NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

EVALUATION OF NAVAL AVIATION ENTERPRISE AIRSPEED'S GENERATION OF MEASURABLE COST SAVINGS AND REINVESTMENT FOR RECAPITALIZATION OF THE FUTURE NAVY AND MARINE CORPS

by

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June 2007

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REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE June 2007	3. REPORT TYPE AND DATES COVERED Master's Thesis

4. TITLE AND SUBTITLE: Evaluation of Naval Aviation Enterprise Airspeed's Generation of Measurable Cost Savings and Reinvestment for Recapitalization of the Future Navy and Marine Corps	5. FUNDING NUMBERS
6. AUTHOR(S) **Robert J. Williams**	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A	10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.	12b. DISTRIBUTION CODE A

13. ABSTRACT (maximum 200 words)

Naval Aviation, faced with budgetary pressures, decreasing buying power and increasing costs of aircraft and equipment, realized it had to change the way it did business in order to recapitalize. The Naval Aviation Enterprise (NAE) was formed to implement the aviation components of Sea Power 21 and Sea Enterprise, including modernization and recapitalization. Through the implementation of AIRSpeed, the NAE strives to provide "the right amount of readiness at the right cost, so that money can be saved and returned to the Navy and Marine Corps to recapitalize the Fleet."

This thesis examines the NAE's effort to generate measurable cost savings toward recapitalization. The background and implementation of AIRSpeed are reviewed. It identifies cost savings attributed to AIRSpeed initiatives and investigates the relationship between costs savings and reinvestment and recapitalization.

The results of this thesis reveal that the NAE is achieving measurable cost savings, but the cost saving has not been made available for recapitalization. The thesis reveals some identifiable organizational challenges and change issues that inhibit the achievement of NAE's goals. These findings are used to develop and present a series of recommendations to assist the leadership to further align AIRSpeed programs with the recapitalization vision.

14. SUBJECT TERMS Naval Aviation Enterprise, AIRSpeed, cost savings, recapitalization, Continuous Process Improvement, benefits, Flying Hour Program, wedge, NAE, NAVRIIP, ADMS.	15. NUMBER OF PAGES 117
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

from the

NAVAL POSTGRADUATE SCHOOL
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ABSTRACT

Naval Aviation, faced with budgetary pressures, decreasing buying power and increasing costs of aircraft and equipment, realized it had to change the way it did business in order to recapitalize. The Naval Aviation Enterprise (NAE) was formed to implement the aviation components of Sea Power 21 and Sea Enterprise, including modernization and recapitalization. Through the implementation of AIRSpeed, the NAE strives to provide "the right amount of readiness at the right cost, so that money can be saved and returned to the Navy and Marine Corps to recapitalize the Fleet."

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ACKNOWLEDGMENTS

I would like to express my gratitude to Professor Doug Brook and Professor Don Summers, my thesis advisors. Their patience and guidance contributed significantly in making this thesis a rewarding experience.

I would like to express my appreciation to Captain Bob Novak, at Naval Air Systems Command, Patuxent River, for his commitment and personal interest in my academic and professional achievement. His dedication and individual contributions to this research were beyond my greatest expectations. Without his assistance this project would not have been possible.

I would like to acknowledge the members of the N43, CNAF, and NAVAIR staffs for providing guidance and dedicating their time to assist in my pursuit of data and information. Their insights and contributions were invaluable.

Most importantly, I would like to thank my family. My wife, Tanya, stood by me and was an unwavering source of support. Her confidence in me provided endless encouragement and kept me focused when I needed it most. My daughters, Makenzie and Makayla, always kept me grounded and reminded me of what is truly important, the love and support of a family. My family sacrificed much as I pursued my education and completed this thesis. Thank you for your understanding and patience.

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LIST OF ACRONYMS AND ABBREVIATIONS

Acronym	Definition
ADMS	AIRSpeed Deployment Management System
APN	Aviation Procurement, Navy
BLI	Budget Line Item
BOD	Board of Directors
CEO	Chief Executive Officer
CFFC	Commander, Fleet Forces Command
CFT	Cross Functional Team
CNAF	Commander, Naval Air Forces
CNAL	Commander, Naval Air Force, U.S. Atlantic Fleet
CNAP	Commander, Naval Air Force, U.S. Pacific Fleet
CPI	Continuous Process Improvement
DMAIC	Define, Measure, Analysis, Improvement, Control
DoN	Department of the Navy
FBW	Financial Benefits Workbook
FRC	Fleet Readiness Center
FWG	Financial Working Group
FY	Fiscal Year
FYDP	Future Year Defense Plan
LSS	Lean Six Sixma
MPN	Military Personnel, Navy
NAE	Naval Aviation Enterprise
NAVAIR	Naval Aviation Systems Command
NAVICP	Naval Inventory Control Point
NAVSUP	Naval Supply Systems Command
NAVSEA	Naval Sea Systems Command
NAVRIIP	Naval Aviation Readiness Integrated Improvement Program
OPNAV	Office of the Chief of Naval Operations

PB	President’s Budget
PBIS	Program Budget Information System
ROI	Return on Investment
TMS	Type Model Series
TOC	Theory of Constraints
TTL	Transformation Team Leaders
TRR	Time to Reliably Replenish

I. INTRODUCTION

A. BACKGROUND

> During most of the 1980s, we seemingly had everything we needed to fly, fight and win. There were resources available to recapitalize while sustaining our Naval Air Force. In 1989, the world changed - the Berlin Wall came down - our country sought a peace dividend while our Navy's mission became increasingly more complicated. (Malone, 2003)

The abundance of resources available to the United States Department of Defense in the early to middle 1980's began a rapid decline that continued through the 1990's and into the 21st century. In this austere budget environment, Naval Aviation became increasingly focused on individual programs at the expense of the whole. (Malone, 2003) Along with the decline in overall defense funding, Naval Aviation found itself faced with a rapidly aging Naval Aviation force. If left unchecked, the average age of Fleet aircraft would approach twenty years by 2010, as illustrated in Figure 1.

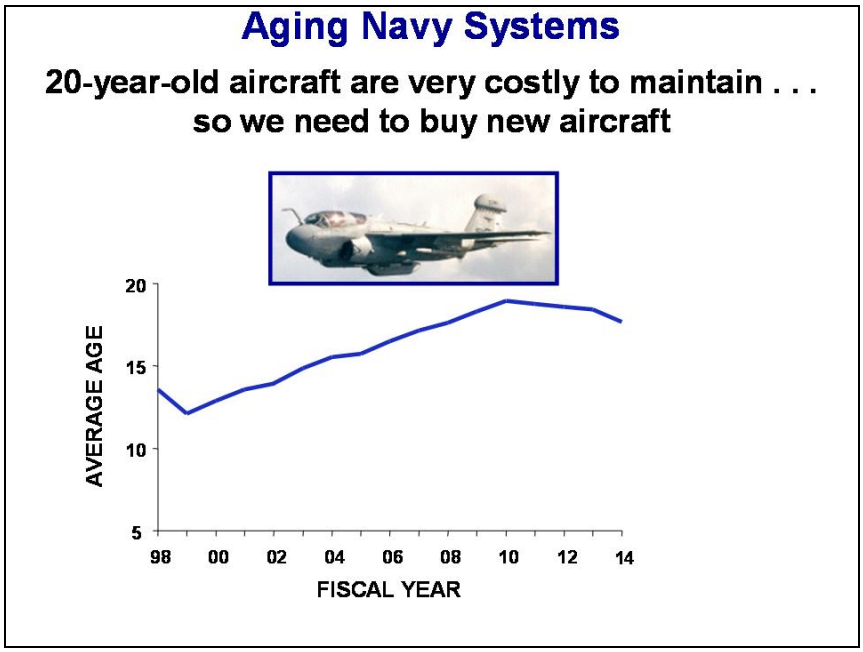

Figure 1. Aging Navy Systems in Need of Recapitalization. (From: *NAVAIR AIRSpeed Overview Brief*, 2004)

As Naval Aviation attempted to recapitalize the force, unable to buy new and take care of the old, Naval Aviation entered into the ever-increasing downward spiral of a resource to requirement mismatch. (Malone, 2003)

Faced with continued budgetary pressures, decreasing buying power and increasing costs of aircraft and equipment, Naval Aviation realized that in order to recapitalize, they had to "get the money from someplace." (Steber, 2006) The need for change in the way Naval Aviation did business was apparent. The Chief of Naval Operations, Admiral Vern Clark, identified the Commander, Naval Air Force, U.S. Pacific Fleet (CNAP), as the single process owner for all Naval Aviation. These first steps led to the formation of the Naval Aviation Readiness Integrated Improvement Program (NAVRIIP) and later to the Naval Aviation Enterprise (NAE), which is the vehicle for fundamental change in Naval Aviation. (Steber, 2006)

In 2002, the Chief of Naval Operations, unveiled Sea Power 21 as the strategy for the Navy's future. It was supported by three core components: Sea Shield, Sea Warrior and Sea Enterprise. Sea Enterprise is the resource enabler for Sea Power 21, responsible for optimizing resources at every level in the Department of the Navy, including modernization and recapitalization. In 2004, the Naval Aviation Enterprise (NAE) was formed to implement the aviation components of Sea Power 21 and support the initiatives of Sea Enterprise.

Naval Aviation Systems Command (NAVAIR) had introduced industry-proven continuous improvement business process methodologies (Lean, Theory of Constraints and Six Sigma) at the maintenance depot level in 1999, under the title of AIRSpeed. The intent was to deliver products to the Fleet faster at reduced costs.

Through the collective AIRSpeed programs, the NAE strives to provide "the right amount of readiness at the right cost, so that money can be saved and returned to the Navy and Marine Corps to recapitalize the Fleet." (Shrout, 2006) One of NAE's stated "measures of success" is achieving measurable cost savings across the Enterprise and to reinvest those savings to recapitalize the future of Navy and Marine Corps." (Shrout, 2006)

As in any business transformation, significant barriers exist to the achievement of the NAE's savings and recapitalization goals. These barriers may include leadership, culture, organizational structure, policies and competing budgetary requirements. Demonstrated achievement of incremental goals will be a key component of the long term success of the overall transformational effort.

B. RESEARCH

This research draws upon the effort of the Naval Air Enterprise (NAE) to deliver measurable cost savings that can be reinvested to recapitalize the future Navy and Marine Corp. The research attempts to identify specific savings directly attributable to AIRSpeed initiatives and to link those savings to capital reinvestment programs. This research will also review financial and managerial controls related to AIRSpeed initiatives that impact the feasibility of the stated savings and reinvestment goals.

1. Primary Research Question:

Has the implementation of AIRSpeed achieved measurable cost savings that have been made available to recapitalize the future Navy and Marine Corps?

2. Supporting Research Questions:

a. To what extent do current financial and managerial policies allow the generation of measurable cost savings?

b. To what extent do current financial and budgetary requirements allow the reinvestment of generated cost savings?

c. How are substantiated costs savings identified and linked to capital reinvestments?

d. What method(s) can best demonstrate actual cost savings and capital reinvestments attributed to AIRSpeed initiatives?

C. BENEFIT OF THESIS

This thesis will provide an analysis of the Naval Aviation Enterprise AIRSpeed program and the stated measure of success, harvesting measurable cost savings and the reinvestment of those savings to recapitalize the future Navy and Marine Corps. It will provide an analysis of the relationship between savings and recapitalization. It will attempt to identify challenges to the Naval Aviation Enterprise's effective achievement of this goal, and if necessary deliver recommendations to overcome these issues.

The purpose of this thesis is to provide a broad look, a deeper understanding, and an analytical perspective to the AIPSpeed effort. This analysis will contribute to greater awareness by the NAE of the managerial, organizational and procedural barriers to the Naval Aviation Enterprise's effective achievement of this goal and assist the leadership to further align AIRSpeed programs with recapitalization requirements.

D. THESIS SCOPE

The focus of this thesis is on cost savings and capital reinvestments attributable to AIRSpeed initiatives, related fiscal policies and budgetary requirements. The time frame will be FY-2004 through FY-2006 to allow a year to year comparison following the implementation of Enterprise AIRSpeed in 2003. Budgetary requirements and fiscal policy outside this scope will not be addressed.

E. METHODOLOGY

This thesis reviews the background and implementation of AIRSpeed. It attempts to identify measurable cost savings attributed to AIRSpeed initiatives through the review and analysis of Naval Aviation budget plans and execution rates. It investigates the relationship between costs savings and reinvestment and recapitalization initiatives through a comparison of budget Future Year Defense Plan forecasts, apportionment plans, and Department of the Navy, Office of Budget and Comptroller, Program Budget Information System (PBIS) database. The resulting relationship is examined to develop a framework for controls and incentives best suited to align Naval Aviation Enterprise

saving and recapitalization initiatives with budgetary requirements. Additional data and information were obtained from members of OPNAV N43, NAVAIR and CNAF staffs to supplement, clarify and confirm this research.

F. ORGANIZATION OF THESIS

The research presented in this thesis is presented as follows:

This chapter, Chapter I, establishes the historical context and the change imperative faced by Naval Aviation resulting in the establishment of NAE AIRSpeed. Thesis purpose, scope, and methodology are discussed.

Chapter II, Literature Review provides a summary of leading organizational systems and change management theorists. Overall, this chapter provides the background information to address organizational issues raised throughout the remainder of this thesis. The study of the systems models and change management theory enables the analysis of the NAE and the identification of barriers to the achievement of NAE objectives.

Chapter III, Naval Aviation Enterprise AIRSpeed, provides background information on the philosophy, concepts and processes that are collectively NAE AIRSpeed. This chapter first presents a brief discussion of the organizational structure of the NAE and the history of AIRSpeed, followed by the concepts and methodologies of NAE AIRSpeed.

Chapter IV, Presentation of Data, presents the findings obtained from various sources to determine if Naval Aviation Enterprise (NAE) AIRSpeed initiatives have generated measurable savings that have been made available to recapitalize the future Navy and Marine Corp. This chapter addresses the primary research question as well as the secondary questions relating to the identification of cost savings and the financial, budgetary and managerial policies involved in the reinvestment of stated savings.

Chapter V, AIRSpeed Analysis, provides an analysis of the Naval Aviation Enterprise (NAE) and the implementation of AIRSpeed as an organization change effort. The focus is on the ability of NAE AIRSpeed to achieve measurable cost savings that can

be reinvested for recapitalization. This analysis will examine the role of the NAE organizational structure and change management process in regards to maximizing AIRSpeed benefits toward the goal of recapitalization.

Chapter VI, Conclusions and Recommendations, presents a series of conclusions and recommendations based on this evaluation.

II. LITERATURE REVIEW

A. INTRODUCTION

This chapter presents background information on a number of subject areas in order to build a framework upon which to discuss topics raised throughout the remainder of this thesis. Organizational change is presented and discussed through several models presented by established academic theorists. These theorists discuss what is required for effective organizational change followed by a discussion on the importance of execution. Next, this chapter discusses the application of cost management theory to government and military organizations. A summary identifies the similarities between the models and their application to the analysis presented in the remainder of this thesis.

B. ORGANIZATIONAL CHANGE

1. Henry Mintzberg. Organization Design: Fashion or Fit?

Henry Mintzberg's article presents the argument that an organizations design is critical to its effectiveness and ultimate success. He states:

> Like all phenomena from atoms to stars--the characteristics of organizations fall into natural clusters, or configurations. When these characteristics are mismatched--when the wrong ones are put together, the organization does not function effectively, does not achieve a natural harmony. (Mintzberg, 1981)

In order to design effective organizations, leaders and managers must account and plan for the "fit." Mintzberg describes the concept of "fit" though five distinct organizational configurations that clearly differ in their structure and in their ideal situational uses. They are identified as simple structure, machine bureaucracy, professional bureaucracy, divisionalized form and adhocracy. (Mintzberg, 1981) Each organizational configuration is composed of five adaptable component parts: strategic apex (top management), operating core (basic work force), middle line (middle management), technostructure (analysts and design systems support personnel) and

support staff (indirect support services). The combination of these parts and their fit in the organization relative to the other parts determine the organizational configuration. Mintzberg's basic model is depicted in Figure 2.

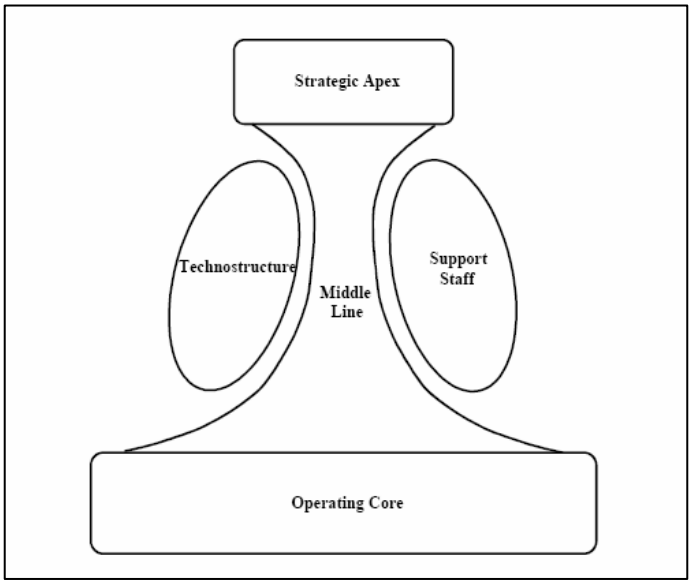

Figure 2. Mintzberg's Organizational Configuration. (From: Raynolds, 2003)

In Mintzberg's model the purpose of the structure is the coordination and division of work; who does what and to what extent. This division of work determines the organization's configuration. Mintzberg identifies five coordinating mechanisms:

a. Coordinating Mechanisms

(1) Direct supervision. Coordination is achieved at the strategic apex through orders given by the top management, resulting in a simple structure.

(2) Standardization of work**.** Coordination is achieved through word and process standards designed by an extensive administrative staff and technostructure, resulting in a machine bureaucracy.

(3) Standardization of skills. Coordination is achieved through the high level of training among employees. The operating core is composed of educated

and skilled professionals who require a significant support staff. Middle line and technostructure are minimal, resulting in a professional bureaucracy.

(4) Standardization of outputs. Coordination is achieved through extensive oversight of the middle line managers, who are often allowed autonomy over divsionalized units. Middle line managers must insure that outputs meets standards set across the entire organization despite operating autonomy, resulting in the divsionalized form.

(5) Mutual adjustment. Coordination is achieved through the use of sophisticated specialists and support staff, often through the use of project teams. Distinctions between line and staff tend to break down resulting in the adhocracy configuration.

The resulting five organizational configurations, elements of structure and situational characteristics determine how all the elements form an integrated system. Below is a discussion of these configurations.

b. Organizational Configurations

(1) Simple structure. The simple structure is noted for what it is not. It is not elaborate, it has little or no technostructure, few support staff and a small cadre of middle management. Behavior norms are not formalized and there is little use of training and planning. Power is centralized with top management, the strategic apex. In the simple structure, the strategic apex often consists of only one person.

The simple structure is non-sophisticated and dynamic. The environment can be evaluated and understood by a single individual, enabling decision making and control of the organization to remain with that single individual.

(2) Machine bureaucracy. The machine bureaucracy is characterized by formalized procedures, rules, regulations and highly specialized yet routine operating tasks. Operating units are large with a high reliance on functional

grouping for task accomplishment. Power and decision making is relatively centralized with a complex administrative structure that emphasizes the distinctions between line and staff.

The machine bureaucracy depends on the standardization of operating processes to insure coordination throughout the organizational. For this reason the technostructure is key in this configuration. The technostructure analyzes and develops the standards that govern the organization.

Machine bureaucracies are normally found in large and mature organizations that depend on repetition and standardization. Management at the strategic apex tends to focus on improving the bureaucratic processes while a large middle line emerges to oversee the standardized work of the operating core. The organization remains departmentalized to the top levels, where the formal power is centralized. (Mintzberg, 1981) Machine bureaucracies strive to deliver their desired outputs by the most efficient means. These are "performance organizations", not "problem solving organizations." (*Organizational Configurations (Mintzberg),* 2007)

(3) Professional bureaucracy. The professional bureaucracy relies on the standardization of skills for coordination. It relies upon trained professionals, skilled people who required considerable control over their work. The organization surrenders a great deal of its power to the professionals as well as the associations and institutions that select, train and certify the professionals in the first place. (Mintzberg, 1981) As a result, the organizational structure becomes decentralized, with strategic and operating power flowing all the way down to the professionals in the operating core. (Mintzberg, 1981)

Because the individual professionals work independently, the size of the operating core can become very large, but require very few middle line managers. On the other hand, the support staff for the professionals is very large. The support staff performs tasks much different than the professionals, often the simple routine tasks not performed by the higher priced professionals. As a result a dual hierarchy develops between the professional operating core and the large support services staff. Each

hierarchy emerges with differing power structures, one democratic with bottom-up power for the professionals, and a second autocratic with top-down control for the support staff. (Mintzberg, 1981)

The professional bureaucracy is most effective for organizations in a stable yet complex environment. (Mintzberg, 1981) However, the professional bureaucracy is inflexible. It is well suited to produce standardized outputs but ill-suited to adapt to new outputs or services. Change cannot be effectively implemented through the appointment of new administrators or leaders announcing major reforms. Rather, change seeps in by the slow process of changing the professionals. (*Organizational Configurations (Mintzberg)*, 2007)

(4) Adhocracy. The adhocracy is a fluid organization with very little formalization of job tasks or behavior. Several dissimilar specialists may be grouped into small project teams for operating tasks. There is a high reliance on mutual adjustment as the key coordinating mechanism, within and between teams (*Organizational Configurations (Mintzberg)*, 2007)

The adhocracy does not rely upon the standardization of skills of the specialists for coordination because this would lead to further standardization when the desired result is innovation. In an adhocracy the experts must combine efforts in pursuit of the organization's desired output, focused on innovation.

In an adhocracy, there is a multitude of managers; from functional managers to project managers. Managers become active members of teams with the specific responsibility of fostering communication and coordination. Formal authority, the distinction between management and operating core, dispersed and becomes blurred throughout the organization. Additionally, the distinction between line and staff also disappears.

The adhocracy operates in environments that are complex and dynamic, requiring sophisticated innovation and the cooperative efforts of many different kinds of experts. (Mintzberg, 1981) Although adhocracies may be effective they are also inefficient. Nothing gets done without extensive discussions, ambiguity abounds and

there is significant opportunity for conflict and political pressure. "Adhocracy can do no ordinary thing well, but it is extraordinary at innovation." (Mintzberg, 1981)

c. Configurations as Diagnostic Tools

Mintzberg's configurations are abstract ideals that simplify the complex world of organizational structures. In this model, every organization reacts to five pulls that underlie these configurations; the pull to centralize by the top management, the pull to formalize by the technostrucure, the pull to professionalize by the operators, the pull to divisionalize by the middle line managers and the pull to collaborate by the support staff. (Mintzberg, 1981) The organization will tend to become closely organized around the configuration that favors the dominant pull.

Managers can use this set of five configurations as a tool in diagnosing the problems of organizational design. They can improve their organizations by being aware of the different pulls resident and the configurations toward which they are drawn and insuring that the internal elements of the organization are consistent. Mintzberg warns that "management that grabs at every structural innovation that comes along may be doing its organization great harm, it risks going off in all directions." (Mintzberg, 1981) By remaining aware of the nature of their organization, managers can avoid attempts to improperly fit the latest management fad with negative consequences.

Mintzberg also states that an organization may be in balance and consistent but be destroyed by the imposition of external controls. The simple structure, professional bureaucracy and adhocracies will suffer the most from imposition of external controls resulting from increased government control over previously independent organization and the tendency for any organization to become more bureaucratic as it grows and becomes a larger divisionalized organization. (Mintzberg, 1981) The application of external controls could very well hinder the accomplishment of the desired result if the applied external control is not appropriate the organizational configuration.

Each organization or configuration develops its own norms, traditions, beliefs and ideology. Unless there is a balance among opposing forces, the prevailing

ideology will tend to dominate. This can become problematic for an organization if there is a part of the organization that requires special attention, or more likely increase autonomy. Administrative standards, when applied to this segment of an organization, can result in poor fit in relation to the rest of the configuration.

d. Fit over Fashion

The right configuration in the wrong environment often occurs as the external environment changes around the organization. In this case the organization has two choices, it can continuously adapt to the environment through continuous redesign at the expense of internal consistency, or it can maintain internal consistency at the expense of a gradually worsening fit with the environment. (Mintzberg, 1981) The organization must choose between evolution and revolution. The organization that chooses evolution may find that it cannot evolve at the same pace as the environment and must ultimately revolutionize to regain a proper fit.

Mintzberg concludes that:

> Consistency, coherence and fit are the critical factors in organizational design, but they come at a price. An organization cannot be all things to all people. It should do what it does well and suffer the consequences. Be an efficient machine bureaucracy but don't pretend to be highly adaptive. Or be an adaptive adhocracy and do not pretend to be highly efficient. Or create some new configuration to suit your own needs. The point is not really which configuration you have; it is that you achieve configuration. (Mintzberg, 1981)

2. David A. Nadler with Mark B. Nadler. Champions of Change: How CEO's and Their Companies are Mastering the Skills of Radical Change

Nadler and Nadler write that "real change is an integrated process that unfolds over time and touches every aspect of the organization." (Nadler & Nadler, 1998) In Champions of Change: How CEO's and Their Companies are Mastering the Skills of Radical Change, they discuss this integrated process and its relationship to the real world organizations through the application of complimentary models developed over the

previous twenty years. The models that form the basis of this discussion are the Congruence Model and the Cycle of Change Model.

a. Why Change Efforts Fail

Numerous organizations have been faced with the challenge of change and have failed. Nadler and Nadler present five major mistakes that organizations make that cause change efforts to fail. (Nadler & Nadler, 1998)

(1) Top executives abdicate their responsibility for personal commitment and involvement and try to delegate the leadership of change.

(2) Small numbers of people, in secrecy, develop change strategies and unleash them upon an unprepared and uncooperative organization.

(3) Executives choose a particular set of strategic initiatives without generating full discussion of all the possible alternatives.

(4) Organizations make crucial decisions on incomplete and biased information.

(5) Organizations cling to the misguided hope that one single concept will deliver organizational change.

Some organizations, however, do deliver on successful organizational change. What do these organizations do differently to avoid the mistakes listed above? They seek organizational change through deliberate, long-term, and focused collection of efforts and activities - a process grounded in the integrated approach to change. (Nadler & Nadler, 1998) The integrated approach to change is the basis of the theories presented by Nadler and Nadler through their models.

b. Concept of Integrated Change

Nadler and Nadler begin with the premise that organizations are human institutions. Although each organization should have a strategy and objectives, at the center of each organization is a complex social system, comprised of four specific and

tightly interrelated components. Listed below, these components must become congruent with the strategy before the strategy can succeed. (Nadler & Nadler, 1998)

(1) The work. The activities of the organizations employees required to create, produce and deliver the desired output.

(2) The people. All the employees that support the organization's operations.

(3) The formal organization. The structures, processes, and systems that organize activities and direct the people in the performance of their work.

(4) The informal organization. The organization's collective values, attitudes and beliefs, unofficial channels of communication and influence and accepted standards of behavior.

Each of these components is directly tied to and influenced by the others. Nadler and Nadler state that this simple notion has enormous implications given the inherent complexity of organizations; there can never be one single solution aimed at one specific aspect of the organization that can bring about successful organizational change. (Nadler & Nadler, 1998)

c. The Congruence Model - Understanding Organizations

According to Nadler and Nadler, the first step to any change effort is to figure out how the organization works and identify the trouble spots and areas of opportunity. (Nadler & Nadler, 1998) They present the congruence model as a tool to assist managers in understanding and predicting patterns of organizational behavior and the concept of organizational fit.

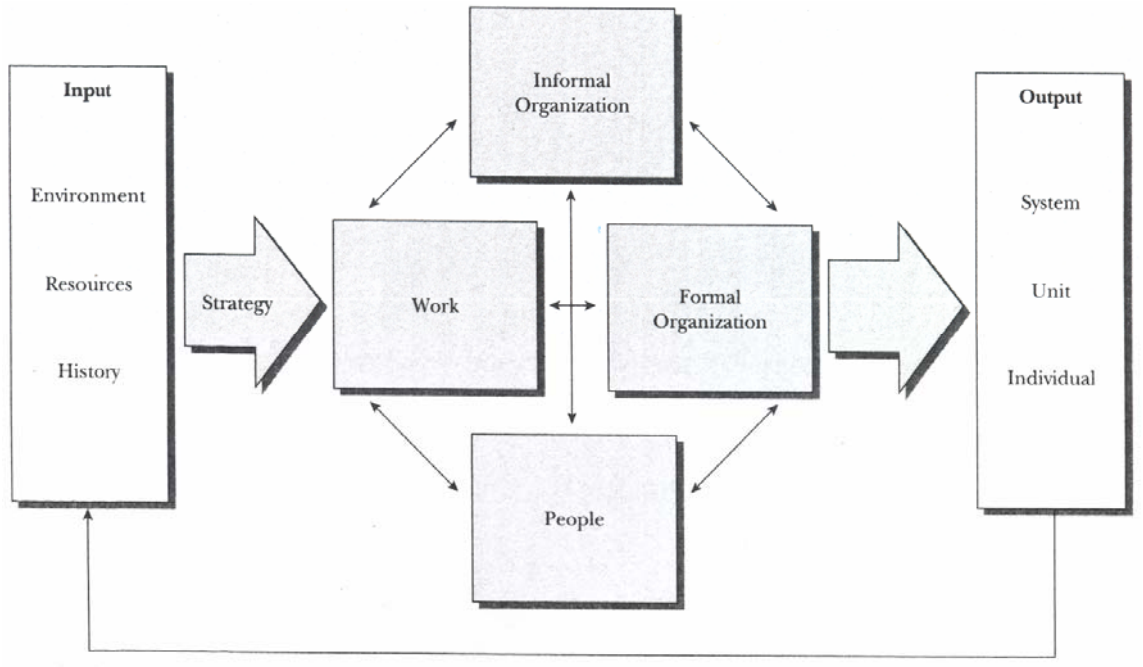

Figure 3. The Congruence Model. (From: Nadler & Nadler, 1998)

The Congruence Model, as depicted in Figure 3, describes the set of interrelated components as they are affected by external elements of inputs, undergo some sort of transformation and emerge from the system as outputs.

(1) Inputs originate outside the organization and include environment, resources and history. The environment consists of all the forces, conditions and players outside the boundaries of the organization. Resources are the assets that have potential value for the organization in light of the demands and opportunities and constraints of the external environment. History comprised of the past events and activities that influence the workings of the organization today. (Nadler & Nadler, 1998)

(2) Strategy represents the set of decisions made by the organization about how to configure resources, demands, opportunities, and constraints of the environment in the context of history. (Nadler & Nadler, 1998)

(3) Output represents the ultimate purpose of the organization and describes the pattern of activities, behavior, and performance of the system at three

levels. The system level looks at goods and services produced, revenues and profits, employment, community impact and others. Units are the departments, divisions and teams that make up the organization. In outputs the model looks at the individuals; the behavior, activities and performance of the people within the organization. (Nadler & Nadler, 1998)

(4) Work defines the activity of the organization, the basic and inherent tasks performed by the organization and its parts. When analyzing work one must consider the skills and knowledge level of the people, what rewards are derived from the work, what is the degree of uncertainty associated with the work, and what are the constraints or demands placed upon the work in the context of strategy? (Nadler & Nadler, 1998)

(5) People are described through four characteristics in order to diagnose any organizational system. These four characteristics are knowledge and skills, needs and preferences, perceptions and expectations, and demographics.

(6) The formal organization is the set of arrangements, structures, systems, and processes each organization develops for grouping people, the work they do, and then coordinating their activity in ways designed to achieve the strategic objectives. (Nadler & Nadler, 1998)

(7) The informal organization includes the unwritten, emerging arrangements and interaction patterns that overlap the formal structure and processes. It includes the organizational culture; the values beliefs and behavioral norms, the informal rules and practices, patterns of communication and influence, and the actual behavior of leaders rather than their prescribed roles. (Nadler & Nadler, 1998)

The basis of the congruence model is that you cannot ignore any aspect of the system. All components, relationships and dimensions and interactions must be considered. The model says, "There is no one best structure. There is no best culture. What matters is fit." (Nadler & Nadler, 1998)

d. Organizational Fit

The concept of fit is crucial to understanding the congruence model. In this system the interaction of the components is more important than the individual components. The overall effectiveness of the organization depends on the internal congruence, or fit of the basic components. The tighter the fit or the greater the congruence, the more effective the organization will be in transforming its strategy into performance. In the world of organizational change, identifying the points at which the fit is breaking down is the vital first step in determining what has to change. (Nadler & Nadler, 1998)

e. Cycle of Change

Nadler and Nadler incorporate previously presented concepts and model in their “cycle of change.” The change cycle follows a logical flow and provides guidance for planning and managing the most complex and discontinuous change. (Nadler & Nadler, 1998) The model is explained through five phases; 1) recognizing the change imperative, 2) developing a shared vision, 3) implementing change, 4) consolidating change and 5) sustaining change. Figure 4 illustrates the "Cycle of Change."

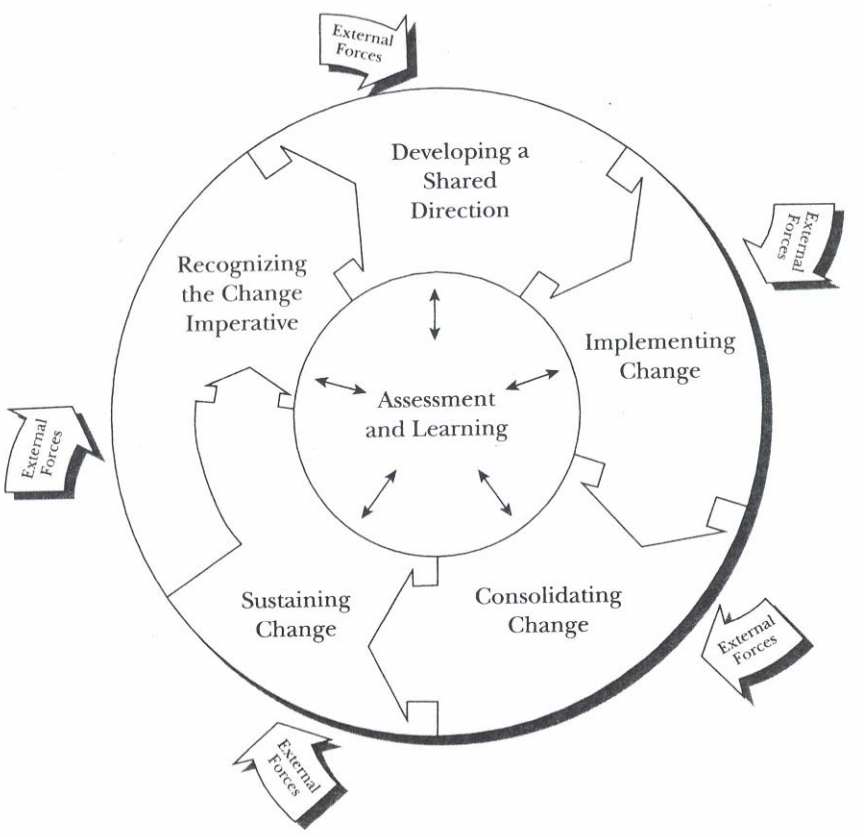

Figure 4. Cycle of Change. (From: Nadler & Nadler, 1998)

Nadler and Nadler's five phases of the cycle of change are summarized below (Nadler & Nadler, 1998):

(1) Recognizing the change imperative. The first step is to use the congruence model to analyze each of the organization's components and how they work, or don't work. Strategic objectives must be compared to actual performance to determine the extent of the need for change.

(2) Developing a shared direction. This step includes providing clear direction for change and building a coalition that will support the change effort. The first step in this phase is to communicate the fundamental direction of the change. The details may come later, but the expression of some basic direction is essential.

(3) Implementing change. The implementation of change overlaps some of the other phases in the cycle but includes:

- Redefining strategy and rethinking the nature of the work required to employ that strategy
- Redesigning the organization's formal structures, systems and processes.
- Rebuilding the operating environment of the organization and creating informal arrangements that support the new strategy and work requirements.
- Restaffing: making sure that the right people are in the right jobs in keeping with the new strategy, structure, work, and culture.

These steps are crucial; each one must be considered as an integral part of the change process, not an afterthought.

(4) Consolidating change involves three major activities. The first is communication and diagnosis; find out what is working and what isn't. The second activity is refinement; processing the information gathered with all the tools available, figuring out which aspects of the change are working and which aren't. Then going back and fine-tuning the plan accordingly. Consolidation occurs when what was once the "new" change becomes integrated into the organizational fabric. This activity requires a wide range of techniques, ranging from political activity to broaden and deepen support to compensation, staffing, training, work requirements and the operating environment.

(5) Sustaining change requires top leaders to maintain vigilance while the organization returns to normalcy. It remains critical that the lines of communication remain open so that leaders can determine which aspects of the change are working and which need attention. Nadler and Nadler recognize that the sustainment phase does receive as much attention as the previous phases; however they emphasize its importance:

> This final sustaining phase also continues the consolidation stage, in that management needs to constantly reassess the effectiveness of each element of the change program and stay sufficiently flexible to modify the plan when necessary. This is the time to iron out the fit - to reconnect the web of relationships among the organizational components that had to be ripped apart to clear the way for radical change. (Nadler & Nadler, 1998)

Nadler and Nadler emphasis the importance of thinking of discontinuous change as a cycle rather than a linear process. "The final stage of the change cycle always contains the seeds of the next cycle." (Nadler & Nadler, 1998)

f. Final Principals

Coming full circle from the five mistakes organizations make that cause change efforts to fail, Nadler and Nadler present five final principles for leaders to employ when embarking on a major change effort.

(1) Ensure appropriate involvement. Leaders must take the time to actively involve the key people who will bear the responsibility for making the change not only happen but succeed. (Nadler & Nadler, 1998)

(2) Exercise committed leadership. Effective change must be led through the personal involvement of active leaders who inspire and excite the entire organization. Nadler and Nadler very eloquently summarize this point:

> The best leaders are those who understand the need to articulate a vision and goals that appeal on an emotional level to the basic values and highest aspirations of their people, who deeply believe in the benefits of getting people fully engaged, and who then motivate people to go out and act. (Nadler & Nadler, 1998)

(3) Provide valid information. Effective change requires that everyone involved have full access to the full range of information required to make appropriate decisions at each step of the process. Decision makers must look beyond the normal and obvious information sources, both inside and outside the organization. This principal includes disseminating information as well as collecting it; the sharing of information will buy trust and credibility throughout the organization. (Nadler & Nadler, 1998)

(4) Make informed choices. Full and open consideration of the widest possible range of alternatives will result in the best decisions. "Whether it is strategy, structure, staffing or any other aspect of change, it's essential that top

management insist upon and then actively engage in free, open, and informed debate of a wide range of alternatives." (Nadler & Nadler, 1998)

(5) Construct integrated change. The successful integrated change of complex human organizations requires the consideration of every aspect of the enterprise. The congruence model provides the framework for a disciplined assessment of each component of the organization; strategy, structure, people, processes and operating environment. The relationships and interdependence of each component on the others must be appreciated and accounted for in any integrated change effort. Nadler and Nadler emphasis this point, "There is no place in the change process for fragmented actions and one-off decisions. Ignore the web of relationships that make up the organization and you will fail in a hundred ways." (Nadler & Nadler, 1998)

In summary, Nadler and Nadler recognize that integrated change is hard, demanding work that requires energy, courage, vision and commitment. There will always be setbacks and moments of doubt. However, successful change is based in the return to the above five principals which are based on their models of congruence and the cycle of change. (Nadler & Nadler, 1998)

3. John P. Kotter. Leading Change

John P. Kotter presents his eight-step model for transforming organizations in his book *Leading Change*. This model provides a valuable tool to managers and the leaders of change.

a. Why Organizations Fail to Transform

Similarly to Nadler and Nadler, Kotter begins his discussion with an explanation as to why so many organizations fail to transform. He presents the following common errors when transforming and organization (Kotter, 1996):

- Allowing too much complacency
- Failing to build a substantial coalition
- Not understanding the need for clear vision
- Failing to clearly communicate the vision

- Permitting roadblocks against the vision
- Not planning for short term results and not realizing them
- Declaring victory too soon
- Neglecting to anchor changes in corporate culture

Kotter states that these errors are not inevitable, and can either be avoided or at least mitigated. The key is to understand why organizations resist change, the multistage process to achieve it, and most of all, how leadership is critical to drive the process in a socially healthy way. (Kotter, 1996) To prevent these mistakes, Kotter developed the related Eight-Stage Change Process.

b. The Eight-Stage Change Process

Kotter bases his methods for successful transformations on one fundamental insight: that major change will not happen easily. (Kotter, 1996)

> Even if an objective observer can clearly see that costs are too high, or products are not good enough, or shifting customer requirements are not being adequately addressed, change can still stall because of inwardly focused cultures, paralyzing bureaucracy, parochial politics, a low level of trust, lack of teamwork, arrogant attitudes, a lace of leadership in middle management, and the general human fear of the unknown. (Kotter, 1996)

Kotter's Eight-Stage Change Process is designed to combat these barriers and is directly associated with the eight fundamental errors.

(1) Establish a sense of urgency. Establishing a sense of urgency is crucial to gaining needed cooperation for change. With complacency high, few people are even interested in working on the change problem. With urgency low, it is difficult to form a group with enough power and credibility to guide the effort or convince key individuals to commit the necessary time to create and communicate the change effort.

There are several sources of complacency, from the lack of sufficient communication and feedback, poor internal measurement systems and standards, to too much "happy talk" from leadership and most notably the absence of a major and visible crisis. Kotter suggests raising the level of urgency in the organization

through a variety of ways, including; creating a crisis, eliminating examples of excess, set extraordinarily high targets and goals, insist on accountability for broad measures of performance, distribute performance and satisfaction information, increase contact with dissatisfied partners, force relevant data and "honest" discussions into meetings and to the entire organization, and finally, bombard people with information on future opportunities and rewards and the organizations inability to pursue those opportunities. (Kotter, 1996)

(2) Create a guiding coalition. The first step to forming a team that can guide a change effort is to find the right membership. Kotter presents four key characteristics that are essential to effective guiding coalitions. (Kotter, 1996)

- Position power: Enough key players must be on board with enough influence to overcome attempts to block progress
- Expertise: Various points of view, relevant to the task, must be adequately represented to make informed, intelligent decisions.
- Credibility: Group members must have good reputations.
- Leadership: Group must have enough proven leaders to drive the change process.

Leadership and management must work in tandem on the guiding coalition; management keeps the whole process under control and leadership drives the change. (Kotter, 1996)

(3) Develop a vision and strategy. Kotter defines vision as "a picture of the future with some explicit commentary on why people should strive to create that future." (Kotter, 1996) Good vision provides three purposes; clarifies the general direction for change, it motivates people to take action in the right direction and it helps coordinates the actions of different people. Kotter states that effective visions seem to have six key characteristics (Kotter, 1996):

- Imaginable. Conveys a picture of what the future will look like.
- Desirable: Appeals to the long-term interests of employees, customers, stockholders, and others who have a stake in the enterprise
- Feasible: Comprises realistic, attainable goals.
- Focused: Is clear enough to provide guidance in decision making.

- Flexible: Is general enough to allow individual initiative and alternative responses in light of changing conditions.
- Communicable: Is easy to communicate; can be successfully explained within five minutes.

The creation of an effective vision takes time, includes the efforts of many people, and must include both logic and an emotional connection.

(4) Communicating the change vision. Kotter explains that the power of a vision is unleashed only when the majority of those involved in an enterprise or activity have a common understanding of the goals and direction. (Kotter, 1996) He lists seven key elements common to effective communication of vision. (Kotter, 1996)

- Simplicity: All jargon and technobable must be eliminated.
- Metaphor, analogy and examples: A verbal picture is worth a thousand words.
- Repetition: Ideas sink in deeply only after they have been heard many times.
- Leadership by example: Behavior from important people that is inconsistent with the vision overwhelms other forms of communication.
- Explanation of seeming inconsistencies: Unaddressed inconsistencies undermine the credibility of all communication.
- Give and take: Two-way communication is always more powerful than one-way communication.

(5) Empowering broad based action. The purpose of this phase is to remove as many barriers as possible to the implementation of the change vision. Any obstacles, systems, structures or supervisors that undermine the vision must either be changed or eliminated. Kotter presents five elements of empowering people to effect change (Kotter, 1996):

- Communicate as sensible vision to employees: If employees have a shared sense of purpose, it will be easier to initiate actions to achieve that purpose.
- Make structures compatible with the vision: Unaligned structure block need action.
- Provide the training employees need: Without the right skills and attitudes, people feel disempowered.
- Align information and personal systems to the vision: Unaligned systems also block needed action.

- Confront supervisors who undercut needed change: Nothing disempowers people the way a bad boss can.

(6) Generating short-term wins. This phase generates and sustains momentum generated in the previous phases of the transformation process. The transformation process most often very lengthy, measured in years, allowing multiple opportunities for motivation to fall and momentum to stall. Short-term wins provide concrete feedback on the validity of the vision against performance. A good short term must be highly visible, unambiguous and clearly related to the change effort. (Kotter, 1996) Short-term wins help the transformation process at least six ways. (Kotter, 1996)

- Provide evidence that the sacrifices are worth it: Wins greatly help justify the short-term costs involved.
- Reward change agents with a pat on the back: After a lot of hard work, positive feedback builds morale and motivation.
- Help fine-tune vision and strategies: Short-term wins give the guiding coalition concrete data on the viability of their ideas.
- Undermine cynics and self-serving registers: Clear improvements in performance make it difficult for people to block needed change.
- Keep bosses on board: Provides those higher in the hierarchy with evidence that the transformation is on track.
- Build momentum: Turn neutrals into supporters, reluctant supporters into active helpers.

Short term wins cannot be left to luck, they must be planned. Leaders of the change effort must plan for and generate the short-term performance indicators. The point is not to maximize short-term wins at the expense of the future, but to make sure that visible results lend sufficient credibility to the transformation effort. (Kotter, 1996)

(7) Consolidating gains and producing more change. During this phase change agents build upon the momentum and credibility generated in previous phases by through short-term wins. Change is focused on all systems, structures and policies that do not fit together and don't fit the vision. It includes making changes to the

work force by hiring, promoting and developing people who can implement the change vision. And ultimately, reinvigorate the change process with new projects, themes and change agents. (Kotter, 21)

> Whenever you let up before the job is done, critical momentum can be lost and regression may follow. Until changed practices attain a new equilibrium and have been driven into the culture, they can be very fragile. (Kotter, 1996)

(8) Anchoring new approaches in the culture. Once an organization has achieved the desired transformation, the changes must be ingrained throughout the enterprise. The connection between the new behavior and the new found success must be articulated to sustain success. Kotter offers the following considerations when anchoring change in a culture. (Kotter, 1996):

- Cultural change comes last, not first: Most alterations in norms and shared values come at the end of the transformation process.
- Depends on results: New approaches usually sink into a culture only after it's very clear that they work and are superior to the old methods
- Requires a lot of talk: Without verbal instruction and support, people are often reluctant to admit the validity of the new practices.
- May involve turnover: Sometimes the only way to change a culture is to change key people
- Make decisions on succession crucial.

Successful change goes through all eight stages, normally in the order presented. (Kotter, 1996) Although an organization may be operating in all phases at once, skipping any step or moving too far ahead with out the solid foundation established by the previous steps almost always creates problems. (Kotter, 1996) When change follows the eight phases in sequence, "it will build and develop in a natural way, creating the momentum needed to overcome enormously powerful sources of inertial." (Kotter, 1996)

c. Leadership vs. Management

Kotter emphasizes the importance of leadership throughout the eight-stage process. He claims that successful transformation is 70 to 90 percent leadership and only 10-30 percent management. (Kotter, 1996) "Leadership defines what the future should look like, aligns people with that vision, and inspires them to make it happen despite the obstacles." (Kotter, 1996) On the other hand management deals with structural and systematic aspects of the organization; like staffing, budgeting and problem solving. Kotter warns that visions and strategies are not formulated by individuals that have learned only to deal with plans and budgets and are not implemented well by people who think in terms of structure, systems and cycle time. (Kotter, 1996) However, managing change is important. Without competent management, the transformation process can get out of control. But the bigger challenge is leading change. Only leadership can blast through the many sources of inertia. (Kotter, 1996)

4. Larry Bossidy and Ram Charan. Execution: The Discipline of Getting Things Done

Larry Bossidy and Ram Charan explain the discipline *execution*; the behaviors and techniques required for organizations to succeed. Their concepts are not unique and in fact, are consistent with the models previously presented. Their focus is on "results" or the bottom line.

a. What is Execution?

How do we successfully achieve the desired results or intended change? Bossidy and Charan state that there are three key points to understanding execution. (Bossidy, Charan, & Burck, 2002):

- Execution is a discipline, and integral to strategy.
- Execution is the major job of the business leader.
- Execution must be a core element of an organizations culture.

These three concepts form the foundation of Bossidy and Charan's work. These three points are explained in detail, but the common theme of the discussion is process, communication, leadership and culture. Bossidy and Charan state:

> Execution is the systematic process of rigorously discussing the whys and whats, questioning, tenaciously following through, and ensuring accountability. It includes making assumptions about the business environment, assessing the organization's capabilities, linking strategy to operations and the people who are going to implement the strategy, synchronizing those people with the various disciplines, and linking rewards to outcomes. It also includes the mechanisms for changing assumptions as the environment changes and upgrading the company's capabilities to meet the challenges of an ambitious strategy. (Bossidy et al., 2002)

b. Execution is the Job of the Leader

The ability of an organization to execute is fully dependent on the leadership. The leadership has to be fully engaged, both personally and professionally, with a comprehensive understanding of the business, its people and the environment. (Bossidy et al., 2002) Bossidy and Charan present seven essential behaviors of a leader:

(1) Know your people and your business. Leaders are presented a lot of information, but it is filtered and tainted with the perceptions, limitations, agendas and perspectives of those who prepared and delivered it. Effective leaders make the effort to understand their people’s strengths, weaknesses, potential and limitations. They take extraordinary measures to understand an issue, what it would take to execute an initiative, what skills and attributes would be required of the organization's people and what resources would be needed. (Bossidy et al., 2002)

(2) Insist on realism. This is the heart of execution. Realism must be the goal of all dialogue in an organization. Realistic dialogue flushes out important issues or problems, allowing leadership to make appropriate decisions on priorities and resources. (Bossidy et al., 2002)

(3) Set clear goals and priorities. Set a very few, clear, understandable goals that will influence the overall performance of the organization. Keep the list short and simple. (Bossidy et al., 2002)

(4) Follow through. Set up a follow through mechanism that ensures everyone is doing what they are supposed to do. This may be in the form of regular progress review meetings or progress reports. Follow through validates the merit of an initiative maintains focus on execution. (Bossidy et al., 2002)

(5) Reward the doers. Reward people accordingly for producing specific results. Make it clear that rewards and respect are based on performance and insure that these distinctions become ingrained in the organizational culture. (Bossidy et al., 2002)

(6) Expand people's capabilities. Coaching is the single most important part of expanding other people's capabilities. The aim is to ask questions that bring out the realities and give people the help they need to correct problems. It is how leaders pass on their knowledge to the next generation, individually and collectively. (Bossidy et al., 2002)

(7) Know yourself. Good leaders learn and develop an awareness of their strengths and weaknesses. Through this knowledge they develop character and emotional fortitude. Emotional fortitude allows a leader to deal honestly with himself, others and the organization, provide forthright assessments, tolerate diversity, accept divergent viewpoints and remain open to both positive and negative information. (Bossidy et al., 2002)

Bossidy and Charan state that the behavior of a leader is, ultimately the behavior of the organization and is the foundation of the culture. (Bossidy et al., 2002) As such, we can see why they consider leadership to be the most critical aspect of execution and essential for implementing effective organizational change.

c. Creating the Framework for Change

Bossidy and Charan present a *reality based* framework for organizational change that is based on execution. They introduce their discussion of change with:

> Most efforts at cultural change fail because they are not linked to improving the business's outcomes. To change a business's culture, you need a set of processes -- social operating mechanisms -- that will change the beliefs and behavior of people in ways that are directly linked to bottom-line results. (Bossidy et al., 2002)

Bossidy and Charan explain that to achieve successful change, people's behavior must be changed. To accomplish this they state that the desired results must be clearly stated and how to achieve them clearly explained. Individuals who achieve the desired results should be rewarded while those that do not should receive additional *coaching*, have rewards withdrawn, be reassigned or let go. (Bossidy et al., 2002) These concepts are further explained in four key organizational change concepts presented below:

(1) Linking reward to performance. The foundation of changing behavior is linking rewards to performance and making those linkages transparent. “That which gets appreciated, respected and ultimately rewarded, defines an organization's culture.” (Bossidy et al., 2002) People will understand what the organization values and recognizes. In their own self interest, people will then concentrate on those aspects of their behavior.

(2) The social software of execution. Bossidy and Charan compare an organization to a computer, having both hardware and software. They link a computer's software to the human aspect of an organization, recognizing it as a social system and naming it "social software." (Bossidy et al., 2002) "Social software" contains the values, beliefs and norms of behavior. Hardware includes the organizational structure, rewards and compensation system, communications system, and the hierarchical distribution of power. (Bossidy et al., 2002) The "social software" provides the life to the organizations hardware, resulting in a functional system.

Contained within the organizations social software are the "software operating mechanisms." The software operating mechanisms are the "formal or informal meetings, presentations, even memos or e-mail exchanges -- anywhere that dialogue takes place" (Bossidy et al., 2002) Additionally, they "are where the beliefs and behaviors of the social software are practiced consistently and relentlessly and spread the leaders' beliefs, behaviors and mode of dialogue through the organization." (Bossidy et al., 2002) The authors describe linking the software operating mechanisms to the measurement and reward systems resulting in concept of a "social operating system," which drives the organizations culture. (Bossidy et al., 2002)

(3) Robust Dialogue. An execution culture, critical to effective change, requires a dialogue that brings reality to the surface through openness, candor and informality. (Bossidy et al., 2002)

> Robust dialogue makes an organization effective in gathering information, understanding the information, and reshaping it to produce decisions. It fosters creativity--most innovations and inventions are incubated through robust dialogue. Ultimately, it creates more competitive advantage and shareholder value. (Bossidy et al., 2002)

Robust dialogue begins when people maintain an open mind. They avoid preconceptions and private agendas. Next is candor, when people voice their real opinions, not those that will please others. Harmony is not the intent of a robust dialogue and can in fact stifle critical thinking. The authors advocate the motto "Truth over harmony." (Bossidy et al., 2002) Informality encourages dialogue and with it the desired candor. Finally, robust dialogue is not complete without closure. At the end of the dialogue, the participants must agree about each person's responsibilities; who is going to do what and when. (Bossidy et al., 2002)

(4) Leaders get the behavior they exhibit and tolerate. Leaders must remain engaged in the daily life of the organization to change and sustain the culture. The authors quote Dick Brown, "The culture of a company is the behavior of its leaders." (Bossidy et al., 2002) The leader must create, display and relentlessly reinforce the desired behaviors through example and robust dialogue. Bossidy and Charan explain

that you change the culture of a company by changing the behavior of its leaders, and you measure the change in culture by measuring the change in personal behavior of its leaders and the performance of the business. (Bossidy et al., 2002) In this explanation there is no mention of the people or systems of the organization, the focus is clearly on leadership and overall organizational performance.

Although Bossidy and Charan discuss the above four concepts as critical to achieving organizational change, they maintain a heavy emphasis on *execution*. Execution remains a constant requirement for successful achievement organizational goals and organizational change.

C. COST MANAGEMENT

1. Dale R Geiger. Winning the Cost War

Dr. Dale Geiger presents his concept of cost management of government organizations and programs through the terms and concepts of military battle. His book, "Winning the Cost War," describes the process of interactive cost based management. Lieutenant General Thomas P. Carney describes the concept:

> The process is based on a simple premise; productivity gains will be achieved when the creative power of the organization's workforce is unleashed by continuously challenging them to identify ways to improve performance, cut costs and reapply resources to higher priority endeavors. (Geiger, 2000)

a. Nature of the Cost War

For over sixty years government organizations received lavish funding levels that resulted in a spending mode of management. The Anti-Deficiency Act and current budget execution practices have created a culture where good financial management focuses on “spending” the budget rather than on continuously improving productivity. (Geiger, 2000) Additionally, organizations that spend less than budget are perceived to have lost resources and are in danger of receiving lower budgets in the future. Strong pressures exist to spend all appropriated funds. In fact, the executive

branch is legally bound to spend the funds appropriated by Congress. These factors have created a management culture with a spending vice conserving mentality, "good financial management within the executive branch has come to mean spending 99.9% of the budget." (Geiger, 2000)

Geiger proposes that government organizations have not managed costs well simply because they didn't have to manage costs well. (Geiger, 2000) The historically high funding levels removed any necessity for efficiency. However, today's reduced resources pose a significant threat to mission capability and are forcing government organizations to recognize the importance of cost management. Geiger offers his Interactive Cost Based Management model as a tool for government organizations to affect sound cost management practices.

b. Interactive Cost Based Management

Geiger dismisses the assumption that government cannot manage itself well by observing that government has not had to manage costs well in the last sixty years. (Geiger, 2000) He notes that military leaders are premier cost managers in the arena of the battlefield. Military commanders start with objectives and missions provided by higher authority and they seek to accomplish that mission with the lowest possible cost in people and resources; an implicit cost/benefit analysis. (Geiger, 2000)

The Interactive Cost Based Management model is fashioned after the Navy's Command, Control, and Communication paradigm; consistent perception (intelligence gathering), warrior (managerial) pull, collaborative planning and execution. (Geiger, 2000) Applying cost management techniques to this paradigm, Geiger offers the model depicted in Figure 5 for cost management in government:

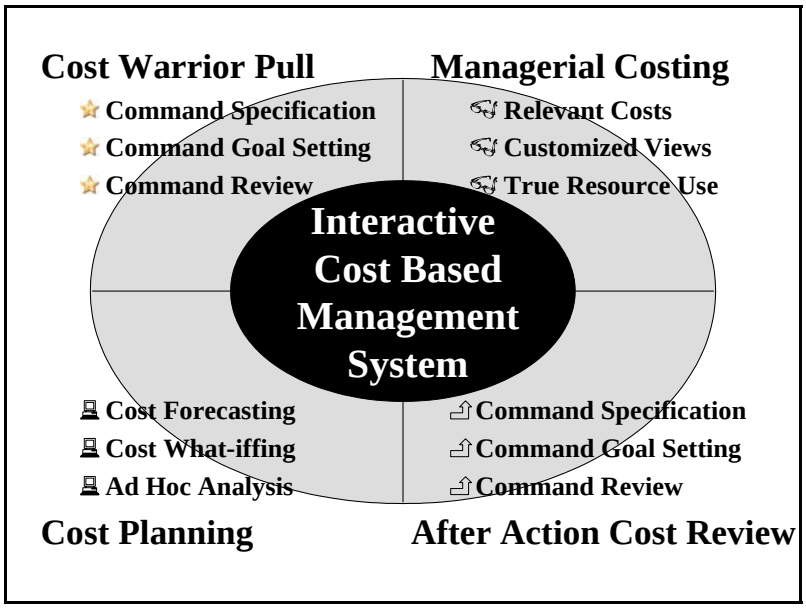

Figure 5. Interactive Cost Based Management Paradigm. (From: Geiger, 2000)

The paradigm is based on good reconnaissance, planning and after action review coordinated by strong leadership. (Geiger, 2000) It is based on decentralized accountability and recognizes the need for cost measurement processes that provide relevant information that lead to better decisions and drive the desired consumption behaviors. Managerial costing provides the information (or reconnaissance). Planning provides the forethought and promotes preemptive vice reactive actions. After action cost review completes the accountability loop and insures the continuous learning process. Finally, the leadership, the Cost Warrior's role in guiding and coordinating the other activities is critical and cannot be delegated. (Geiger, 2000)

(1) Cost Warrior Pull. The leadership, or Cost Warrior, must specify what will be measured and how the information will be presented. This specification is the key to achieving relevant cost information and should be based on the requirement, frequency, level of detail and applicability. Additionally, leaders must clarify their intent and provide a concept of operations that allows subordinates to vary from the original plan when necessary in pursuit of the overall goals. (Geiger, 2000) And finally, the leader must follow through with reviews of the organization's cost performance.

(2) Cost Planning. This concept is based on a cycle of commitment and review that encourages learning and improvement. It begins with a forecast of future cost performance, reached through reasonable cost projections negotiated with upper management. This routine establishes a commitment to performance and provides a standard for accountability. (Geiger, 2000)

The forecast must be separate from traditional budgeting drills. It should focus on management objectives that have short feedback cycles and where adjustments can be made. Geiger notes that if the budget process is pushed down to the lower levels of an organization; the long feedback cycle creates the view that the budget is a spending entitlement rather than a target for continuous improvement. (Geiger, 2000)

In a culture of continuous improvement, the forecast is viewed as dynamic. The expectation is that the forecast will be continuously tightened to encourage innovation and efficiency. As an organization's cost management improves resources will become available to be applied to higher priority requirements. (Geiger, 2000)

(3) After Action Cost Review. This phase provides the performance measure of actual results against forecasts and explains the differences. This review provides the basis for accountability. It is in this phase that improvement gains are recognized and plans for additional improvement are generated. It consists four major components (Geiger, 2000):

- Present results compared to forecast. Managers will gain understanding of their performance through the analysis. Personal accountability is established.
- Reconcile and explain results. Identify both problems and successes. This provides an important opportunity for learning.
- Prepare and present a plan of action. This is a specific plan that lists critical actions to be completed and signals command expectations. The specificity should include: who, what and when.

- Submit forecast for the next reporting period, incorporating lessons learned. Continued refinement of the forecast is expected, to more closely reflect reality. Again, it should be based on realistic cost projections and negotiations with upper management.

(4) Managerial Costing. This process develops and provides credible measurement of the true cost of resource consumption. Managerial costing is responsive to the organizations managers and provides relevant information needed to make sound decisions and motivate desired behaviors. For this reason there is no "one size" that "fits all" managerial costing system; the system must be tailored to the leader and the organization. Geiger emphasizes that during the costing process, the selection of the cost drivers must consider the behavioral motivation, measurement credibility and cost of the measurement itself. The driver must be credible, useful, and not costly to measure. (Geiger, 2000) As such, a legitimate managerial costing system provides realistic awareness of the cost of resources, reducing the demand for resources. This is the basis of sound cost management.

Dale Geiger has presented his unique model for managerial cost management in government organizations. He has done this through a comparison with the military model of command and control. He has described a cycle that begins with the leadership setting the expectations and requirements. The organization supports the leadership expectation with a costing system that illuminates the relevant cost of resources and allows for a review of the findings and performance. Based on historical cost data, the organization then commences cost forecasting for the next period, and the cycle begins again. Geiger's model relies heavily on individual accountability, individual and organizational learning, and continuous improvement.

D. SUMMARY

This literature review has presented a number of concepts, theories and models that provide a framework upon which to discus topics raised throughout the remainder of this thesis. First, Mintzberg argues that an organization's design is critical to its effectiveness and success. The organizational structure must "fit" the work performed or

the output desired. Nadler and Nadler build upon these concepts and add that organizations are interactive with the external environment and with every internal element. One cannot make changes in any element of an organization without considering the impact throughout the entire organization. They further discuss these implications on types of change and the cycle of change. Nadler and Nadler conclude that organizational change is an integrated effort requires energy, courage, vision, and committed leadership. John P. Kotter presents his eight-step model of change emphasizing that change occurs in a series of phases that must each be completed in entirely and in order for significant change to take hold. He emphasizes leadership, coalitions, vision, strategy, communication and generating short-term wins, and anchoring change in the new culture. Bossidy and Charan review many of the concepts presented earlier in their focus on execution. They argue that execution is integral to strategy, the primary job of the leader and the core of organizational culture. Additionally, they present their model for executing organizational change through execution. Finally, Dale Geiger presented his unique concept of cost based management in government and military organizations. Throughout his book, he utilized several of the concepts presented by Bossidy and Charan. Execution is essential in Geiger's analogy of cost management.

These authors and theorists have provided a clear and comprehensive discussion of the organization as a structure and an integrated system. They have provided relevant considerations for effective organizational change and finally a systematic strategy for cost management.

These theories are relevant to the analysis and evaluation of the Naval Aviation Enterprise as they provide a framework against which to examine the role of the NAE organizational structure, change management process and cost management practices in regards to maximizing AIRSpeed benefits toward the goal of recapitalization. The concepts and applications presented in this chapter provide the analytical tools to evaluate and understand the progress of the Naval Aviation Enterprise change effort by detailing a systematic approach to evaluating an organization as a system and transformational change as a process.

III. NAVAL AVIATION ENTERPRISE AIRSPEED

A. INTRODUCTION

This chapter will provide information on the background, philosophy, concepts and processes that are collectively Naval Aviation Enterprise AIRSpeed. In order to establish a foundation for this discussion this chapter first presents a brief discussion of the organizational structure of the Naval Aviation Enterprise and the history of AIRSpeed. This chapter then presents the concepts and methodologies of Naval Aviation Enterprise AIRSpeed.

B. DISCUSSION AND BACKGROUND

In 2002, the Chief of Naval Operations, Admiral Vern Clark, unveiled Sea Power 21 as the strategy for the Navy's future. It was supported by three core components: Sea Shield, Sea Warrior and Sea Enterprise. Sea Enterprise is identified as the resource enabler for Sea Power 21, responsible for optimizing resources at every level in the Department of the Navy, including modernization and recapitalization. In 2004, the Naval Aviation Enterprise (NAE) was formed to implement the aviation components of Sea Power 21 and to support the initiatives of Sea Enterprise.

1. Purpose of the Naval Aviation Enterprise (NAE)

The NAE was formed as a partnership between multiple organizations within Naval Aviation to resolve interdependent issues that affect multiple commands. This construct was viewed as transformational within the Navy, where individual organizations adopted a corporate model to foster inter-organizational communication, alignment and integration. Expectations included stimulated productivity, change facilitation, optimization of resources, cost management and the efficient generation of operational readiness. The vision of the NAE is "to deliver the right force, with the right readiness, at the right cost, at the right time -- today and in the future." (Zortman, Massenburg, & Kilcline, Thomas J., Jr., 2005) The NAE intends to achieve this vision

through single process ownership that will establish a culture of cost-wise readiness (achieving the right readiness at the right cost), improved material management, and balanced logistical support with reduced turnaround times.

NAE measures efficiency and effectiveness through a single Fleet-driven metric of "aircraft and carriers ready for tasking at reduced cost." (Zortman et al., 2005) This metric is the standard against which the NAE measures the ability to deliver readiness tied to Fleet-driven demand, including reduced cycle time, improved quality and reliability, reduced costs and implementing process efficiencies.

2. Naval Aviation Enterprise Organizational Structure

The NAE organization is modeled after a corporate structure as diagramed below in Figure 6. It is comprised of a Board of Directors (BOD) with a six member executive steering committee composed of Commander, Naval Air Forces (CNAF) as the Chief Executive Officer; Commander, Naval Air Systems Command (NAVAIR) as the Chief Operations Officer; Commander, Naval Air Forces Atlantic (CNAL) as the Enterprise Readiness Officer; Total Force Readiness Officer (AIR 1.0 NAVAIR) for policy and personnel; a Chief Financial Officer (AIR 6.8, NAVAIR) and OPNAV N88 for acquisition and procurement. A variety of supporting commands that directly impact Fleet readiness or incur costs are also on the board.

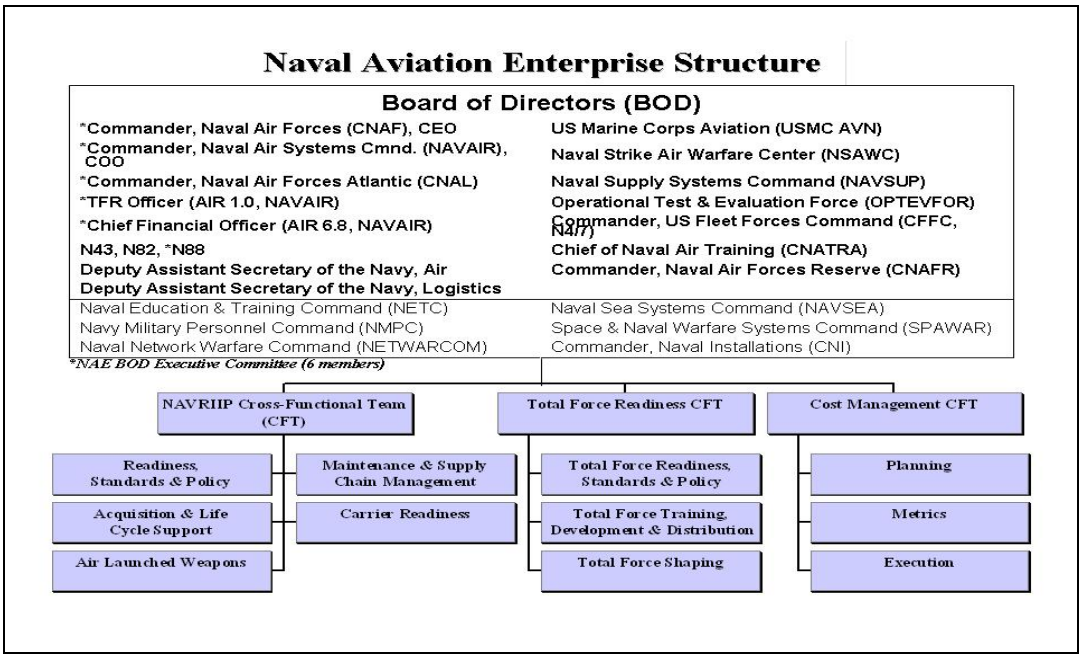

Figure 6. Naval Aviation Enterprise Structure. (From: Shrout, 2006)

The primary commands that support operational readiness and incur costs include Commander, Naval Air Forces (CNAF), Naval Air Systems Command (NAVAIR), Naval Sea Systems Command (NAVSEA) and Naval Supply Systems Command (NAVSUP). These commands are structured as a "triad" to support Fleet requirements, as depicted in Figure 7. The single process owner is CNAF, who directs and monitors the requirements. Fleet requirements are presented and funded through the Office of the Chief of Naval Operations (OPNAV) and then the systems commands (NAVAIR, NAVSEA and NAVSUP) execute the requirements.

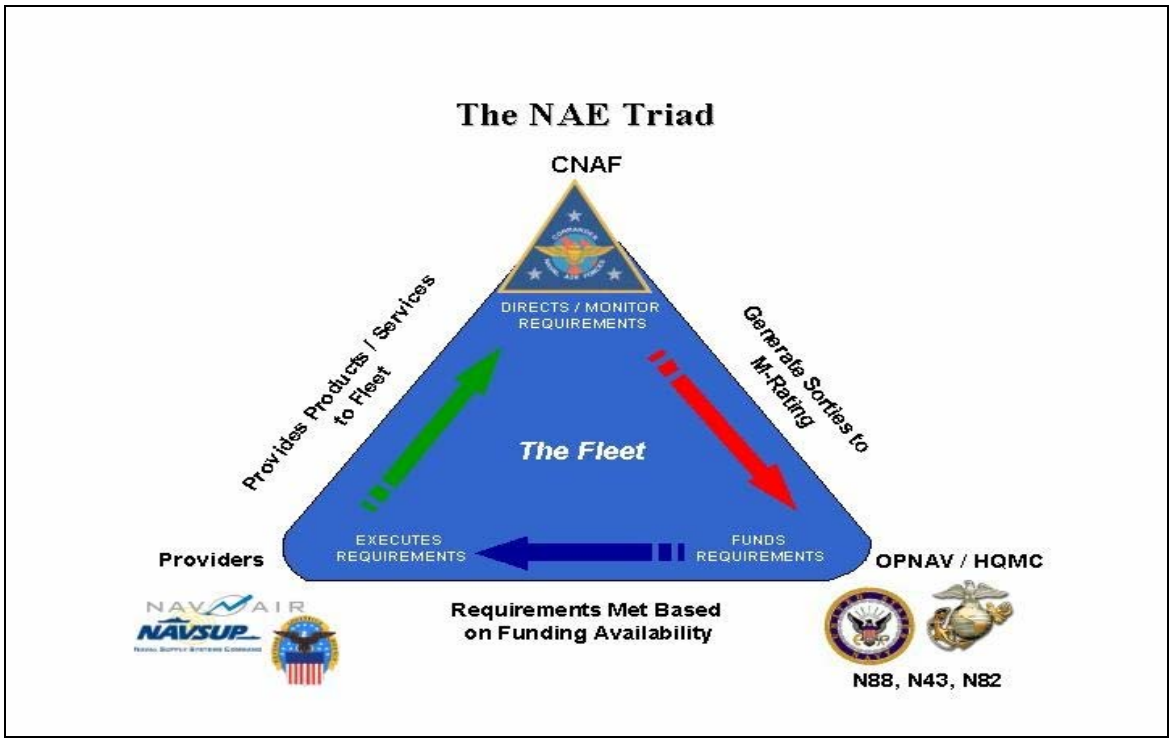

Figure 7. The Naval Air Enterprise Triad (From: Shrout, 2006)

The NAE Board of Directors is supported by three cross-functional teams (CFTs); titled Total Force CFT, Readiness CFT and Cost Management CFT. The primary responsibilities of each team are shaping force structure, generating fleet readiness and managing costs, respectively between the commands that comprise the NAE Triad. Each CFT is chaired by a member of the NAE Board of Directors.

Integrated within the CFTs are Type Model Series (TMS) teams, responsible for the daily management of specific aircraft types (F-18E/F, P-3C, SH-60R, etc.) The TMS teams consist of the members of the NAE Triad that are specifically responsible for that specific aircraft type. They work closely with the operational wings to support squadron demands in the form of budgetary, material and maintenance resources. The purpose of the TMS team is to eliminate barriers between different organizations within the NAE to efficiently generate readiness at reduced costs.

C. AIRSPEED

AIRSpeed is the application of industry-proven process improvement methodologies to the business of Naval Aviation. It is a strategy and set of established best business management tools intended to increase efficiency and productivity, resulting faster delivery of products to the Fleet at reduced cost. The tools are Lean, Theory of Constraints (TOC) and Six Sigma. Through the application of these initiatives, the NAE intends to harvest efficiencies in the way it does businesses, thus guaranteeing the future of Naval Aviation. (Zortman et al., 2005)

1. History of AIRSpeed

AIRSpeed began as four separate programs. Depot AIRSpeed was started in 1999 with the mission of reducing cycle-time, improving productivity and establishing a culture of continuous process improvement. Enterprise AIRSpeed began in 2003 and aligned the organizational, intermediate and depot level supply and repair processes to the demands of the Fleet. (Shrout, 2006) Enterprise AIRSpeed was designed to insure that operational units were provided the correct resource entitlements while properly managing costs, directly supporting the initiatives of the Readiness CFT. Depot AIRSpeed and Enterprise AIRSpeed were integrated in 2004. NAVAIR AIRSpeed was established in 2004 to extend the continuous process improvement philosophies to the transactional and non-production service environments of the "providers" in NAE Triad. NAVAIR AIRSpeed's focus is on cultural change to enable the personnel of NAVAIR to become more productive, efficient and reduce costs in the management of research and development, test and evaluation, and acquisitions. Lastly, Naval Inventory Control Point (NAVICP) AIRSpeed was initiated in 2005 to improve corporate competencies and productivity in integrated supply chain management between NAVSUP and the NAE. In October 2006, all four AIRSpeed programs were collectively brought under the umbrella Naval Aviation Enterprise AIRSpeed to provide the BOD enterprise-wide visibility on all AIRSpeed activities and ensure the proper prioritization and coordination of efforts.

2. AIRSpeed and Continuous Process Improvement

AIRSpeed is a blend of several continuous process improvement (CPI) methodologies. The three primary CPI tools are Lean, Six Sigma and Theory of Constraints (TOC). The application of these principles is focused on achieving the desired level of readiness while delivering appropriate inventory levels at the right time and at reduced operating costs. Below is a short discussion of each methodology:

a. Lean

Lean is focused on the elimination of waste from a process. Waste is defined as anything that is not necessary, or provides "no value added," relative to customer value and the production of a product or a service. (Womack & Jones, 1996) The goal of *Lean* is to achieve perfection through the total elimination of waste in the value stream; including time, space, motion and resources. Constant and incremental improvements are used to balance operational requirements and the standard production workflow. The emphasis is on the minimization of resources used and on increasing flow through the production process. Five essential elements of Lean are listed below (Dennis, 2002):

- Identify what creates value in the eyes of the customer
- Identify the process or sequence which creates the value and eliminate waste
- Make the activity flow as the customer pulls the product or service through the system
- Involve and empower workers
- Continuously strive to perfect the process

Lean theory relies on the "Five S's" to create a simplified visual workplace, one that is self-explaining, self-ordering and self-improving. (Dennis, 2002) The simplicity of the visual workplace accelerates the identification and elimination of waste in the process. The “Five S’s” are (Dennis, 2002):

- Sorting – Clean house , remove unnecessary items
- Storing – Organize in order of the process; create a place for everything

- Shining – Physically clean everything, putting everything in its place
- Standardize – Maintain order and keep everything accessible and ready to use
- Sustaining – Resist returning to the old methods

The application of *Lean* goes beyond the production floor. One example is the design phase, where most costs for a product are established. The choice of materials and engineering configurations will impact future reliability, time to repair and ultimately repair costs. Risk must be balanced between product design and financial returns.

Leadership is critical to sustaining the culture of *Lean.* The culture will be transferred throughout the organization only through the coaching and guidance of the more experienced *Lean* champions. (Womack & Jones, 1996) It is leadership that insures that the organizational goals are implemented, acted upon, validated, revised (if necessary) and sustained.

b. Theory of Constraints (TOC)

TOC is a management philosophy that aims to continually achieve more of the goal of a system. It is based on the belief that any organization has at least one constraint and that the greatest Return on Investment (ROI) will be obtained through improvements to that constraint. In order to manage the performance of the system, the constraint must be identified and managed correctly through the Five Focusing Steps listed below. (McMullen, 1998):

- Identify the constraint (the primary obstacle to achieving the goal).
- Decide how to exploit the constraint (create a plan for the constraint that best supports the organization's goal).
- Subordinate and align all other processes to the above decision.
- Elevate the constraint (if required, increase capacity of the constraint).
- If, as a result of these steps, the constraint has moved, return to Step 1. Do not let inertia become the constraint.

As constraints are identified and exploited, system throughput is increased and non-value added activity is removed from both the constraints and other processes. Continuous identification and exploitation of the remaining primary constraint allows high returns in increased throughput for the effort spent on the improvement process.

A primary concept of TOC is the application of market-demand pull supply-chain management. In previous systems, components and parts are "pushed" to the end users. Historically, in the aircraft intermediate maintenance activities, components were inducted regardless of whether they were required. In the "pull" system, actual flight-line demand (operational requirements) and the time it takes to reliably replenish (TRR) dictates inventory buffer levels and times to induct components into the repair process. (Shrout, 2007)

c. Six Sigma

Six Sigma is a management methodology based on the assumption that process capacity will be increased through a reduction in process variation. It is a quality measurement and improvement method that focuses on the control of a process until the point of six sigma (standard deviations), from the centerline, or 3.4 defects per million items produced. (Stamatis, 2004) Six Sigma identifies quality factors as determined by customer needs. Then, through the use of facts, data, statistical analysis, and diligent attention to managing the process, it reduces variation, improves capabilities and increases stability.

The Six Sigma model is highly disciplined and focused on delivering near perfection in the production of products or services. It is statistically based and assumes that if you can measure the number of defects in a process, you can figure out how to eliminate them. A typical Six Sigma process has the following five stages often referred to as DMAIC. (Stamatis, 2004):

- Define: clarify and narrow the scope of the problem in a way that measurable goals can be achieved. Examine the process in detail, develop improvement suggestions and then implement the recommendations.
- Measurement: Gather data on the process and prepare for analysis.

- Analysis: the process is mapped and documented; the quality of the data is verified and then analyzed. Initial analysis normally focuses on identifying people's failures to act as needed or ensure effective controls at each stage of the process.
- Improvement: recommend, decide and implement process improvements
- Control: create controls that enable and sustain the improvements.

Six Sigma performance improvements result from decreased process variation and the development of a highly repeatable process. Reductions in the number of defects requiring rework lead create customer satisfaction, increased organizational morale and a reduction in production costs.

NAE AIRSpeed is focused on aligning these business methodologies and a culture of Continuous Process Improvement (CPI) throughout the organization in order to achieve mission requirements with reduced resources. AIRSpeed focuses the entire Enterprise on aligning and optimizing all maintenance, supply and administrative support functions in support of operations in order to achieve this goal. The expected outcome is to reduce the cost of Naval Aviation while meeting current and future readiness requirements.

3. Naval Aviation Readiness Integrated Improvement Program

The Naval Aviation Readiness Integrated Improvement Program (NAVRIIP) applies continuous process improvement techniques to the operational level of the NAE. Through NAVRIIP, the NAE gains an increased understanding of the operational cost drivers within Naval Aviation. NAVRIIP is focused on achieving "aircraft ready for tasking at reduced cost" by creating a culture of Cost-Wise Readiness and continuous process improvement. (Zortman et al., 2005)

Implemented in concert with Enterprise AIRSpeed in 2003, NAVRIIP changed the way the Navy provides manpower, equipment, maintenance, supply and training to Naval Aviation commands. The goal is to align the interactions between the maintenance and logistics activities in support of the operational requirements. To accomplish this, NAVRIIP measures inventories, reliability, cycle time, and costs, to identify and resolve

barriers to improvement. (Zortman et al., 2005) The collected data are processed and reported in a standardized format. The standardized reports are utilized by Type Model Series (TMS) teams to manage readiness and costs at the operational level, remove barriers throughout the organization and monitor progress, and provide leadership the visibility to make informed decisions.

4. Defining AIRSpeed Benefits

All activities within NAE AIRSpeed are responsible for reporting financial benefits attributable to AIRSpeed initiatives. In order to establish a baseline for the types of benefits gained the NAE has established the below definitions (*Naval Aviation Enterprise AIRSpeed Concept of Operations, Draft Edition,* 2007):

Type I Benefits:

- Real dollars that can be used to offset dollars previously taken out of the budget (wedges) or can be used for emergent Naval Aviation Enterprise needs.
- Have a direct and certain impact on NAE resources. There is a clear cause and effect relationship between the project and resources.
- There is a permanent reduction in costs / assets.
- Include benefits to entire NAE: NAVAIR, CNAF, NAVICP and Fleet Readiness Centers (FRCs)[1].
- Examples of Type I benefits include reductions in labor costs, facility costs, scrap and material costs, and contract costs.

Type II Benefits:

- Are associated with waste elimination, where assets/resources are feed up to be reassigned to other value-added work and/or potential future benefits.
- Examples of Type II benefits include cost avoidance from AIRSpeed efficiencies and the reduction of repair assets, reduction and reallocation of space requirements, and reduced future resource requirements due to process improvements.

[1] In October 2006, the first Fleet Readiness Center (FRC) was stood up. The FRCs will integrate former Depot-level and Intermediate level maintenance activities in compliance with recommendations made during the 2005 Base Realignment and Closure legislation.

Type III Benefits:

- Represent projects that are associated with productivity gains, such as improvements in Cost-wise Readiness or quality of NAE products and services.
- Examples of Type III benefits include: improved quality of work life, customer satisfaction and loyalty, employee motivation and satisfaction and faster response time.

This study focuses on Type I benefits as they represent real dollars that can be harvested and reapplied to other priorities or reinvested for recapitalization. The distinction between types of benefits becomes critical when evaluating the impact of AIRSpeed initiatives on the business of Naval Aviation and meeting the stated objectives.

D. SUMMARY

This chapter presented a brief discussion of the background, history, philosophy, concepts and processes that are collectively Naval Aviation Enterprise AIRSpeed. AIRSpeed was introduced as four separated initiatives across Naval Aviation between the 1999 and 2005. These initiatives were designed to introduce and implement industry-proven best business practices to the business of Naval Aviation from the maintenance and supply to administrations and procurement. In general, AIRSpeed is the application of the management tools of *Lean*, Theory of Constraints and Six Sigma. In 2004 the Naval Aviation Enterprise was formed to align Naval Aviation after a corporate model to provide oversight and foster cooperation, communication and issue resolution between the multiple commands of Naval Aviation. In 2006, all AIRSpeed initiatives were combined under the NAE to provide single process ownership, oversight, management and decision making authority across the Enterprise. As a means of evaluating and measuring the gains of NAE AIRSpeed, the benefits have been defined as Type I, II, and III; from hard savings that can be reinvested to soft productivity gains and organizational improvement.

Through this discussion, a background and understanding of the Naval Aviation Enterprise and NAE AIRSpeed has been established that will provide the basis for the analysis and evaluation of NAE AIRSpeed that comprises the remainder of this study.

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IV. PRESENTATION OF FINDINGS

A. INTRODUCTION

This chapter presents the findings obtained from various sources to determine if Naval Aviation Enterprise (NAE) AIRSpeed initiatives have generated measurable savings that have been made available to recapitalize the future Navy and Marine Corps. Overall, this chapter will answer the primary research question as well as the secondary questions relating to the identification of cost savings and the financial, budgetary and managerial policies involved in the reinvestment of stated savings.

This research identified the procedures utilized for the accounting of AIRSpeed savings and benefits. It attempted to link identified savings (or benefits) to recapitalization. This research also evaluates the effectiveness of cost saving initiatives within the current financial, budgetary and managerial framework. This chapter presents the findings of this research and its implications.

Information was gathered from community briefs, documents, and informal interviews to capture the insights of the variety of commands and activities that comprise the NAE. The information sought was related primarily to the claimed savings attributable to various activities as well as the application of the identified savings. Most interviews were informal; discussing areas specific to each individual's roles and responsibilities in regards to the NAE, AIRSpeed and the research data requested. Respondents consisted primarily of AIRSpeed program managers, implementation managers and comptrollers.

B. COST SAVINGS INITIATIVES

The first continuous process improvement initiatives were introduced to Naval Aviation in 1999. These predecessors to AIRSpeed included the independent introductions of *Lean* at Oceana, VA, and Lemoore, CA, and Theory of Constraints at NAVAIR Depot Cherry Point and Intermediate Maintenance Activity North Island. As

discussed in the previous chapter, these initiatives were combined under the purview of Enterprise AIRSpeed in 2003, concurrent with the implementation of the Naval Aviation Readiness Integrated Improvement Program (NAVRIIP). Together, Enterprise AIRSpeed and NAVRIIP were to enable operational cost-wise readiness through the application of process improvement tools to all levels of maintenance, supply and operations.

As the focus of this thesis begins in Fiscal Year (FY) 2004, cost savings (or reductions) due to the implementation of Depot/Enterprise AIRSpeed was the initial focus of this research. As Enterprise AIRSpeed and NAVRIIP were established in 2003, and the NAE was formed in 2004, there was not yet any framework of financial accounting established for the identification, tracking and reporting of FY-2004 cost reductions. "No real benefits for 2004 were captured or tracked to the point of granularity." (Novak, 2007b) AIRSpeed results were reported in terms of efficiencies and productivity increases, which are today defined as Type II (efficiency and productivity) benefits by the NAE. The below testimony on AIRSpeed benefits was delivered to the House Armed Services Committee, Subcommittee on Readiness, in April 2005:

> Depot AIRSpeed initiatives have resulted in: an improvement in turn around time for the CH-46 aircraft at Cherry Point Depot from 215 to 170 days and work in process dropped from 28 aircraft to 18, using the same staff level; a drop in the turnaround time for EA-6B re-wing at the Jacksonville Depot from 594 days to 450 and work in process dropped from 16 aircraft to 9, with 5 of the last 7 delivered ahead of schedule; and at North Island Depot, we've seen a reduced turnaround time on the F/A-18 aircraft from 192 to 132 days and work in process dropped from 31 aircraft to 16. (Hugel, 2005)

FY-2005 marked the first indication of identified financial cost reductions attributed to AIRSpeed initiatives that could be classified as Type I benefits (real dollars that could be used to offset dollars previously taken out of the budget or used for emergent Naval Aviation Enterprise needs). The NAE reported that the Flying Hour Account was fully executed in 2005, with $163 million remaining (5% under budget) that was made available to offset other emergent execution year bills such as fuel and health

care costs. (Skinner, 2006) Subsequently, beginning in FY-06 over $131M per year was removed from the Flying Hour Program due to anticipated future AIRSpeed efficiencies within the intermediate and depot level aviation maintenance activities. (Wood, 2007) This equated to an $820.9M budget reduction across the Future Years Defense Plan (FYDP).

Other FY-2005 AIRSpeed savings were identified by the NAE as the result of manpower reductions within intermediate and depot level maintenance activities. The savings were associated with the elimination of 212 billets and were calculated to be $11.2M at the presidential budget rate for those positions. The billets were returned under the Military Personnel, Navy (MPN), account and utilized by Commander, Fleet Forces Command (CFFC) to stand up other programs. (Linsteadt, 2007) The NAE identified the savings associated with these reductions, calculated them across the FYDP and reported them as Type I savings in FY-06 and subsequent years.

AIRSpeed financial efficiencies for FY-06 and after are presented by the NAE as *benefit*s vice *savings*, as "the connotation for savings is for someone to take them." (Novak, 2007a) FY-06 financial benefits totaled $46.5M Type I benefits and $82.3M Type II (efficiency and productivity) benefits. These benefits were presented by the AIRSpeed activities that report to the NAE as illustrated in Table 1. It must also be stated that these benefits were reported as progress against existing budget "wedges" (dollars taken out of the budget due to mandated reductions). Ideally, if an organization were able to realize benefits that recovered the exiting "wedge," then funds could be realigned by the Enterprise to address other funding requirements.

Activity	Type I Benefits	Type II Benefits
Fleet Enterprise	$22.6M	$43.7M
Depot	0	$22.7M
NAVICP	$1.4M	$1.8M
NAVAIR	$22.5M	$14.1M
Total	$46.5M	$82.3M

Table 1. FY-06 NAE AIRSpeed Benefits (From: Novak, 2006)

The FY-2006 Type I benefits attributed to Fleet Enterprise also included the $11.2M in FY-05 manpower cuts[2] and $11.4M in FY-2006 as the benefits continue to be counted across the FYDP. (Novak, 2006) The remainder of FY-06 NAE AIRSpeed Type I benefits, $23.9M, were attributed to NAVAIR and NAVICP initiatives.

In summation; the NAE began identifying financial benefits attribute to AIRSpeed in FY-2005. Cumulative Type-I benefits for the year of execution were identified as $174.2M in FY-2005 and $23.9M in FY-2006. When applied across the FYDP, Type I benefits totaled $822.2M from FY-2005 benefits and $147.8M from FY-2006 benefits. No Type I benefits were identified for FY-2004.

C. ACCOUNTABILITY OF COST SAVINGS

This research attempted to identify the procedures utilized for the accounting of AIRSpeed savings and benefits. It attempted to link claimed savings (or benefits) to recapitalization.

The organizational structure and reporting hierarchy within the NAE was in constant flux during the period of this research. Multiple methods were identified for accounting for NAE AIRSpeed financial benefits. As discussed earlier, the framework for this accounting did not exist when the NAE was established in 2004. The lack of established norms resulted in inconsistent reporting methods and tracking of benefits. Correspondingly, early benefits (FY-04) were reported in terms of efficiency gains; reductions in turnaround times and work in process (Type II benefits).

Financial benefits (Type I) for FY-2005 were accounted for through two measures. The first was based on fund accounting, in which expenditures are tracked through various special use accounts and drawn against an established budget. The CNAF Flying Hour Program savings of $163 million was identified as the fund balance remaining upon the execution of the required annual expenditures. Additionally, these

[2] FY-2005 manpower benefits were included in the FY-2006 Type I benefits as they were not captured for presentation purposes in FY-2005

savings were tracked though NAVRIIP. Monthly costs were measured and displayed against the budget profiles, allowing the calculation and analysis of budget variances.

The second accounting measure utilized for identified FY-2005 savings was the simple calculation of the costs associated with the 212 billets eliminated from the intermediate and depot level maintenance facilities. Although the manpower cost reduction was identified as a Type I savings by the NAE, no real savings was realized by the greater Sea Enterprise. The billets were returned and reassigned at the CFFC level. Additionally, no other Type I savings were identified at the intermediate and depot level maintenance facilities. "In almost two years of gathering data from all our former I-level and Depots (now FRCs), we have not shown any Type I savings except for the directed manpower cuts we took in FY-05." (Linsteadt, 2007)

The final accounting method discussed was employed in FY-2006 by NAVAIR. The AIRSpeed Deployment Management System (ADMS) is a commercial web-based software system designed to improve the process of data gathering, validation and reporting of *Lea*n Six Sigma projects. NAVAIR uses the system to manage AIRSpeed projects from initial project idea inception, through project selection, benefit validation and ultimately savings realization. Financial benefit calculation, tracking and validation are only one aspect of the management system. It also manages document preparation, training, performance monitoring and lessons learned and replication opportunities.

ADMS utilizes a standardized process to validate financial benefits, or cost savings. The process begins with the completion of the Financial Benefits Workbook (FBW) by the project leader. The FBW requires the project leader to identify (by cost element and time period) the current baseline costs of the process, the new or non-recurring (one-time only) costs of implementing AIRSpeed changes and the post-implementation improved process costs. The projected cost savings are the net difference between the baseline costs and the new non-recurring plus the post-implementation costs. The below example illustrates a hypothetical calculation of cost savings:

Baseline Costs		$250,000
New or Non-Recurring Costs	$25,000	
Post-Implementation Costs	$200,000	
		$225,000
Net Process Cost Savings		$25,000

Following the calculation of the net benefits, the project leader must determine how much of the predicted net savings are Type I benefits, including potential manpower reductions. The Type I benefits are then identified and tracked by Budget Line Item (BLI). ADMS allows the tracking and verification of actual savings compared to predicted savings. The NAVAIR validation process utilizes trained financial representatives to assess and validate the reasonableness of the savings as an independent analysis. Provided that the savings are validated and are greater than any applied wedges (budget reductions) to the affected BLIs, the project financial lead advises the comptroller that the savings can be withheld by BLI.

The NAE measures all Type I financial benefits against "the wedge," or dollars previously taken out of the budget through mandated reductions. The intent is to avoid "double-booking" financial benefits; giving back savings against a BLI that has already been reduced in anticipation of AIRSpeed efficiency gains or other budgetary pressures. AIRSpeed is viewed as the tool to recapture the value of the budget reduction. As a result, all Type I benefits reported by the NAE are first measured against the established wedge. Only Type I benefits in excess of the wedge are considered available for reinvestments. Figure 8 illustrates the NAE reported FY-2006 and FY-2007 Type I benefits against the "wedge".

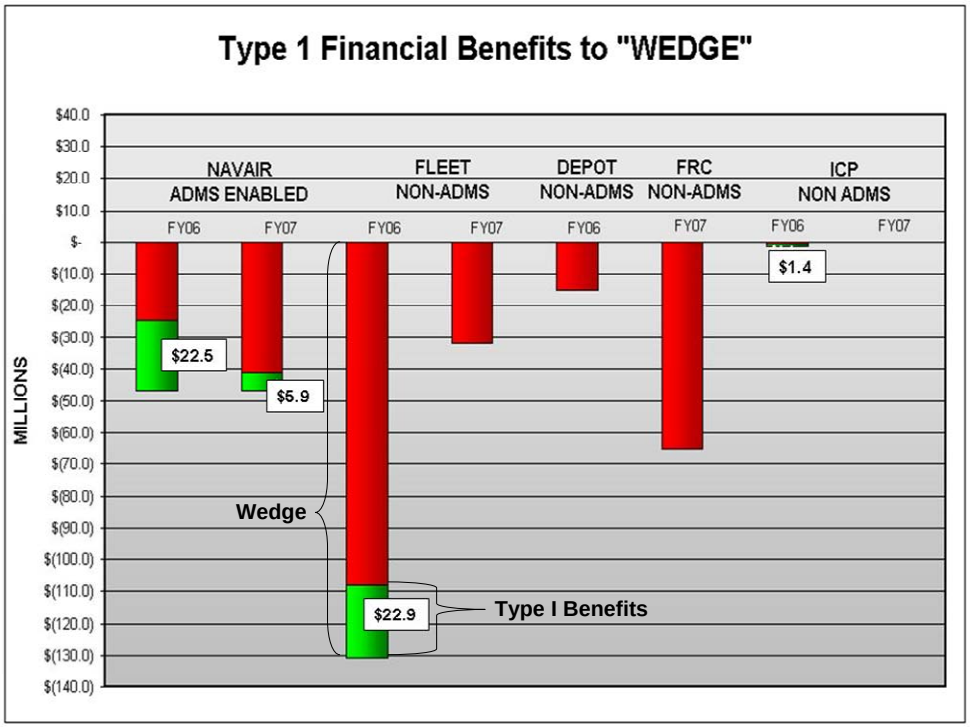

Figure 8. FY-06 and FY-07 Financial Benefits to "Wedge." (From: Skinner, 2007)

As illustrated above, Type I benefits for FY-2006 fell significantly short of the "the wedge." As such, there would not be an expected return of Type I benefits to the resource sponsors for recapitalization.

D. REINVESTMENT AND RECAPITALIZATION

In the absence of identifiable AIRSpeed Type I benefits that could be formally linked to reinvestment and recapitalization initiatives, this research attempted to identify any changes in appropriation trends that could be related to AIRSpeed benefits. As stated in the introduction, the primary incentive for implementing NAE AIRSpeed was to counter the alarming trend in reduced aircraft procurement across the FYDP. This research examined this trend to determine if the downward trend had been halted or slowed by reduced costs of other aviation programs. Table 1 illustrates the number of aircraft planned for procurement in the Department of the Navy's' Presidential Budget

submissions (PB01-PB08) as programmed across the FYDP. The final number in each column (FY00-FY06) represents the total number of aircraft purchased in the year of execution.

Number of Aircraft Programmed for Purchase

President's Budget (PB)	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
PB01	**115**	128	130	173	177	**187**						
PB02		**124**	88	92	115	119	**143**	**155**				
PB03			**90**	83	85	105	147	193				
PB04				**99***	104*	109*	133	191	**258**	**302**		
PB05					**105**	108	127	184	240	285		
PB06						**111**	128	173	200	249	**259**	**254**
PB07							**125**	165	192	257	267	256
PB08									177	206	224	221

* Includes F-5E aircraft purchased from the government of Switzerland not included in the DON Budget Highlights Aircraft Procurement Plan until PB-06 (4 FY03, 4 FY04, 9 FY05; included in PB04 supporting tables and exhibits).

Table 2. Department of the Navy Aircraft Procurement Plan. (After: Highlights of the Department of the Navy FY 2006/FY 2007 Budget, 2005)

As depicted in Table 2, PB01 planned to procure 187 aircraft in FY-2005 and in actuality only 111 aircraft were purchased. PB02 programmed the procurement of 143 aircraft in FY-2006 and only 125 were purchased. This trend of declining procurement plans continues across all years of the FYDP. The only significant change in the downward trend of planned purchases occurred in PB04 due to the purchase of nineteen training aircraft that were not previously identified in the procurement plan. PB04 was submitted in February 2003, prior to the establishment of NAE and cannot be directly attributed to NAE AIRSpeed financial benefits.

One of the founding ideas for establishing the NAE and AIRSpeed was the concept that the Navy was mortgaging the future to pay current bills. Given this premise, the transfer of funds out of aircraft procurement accounts would be an indicator of the significance of this trend. This research attempted to identify any shift in trends of the amount of funds transferred from these accounts in relation to the total Aviation Procurement Navy (APN) appropriation amount for the Air Warfare resource sponsor. Transfer amounts recorded in the Department of the Navy Program Budget Information

System (PBIS) were compared to the total under the Air Warfare (N88) resource sponsor APN appropriation. Below threshold reprogramming totals were considered for FY 1999 through FY 2007. A negative transfer rate indicates a transfer out of the N88 APN account and a positive transfer rate indicates an increase in the account. Figure 11 illustrates graphically the percentage of funds transferred each fiscal year.

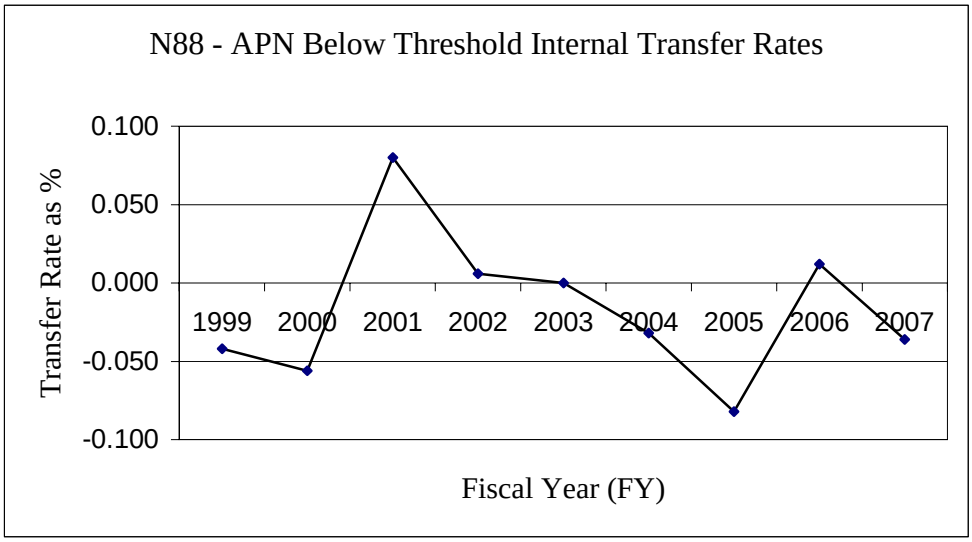

Figure 9. Transfer Rates as Percentage of President's Air Warfare APN Budget. (From: Department of the Navy Fiscal Year 2005 budget Estimates, 2005; Highlights of the Department of the Navy FY 2006/FY 2007 Budget, 2005; Department of the Navy's Program Budget Information System (PBIS), 2007)

Figure 9 illustrates a steady increase in the transfer rate out of the N88 APN account from FY 2003 through FY 2005. FY 2006 reversed the trend with a positive transfer rate. A preliminary look at the first six months of FY 2007 indicates that the negative trend observed prior to FY 2006 may continue in FY 2007.

The analysis of Air Warfare APN budgets and yearly below threshold transfers did not reveal a positive correlation with the implementation of AIRSpeed in FY 2003. Negative transfer rates continued to increase, with the exception of FY 2006. This data indicates no beneficial relationship between the observed trend in N88 APN transfer rates and the implementation of NAE AIRSpeed.

E. RECAPITALIZATION PROCESSES AND MECHANISMS

This research found no established accounting processes or mechanisms to return identified Type I benefits to the resource sponsor for recapitalization. Identified savings resulted in reduced future budgets, were posted against the wedge, or were retained at the activity level. Although the ADMS program identifies and tracks Type I benefits, thus enabling the comptroller to place a hold on the appropriate BLI funding, there is no mechanism beyond that point to return the funds to the resource sponsor as identified AIRSpeed Type I benefits. There are no lines (accounts) established in the Department of the Navy's Program Budget Information System (PBIS) to link identified AIRSpeed benefits to reinvestment opportunities. (Novak, 2007c)

The impact of the lack of a recapitalization mechanism to track Type I savings back to the resource sponsor was illustrated in the NAVAIR Tomahawk missile program. The adoption of AIRSpeed at the Tomahawk Depot resulted in the reduction of fixed and variable costs in the missile recertification process. As a result, the Program Office was able to sign a firm fixed price contract for FY 2006 with a combined Type I savings of $7.9 million. (*NAVAIR Success Stories by Program or Competency Project Sponsor*, 2006) The Program Office recognized the savings and attempted to return the savings to the resource sponsor. Since there were no procedures established for returning the savings as Type I benefits and evaluating reinvestment opportunities, the funds were returned to the Tomahawk Program. (Novak, 2007c) In this example, AIRSpeed principles resulted in real Type I benefits that could have been utilized for recapitalization. The lack of formal accounting procedures to identify, track and reapply the funds beyond the level of the comptroller resulted in a decision to return the funds to the responsible program. The Tomahawk program benefited from the application of AIRSpeed and the ability to internally reapply the savings achieved. The lack of visibility of the savings at the Echelon II level and higher, precluded the level of decision making authority necessary to apply AIRSpeed Type I benefits to recapitalization.

It must be noted that during the implementation of AIRSpeed, the NAE identified the challenge of returning benefits to the resource sponsor to realign or reinvest as

needed. Another challenge identified was the issue of connecting this process to PBIS for the Navy's budget development and execution. The Secretary of the Navy's Transformation Team Leaders (TTL) have chartered the Financial Working Group (FWG) to address these issues Navy wide. The FWG's effort is chartered to:

(1) Develop a Department of the Navy (DoN)-wide process for calculation, categorization, and validation of financial benefits associated with Lean Six Sigma (LSS) projects; and

(2) Provide DoN Leadership with recommendations for leveraging financial benefits resulting from LSS events.

The FWG has proposed a process to calculate, categorize and validate benefits associated with LSS projects, modeled after the NAVAIR process that is automated through the ADMS. Additionally, the FWG is developing a process to link and make visible, CPI/LSS efforts in PBIS. These results have been briefed through various leadership levels of OPNAV, Assistant Secretary of the Navy (Financial Management and Comptroller), and the United States Marine Corps. The FWG plans to continue the briefing chain of command and to introduce these concepts to the Chief of Naval Operations and the Secretary of the Navy sometime in the summer of FY-07. If approved, these process changes will enable Resource Sponsors to have insight into CPI/LSS-based results and tie the tracking of those results (by BLI) and benefit categorization to PBIS. This will in-turn provide the data/results transparency necessary to capitalize on reinvestment or realignment opportunities or acknowledge the benefits that CPI/LSS has yielded against existing budget reductions. (Novak, 2007c)

F. SUMMARY

This chapter has presented the findings obtained through multiple sources associated with NAE AIRSpeed. These findings provide the background required to address the primary and secondary research questions presented in this thesis. The primary research question is best answered in two parts. First, this research finds that measurable cost savings are being achieved through the application of NAE AIRSpeed. Savings have been achieved at the Fleet level through the application of AIRSpeed and

NAVRIIP, resulting in corresponding reductions in the cost of the Flying Hour Program and manpower at the intermediate and depot level maintenance activities. NAVAIR and NAVICP have also identified Type I savings commencing in FY 2006. Secondly, the cost savings achieved through NAE AIRSpeed have not been made available for recapitalization. Identified savings have been applied against other requirements, against the wedge or returned to the responsible activity.

Cost savings have been identified through varying methods, differing between years and activities. Early benefits were identified through efficiency and productivity measures. As AIRSpeed evolved, cost savings were expressed as fund balances remaining upon the execution of required expenditures. NAVRIIP formalized and tracked these savings, providing monthly updates and visibility for the Fleet AIRSpeed activities. NAVAIR introduced the ADMS system which identifies, tracks and validates financial benefits by BLI. This system is the most mature and comprehensive in the NAE. This system provides visibility within the activity and provides a mechanism to hold the funds pending validation of the predicted savings. The ADMS system provides an opportunity for expansion throughout the NAE. ADMS could be the foundation of a more expansive system designed to link the validated cost savings by BLI in ADMS to recapitalization opportunities resident in Department of the Navy financial systems.

Currently there is no established system for returning AIRSpeed benefits for reinvestment. No accounts have been established in Department of the Navy financial systems that can demonstrate a relationship between NAE AIRSpeed cost savings and capital reinvestment. The lack of such accounts prevents senior Navy leadership from achieving the visibility over the AIRSpeed benefits and the ability to make decisions in relation to reinvestment of those savings. The Financial Working Group (FWG) has been chartered to address these issues Navy wide.

The policy of measuring AIRSpeed benefits against the wedge (funds that have already been taken against a BLI in anticipation of future AIRSpeed benefits or other budgetary pressures) does not allow for funds to be captured for reinvestment. This practice assumes that each AIRSpeed activity under the NAE will begin the year at a deficit, with the goal of recovering the deficit through AIRSpeed benefits. Although this

practice is intended to prevent the “double-booking” of financial benefits it will become increasing difficult for activities to exceed the wedge and return benefits for recapitalization. The application of the wedge in anticipation of AIRSpeed financial benefits is the equivalent of a top-down cost reduction policy. Budgets are reduced, forcing the activity to find ways to reduce costs. AIRSpeed is a chosen tool to achieve such cost reduction. However, unless the amount of the wedge is applied to recapitalization, or the specific activity realizes benefits greater than the wedge, no benefits will be made available for recapitalization.

The potential for equivalent benefits each year is reduced as AIRSpeed initiatives continue to make each organization more efficient and productive. In each successive year, the magnitude of benefits available will likely be reduced as the most readily achievable benefits have already been harvested. If the wedge is based on previous benefits, the potential for the activity to surpass the wedge is reduced each successive year. This concept can be illustrated by the wedge placed against the Fleet in FY 2006 of $131 million, the amount that the Flying Hour Program was reduced. The Fleet was only able to post $22.9 million in Type I benefits against this wedge in FY 2006. As the Flying Hour Program was executed in FY 2005 at $163 million below budget, this left approximately $32 million in potential benefits available to post against the wedge without additional realized AIRSpeed benefits. Despite this fact, the Fleet fell short of not only the wedge but also of the $32 million that remained from the previous year's benefits. If AIRSpeed activities are expected to post Type I benefits greater than a wedge based on past achievements, it will be increasingly difficult for an activity to exceed this requirement. The wedge is the amount of funds the activity no longer has available whether based on past realized benefits or anticipated future efficiencies.

In summary, this research finds that NAE AIRSpeed has achieved measurable cost savings but does not have the systems or processes in place to make the savings available for reinvestment and recapitalization. Multiple methods have been used to demonstrate actual cost savings but there are no systems in place to link savings to capital reinvestments. Current financial and managerial policies promote measurable cost savings, but only to the extent that they are measured against budget wedges, which are

directly related to historical or anticipated future financial benefits. And finally, current financial and budgetary requirements do not allow for the reinvestment of generated cost savings.

The following chapter will analyze the NAE organization and the application of AIRSpeed utilizing the models presented in Chapter II of this thesis. This analysis will provide the framework for recommendations to further align NAE AIRSpeed with recapitalization requirements.

V. NAE AIRSPEED ANALYSIS

A. INTRODUCTION

This chapter provides an analysis of the Naval Aviation Enterprise (NAE) and the implementation of AIRSpeed as an organizational change effort. The focus is on the ability of NAE AIRSpeed to achieve measurable cost savings that can be reinvested for recapitalization. As discussed in the previous chapter, there is evidence NAE AIRSpeed is delivering measurable cost savings. However, the identified cost savings cannot be linked to reinvestments for recapitalization. This analysis will examine the role of the NAE organizational structure, change management process and interactive cost based management practices in regards to maximizing AIRSpeed benefits toward the goal of recapitalization. This analysis is conducted through the exploration of the models and theories presented in the literature review of Chapter II.

B. DIAGNOSIS OF THE NAVAL AVIATION ENTERPRISE SYSTEM

An analysis of the NAE requires that the organization be examined from an internal, external and a systems perspective. Mintzberg's Organizational Configurations model provides the basis to evaluate the "fit" of an organization. The model raises several questions. Are the components that make up the organization in balance? Is the organization designed to be efficient, adaptive, or innovative? Can the organization evolve or react to changes in the external environment?

Nadler's Congruence model provides the means to examine the organization as a system, both internally and as it interacts with the external environment. The basis of the Congruence model is that all components of an organization are related and interdependent, and must be accounted for in any change effort.

1. Organizational Configuration

The formation of the NAE in 2004 was the formal realignment of Naval Aviation into a “corporate-like” model, intended to increase internal visibility, promote managerial

control and centralize decision making authority. As the term "enterprise" implies, the intent of the alignment was to take bold action requiring broad participation to shape the aviation community into a commercial or business like organization. The organization drew collaboration from all activities tied to aviation and placed them under the purview of the NAE CEO (Commander, Naval Air Forces) and NAE Board of Directors. This centralization took a loosely diversified organization and attempted to shape it into a machine organization. (Mintzberg, Ahlstrand, & Lampel, 1998) According to Mintzberg's organizational configurations model, a machine organization operates as a highly programmed and well-oiled machine. It has a leader that presides over the operating base, technocrats (planners, analysts, etc.), a support staff and a line hierarchy to control the operating core of workers.

Prior to the formation of the NAE, Naval Aviation was comprised of "rather independent entities joined together by a loose administrative overlay," a divisionalized organization in Mintzberg's model. The various entities that comprise the NAE Triad produced distinctly different (although related) outputs. The Fleet generates operational readiness, Naval Air Systems Command (NAVAIR) and Naval Supply Systems Command (NAVSUP) deliver systems and hardware, and Office of the Chief of Naval Operations (OPNAV) provides resource funding. Each entity required uniquely specialized skills, a unique organizational structure and appropriate decision making authority to best deliver the desired outputs. According to Minzberg, the divisionalized organization requires some level of direct oversight by headquarters, but too much interferes with the required autonomy of the divisions. (Mintzberg, 1981) Accordingly, prior to the establishment of the NAE, the divisionalized nature of traditional Naval Aviation was dominated by the middle line component.

The NAE is designed as a machine bureaucracy, imposing a formalized bureaucracy that is vertically oriented, retains centralized power at the top, and requires technocratic controls in the form of action planning and the standardization of work. The strength of the technocratic component of the organization would have a significant impact on the success of the NAE to manage the transition from a divisionalized organization to a machine organization. The organization depends on the operating

processes to insure coordination throughout the organization. This leads to the fundamental question in this analysis. Is the technocratic component robust enough to standardize the processes and keep the organization in balance?

Mintzberg's configuration model states that every organization reacts to underlying pulls of the coordinating mechanisms of the organization. The NAE reacts to three primary "pulls"; the pull to centralize by top management, the pull to divisionalize by middle line managers and the pull to standardize by the technocrats. The establishment of the NAE is an intentional increase in "pull" by the top management which must be supported by a robust technocratic component. Is the nature of "pull" between the top management and the technocrats in balance and robust enough to overcome the traditional pull of the middle line? This relationship determines the balance and ultimately the "fit" of the organization. The organization will become closely aligned with the configuration that has the dominant pull and the success of the organization will be affected by the consistency of the internal elements of the organization in relation to the configuration pulls. Further analysis through Nadler's Congruence Model will provide additional insight to these issues.

2. Organizational Congruence

Nadler's congruence model expands upon the concept of organizational fit and provides a framework for further analyzing the patterns and behaviors of the NAE. The Congruence model is based on the premise that at the center of each organization is a highly complex social system comprised of four interrelated components: the work, the people, the formal organization and the informal organization. These central components transform the external elements of inputs into the organization's outputs. Each component is directly tied to and influenced by the others. Changes cannot be made to one component without consideration being given to the impacts of that change on the remaining components of the organization. The resulting "fit" of the basic components will determine the overall effectiveness of the organization. The ability of the NAE to generate measurable cost savings for reinvestment will be evaluated through this model.

In order to understand the ability of an organization to succeed, one must first understand what defines success. What outputs are desired from the NAE AIRSpeed? What are the inputs to the NAE that are transformed into the outcomes? Finally, how do the central components of the NAE transform the inputs into the desired outputs? These issues are presented below to evaluate the ability of NAE AIRSpeed to achieve the stated goals.

a. Outputs

The outputs of NAE AIRSpeed represent the ultimate purpose of the organization and are identified through the activities, behavior and performance of the organization as a system. The stated purpose of NAE AIRSpeed is to deliver Fleet aircraft ready for tasking at reduced cost. (Moore, 2006) The desired outputs include quality and productivity improvements, reduced cycle times, and a workforce with the right skills, focus and behavior required to deliver the right capability to the Fleet. An additional desired output, and the focus of this analysis, is the harvesting of savings for recapitalization. (Skinner, 2006) These outputs then become part of the organizational history, a critical component of the inputs to the organizational congruence model. The organization must be able to accurately identify the outputs in order to evaluate the inputs and formulate a viable strategy.

The NAE has successfully demonstrated the ability to achieve performance improvements in quality, productivity and reduced cycle times through the application of AIRSpeed. The workforce has been exposed to and trained on the processes of AIRSpeed. As a result, a significant degree of enthusiasm has been noted in the workforce, especially in the junior ranks which perceive AIRSpeed as an opportunity to increase promotion opportunities. (Sacco & Lovell, 2006) However, the desired output of generating savings available for recapitalization has not yet been evident. This issue will remain the focus of the remainder of this analysis.

b. Inputs

According to Nadler, the inputs to an organizational system are comprised of the environment, resources and history. Specific to the NAE, the inputs include the resources provided through budgetary funding, the constraints of the external environment and the historical events and activities of the organization.

Naval Aviation budgetary funding is provided through Congressional appropriations. Congress authorizes and appropriates the annual military budget, which is then apportioned by the Secretary of Defense among the services. Each service chief then allocates the funds within his respective service. Funding is distributed down the chain of command until the individual commands have received their annual budget authority. Additionally, the use of these funds is subject to distinct purposes, times and amounts for which funds can be used in accordance with appropriation law.

The NAE is operating in an environment of budgetary pressures caused by the decreasing defense funding as a percentage of GDP and overall federal spending, deficit spending, and the fiscal demands of the Global War on Terror and the Iraqi War. Additionally, the funding received is subject to Congressional oversight. As Congress has the sole authority to provide and maintain a Navy, it controls the funding through the power of the purse. Congress sets limits on the use of those funds, regulates what will be done, when it will be done and to what extent. Funds are limited, restricted, earmarked and otherwise designated. (*Practical Financial Management*, 2005) Unless the systems and methods established by the NAE are in alignment and are agreed upon by Congress, there can be no guarantee that the NAE will be authorized to use funds realized through savings for recapitalization.

The organization's history influences the workings of the organizational body. The historical context of the NAE must consider past events and activities that influence the workings today. Naval Aviation has historically been a resource consumer, generating readiness at any cost. This consumption mentality was perpetuated by the close correlation of budget execution and anticipated readiness achievement. Under-execution was perceived as poor management or an indication of over-funding. In either

case, excess funds could be taken and reapplied elsewhere, as determined by a higher authority. Additionally, failure to spend one's entire budget reduced the chance for maintaining that budget in future years. Through this behavior the budget system incentivized the spending of all funds within the appropriation.

Another component to organizational history is the continuous reintegration of the organizational outputs. The organization's current performance, achievements, activities and behaviors all become part of the organizational history. In this way, the outputs continuously impact the historical and environmental inputs of the organization. The organization must be able accurately interpret the current and constantly changing inputs while developing the strategy that guides the organization forward. The noted productivity improvements and observed enthusiasm in the junior workforce have become a part of the organization's history, and a component of the inputs to strategy formulation.

c. Strategy

Strategy represents the decisions of the organization about how to configure resources, demands, opportunities and constraints of the environment in the context of history. (Nadler & Nadler, 1998) The NAE stated vision is to "deliver the right force with the right readiness at the right cost at the right time, today and in the future." (Zortman et al., 2005) This vision is supported by the strategy outlined in Naval Aviation Vision 2020 (Zortman et al., 2005):

- Harvest efficiencies in the way we conduct business, guaranteeing the future of Naval Aviation
- Execute the Flying Hour Program in a fiscally responsible manner
- Execute AIRSpeed methodology
- Align maintenance and supply infrastructures to meet fleet demand
- Reduce work-in-progress, inventory, and operating expenses at all levels of maintenance, supply, and logistics
- Increase throughput at all maintenance levels
- Optimize aircraft inventory with the right mix of aircraft for the right missions

AIRSpeed and NAVRIIP address how each listed strategic objective is to be achieved with exception of "harvesting efficiencies in the way we conduct business, guaranteeing the future of Naval Aviation." The NAE Cost Management Team (CMT) was formed to address this objective and improve financial management within the enterprise, optimize cost-wise readiness and recapitalize aviation assets. (Zortman et al., 2005) The CMT states that these objectives will be met through the below actions (Zortman et al., 2005):

- Develop cost management strategies
- Implement financial management processes
- Identify key metrics to support decision making
- Optimize integration with existing Department of Defense planning processes
- Provide horizontal financial management processes

This list of objectives demonstrates that the concept of cost management within the NAE remains an immature concept. When the goals include developing strategy, implementing processes and identifying metrics, there is arguably not a basis established for achieving the strategic objective of "harvesting efficiencies." The goals are vague and do not provide realistic and attainable goals that can be utilized in the decision making process.

The NAE strategy has incorporated the organizational inputs of the environment and resources. The AIRSpeed and NAVRIIP programs are intended to counter the external pressures on budgetary resources and provide "the right readiness at the right cost."(Zortman et al., 2005) Through this strategy the NAE has also addressed some of the historical inputs to the system, notably the notion of Naval Aviation as a resource consumer. The NAE strategy has elevated awareness of AIRSpeed and NAVRIIP methodologies toward readiness achievement by divorcing it from the historical correlation to the budget execution.

The NAE strategy falls short of addressing ability to harvest the savings toward reinvestment. As such, it fails to address the environmental impact of Congress and appropriation law on the on the use of funds for recapitalization. Although the

perception of under-execution as poor management may be alleviated by the NAE, there remains a very real potential for budget savings to be taken, reapplied and reduced in the future. Therefore, this remains a part of the historical input of the NAE system.

d. The Work

Nadler's Congruence model defines work as the basic tasks performed by the organization and its parts. (Nadler & Nadler, 1998) The analysis of the work component of the NAE requires consideration of the skills and knowledge of the people, the rewards derived from the work, the degree of uncertainty associated with the work and any constraints or demands placed on the work. The skill and knowledge of the people is well addressed by the training provided through the deployment of NAE AIRSpeed.

Rewards and uncertainty need to be addressed to insure congruence in the organization and the successful generation of outputs. Individuals who believe they will be rewarded will be more motivated to deliver the rewarded behavior. Rewards in professional development have been noted as effective among the junior workers (Sacco & Lovell, 2006), but there is no evidence of established rewards for saving toward recapitalization. There must be a reward of adequate significance to offset the historical loss of funds and future budget. Manpower reductions may have a negative impact on the achievement of NAE AIRSpeed objectives. If the workforce perceives their positions to be threatened by the achievement of increased efficiencies, the gains in efficiencies will cease. A significant portion of NAE Type I savings are the result of manpower reductions, making this a very real concern.

If the workforce is not motivated by potential rewards or is discouraged by the threat of lost employment, AIRSpeed initiatives will not achieve the desired efficiency gains and potential costs savings.

e. The People

The people of the NAE are described through their knowledge and skills, needs and preferences, and perceptions and expectation. The people of the NAE have

substantial knowledge and skill related to AIRSpeed. Their needs and preferences are bases on job satisfaction and achievement. If the perception is that the efforts of he workforce will not directly contribute to the desired outputs (expectations) then motivation and commitment to the strategy may waiver. The expectation is that the desired output of NAE AIRSpeed, aircraft ready for tasking at reduced cost, is being achieved though the strategies of AIRSpeed initiatives and methodologies. However, the expectation that the gained savings is contributing to recapitalization and future readiness has not been validated.

f. The Formal Organization

The formal organization of the NAE includes the arrangements, structures, systems and processes of the organization used to characterize people, work and activities to achieve the strategic objectives of the organization. Simply, it is the rules of the organization.

The NAE's corporate framework is designed to increase internal visibility, promote managerial control and centralize decision making authority. Critical to these issues is the process and system used to provide information to the leadership. The methods employed by the organization for the identification and reporting of identified cost savings are not standardized and are suspect in their contributions to informed decision making. Different elements of the organization calculate and report Type I savings by different methods. The Fleet utilizes fund accounting while NAVAIR employs the AIRSpeed Deployment Management System (ADMS). Fund accounting results in a historical view of the organization while ADMS allows a more forward looking predictive methodology. This difference precludes the ability to evaluate and make actionable decisions that are equally appropriate across the organization.

Additionally, there currently is no system in place to track and apply cost savings achieved by the organization to recapitalization. NAE leadership is advised of the enterprise wide savings, but has no visibility on the recapitalization opportunities

available. Without the formal means to identify, track and apply cost saving to recapitalization, the NAE cannot effectively pursue the strategic goal of "harvesting efficiencies" toward recapitalization.

g. The Informal Organization

The informal organization is made up of the values, the beliefs and norms of the organization. It is influenced by the environment and historical inputs to the strategy of the organization. The NAE has demonstrated a concern and cautiousness over reductions in the budget, evident by the choice to report savings against the wedge to avoid savings being double-booked (additional budget reductions following the return of savings) against the NAE. This protectionist reaction to anticipated funding shortfalls is consistent with the system inputs of current budgetary pressures, the historical trend of losing under-executed funds in both the current year and future budgets, and the potential loss of control of the funds due to Congressional oversight and the restrictions of appropriation law.

h. Summary of Congruence Analysis

Nadler's congruence model provided the basis of a systems look at the NAE. This analysis is effective in identifying the trouble spots and areas of opportunity in a change effort. This analysis has identified the incongruence of the intended outcome of "savings available for recapitalization" and the remainder of the organizational system.

The inability of the system to generate this intended objective can be predicted through this analysis. The inputs to an organization form the basis for strategy formulation. For this reason the leadership must have an accurate depiction of the historical nature of organization. Without effective and accurate methods of measuring the outputs of the system, future strategy will be formulated based on incomplete or inaccurate historical inputs. The result will be a flawed or incomplete strategy that fails to address the needs and opportunities within the organization.

Lacking an appropriate strategy, the core components of the organization will not have effective guidance on how to generate the desired output. Rewards and

uncertainty will not be properly considered or addressed. Expectations and motivation of the people may waiver when their efforts are not achieving the desired outputs. The formal organization cannot establish appropriate systems and processes to coordinate the efforts of the organization. And finally, the beliefs and values of the informal organization will remain anchored to the potentially flawed historical inputs of the system.

The first step to improving these trouble spots is the identification of a constant cause. The basic cause of the organizational incongruence is the lack of standardization of the reported outputs. An accurate and transparent accounting of AIRSpeed savings that are available for recapitalization would be reintegrated into the organizational history. Secondly, the standardized reporting would provide leadership an accurate depiction of the organizations performance and achievement toward the strategic goals. Thirdly, the combination of viable strategy and consistent visibility of the organizational outputs would allow the alignment of the other components in the form of rewards, expectations, motivation and finally beliefs. Lastly, it is the role of the formalized organization to establish and maintain the systems and processes required, but in congruence with the strategy and outputs of the organization.

3. Summary: Diagnosis of the Naval Aviation Enterprise as a System

Mintzberg's Configurations Model and Nadler's Congruence model were utilized to analyze the "fit" of the NAE in respect to achieving the stated objective of capturing AIRSpeed savings toward recapitalization. The analysis through the Configurations model identified the three core components of the NAE as the top management, the middle line and the technocrats. This analysis concludes that these components are not balanced. The technocratic component is not robust enough to support the "pull" of top management to centralize. The processes and systems subject to the development and control of the technocrats requires further development and application.

This finding is consistent with the analysis through the Congruence model. The formal organizational component must develop and apply more robust processes and

systems to guide the rest of the organization. Accuracy, visibility and transparency in performance reporting are characteristics of the processes required for the improvement of the NAE in both models.

C. CHANGE MANAGEMENT AND EXECUTION

This section analyzes the NAE in the context of organizational change. Naval Aviation has been undergoing change related to AIRSpeed since its introduction in the NAVAIR Depots in 1999. The change effort has grown and matured over time as AIRSpeed has expanded throughout Naval Aviation and is highlighted with the establishment of NAE AIRSpeed in 2006. As in any business transformation, significant barriers exist to the achievement of the NAE's savings and recapitalization goals. Several of these obstacles were identified in the system analysis in the previous section. Others will be expanded upon and introduced as factors relating to the success of the Naval Aviation change effort. The review of change management literature identified several common factors that are directly applicable to the success of the NAE change effort underway. These issues are examined and will form the basis for future recommendations to the NAE.

1. Vision and Strategy

Kotter defines vision as "a picture of the future with some explicit commentary on why people should strive to create that future." (Kotter, 1996) It should clarify the general direction of the change; motivate the people and help coordinate the actions of the different people. To be effective the vision should be imaginable and desirable. The NAE vision of "deliver the right force, with the right readiness, at the right cost, at the right time – today and in the future," (Zortman et al., 2005) certainly meets this criteria. However, an effective vision should also be feasible; comprisedg of realistic and attainable goals.

The NAE's strategic objectives address each component of the vision statement with exception of the "future" component. The strategic objective of "harvesting efficiencies in the way we conduct business, guaranteeing the future of Naval Aviation"

is vague and does not provide realistic and attainable goals that can be utilized in the decision making process. To accomplish goals, the desired results should be clearly stated and how to achieve them clearly explained. (Bossidy et al., 2002) The NAE Cost Management Team's supporting objectives are immature, remain developmental and do not yet provide specific guidance. As a result, the NAE is lacking a clear set of goals and priorities in regard to harvesting savings toward recapitalization.

2. Communication

Communication is a critical aspect of any organization and most notably any organization undergoing significant change. It is a process, a continuum that touches and affects every aspect of the organization. Nadler concisely summarizes the importance of communication; "effective change requires that everyone involved have full access to the full range of information required to make appropriate decisions at each step of the process." (Nadler & Nadler, 1998) Communication is defined as the process by which information is exchanged between individuals through a common system of symbols, signs, or behavior.[3] The impact of this transfer of information was illustrated in the systems analysis of this chapter. The systems analysis showed that a breakdown in the information at any point resulted in an incongruent organization.

The process of communication should first establish the nature of the information to be transferred. The leadership should specify what will be measured and how the information will be presented. The specification is the key to achieving relevant information and should be based on the requirements, frequency, level of detail and applicability. (Geiger, 2000) The information should be designed to illustrate important problems and allow the leadership to make appropriate decisions on the priorities and resources. The components of the NAE are currently reporting their identified Type I benefits by differing methods and there is no system in place to link the saving to capital reinvestments. As a result, NAE leadership has to make decisions based on potentially

[3] Definition of communication by Merriam-Webster's Online Dictionary, http://www.m-w.com/dictionary/communication Last accessed April 2007.

incomplete, inconsistent, or inaccurate information, hindering the ability to make informed decisions on the recapitalization of the Fleet.

Successful execution of change requires a dialogue that brings reality to the surface through openness and candor. (Bossidy et al., 2002) Information should be accurate, transparent and unambiguous. The NAE reports identified savings against the "the wedge," or mandated reductions in funding. This practice increases the ambiguity and eliminates transparency in the reporting processes of NAE. It obscures the exact nature of achieved saving and recapitalization.

To summarize the importance of communication, Kotter warns that complacency can result from lack of sufficient communication, feedback and poor internal measurement systems. (Kotter, 1996) The NAE's lack of accurate and validated information impairs the ability of the leadership to make informed and appropriate decisions and guide the actions of the organization.

3. Empower Broad Based Action

Successful change requires the empowerment of the organization to achieve the desired objectives. This includes the removal of obstacles and making the structures within the organization structures compatible with vision: The organization should align the information and personnel systems to the vision. Unaligned systems block achievement of the vision. (Kotter, 1996)

The accounting and reporting systems currently in place do not fully capture the requirements of the objective to recapitalize savings. The recapitalization of funds is subject to the time, purpose and amount restrictions of appropriation law. As such, in order to track savings for recapitalization, they should be linked to the Department of the Navy financial systems through the specific budget line that provided the initial funding. The ADMS system of NAVAIR does track savings in this manner, but the rest of the NAE does not yet utilize ADMS. Additionally, any system that tracks or channels the funds for recapitalization should consider the same requirements.

Empowering the organization also includes eliminating cultural and personnel roadblocks. In the case of the NAE this would include promoting funding transparency and eliminating ownership concerns. In order to achieve this, Geiger recommends keeping cost (or saving) forecasts separate from the budget process. He believes that pushing the budget process too low in the organization creates the view that the budget is a spending entitlement rather than a target for continuous improvement. (Geiger, 2000)

4. Short Term Wins

Demonstrated achievement of incremental goals will be a key component of the long term success of the overall NAE transformational effort. Short term wins are used to sustain momentum by providing concrete feedback on the validity of the vision against performance. (Kotter, 1996) An effective short term win should be highly visible, unambiguous and clearly related to the change effort. Clear and indisputable improvements in performance will make it difficult to resist the change effort.

Short term wins cannot be left to luck; they should be planned, transparent and cannot be open to skepticism. The point is not to maximize short term wins at the expense of the future, but to make sure that visible results lend credibility to the transformation effort. (Kotter, 1996)

The NAE should demonstrate the achievement of the right readiness, at the right cost, at the right time – today and in the future. The enterprise should show that the sacrifices made by the commands and individuals are resulting in the achievement of the vision. A concrete demonstration of this change is necessary to maintain the momentum. The example given by the NAE, that the CNAF Flying Hour Program was executed $163 million under budget in FY-2005, is a testament to the efforts of the change effort. However, the example only addresses part of the vision, "current readiness." To fully illustrate the success of the vision, the NAE should indicate a specified and validated amount of savings achieved through NAE initiatives that are responsible for the recapitalization of some assets. A hypothetical example would be, "in FY-2006,

NAVAIR saved in $20.0 million that contributed to the purchase of one additional F-18." Unless the NAE can clearly link harvested savings to recapitalization the vision will remain ambiguous.

5. Incentives and Rewards

The NAE has demonstrated the capability to generate and identify measurable cost savings through AIRSpeed initiatives. However, there is currently no policy or mechanism in place to reward or provide incentives to a command for generating benefits or savings. There is no mechanism to return any of the achieved savings to the commands that generate them, as such, commands may be inclined to spend their budgets in full or reapply the savings within the command. Accordingly, in order for the desired behavior of generating savings toward recapitalization to be established, commands must believe that their effort will be rewarded. An incentive program should link rewards to performance and make them transparent to the entire enterprise. "People will understand what the organization values and recognizes, that which gets appreciated, respected and ultimately rewarded, defines an organizations culture." (Bossidy et al., 2002)

6. Summary: Change Management and Execution

This section analyzed the NAE and the effort to generate measurable cost savings toward recapitalization through the context of organizational change. As in any change effort, the NAE faces significant barriers to success. This analysis identified five areas that continue to present challenges to the NAE in the successful implementation of change across the organization. The finding that the NAE has not applied cost savings toward recapitalization is, in part, a result of not fully meeting these requirements of the change management models.

D. SUMMARY

This chapter provided an analysis of the NAE and the implementation of AIRSpeed as an organizational change effort. This analysis examined the role of the

NAE organizational structure and the change management process in regards to maximizing NAE AIRSpeed benefits toward the goal of recapitalization.

The analysis through the Configurations model identified the three core components of the NAE as the top management, the middle line and the technocrats. This analysis concludes that these components are not balanced. The technocratic component, the planners and analysts, is not robust enough to support the "pull" of top management to centralize. The processes and systems subject to the development and control of the technocrats requires further refinement and application.

This finding is consistent with the analysis through the Congruence model. The formal organizational component should develop and apply more robust processes and systems to guide the rest of the organization. Accuracy, visibility and transparency in performance reporting are characteristics of the processes required for the improvement of the NAE in both models.

The analysis of the NAE through the context of organizational change identified five major challenges to the NAE in the successful implementation of change across the organization. The five areas identified are vision and strategy, communication, empowerment, short term wins, and reward and incentives. The successful of the NAE in addressing these five issues will directly impact the success of the change effort underway.

These findings will form the basis of the future recommendations to the NAE of this thesis.

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VI. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

This thesis provides an external look at the Naval Aviation Enterprise AIRSpeed program and the stated measure of success; harvesting measurable cost savings and the reinvestment of those savings to recapitalize the future Navy and Marine Corps. It presented a review of the background and implementation of NAE AIRSpeed, analyzed the relationship between savings and recapitalization; evaluated the effectiveness of the financial and managerial controls related to AIRSpeed initiatives; and identified organizational barriers to the Naval Aviation Enterprise's effective achievement of this goal.

This thesis concludes with recommendations to overcome these issues. It is hoped that this analysis will contribute to greater awareness throughout the NAE and assist the leadership to further align AIRSpeed programs with the recapitalization vision.

B. CONCLUSIONS

The conclusions of this thesis are presented in the context of the research questions posed in Chapter I.

1. Primary Research Question:

Has the implementation of AIRSpeed achieved measurable cost savings that have been made available to recapitalize the future Navy and Marine Corps?

The primary research question is best answered in two parts. First, measurable cost savings are being achieved through the application of NAE AIRSpeed. Savings have been achieved at the Fleet level through the application of AIRSpeed and NAVRIIP, resulting in corresponding reductions in the cost of the Flying Hour Program and manpower at the intermediate and depot level maintenance activities. NAVAIR and NAVICP have also identified Type I savings commencing in FY 2006.

Secondly, the cost savings achieved through NAE AIRSpeed have not been directly made available for recapitalization. Identified savings have been applied against other requirements, against the wedge or returned to the responsible activity.

2. Supporting Research Questions:

a. To what extent do current financial and managerial policies allow the generation of measurable cost savings?

Current financial and managerial policies promote measurable cost savings, but only to the extent that they are measured against budget wedges (budget reductions imposed in anticipation of future AIRSpeed benefits or other budgetary pressures), which are directly related to historical or anticipated future financial benefits. The policy of measuring AIRSpeed benefits against the wedge does not allow for funds to be captured for reinvestment.

This practice assumes that each AIRSpeed activity under the NAE will begin the year at a deficit, with the goal of recovering the deficit through AIRSpeed benefits. Although this practice is intended to prevent duplicative budget reductions of the financial benefits it becomes increasingly difficult for activities to exceed the wedge and return benefits for recapitalization. The application of the wedge in anticipation of AIRSpeed financial benefits is the equivalent of a top-down cost reduction policy. Budgets are reduced, forcing the activity to find ways to reduce costs. AIRSpeed is a chosen tool to achieve such cost reduction.

b. To what extent do current financial and budgetary requirements allow the reinvestment of generated cost savings?

Current financial and budgetary requirements do not allow for the reinvestment of generated cost savings. There is no established system for returning AIRSpeed benefits for reinvestment. No accounts have been established in Department of the Navy financial systems that can demonstrate a relationship between NAE AIRSpeed cost savings and capital reinvestment. The lack of such accounts prevents

senior Navy leadership from achieving the visibility over the AIRSpeed benefits and the ability to make decisions in relation to reinvestment of those savings.

Additionally, the use of savings is subject to specific restrictions of purposes, times and amounts for which funds can be used in accordance with appropriation constraints. The systems and methods established by the NAE should be in alignment and agreed upon by Congress to fully achieve recapitalization goals.

c. How are substantiated costs savings identified and linked to capital reinvestments?

Cost savings were identified through multiple methods, differing between years and activities. Early benefits were identified through efficiency and productivity measures. As AIRSpeed evolved, cost savings were expressed as fund balances remaining upon the execution of required expenditures. NAVRIIP formalized and tracked these savings, providing monthly updates and visibility for the Fleet AIRSpeed activities. NAVAIR introduced the AIRSpeed Deployment Management System (ADMS) which identifies tracks and validates financial benefits by Budget Line Item. This system is the most mature and comprehensive in the NAE.

d. What method(s) can best demonstrate actual cost savings and capital reinvestments attributed to AIRSpeed initiatives?

This AIRSpeed Deployment Management System (ADMS) best demonstrates the actual cost savings attributed to AIRSpeed initiatives. It provides formal and standard methodologies for identifying, tracking and validating AIRSpeed financial benefits within NAVAIR. It provides visibility within the command activity and provides a mechanism to hold the funds pending validation of the predicted savings. The ADMS system provides an opportunity for expansion throughout the NAE.

ADMS could be the foundation of a more expansive system designed to link the validated cost savings by BLI in ADMS to recapitalization opportunities resident in Department of the Navy financial systems.

C. RECOMMENDATIONS

1. Develop Standardized Reporting System

It is recommended that the NAE develop and implement a standardized reporting system to be utilized by every component and command within NAE. The selected system should accurately identify, track and validate AIRSpeed benefits. It should be capable of providing formal and standardized reporting of the organization outputs that can be integrated into organizational decision making and developing policy guidance.

The AIRSpeed Deployment Management System (ADMS) currently being utilized at NAVAIR provides a viable model for the desired system. It is recommended that the NAE implement ADMS in each component of the enterprise. Additionally, it is recommended that ADMS be configured to link the validated cost savings to recapitalization opportunities resident in Department of the Navy financial systems.

2. Implement Recapitalization Accounts

It is recommended that the Navy develop and implement a mechanism to capture and return AIRSpeed savings to the Enterprise, resource sponsors and ultimately the CNO for recapitalization. The NAE and the Department of the Navy should establish accounts that track AIRSpeed benefits in the Program Budget Information System (PBIS); providing a mechanism for tracking, holding and reapplying AIRSpeed savings toward recapitalization. The accounts should be integrated with a universally employed and standardized management system (such as ADMS) and promote transparency in funding and recapitalization decisions. Additionally, such a system should remain cognizant of and in accordance with Congressional appropriations law and other policy restrictions.

3. Revisit Strategy for Realizing Recapitalization

It is recommended that the NAE develop a strategy for generating measurable cost savings that can be reinvested for recapitalization. To be effective the strategy should be specific; clearly stated how to recapitalize; present realistic and attainable goals

and include rewards and incentives to commands that succeed. The methodology for converting achieved saving into recapitalization should be clearly stated and communicated across the organization. The strategy should be aligned to the structures and processes within the organization and empower the organization to overcome obstacles and roadblocks; including individual concerns about funding transparency and ownership, appropriation law restrictions, and complacency. The strategy should include an incentive program that links rewards to the performance and makes them transparent to the entire enterprise. Success should be planned and demonstrated through the achievement of incremental goals, or short-term wins, and then communicated throughout the enterprise.

The author presents the following framework for consideration in strategy formulation and execution:

- Generate measurable cost savings through the application of AIRSpeed methodologies and reinvest those savings to recapitalize the future Navy and Marine Corp guaranteeing the future of Naval Aviation
- Standardize the process of identifying, tracking and validating AIRSpeed benefits through the application of a cost and savings reporting system across the enterprise.
- Integrate reinvestment with the existing Department of Defense planning processes through the Department of the Navy Program Budget Information System
- Establish realistic and attainable spending goals in the planning process and covert into saving goals following budget authorization
- Reward commands that achieve established goals by returning a portion of execution year savings to the command for application to previously unfunded requirements (in accordance with time, purpose and amount restrictions)
- Reapply budget year savings to recapitalization opportunities at the Enterprise level
- Return future year savings to the Chief of Naval Operations for redistribution in the Future Years Defense Plan.
- Demonstrate success through short-term wins and then communicate throughout the enterprise.

D. SUGGESTIONS FOR FUTURE RESEARCH

The following questions could be presented for future research:

1. What are the key components and mechanisms required to link the NAE AIRSpeed savings initiatives to Department of the Defense financial systems through the Program Budget Information System?

2. How can the Naval Aviation Enterprise savings and reinvestment initiatives be effectively integrated into the Planning, Programming, Budgeting, and Execution (PPBE) System?

3. Evaluate the feasibility of enterprise savings and recapitalization in the context of the Congressional authority, appropriations requirements and transfer authority limits. Based on the findings, draft a proposal that addresses the limitations imposed on the NAE and allows the recapitalization of net enterprise savings beyond the current constraints.

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