of how contractor support can be used in the early stages of analysis and design, specifically the development of requirement specifications.

The reason for increased contractor support is flexibility and innovation. By using contractor support in a variety of areas the Navy improves it's ability to identify and incorporate technological advances. The Navy also gains the ability to obtain highly specialized personnel expertise on an ad hoc basis. This selective infusion of experience is often crucial to a successful program.

In conclusion, the Navy's IS acquisition process is improving and will continue to improve as long as the system is allowed to function. The "unduly close supervision and scrutiny by higher levels of authority . . . characterized by the term 'micromanagement' . . ." [Ref. 7: p. 21] is unnecessary. The need for strong central oversight is not the issue, rather the issue is one of degree. The Navy must have the room to put it's own house in order.

VI. CONCLUSION

The Navy is faced with an ever increasing demand for the expansion of its information systems. This demand is increasing at the same time that personnel resources are dwindling. The Navy can not allow regulations and policies to inhibit IS growth.

The acquisition planning used by the Navy to develop and maintain effective and efficient information systems is critical. An acquisition process which requires three years to obtain hardware can not continue. While the Navy and DOD have evidenced the ability to adapt the acquisition process to these increasing demands, the adaptation must be dynamic. In order to remain dynamic the acquisition process must provide flexibility, stability, resource balance and realism. Only in this way can the Navy hope to field systems responsive to future needs.

APPENDIX A

LIST OF ACRONYMS AND ABBREVIATIONS

- ACAT Acquisition Category
- ADP Automated Data Processing
- ADPE Automated Data Processing Equipment
- AIP Acquisition Improvement Program
- AIS Automated Information System
- APADE Automation of Procurement and Accounting Data Entry
- ARB Acquisition Review Board
- ARC Acquisition Review Committee
- ASDP Abbreviated System Decision Paper
- ASN(S&L) Assistant Secretary of the Navy for Shipbuilding and Logistics
- CAIMS Conventional Ammunition Integrated Management System
- CDA Central Design Agency
- CMC Commandant of the Marine Corps
- CNO Chief of Naval Operations
- DAB Defense Acquisition Board
- DAE Defense Acquisition Executive
- DAIP DOD Acquisition Improvement Program
- DAR Defense Acquisition Regulations
- DCP Decision Coordinating Paper
- DG Defense Guidance
- DLA Defense Logistics Agency
- DOD Department of Defense
- DODD Department of Defense Directive
- DODI Department of Defense Instruction
- DON Department of the Navy
- DPA Delegation of Procurement Authority
- DRB Defense Resources Board
- FAR Federal Acquisition Regulations
- FD Functional Description
- FIPS Federal Information Processing Standards

- FMSO Fleet Material Support Office
- FYDP Five Year Defense Program
- GAO General Accounting Office
- GSA General Services Administration
- GSBCA GSA Board of Contract Appeals
- HAC House Appropriation Committee
- HBC House Budget Committee
- ICP Inventory Control Point Resolicitation Project
- ILS Integrated Logistics Support
- IOC Initial Operational Capability
- IS Information System
- JCS Joint Chiefs of Staff
- JMSNS Justification for Major System New Start
- KO Contracting Officer
- MENS Mission Element Needs Statement
- NAE Navy Acquisition Executive
- NARSUP Navy Acquisition Regulation Supplement
- NDCP Navy Decision Coordinating Paper
- NDI Non-Developmental Item
- NSARC Navy System Acquisition Review Council
- OA Office Automation
- OMB Office of Management and Budget
- OPNAV Office of the Chief of Naval Operations
- OSD Office of the Secretary of Defense
- PDM Program Decision Memorandum
- PM Program Manager
- PMP Program Management Plan
- POA&M Plan of Actions and Milestones
- POM Program Objective Memorandum
- PPBS Planning, Programming, and Budgeting System
- RFP Request for Proposal
- SCP System Concept Paper
- SECDEF Secretary of Defense
- SECNAV Secretary of the Navy
- SEI Software Engineering Institute

- SNAP Shipboard Non-Tactical ADP Program
- SPAR Stock Points ADP Replacement
- SPLICE Stock Point Logistics Integrated Communication Environment
- SS System/Subsystem Specifications
- SPR Sponsor's Program Review
- SYSCOM Systems Command
- WP Word Processing

APPENDIX B

REPRESENTATIVE MAJOR NAVY INFORMATION SYSTEMS

- Integrated Disbursing and Accounting Financial Information Processing System (IDAFIPS)
- Personnel and Pay Systems Consolidated Computer Center (PERSPAY)
- Uniform Automated Data Processing System - Inventory Control Points (UADPS-ICP)
- Uniform Automated Data Processing System - Stock Points (UADPS-SP)
- Stock Point Logistics Integrated Communications Environment (SPLICE)
- Pay Personnel Administrative Support System Source Data System (PASS SDS)
- Naval Air Rework Facilities Workload Control System (NAVAIRREWORKSFAC WCS)
- Naval Aviation Logistics Command MIS (NALCOMIS)
- Shipboard Non-Tactical Automated Data Processing Program (SNAP-I)
- Shipboard Non-Tactical Automated Data Processing Program (SNAP-II)
- Department of the Navy Office Automation and Communications System (DONOACS)
- Standard Automated Financial System (STAFS)
- GAO Review and Approval of Accounting Systems Project (GRASP)
- Navy Civilian Payroll System Project (NAVCIIPS)
- Conventional Ammunition Integrated Management System (CAIMS)
- Logistics Application of Automated Marking and Reading Symbols (LOGMARS)
- Inventory Control Point Resolicitation Project (ICP RESPRO)
- Stock Point ADP Replacement (SPAR)
- Printing Resources Management Information System (PRIMIS-II)
- Naval Aviation Logistic Data Analysis (NALDA) System
- Automation of Procurement and Accounting Data Entry (APADE)

APPENDIX C

MAJOR IS ACQUISITION REFERENCES

FEDERAL

- Public Law 89-306 (Brooks Bill), 30 October 1965
- Public Law 98-191, "Federal Procurement Policy Act Amendments of 1983", 1 December 1983
- Public Law 96-511, "Paperwork Reduction Act of 1980", 11 December 1980
- Title 10 U.S.C. 2315 (Warner Amendment), 1 December 1981
- OMB Circular A-109, "Major System Acquisitions", 5 April 1976
- OMB Circular A-76, "Commercial Activities Program"
- Federal Acquisition Regulations (FAR), Part 7, 1 April 1986
- Federal Property Management Regulations (FPMR) 101-35.210, "Management, Acquisition, and Utilization of ADP Resources; Evaluation of Acquisition Alternatives",
- Various FIPS Standards and Guides

DOD

- DOD FAR Supplement, Part 7, 10 January 1985
- DODD 5000.1, "Major System Acquisitions", 12 March 1986
- DODD 5000.2, "Major System Acquisition Procedures", 12 March 1986
- DODD 5000.43, "Acquisition Streamlining", 15 January 1986
- DODD 7920.1, "Life Cycle Management of Automated Information Systems", 17 October 1978
- DODD 7920.2, "Major Automated Information System Approval Process", 20 October 1978

NAVY

- Navy Acquisition Regulation Supplement (NARSUP), Part 7, January 1986
- SECNAVINST 4210, "Acquisition Policy", 20 November 1985
- SECNAVINST 4210.7, "Effective Acquisition of Navy Material", 16 June 1986
- SECNAVINST 5000.1B, "System Acquisition", 8 April 1983
- SECNAVINST 5000.33, "Project Management Proposal Process", 6 September 1985

- SECNAVINST 5230.8, "Information Processing Standards for Computer Programs", 10 May 1982
- SECNAVINST 5230.9A, "Information Resources (IR) Program Planning", 16 October 1985
- SECNAVINST 5231.1B, "Life Cycle Management Policy and Approval Requirements for Information System Projects", 8 March 1985
- SECNAVINST 5236.1B, "Contracting for Automatic Data Processing", 10 May 1982
- SECNAVINST 5236.2A, "Automatic Data Processing Services Contracts", 7 July 1980
- OPNAVINST 5000.42C, "Research Development and Acquisition Procedures", 10 May 1986
- NAVMATINST (ONASINST) 5000.29A, "Acquisition Strategy Paper", 6 May 1983
- NAVDAC Advisory Bulletin No. 70, "Word Processing (WP), Office Automation (OA) and Life Cycle Management", 25 April 1985
- ADPSOINST 4235, "Contracting for Automatic Data Processing Equipment", 21 June 1982
- NAVDAC PUB 24.1.24.2, "Life Cycle Management: Navy Data Automation Management Practices and Procedures", 9 March 1983

APPENDIX D

ACQUISITION MANAGEMENT AND SYSTEM DESIGN PRINCIPLES

1. Mission Analysis
2. Operational Requirements
3. Long-Range Planning and Program Stability
4. Affordability
5. Timeliness
6. Acquisition Strategy
7. Participating Activities
8. Industrial Resource Analysis
9. Facility Construction
10. Cost Estimates
11. Goals, Thresholds, and Threshold Ranges, as appropriate
12. International Defense Cooperation
13. Economical Production Rates
14. Test and Evaluation
15. Independant Cost Analysis
16. Competition
17. Specification and Standards
18. Standardization and Interoperability
19. Preplanned Product Improvement
20. Quality
21. System Readiness, Support and Personnel
22. Reliability and Maintainability
23. Deployment Requirements
24. System Safety
25. Physical Security
26. Nuclear and Chemical Hardness, Survivability and Endurance
27. Producibility and Production Planning
28. Contractor's Production Capability and Contractor Productivity
29. Computer Resources
30. Data Management

31. Metric Units of Measurement
32. Electromagnetic Spectrum and Other Spectrum Allocation
33. Energy Efficiency
34. Environmental Impact
35. Post Production Support
36. Administrative and Business Applications for Automated Information Systems
37. Cost Visibility and Control
38. Industrial Modernization Improvement
39. Evolutionary Development and Acquisition of Command and Control System

APPENDIX E
ONASINST 5000.29 ACQUISITION STRATEGY

1. Needs, Constraints, Thresholds, and Program Structure
 - a. Statement of Need
 - b. Program Constraints and/or Thresholds
 - c. Resources and Funding
 - d. Program Structure
2. Risk Analysis
3. Strategy to Achieve Objectives and Implementation
 - a. Objectives and Goals for the Acquisition Effort
 - b. Considerations and Rationale for Program Schedule
 - c. Planning and Control of Critical Program Activities
 - d. Acquisition Alternatives
 - e. The Plan for Selecting among Alternatives and the Timing of Key Selection Decisions
 - f. The Interdependence of the Acquisition Effort with Other Programs
 - g. Risk Management Plan
 - h. The Approach for Design, Hardware Data Development, and Preplanned Product Improvement
 - i. Plans for Achieving Reliability in Design and Manufacturing
 - j. Standardization Considerations
 - k. Design-to-Cost and Affordability Considerations
 - l. Integrated Logistics Support Approach
 - m. Use of Organizational Assets
 - n. Mobilization Capability
 - o. A Financial Strategy
 - p. Plans for and Funding Required to Acquire Adequate Subsystems and System Test Hardware
 - q. The Business Management Approach
 - r. An Audit Trail of Key Acquisition Decisions

APPENDIX F
DAR PROCUREMENT STRATEGY

1. Description of the Program, Item or System
2. Program Funding (R&D and Production), including a Summary of Monies in the FYDP Budget Submissions
3. Delivery Requirements, Both R&D and Production Contracts
4. Applicability of a Decision Coordinating Paper, Program Memorandum, Defense System Acquisition Review Council, or Internal Service Review
5. Background and Procurement History
6. Discussion of Program Risk, Including Technical, Cost, and Schedule Risk
7. Integrated Logistics Support Planning Concept
8. Application of Design-to-Cost
9. Application of Life Cycle Cost
10. Reliability and Maintainability Objective, including Warranties
11. Test and Evaluation Approach
12. Management Information Program Control Requirements
13. Approval for Operational Use
14. Government-Furnished Material Facilities Component Breakout
15. Application of Should Cost
16. Milestone Chart Attachment Depicting the Objectives of the Acquisition
17. Milestones for Updating the Procurement Plan
18. Identification of Participants in the Procurement Plan Preparation
19. Procurement Approach for Each Proposed Contract

APPENDIX G
FAR ACQUISITION STRATEGY PLAN

1. Acquisition Background and Objectives
 - a. Statement of Need
 - b. Applicable Conditions
 - (1) Requirements for Compatability with Existing or Future Systems or Programs
 - (2) Any Kown Cost, Schedule, Capability, or Performance Constraints
 - c. Cost
 - (1) Life-Cycle Cost
 - (2) Design-to-Cost
 - (3) Application of Should Cost
 - d. Capability or Performance
 - e. Delivery or Performance-Period Requirements
 - f. Trade-offs
 - g. Risks
2. Plan of Action
 - a. Sources
 - b. Competition
 - c. Source-Selection Procedures
 - d. Contracting Considerations
 - e. Authority for Contracting by Negotiation
 - f. Budgeting and Funding
 - g. Product Descriptions
 - h. Priorities, Allocations, and Allotments
 - i. Contractor Versus Government Performance
 - j. Management Information Requirements
 - k. Make or Buy
 - l. Test and Evaluation
 - m. Logistics Considerations
 - (1) Assumptions Determining Contractor or Agency Support
 - (2) Reliability, Maintainability, and Quality Assurance Requirements, Including any Planned Uses of Warranties

(3) Requirements for Contractor Data (Including Purchase Data) and Data Rights, Their Estimated Costs, and the Use to be Made of the Data

- n. Government-Furnished Property
- o. Government-Furnished Information
- p. Environmental Considerations
- q. Security Considerations
- r. Other Considerations
- s. Milestones for the Acquisition Cycle
- t. Identification of Participants in Acquisition Plan Preparation

APPENDIX H
A-109 ACQUISITION STRATEGY

1. Contracting Process
2. Scheduling of Essential Elements
3. Demonstration Test and Evaluation Criteria
4. Content of Solicitations for Proposals
5. Decisions on Whom to Solicit
6. Methods for Obtaining and Sustaining Competitors
7. Guidelines for Evaluation and Acceptance or Rejection of Proposals
8. Goals for Design-to-Cost
9. Methods for Projecting Life Cycle Costs
10. Use of Data Rights
11. Use of Warranties
12. Methods for Analyzing and Evaluating Contractor and Government Risks
13. Need for Developing Contractor Incentives
14. Selection of the Type of Contract Best Suited for Each Stage in the Acquisition Process
15. Administration of Contracts

APPENDIX I
NARSUP ACQUISITION STRATEGY PLAN

- A. Acquisition Background and Objectives
 - 1. Statement of Need
 - 2. Applicable Conditions
 - (a) Requirements for Compatibility with Existing or Future Systems or Programs
 - (b) Any Known Cost, Schedule, Capability, or Performance Constraints
 - 3. Cost
 - (a) Life-Cycle Cost
 - (b) Design-to-Cost
 - (c) Application of Should Cost
 - 4. Capability or Performance
 - 5. Delivery or Performance-Period Requirements
 - 6. Trade-offs
 - 7. Risks
 - 8. Applicability of a DCP, Program Memorandum, DSARC, and/or Internal Service Review
 - 9. Approval for Operational Use
 - 10. Milestone Chart Depicting the Objectives of the Acquisition
 - 11. Milestones for Updating the Acquisition Plan
- B. Plan of Action
 - 1. Sources
 - 2. Competition
 - 3. Source-Selection Procedures
 - 4. Contracting Considerations Contracting Type
 - 5. Budgeting and Funding
 - 6. Product Descriptions
 - 7. Priorities, Allocations, and Allotments
 - 8. Contractor Versus Government Performance
 - 9. Management Information Requirements
 - 10. Make or Buy
 - 11. Test and Evaluation

12. Logistics Considerations
 - (a) Assumptions Determining Contractor or Agency Support
 - (b) Reliability, Maintainability, and Quality Assurance Requirements, Including any Planned Uses of Warranties
 - (c) Requirements for Contractor Data (Including Purchase Data) and Data Rights, Their Estimated Costs, and the Use to be Made of the Data
 - (d) Standardization Concepts
13. Government-Furnished Property
14. Government-Furnished Information
15. Environmental Considerations
16. Security Considerations
17. Other Considerations
18. Milestones for the Acquisition Cycle
19. Identification of Participants in Acquisition Plan Preparation
20. Acquisition Approach for Each Proposed Contract
 - (a) Item Description
 - (b) Estimated Cost
 - (c) Sources Proposed Sources and Basis for Selection
 - (d) Source Selection Procedures
 - (e) Contracting Considerations/Contract Type
 - (f) Competition
 - (g) Repurchase Data
 - (h) Incentives
 - (i) Alternative Acquisition Approaches Considered
 - (j) Milestones for the Acquisition/Contract Cycle
 - (k) Other Considerations
 - (l) Contract Award Requirement
 - (m) RDT&E Information

LIST OF REFERENCES

1. Office of Management and Budget Bulletin No. 79-6, "Data on Acquisition, Operation, or Use of Automatic Data Processing and Telecommunications Systems", 9 January 1979.
2. Office of Management and Budget and General Services Administration, *A Five Year Plan for Meeting the Automatic Data Processing and Telecommunications Needs Of the Federal Government*, Vol. 1, GPO, Washington, DC, June 1985.
3. Arthur Clark Argue III, *Acquisition of Automatic Data Processing in the Navy*, Naval Postgraduate School Thesis, Monterey, Ca., March 1979.
4. Monroe T. Smith, "Project Bold Stroke: A Plan To Cap A Software Crisis", *Government Executive*, Vol. 19, No. 1, January 1987.
5. James Cash, Jr., F. Mcfarlan, J. McKenney, *Corporate Information Systems Management*, Irwin, Homewood, Ill., 1983.
6. J. Peter Grace, Chairman, *President's Private Sector Survey on Cost Control - A Report to the President*, GPO, Washington, DC, 15 January 1985.
7. Robert Head, *Federal Information Systems Management: Issues and New Directions*, Brookings Institute, Washington, DC, 1982.
8. Defense Systems Management College, *Acquisition Strategy Guide. First Edition*, First Edition, ARINC Research Corporation, Annapolis, MD., July 1984.
9. U.S. General Accounting Office AFMD-81-9, *Continued Use of Costly Outmoded Computers in Federal Agencies Can Be Avoided*, GAO, Washington, DC, 15 December 1980.
10. U.S. General Accounting Office AFMD-85-35-A, *Managing the Cost of Government: Building an Effective Financial Management Structure*, Vol. II, GAO, Washington, DC, February 1985.
11. Office of Management and Budget and General Services Administration, *A Five Year Plan for Meeting the Automatic Data Processing and Telecommunications Needs of the Federal Government*, GPO, Washington DC, May 1986.
12. ADP Selection Office Instruction 4235, "Contracting for Automatic Data Processing Equipment", 21 June 1982.
13. President's Reorganization Project, *Federal Data Processing Reorganization Study*, Summary Report, April 1979.
14. Secretary of the Navy Instruction 5231.1B, "Life Cycle Management (LCM) Policy and Approval Requirements for Information System (IS) Projects", 8 March 1985.

15. Secretary of the Navy Instruction 5236.1B, "Contracting for Automatic Data Processing (ADP) Resources", 15 October 1980.
16. Robert F. Williams and Duane D. Kittle, "A Contingency Approach to Acquisition Planning", *Concepts*, Vol. 4, No. 3, Summer 1981.
17. Chief of Naval Operations Memorandum 098, "Acquisition Strategy Paragraphs in Program Documents", Ser. 5U355870, 18 November 1986.
18. Department of Defense Directive 7920.1, "Life Cycle Management of Automated Information Systems", 17 October 1978.
19. Gene Bartlow, "Air Force Acquisition Management: Is There a Better Way?", *Program Manager*, Vol. XV, No. 2, March-April 1986.
20. U.S. Congress, House, "An Act to Provide for the Economic and Efficient Purchase, Lease, Maintenance, Operation, and Utilization of Automatic Data Processing Equipment by Federal Departments and Agencies", Public Law 89-306, H.R. 4845, 30 October 1965.
21. Alan Beck, "Reviewing Your Contract", *Program Manager*, Vol. XV, No. 2, March-April 1986.
22. Charles P. Cabell, Jr., "It Depends", *Program Manager*, Vol. XV, No. 5, September-October 1986.
23. Staff, "Amendments to the Brooks Act, Redefining ADPE and the GSBCA's jurisdiction, as approved by Congress in the Continuing Appropriation (HJRES 738), with Conferee's Explanation", *Federal Contracts Report*, Vol. 46, No. 16, 27 October 1986.
24. Office of Management and Budget and General Services Administration, *A Five Year Plan for Meeting the Automatic Data Processing and Telecommunications Needs of the Federal Government*, Vol. II, May 1986.
25. Department of Defense Directive 5000.1, "Major System Acquisitions", 12 March 1986.
26. Naval Data Automation Command Publication 24.1, *Navy Data Automation Management Practices and Procedures*, 9 March 1983.
27. Secretary of the Navy Instruction 4210.7, "Effective Acquisition of Navy Material", 16 June 1986.
28. Staff, "Initial PMSS Functional Modules Available Soon", *Program Manager*, Vol. XVI, No. 1, January-February 1987.
29. Troy Caver, "Would a Computer Data Base Help This Contractor Meet FAR Needs", *Program Manager*, Vol. XIV, No. 3, May-June 1985.
30. G. Dana Brabson, "Department of Defense Acquisition Improvement Program", *Concepts*, Vol. 4, No. 4, Autumn 1981.

INITIAL DISTRIBUTION LIST

	No. Copies
1. Defense Technical Information Center Cameron Station Alexandria, Virginia 22304-6145	2
2. Library, Code 0142 Naval Postgraduate School Monterey, California 93943-5002	2
3. Mr. Norman F. Schneidewind, Code 54Ss Naval Postgraduate School Monterey, California 93943	1
4. LCDR Raymond W. Smith, Code 54Sx Naval Postgraduate School Monterey, California 93943	1
5. LCDR John O. Haima Fleet Material Support Office Mechanicsburg, Pennsylvania 17055	1

17898 2

pc

Thesis
H1185
c.1

Haima
An analysis of acquisition strategy planning for major Navy information systems.

14 NOV 90
31 JAN 91

35805
38947

Thesis
H1185
c.1

Haima
An analysis of acquisition strategy planning for major Navy information systems.

thesH1185

An analysis of acquisition strategy plan



3 2768 000 72023 9

DUDLEY KNOX LIBRARY