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A STRATEGIC PLAN FOR THE CRUSADER HOWITZER
by

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December 2001

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The purpose of this thesis is to evaluate the current state of development of the Crusader Self Propelled Howitzer and the current threat of having its funding ended. The objective is to determine what actions are being taken by the Office of the Program Manager-Crusader (OPM-Crusader), in conjunction with the TRADOC System Manager, Cannon (TSM-Cannon) and the prime contractor, United Defense Limited Partnership (UDLP), in order to keep the program's funding uninterrupted, bring the program into production, and deploy the system to the field. This thesis will present a well know management approach known as strategic planning and apply it to the efforts being made within the Crusader program.

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A STRATEGIC PLAN FOR THE CRUSADER HOWITZER

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ABSTRACT

The purpose of this thesis is to evaluate the current state of development of the Crusader Self Propelled Howitzer and the current threat of having its funding ended. The objective is to determine what actions are being taken by the Office of the Program Manager-Crusader (OPM-Crusader), in conjunction with the TRADOC System Manager, Cannon (TSM-Cannon) and the prime contractor, United Defense Limited Partnership (UDLP), in order to keep the program's funding uninterrupted, bring the program into production, and deploy the system to the field. This thesis will present a well know management approach known as strategic planning and apply it to the efforts being made within the Crusader program.

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I. INTRODUCTION

A. GENERAL INFORMATION

The purpose of this thesis is to evaluate the current state of development of the Crusader Self Propelled Howitzer and the current threat of having its funding ended. The objective is to determine what actions are being taken by the Office of the Program Manager-Crusader (OPM-Crusader), in conjunction with the TRADOC System Manager, Cannon (TSM-Cannon) and the prime contractor, United Defense Limited Partnership (UDLP), in order to keep the program's funding uninterrupted, bring the program into production, and deploy the system to the field. This thesis will present a well know management approach known as strategic planning and apply it to the efforts being made within the Crusader program.

B. RESEARCH QUESTIONS

1. Primary Research Question

What strategic planning actions are being taken by the OPM-Crusader, TSM-Cannon, and UDLP in order to maintain the funding for the Crusader Howitzer and bring the weapon system into full production and deployment?

2. Secondary Research Questions

- What is the Crusader Howitzer and what are its planned capabilities?
- What is strategic planning?
- How can strategic planning be applied to the Crusader Howitzer?
- What strategic planning model can be used for the Crusader Howitzer?

C. DISCUSSION

The Crusader Self Propelled Howitzer is like no other artillery piece that exists today. Unlike traditional cannons, the Crusader does not require crewmembers to load the projectile into the cannon and then manually pull a lanyard in order to fire the

weapon. The Crusader is built to perform all of these functions automatically, while its three-member crew sits in an aircraft-like cockpit. The Crusader is seen as a quantum leap in artillery technology and is planned to eventually replace all of the existing 155mm artillery cannons in the Army's arsenal.

General Eric Shinseki, the Army's Chief of Staff, has determined that the Army must transform itself into a lighter force that can be airlifted to any place in the world. However, the Crusader is in danger of having its funding completely cut off. In the present environment, many feel that the Crusader does not fit into the mold of the lighter and faster combat vehicles that the Army is now pursuing.

In particular, the Crusader is seen as being too heavy to fit into General Shinseki's new vision of the Army. In its original configuration, the Crusader system weighed over 60 tons. It has now undergone a program to reduce its weight down to 40 tons and make it easier to transport by air.

But even with its new weight and size, the Crusader is still coming under fire by the Congress and many critics are calling for its outright elimination from the Defense budget. One official from the RAND Corporation has reportedly advised the Department of Defense to terminate the Crusader program because it will still be too heavy to deploy in time to carry out a two war scenario (Crawley, pg. 14).

With the present budgetary environment and the high acquisition cost of the program, DoD and Congressional leaders will examine the need for Crusader time and time again (Gordon, Matsumura, & Steep, pg. xv). Each time the need for Crusader comes into question, there will be potential for the program's budget to be cut. Therefore, the supporters of Crusader are now taking active measures to combat this perception and continue the development and production of the weapon system.

The Crusader Program may benefit from basic Strategic Planning methods. These methods look to identify a desired future and then determine what actions are needed to make that desired future happen. Strategic Planning is a disciplined effort to produce fundamental decisions and actions that shape and guide what an organization is, what it does, and how it will do it.

In the case of the Crusader Program, Strategic Planning could be used to reassess what its overall mission is, and what its vision for the immediate future should be. Ultimately, Strategic Planning tools could be applied to the actions being taken to maintain the Crusader's funding.

The object of this project will be to document the efforts of OPM-Crusader, TSM-Cannon, and UDLP, collectively referred to in this thesis as "Team Crusader". Although they are three distinct and unique organizations, they work together on the common goal of advancing the Crusader program. This thesis will present a consolidation of Team Crusader's efforts and attempt to fit them into a strategic planning model. Finally, this research will present Team Crusader's strategic plan for other procurement programs to evaluate its applicability.

D. SCOPE OF THESIS

This thesis will be a case study of the strategic planning actions that are being taken by the key members involved in the efforts to develop and deploy the Crusader Howitzer. It will present the Crusader Howitzer to the reader and explain its capabilities and intended use. The thesis will also serve as a primer for the uninitiated in strategic planning actions and models. Finally, this thesis will demonstrate how these strategic planning efforts are being used in order to advance the development and deployment of the weapon system.

This research will include:

- A review of the Crusader Self Propelled Howitzer
- A review of basic Strategic Planning methods
- Interviews with key members of Team Crusader
- Application of Strategic Planning methods to the Crusader Program
- Presentation of a Strategic Plan for the Crusader Program

E. METHODOLOGY

In order to conduct this case study, numerous literary sources were consulted. This study required the review of current news articles, official government reports, documents published by the OPM-Crusader, TSM-Cannon, and UDLP, and collection of

opinions from military officers and industry representatives involved in the development of the weapon system. The literature review provides a clear explanation of the development and capabilities of the Crusader Howitzer

With the literature review complete, this thesis presents a series of generally accepted strategic planning methods and models. The thesis primarily relied upon the teachings of John Bryson and his book, Strategic Planning for Public and Nonprofit Organizations. Within this book, Bryson introduces his "10 Step Strategic Planning Method. " These ten steps, along with other strategic planning tools, were applied to the current efforts to develop and deploy the Crusader Howitzer.

In addition, the researcher conducted interviews, via the telephone and email, with representatives of the three key players in the development of the howitzer. Members of the OPM-Crusader, TSM-Cannon, and UDLP have been identified and interviewed in order to receive the most current information concerning their combined efforts to maintain this program.

Finally, the researcher has applied a strategic planning model to the efforts within the Crusader Howitzer program. This model is a combination of both the information gathered during the interviews and an analysis based upon the strategic planning teachings.

F. CHAPTER OUTLINE

1. Introduction

Chapter I provides an introduction to the Crusader Howitzer program and identifies the focus and purpose of this thesis. The primary and secondary research questions are also stated.

2. Background

This chapter provides the reader with a basic understanding of the concepts, organizations, and issues addressed in this thesis. The Crusader Howitzer has been dissected in great detail in order to present the reader with its origins, its expected capabilities, and its intended use. In addition, the reader will be shown why the Crusader Howitzer has come under criticism and may no longer be seen as the right choice for the

Army's next generation self-propelled howitzer. Furthermore, this chapter introduces the reader to the concepts of strategic planning. The reader will be given a clear definition of strategic planning and a detailed presentation of Bryson's "10 Step Strategic Planning Method" and other strategic planning concepts.

3. Data

In this chapter, a summary of all the interviews conducted with the key program players will serve to present the current status of the Crusader Howitzer program. In addition, the interview summaries will serve to demonstrate what actions have been taken in order to save the program from budgetary cuts. This data will then be used to formulate a strategic planning model seeking to preserve the Crusader howitzer from budgetary termination.

4. Analysis

This chapter will expand on the data that has been previously presented by applying it to Bryson's strategic planning steps. This strategic plan will be presented, as a road map that Team Crusader is using in order to maintain required funding levels.

5. Conclusions and Recommendations

This chapter gives clear and concise answers to all of the research questions. Recommendations will be made, in accordance with the data analyzed in conjunction with the Bryson model, on what additional actions may be taken in order to maintain the development and deployment of the Crusader Howitzer. Additionally, areas for further research will be presented.

G. BENEFITS OF STUDY

This study will provide an outline for Program Managers to determine when and how to use Strategic Planning methods to benefit their programs. The Crusader program will be used as an example of the benefits of strategic thinking and present valuable lessons learned for other procurement programs. Managers at all levels will be able to use this research in order to help prevent their programs and projects from falling victim to funding cuts and termination.

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II. BACKGROUND

A. PURPOSE

This chapter provides the reader with the basic required knowledge concerning the Crusader Self Propelled Howitzer and the strategic planning management tool. This information will be needed in order for the reader to understand the analysis of the Crusader system.

The shortcomings that the Army's field artillery experienced during Operation Desert Storm will be presented as the origins of the Crusader program. A description of the Crusader's capabilities will demonstrate just how different the Crusader will be compared to traditional howitzer systems. The Crusader's role in the new "transformed" Army of the future is then discussed.

Strategic planning is examined by demonstrating how it can be applied to management. Specifically, strategic planning will be defined and its benefits listed. Furthermore, a detailed method of utilizing the strategic planning method will be presented along with other strategic planning tools.

B. HISTORY OF THE CRUSADER SELF PROPELLED HOWITZER

1. Operation Desert Storm

Field artillery plays a key role in any ground-based conflict. The basic mission for the artillery is to fire projectiles well beyond the forward line of the battle in order to destroy, neutralize, or suppress the enemy, thus reducing the size and combat effectiveness of their forces. This principle has been utilized since the development of gunpowder through the most recent armed conflicts.

Field artillery cannons, or howitzers, have been developed in order to increase the range at which they can fire and the accuracy with which they can hit their targets. However, it has also been necessary to create howitzers with the ability to move along with the infantry and armor units that it supports. With that requirement in mind, self-

propelled howitzers were first introduced during World War I and were commonplace throughout World War II (Gordon, Matsumura, & Steep, pg. 1).

The Army deployed twenty-five battalions of self-propelled howitzers to fight in the 1991 Gulf War. These battalions consisted of the M109 series of self-propelled howitzers, which have been fielded since the 1960's. During Desert Storm, these cannons fired over 43,500 projectiles. However, after the war several key shortcomings were noted concerning the performance of the M109 (Gordon, Matsumura, & Steep, pgs. 2, 9).

In particular, the M109 series of howitzers demonstrated shortcomings in its firepower, its mobility, its manpower requirements, and its survivability against enemy artillery. The M109 howitzer was seen as being too slow to keep up with the Bradley Fighting Vehicles and M1 Abrams tanks that it was sent to support, and did not yield the range and rate of fire necessary to hit the enemy long before they reached the maneuver forces. Furthermore, the M109 required too many personnel to perform routine and repetitive tasks in order to efficiently fire the weapon system and did not offer these soldiers enough armored overhead protection from enemy artillery fire (Gordon, Matsumura, & Steep, pgs. 2-3).

With these observations made, the Army declared that it needed a new howitzer that could overcome the shortcomings of the M109. A howitzer would be required with extended range and increased mobility, as well as, reduced manpower requirements, and the ability to better protect its crew.

In addition to these shortcomings in the Army's howitzers, the increase in other nations' artillery systems forced the issue that the Army needed a new cannon to remain viable against potential adversaries. A worldwide proliferation of better artillery systems, with longer ranges than the M109, and advanced target acquisition assets (with the ability to acquire targets earlier than before) have increased the potential for the Army's fire support assets to be outmatched (Gordon, Matsumura, & Steep, pgs. 9-13).

With the shortcomings of the current artillery system identified, the Army began to develop the key performance parameters that any new howitzer system must be able to meet. The Army's intent is not to produce an "improved M109" as its new howitzer, but

rather to make a quantum leap in artillery capabilities. At a minimum, the new howitzer must have:

- A range of 40 kilometers (with the ability to range 50 kilometers utilizing rocket-assisted projectiles) (GAO, June 1997, pg. 2)
- A maximum rate of fire of 10 to 12 rounds a minute (GAO, June 1997, pg. 2)
- The ability to be rearmed with 48 projectiles (with associated propellant and fuses) in 10.4 minutes (DoD, December 15th, 2000, pg. 10)
- A cross country speed of 39-48 kilometers an hour and a highway speed of 67-78 kilometers an hour (GAO, June 1997, pg. 2)

These specifications were deemed necessary in order for the future howitzer to be able to travel along side the forces it was supporting, engage targets far enough in front of the maneuver forces, and still have protection from enemy artillery fire.

2. The Crusader's Expected Capabilities

As with all Department of Defense (DoD) procurement programs, the Crusader program was initiated once the war-fighting deficiency was identified. The above-mentioned parameters were then formalized with the writing of the Mission Needs Statement (MNS) and Operational Requirements Document (ORD) by the Army's Training and Doctrine Command (TRADOC) System Manager-Cannon office (TSM-Cannon).

In 1994, the Office of Program Manager-Crusader (OPM-Crusader) was established. Then in 1995, the Acquisition Decision Memorandum was signed allowing the program to pass Milestone I and awarding the prime contract to United Defense Limited Partnership (UDLP), who is working with several subcontractors. Currently, UDLP has delivered its first prototype for testing and the program is in the Concept and Technology Development phase (U.S. Army Weapon Systems 2001, pg. 49).

The Crusader is set to meet the requirements of the ORD by utilizing many different new technologies. This new approach has led to the development of:

- A computer-controlled, fully-automated autoloader that identifies, selects, and loads projectiles, propellant, and fuses
- An advanced automated crew station (that reduces the number of personnel required to operate the system from 9 to 3)

- A state-of-the-art mobility system (GAO, June 1997, pg. 6)

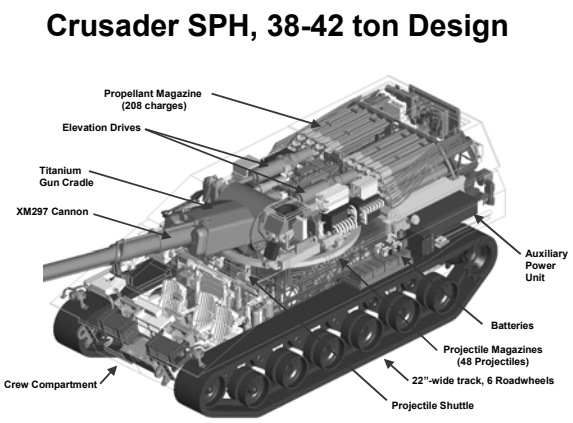

Figure 1. Crusader Self-Propelled Howitzer (From: DoD, December 2000)

This list shows a radical departure from traditional artillery technologies. These technologies are still being designed and created. The Army has estimated that the required research and development effort for these advanced technologies will cost over $2.9 billion over a seven-year period (GAO, May 2001, pg. 11).

Furthermore, the Crusader is being designed to not only replace the current howitzer system in the field, but to also reduce the number of howitzers that the Army needs to deploy. The Crusader is being built with the capability of firing multiple projectiles from the same cannon that will impact simultaneously on the target. Known as a multiple round simultaneous impact mission (MRSI), this capability will allow a single Crusader to have the firepower of several M109's. Therefore, the Army will not have to build as many Crusaders in order to have the same lethality as its current fleet of M109's.

As the Crusader was being envisioned and designed, changes within the Army were taking place that would have a direct effect on the future of the weapon system. Although Crusader was being built to fight in a land war in Europe, the Army's leadership began to rethink the type of operation that it would be involved with in the future.

3. The Army's Transformation

Until very recently, the Army had prepared itself to fight a large-scale land war in central Europe. With this in mind, planners and decision-makers had continuously requested and procured larger and more powerful weapon systems to replace older ones. In terms of its main battle tanks, armored personnel carriers, and self-propelled howitzers, the Army had always stuck to the rule of "bigger is better."

However, two significant events took place that changed this mindset. The collapse of the Soviet Union and the dramatic downsizing of the United States military caused the Army's leadership to rethink its plans for future missions.

Since the fall of the Berlin Wall and the end of Operation Desert Storm, the Army has become one-third its former size and has increased its deployment schedule by 300% (DoD, December 2000, pg. 4). These deployments, such as Operation Joint Endeavor to Bosnia, have mainly been in operations other than war. Such operations call for a rapidly deployable force that can negotiate its way through narrow roadways without destroying the local infrastructure.

The mechanized and armored forces that the Army had relied upon since the Korean War were not suited for such "delicate" operations. Although these forces had evolved into the world's strongest armored force, their size and weight were actually liabilities when they were needed to deploy quickly on an urgent mission. In 1999, the Army's new Chief of Staff, General Eric Shinseki, recognized this problem and took active measures to change the very makeup of the Army's forces.

Shinseki announced his strategic vision during a speech given to the Association of United States Army in October of 1999. During this speech, Shinseki declared that he wanted to build an Army that is more responsive, agile, deployable, versatile, and lethal. His hopes are to build a force that can have a brigade-size element anywhere in the world within 96 hours, followed by a division with 120 hours, finally backed by an additional four divisions within 30 days (U.S. Army News release, October 12th, 1999).

This requirement is based on the present range of global threats. Since the end of the Cold War, the world has witnessed a number of small and emerging countries

creating higher levels of regional instability. Conflicts have erupted over long held ethnic, religious, and historical disputes. The United States now needs an Army that is capable of rapidly deploying to a trouble spot, not only to win our wars, but also shape the international environment to benefit America and her allies (DoD, December 2000, pg. 5).

The changes that are being initiated now have become know as the Army's Transformation Campaign Plan (TCP) (DoD, December 2000, pg. 5). This plan centers around three elements: the objective force, the legacy force, and the interim force. Once the TCP has been realized, the Army's objective force will be made up of fighting vehicles like none other. The Army plans to equip this objective force with a family of Future Combat Systems (FCS). The FCS is a yet-to-be-designed fleet of vehicles that will be a revolutionary system of systems (DoD, December 2000, pg. 7).

The different FCS vehicles in the objective force will be capable of maneuver, reconnaissance, indirect and direct fire, and command and control missions (DoD, December 2000, pg. 7). The FCS is expected to have the lethality of today's heavy forces along with the responsiveness and deployability of today's light forces. The FCS relies on the concept of a single commander operating out of a concealed position to remotely maneuver and fight unmanned direct and indirect weapon systems (GAO, May 2001, pgs. 1 & 6).

It is not expected that this "army after next" will be fielded until the year 2030, therefore; therefore, the Army will need to rely on other forces to maintain the Army's warfighting capabilities until the FCS is fully produced. The TCP calls for a legacy force and an interim force to do that.

The legacy and interim forces will each have specific and different missions for the next thirty years. The legacy force will maintain the Army's ability to fight in a large-scale war while the interim force will handle other missions other than war, such as peacekeeping operations. The objective force will be built to handle both ends of this spectrum. As the FCS becomes available, the legacy and interim forces will be phased out.

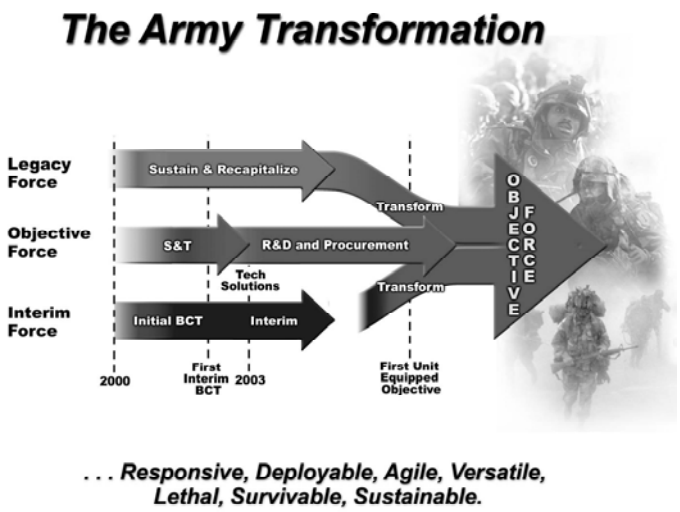

Figure 2. Army's Transformation Campaign Plan (From: DoD, December 2000)

For the time being, the Army will continue to complete its warfighting missions with the traditional heavy legacy forces that it presently has. The legacy force consists of the present day force of heavy mechanized and tracked brigades, to include the M109 howitzer. These brigades will be modernized and repositioned around the III Corps, based at Fort Hood, Texas (DoD, December 2000, pg. 8).

Although the potential for a near-term large-scale war is unpredictable, the Army cannot allow itself to be caught unprepared for such an occurrence. Therefore, it requires a force that retains the necessary power to win any large threat worldwide. The present array of tracked vehicles has such power, although they are plagued with the inability to be deployed rapidly. Therefore, the legacy force has been given the mission of being the Army's "counterattack" force in order to maintain the Army's war-winning capabilities (DoD, December 2000, pg. 8). Although it will still take a longer time to deploy this force, the legacy force must be able to beat any large-scale adversary.

To bridge the gap between the legacy force and the objective force, the Army has begun to create an interim force of lighter and more deployable vehicles. Six to eight Interim Brigade Combat Teams (BCT's) will be created to provide the Army with the capability to respond to emerging global missions faster than the legacy force can. This force will incorporate existing technologies and allow commanders better flexibility during peacekeeping missions (DoD, December 2000, pg. 6)

With the TCP now emplaced, the designers of the Crusader are challenged to create a heavy self-propelled howitzer that will still be viable in this new, lighter, army. Team Crusader is also faced with a new time constraint. Shinseki's transformation plan carries with it an "irreversible momentum" in order to achieve the objective force in the quickest time possible (GAO, May 2001, pg. 12). If Crusader cannot be fielded in time to be part of the legacy force, the program will no longer be needed in either the near-term or long-term future.

In order for the weapon system to remain relevant, the designers are now faced with deploying the howitzer earlier than originally planned. A new fielding schedule has been proposed that would equip the first active duty battery with the Crusader by 2006, two years earlier than originally planned. It is hoped that this accelerated fielding plan will increase the level of support for the program (Tiboni, June 11th, 2001, pg. 12). This earlier fielding date will also contribute to the overall TCP effort and instill Crusader as a permanent fixture in the legacy force.

4. The Crusader's Role in the New Army

As stated earlier, the Army still needs to retain its ability to win wars in the present time. If a major war were to erupt, the legacy force would be called upon to fight it for the Army. In order for this to happen, present heavy armored brigades will need to be updated and modernized in order to stay lethal against an ever-improving threat.

Foreign cannon artillery systems are one such area of improvement that is being seen throughout the world. Several countries that bought the M109 artillery system are now in the process of replacing these howitzers with more modern ones. Furthermore, potential adversaries, such as China, have self-propelled howitzers that currently outrange the M109 howitzer (DoD, December 2000, pg. 9).

The current variant of the M109, the Paladin howitzer, has taken present-day U.S. artillery technology to its limits (Gordon, Matsumura, & Steep, pg. 3). The greater range capability of the Chinese howitzer will allow it to engage the legacy force without fear of being hit by the M109.

The legacy force will need a self-propelled howitzer that is capable of eliminating this gap in range and be more effective than the M109. Simulations have been performed that suggest the longer-ranging Crusader could increase force effectiveness by 52%, in terms of number of rounds fired, missions completed, number of enemy vehicles destroyed, and number of friendly forces protected (GAO, June 1997, pg. 2). The Crusader howitzer offers the necessary range and responsiveness to the legacy force in order to meet its counterattack mission for the next 30 years (DoD, December 2000, pg. 8).

The Crusader is not the only weapon system that is being sustained or recapitalized in order to fit in the legacy force. In fact, the Crusader is being designed to work with several other existing and developing systems. For example, the Crusader will be able to execute fire plans that were distributed across the battlefield by the Advanced Field Artillery Tactical Data System (AFATADS). This computer system will allow Crusader to integrate its fires between field artillery battalions and other fire support assets (U.S. Army Weapon Systems 2001, pgs. 8-9).

Furthermore, the Crusader will be able to fire the new Excalibur 155 mm Precision-Guided Extended Range Artillery Projectile. This projectile will offer greater range and accuracy than the current family of 155 mm projectiles. Finally, the Crusader will work with forward observers operating from the new Bradley Fire Support Team Vehicle and the Striker wheeled Fire Support Team Vehicle (U.S. Army Weapon Systems 2001, pgs. 56-57, 152-153, &188-189). All of these programs are currently in development or production and have been designated to work with the Crusader in the legacy force.

Also, the Crusader may play a significant role in the Army's transition to the objective force. The Crusader is being seen as a "technology carrier" to the FCS. That is, many of the new technologies in the Crusader will be of the type that the FCS will rely upon (Tiboni, June 27th, 2001).

The Crusader's crew cockpit and use of robotics will serve as the Army's first step towards a more automated fighting system. In essence, the Crusader will be the

"walking phase" of the Army 's "crawl, walk, run" approach of achieving the FCS and taking the soldier more and more "out of the loop" (DoD, December 2000, pg. 35).

However, this should not suggest that the Crusader is envisioned to become part of the objective force. Rather, the Crusader is seen to be able to fight alongside the FCS as well as be part of the legacy force throughout its mission. With that said, the life expectancy for Crusader could extend well beyond the year 2030 (Tiboni, June 27th, 2001).

5. Significant Changes to the Crusader Howitzer

Although the prospects for the Crusader look good for its role in the TCP, the initial design of the howitzer needed significant changes in order for the system to stay in development. Primarily, the Crusader needed to lose a significant amount of weight in order for it to be more deployable by air. In short, the Crusader needed to drop from 60 to 40 tons so that two howitzers could fit into a C5 aircraft (Day, pg. 2). Team Crusader approached this challenge by establishing a Crusader Design Refinement (CDR) effort that studied the problem from February to September 2000.

The driving factor in the weight of the system was its "volume under armor," which describes the actual size of the vehicle and hence its weight (DoD, December 2000, pg. 13). By reducing the Crusader's volume under armor, the designers would be able to dramatically reduce the system's overall weight. This became one of the focal points of the CDR.

The CDR Summary Report of October 2000, detailed the actions to be taken in order to save the required amount of weight. Chief among them, the report called for a 6-inch strip to be removed down the center of the howitzer and its resupply vehicle. By narrowing the system, the team was able to save an estimated 2 tons of weight.

Another weight reduction initiative was to remove one road wheel from the tracked chassis. This resulted in a shorter vehicle and saved another 1.5 tons. Finally, an additional significant change was to remove the armored plates from the vehicle and allow them to be bolted on once the howitzer was deployed. This saved an additional 3 tons (Mattingly briefing slides).

A significant reduction in weight was achieved by changing the power pack within the Crusader. Through the Abrams-Crusader Common Engine (ACCE) program, the original engine in the howitzer was changed out with the same engine from Abrams main battle tank. Not only did this engine save weight and space, but also significant operating and support (O&S) costs can be avoided in both the Abrams and Crusader programs by sharing the same power pack (Willingham, pg. 4 & DoD, December 15th, 2000, pg. 14). All told, the redesign effort was able to save a total of 21 tons from the system and thus bring the empty Crusader's weight below the 40-ton requirement.

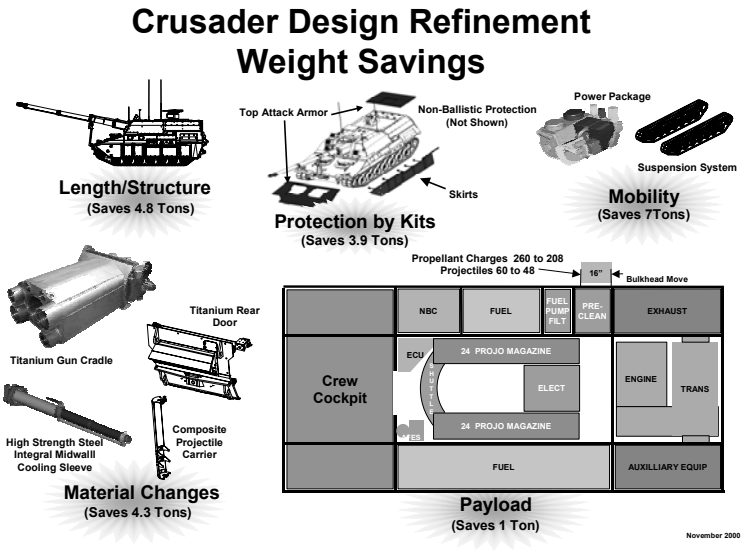

Figure 3. Crusader Design Refinement Summary (From: DoD, December 2000)

However, this savings in weight did come with a price. In order for these weight reductions to be made, the Crusader and its resupply vehicle would not be able to carry as much ammunition as originally designed. A total of 42 fewer rounds would now be carried by the entire system once these changes were implemented. But, this reduction in ammunition payload did not eliminate the ability of the Crusader to meet its KPP's (Mattingly briefing slides).

Finally, another significant change to the Crusader program is the number of systems that are to be procured. The Army has reduced the number of howitzers it wants to purchase from 1,138 to only 480. This should have a significant impact on when the system can be fully deployed (GAO, May 2001, pg. 10)

Suffice to say, the original plans for Crusader have undergone significant change. Team Crusader's success with advancing this weapon system may rely heavily on its ability to deal with this change. Team Crusader may be helped by utilizing a managerial approach that deals with change within and around an organization.

C. STRATEGIC PLANNING FUNDAMENTALS

1. Definition of Strategic Planning

All organizations must plan in order to achieve their goals. However, no organization can plan for all circumstances that may affect it. Successful organizations can successfully deal with these changes. Strategic planning is a method that assists organizations in dealing with changed circumstances (Bryson, 1995, pg. 20).

In his book, Strategic Planning for Public and Nonprofit Organizations, Bryson formally defines strategic planning as a "disciplined effort to produce fundamental decisions and actions that shape and guide what an organization is, what it does, and why it does it." In short it is a management approach that fosters analytical decision-making within an organization (Bryson, pg. 4)

Bryson sees strategic planning is needed now more than ever due to the significant changes that are affecting many organizations. Due to reductions in either budgets or size, organizations are faced with the dilemma that they cannot carry on as before. Cleary, the Army (and in particular the Crusader program) falls into this category. In order to counter these threats, organizations must now make strategic decisions for the long-term.

Strategic planning seeks to improve an organization by having it study not only itself, but also its surroundings so that decisions will not be made in a vacuum. The basic tenet of strategic planning is that organizations must recognize and embrace the changes that are happening around them. By fully understanding these changes, organizations can better deal with them in a successful manner.

2. Benefits of Strategic Planning

Bryson lists four major benefits from utilizing the strategic planning approach (Bryson, pg. 7):

- Promotes strategic thought and action: as the name implies, this approach will cause an organization's leadership to think beyond the near-term and beyond its internal boundaries. When utilized successfully, strategic planning will enable organizations to clarify their future direction and establish priorities for it.
- Improves decision-making: this approach will focus attention on the critical issues an organization is facing and thereby improve its ability to make decisions that deal with these issues.
- Enhances organizational responsiveness and improved performance: once an organization makes better decisions it will also perform better because it is looking beyond its own surroundings.
- Benefits the members of the organization: strategic planning not only encourages better performance to customers outside of an organization, but also to those within the organization. Leaders will have a better understanding of their responsibilities and therefore will be in a position to fulfill their responsibilities to their people.

3. Strategy Change Cycle

After defining strategic planning and listing its benefits, Bryson goes on by presenting his preferred method of bringing about strategic change within an organization. He calls this method the Strategy Change Cycle. When followed, this cycle allows organizations to continuously improve upon themselves by evaluating their environments and implementing strategies to create desired results. The researcher has created the following graphical representation based on Bryson's cycle:

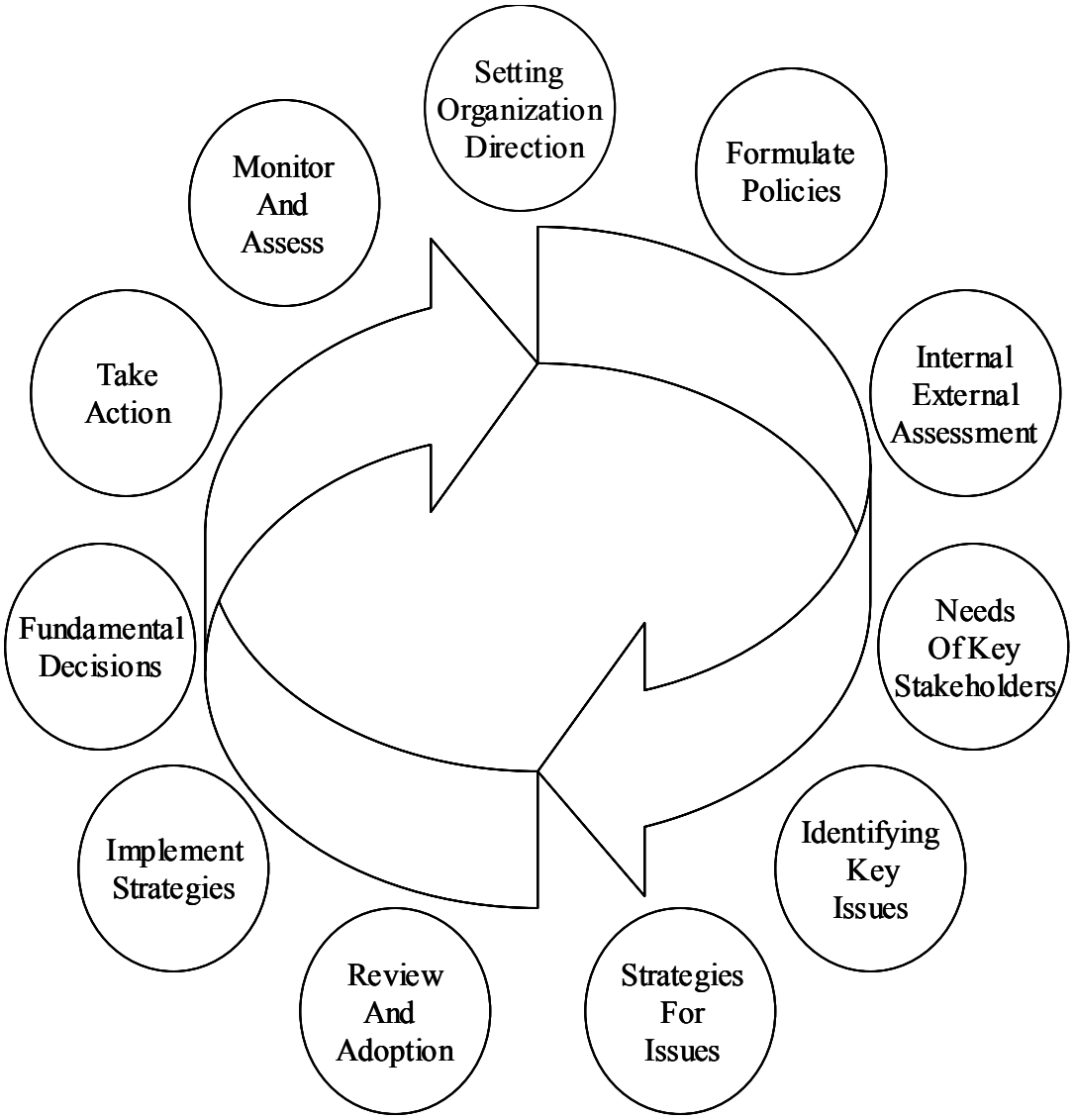

Figure 4. Strategy Change Cycle (based on Bryson, pg. 21)

This cycle is designed only to be a broadly defined management process, not a detailed list of instructions. To facilitate the actions needed to utilize the cycle, Bryson has developed his, more deliberate and participative, 10 Step Strategic Planning Model (Bryson, pgs. 21-22).

D. BRYSON'S 10 STEP STRATEGIC PLANNING MODEL

1. Purpose of 10 Step Method

Recognizing that organizations would be aided with a detailed "roadmap" to implement their strategic plan and strategy change cycle, Bryson developed his 10 Step Method. When followed, this method forces the organization to study not only itself and

its goals, but also the external forces that affect it. It then allows the organization to formulate strategies that will manage these internal and external forces and allow it to envision how it will achieve its goals in the future.

2. The 10 Step Method

Bryson's published method is as follows (Bryson, pgs. 23-37):

- Step 1: Initiate and agree upon a strategic planning process: an agreement must be made among the key decision-makers that this approach will be used and that the organization will be committed to it.
- Step 2: Identify organizational mandates: the organization must identify their formal and informal "musts," that is, the essential goals that their organization has been established to achieve.
- Step 3: Clarify organizational mission and values: establishing an organizational mission statement allows it to clearly identify what it will do and for whom it will do it. In order to do this, an organization should perform an analysis of its stakeholders. These stakeholders are any person or group that can place a claim on the organization's attention, resources, or output.
- Step 4: Assess the organization's external and internal environments: the organization should now look at the environments that it can control and that it cannot control. This analysis will allow the organization to identify its own strengths and weaknesses and also all opportunities and threats that it must deal with. This is referred to as a Strength/Weakness/Opportunity/Threat or SWOT analysis.
- Step 5: Identify the strategic issues facing the organization: a strategic issue is any critical challenge that affects the organization's mission. By its very nature, a strategic issue will involve conflict and must be addressed in order for the organization to overcome it. The organization should take a proactive response to the strategic issue by briefly describing it, listing the factors that make it a challenge, and then preparing a statement of consequence if the organization fails to surpass this challenge.
- Step 6: Formulate strategies to manage these issues: with the SWOT analysis complete and the strategic issues identified, the organization can now formulate strategies to counter the issues. These strategies should also build on the group's strengths and take advantage of opportunities while minimizing their weaknesses and external threats.

- Step 7: Review and adopt the strategic plan: in complex organizations, or a group of organizations working together, it is important that all policy makers agree upon the strategies formulated in the previous step in order for the plan to be successful. In these cases, the organizations may need to rely upon a *program champion*. This is someone who is committed to the groups' goal and can act as an overarching influence among the groups to assist in their unified success.
- Step 8: Establish an effective organization vision: the organization should also envision what it will look like once their strategy has been successfully implemented. A description of the group's "end state" will serve as a beacon for its people to follow throughout the implementation process.
- Step 9: Develop an effective implementation process: similar to the DoD's acquisition model, Bryson calls for organizations to establish specific objectives and milestones to demonstrate progress through the implementation process.
- Step 10: Reassess strategies and the strategic planning process: this method should be seen as iterative in nature with frequent reviews of progress and opportunities to adjust the plan if needed.

3. Other Strategic Planning tools

Bryson is by no means the only scholar who promotes the idea of strategic planning. The literature review for this thesis revealed other tools that can be used in conjunction with Bryson's model.

a. The Value Net

The value net (Brandenurger & Nalefbuff) is a graphical representation of all the entities that either affect an organization or will be affected by an organization. In addition to identifying the organization's stakeholders, the value net also presents the groups competitors, complementors, and suppliers. The value net is designed to assist the policy makers in achieving balance among all those who the organization must deal with. The value net will be used in this thesis to complement steps 3 and 4 of the Bryson method. A generic value net is displayed below:

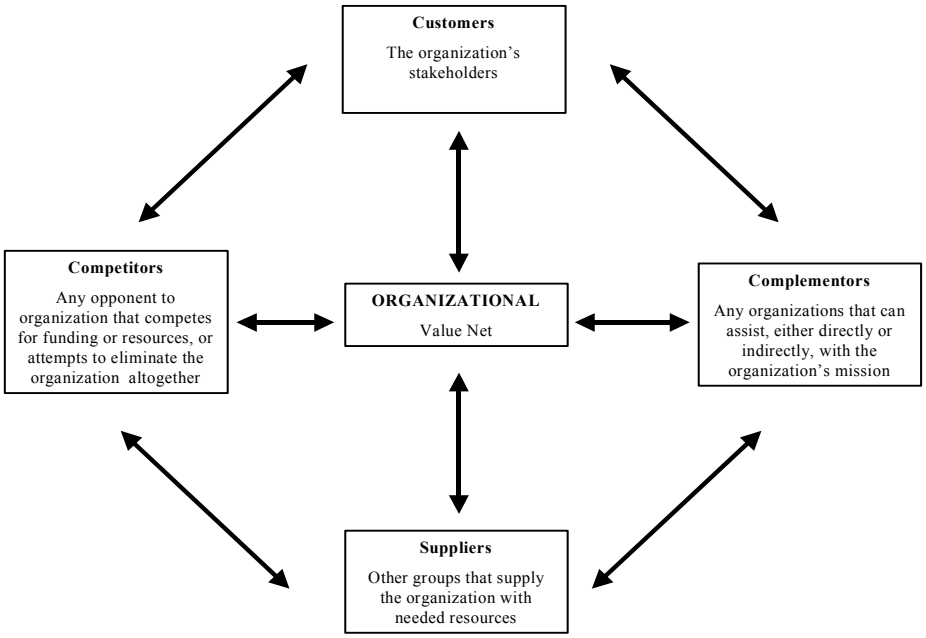

Figure 5. Value Net (From: Brandenburger & Nalefbuff)

b. SWOT Matrix

The SWOT Matrix (Eaton lecture slide) is another tool that can be used in conjunction with Bryson's method. This matrix pits the organization's strengths, weaknesses, opportunities, and threats against each other. The matrix can then be used to develop strategies that maximize an organization's strengths and opportunities, while minimizing the weaknesses and threats. The matrix will be used in this thesis along with steps 4, 5, and 6 of Bryson's method. A generic SWOT matrix is displayed below:

	Strengths List	**Weaknesses List**
Opportunities List	Strategies that take advantage of strengths to seize opportunities	Strategies that counter weaknesses by selecting opportunities
Threats List	Strategies that take advantage of strengths to minimize threats	Strategies that minimize weaknesses and avoid threats

Figure 6. SWOT Matrix (From: Eaton lecture slide)

E. SUMMARY

The Crusader is destined to be like no other self-propelled howitzer before it. With its advances in artillery technology, it will be an integral part of the Army's legacy force and a stepping-stone into the objective force. The original makeup of the Crusader has changed significantly due to a changing environment within the organization and within the Army. Team Crusader must now make strategic decisions to deal with these changes in order to maintain the funding for the weapon system and deploy it to the field. The strategic planning approach could be used to assist Team Crusader in this endeavor.

III. DATA

A. PURPOSE

This chapter presents the reader with all the data that will be analyzed in the next chapter. These data were collected from military and industry representatives who work directly on the Crusader program. These individuals answered a questionnaire designed upon the Bryon 10 Step Method. Unless otherwise noted, the contents of this chapter were derived solely from the individuals' response to the questionnaire.

B. CRUSADER QUESTIONNAIRE

The researcher designed a brief questionnaire and sent it to a representative of OPM-Crusader, TSM-Cannon, and UDLP. The questionnaire consisted of the following questions:

- Are you using, or have you considered using, the strategic planning management approach in your organization?
- What do you feel are the formal mandates of your organization in regards to the Crusader program?
- Who do you feel are the stakeholders of the Crusader program and do you feel that they are being satisfied?
- Outside of Team Crusader, who do you feel is a significant champion of the Crusader program?
- Have you developed a formal mission statement for your organization? If so, what is that statement?
- What do you believe to be your organization's greatest strengths and weaknesses in regards to the managing of the Crusader program? What are the greatest threats and opportunities in regards to the managing of the program?
- What do you believe to be the top critical challenge or policy question that faces the Crusader program right now?
- What strategies have you implemented to face this challenge? Have these strategies been successful?

- What is your vision for the Crusader Howitzer program in the near term and the long term?
- How do you go about assessing your strategic plan and making changes to it?

C. RESPONSE OF OPM-CRUSADER

The researcher contacted MAJ John Chicoli as a representative of OPM-Crusader. MAJ Chicoli is the Assistant Program Manager for Program Integration. Although MAJ Chicoli said his office does not utilize formal strategic planning methods, he did state that OPM-Crusader does take a strategic outlook towards its future and the future of the Crusader howitzer. Summaries of MAJ Chicoli's responses to the Crusader questionnaire follow.

1. Mandates

OPM-Crusader is constrained in its actions by the requirement to fulfill the user's needs, which were provided by TSM-Cannon. With that being said, OPM-Crusader is charged with providing the United States Field Artillery community with a capable and effective replacement for the M109 Paladin series howitzer and resupply vehicle.

2. Stakeholders

MAJ Chicoli divided the Crusader stakeholders into different categories. He referred to major stakeholders such as Team Crusader itself. He also listed sub-contractors as minor stakeholders. However, the ultimate stakeholders in the Crusader program are the soldiers who will be using the system and those who will be supported by them.

3. Strategic Champions

MAJ Chicoli listed several strong supporters for the program outside of Team Crusader. They include:

- The congressional contingent from Oklahoma, the Honorable Congressman J.C. Watts and the Honorable Senators James M. Inhofe and Don Nickles. Also, the Honorable Congressman from New Jersey, Rodney Frelinghuysen
- The current Army leadership, in particular Army Secretary Thomas E. White. According to MAJ Chicoli, Secretary White referred to the system

as the first installment of the objective force and the technological carrier for the FCS.

- The Armament Research, Development And Engineering Center (ARDEC)

4. SWOT

MAJ Chicoli believes that his office's greatest strength is its ability to work with the other members of Team Crusader to form a consensus and speak as one. He stated that this is very important when the individual members of Team Crusader are confronted by external organizations with different agendas. However, he noted as a weakness that the budget and timeline might restrict them from delivering the promised program capabilities.

The greatest opportunity for Crusader, in MAJ Chicoli's opinion, is for the program to initiate a revolution in how the Army operates on the battlefield. He implied that Crusader will demonstrate how the Army will conduct logistical operations and maintain situational awareness in the future. Looming over this is the threat that the program managers will not be able to deliver the Crusader as promised. Furthermore, his office is concerned with the President's 2003 budget. There is a threat that the program's budget will be deeply cut or terminated.

5. Strategic Issue

According to MAJ Chicoli, the top policy question facing Crusader right now is how it will fit into the objective force. Furthermore, with the changing perception of the nation's future threat, will the Crusader program remain relevant?

6. Current Strategies

MAJ Chicoli believes that his office should take a more active strategy aimed at showing the importance of Crusader in regards to the FCS.

7. Vision

MAJ Chicoli's vision for his program to field a compellingly capable system that is continually upgraded based on the lessons learned developed from having the howitzers in the hands of the users.

D. RESPONSE OF TSM-CANNON

The researcher contacted LTC Timothy Prendergast as a representative of TSM-Cannon. LTC Prendergast is the Crusader Team Chief at TSM-Cannon. Summaries of LTC Prendergast's responses to the Crusader questionnaire follow.

LTC Prendergast stated that his organization was not currently employing the strategic planning management approach with the Crusader program. However, his response to the questionnaire did show that TSM-Cannon is taking an objective look at the program and its future.

1. Mandates

According to its charter, TSM-Cannon is responsible for the centralized management of all "Combat Developments user activities" associated with the Crusader and Field Artillery programs. They are mandated with determining and clarifying the Key Performance Parameters for the Crusader. Furthermore, LTC Prendergast lists a few informal mandates such as promoting and defending the system to those outside of Team Crusader.

2. Stakeholders

LTC Prendergast gave a lengthy list of those he considers to be stakeholders in the howitzer program. This list includes:

- United States Field Artillery School at Lawton, Oklahoma. The Crusader is seen as the cornerstone of all field artillery modernization efforts.
- Combined Arms Support Command. Crusader will allow for more efficient logistical support in the field.
- United States Air Force and the Military Traffic Management Command. The Crusader is designed to allow the Air Force to meet its transportability needs for a lighter and more deployable Army.
- Test Centers. The development of Crusader is relying upon Modeling and Simulations to streamline its procurement.
- Potential employees at the planned production plant in Englin, Oklahoma

3. Strategic Champions

LTC Prendergast listed the current Army leadership and Congress as champions of the Crusader program. In particular, LTC Prendergast named Oklahoma Representative Watts and Oklahoma Senator Inhofe, as supporters of the program.

4. SWOT

LTC Prendergast views the program's political and industrial base as its greatest strengths. Furthermore, the program can boast that it is currently on schedule and meeting all of its requirements. However, he feels that the size and location of TSM-Cannon are weaknesses because they need to travel to many different locations in order to support the program.

Solving the shortcomings of the Paladin is the greatest opportunity that the Crusader has right now. With each passing rotation of Paladin battalions at the National Training Center, these shortcomings continue to be highlighted. LTC Prendergast feels that this needs to be stressed to those outside Team Crusader.

LTC Prendergast thinks that the program's budget and schedule are its biggest threats. In particular, the Transformation Campaign Plan and the FCS are threatening the Crusader's funding. TSM-Cannon supports the concept of using Crusader along with the FCS. However, there are those who portray the two as competing systems. The sooner FCS can be deployed, the greater the chance that Crusader will be seen as being an unneeded system and cancelled. For its own sake, the sooner Crusader can be deployed, the better.

5. Strategic Issue

In LTC Prendergast's opinion, the most serious issue for the Crusader right now is maintaining its relevance during the Army's transformation. Although the Crusader was born "of the cold war, " it has been adapted to ensure that it will fit into the Army's TCP. It is now designed to play a critical role in the Army's Legacy force. However, LTC Prendergast maintains that the Crusader will continue to be significant after the Objective Force is deployed. Not only will it be used in the Counterattack Force, but also it will also provide a technological bridge to the FCS, and will be able to fight with the FCS.

He fears that not all of the key decision-makers in the Army fully understand this. Too many believe that once the FCS is deployed, Crusader will not be needed. LTC Prendergast states that Crusader "will continue to suffer from its mandated association (solely) with the Legacy (force)."

6. Current Strategies

TSM-Cannon is continuing to highlight Crusader's "full-spectrum applicability" in the Army transformation plans. It appears that TSM-Cannon has launched a wide-reaching communication plan to ensure that Crusader stays at the forefront of acquisition visibility. LTC Prendergast points out the success the program is having in its initial testing and states that this success is being communicated to the entire Army. He also states the importance of continuing to maintain strategic alliances with general officers and members of Congress.

E. RESPONSE OF UDLP

The researcher contacted Mr. Dave Crowell as a representative of UDLP. Mr. Crowell is the Program Development Manager, Crusader, for the Armament Systems Division at UDLP. Summaries of Mr. Crowell's responses to the Crusader questionnaire follow.

Mr. Crowell stated that UDLP was indeed making use of the strategic planning approach in conjunction with the Crusader program. He spoke of following the "classic strategic planning process" within his division. Although he did not name the Bryson model as being their process, the two are similar. Mr. Crowell described his process in very simple steps.

His planners analyze their customers, competitors, and the industry. This analysis leads to an iterative process that attempts to confirm, create, or update an overall generic strategy. This strategy is designed to answer the question, "how can we most effectively grow the business and sustain our long-term competitive advantages?" Mr. Crowell even stated that his division makes use of a SWOT matrix to lead them to products and services that they believe they can or must provide. Finally, they establish objectives to set in place to win, acquire, or defend their "product niches" within their industry.

1. Mandates

Mr. Crowell provided a very simply-stated mandate that UDLP has: "give the soldier the most effective, sustainable, and safest combat vehicle in history." This far-reaching goal is the result of several, more detailed, mandates that UDLP, as the developer, must follow. These mandates are contained within the prime contract, the ORD, and the KPP's. These documents give UDLP very clear targets that they must deliver. These specific mandates include:

- Design and production of the technical data package.
- Design and production of the test data necessary for the program to progress through Milestone B.
- (Upon completion of a contract modification) procurement of materials needed for production of the system development and demonstration (SD&D) prototype.

Not surprisingly, UDLP, as a private business, will have other goals that are business-oriented. They include:

- Maintain a non-competitive procurement of Crusader through Low Rate Initial Production (LRIP).
- Posture itself for continued full rate production and postproduction support.

2. Stakeholders

Mr. Crowell lists the following as Crusader stakeholders:

- The American soldier. UDLP views the soldiers who will fight within the Crusader as the primary stakeholder in this program. This belief is demonstrated by UDLP's willingness to include field artillery soldiers' input in the design of the Crusader. Mr. Crowell said that UDLP has had several "user juries" to determine the best possible design for the howitzer.
- The Army itself. Mr. Crowell made a valuable point by saying that the Army has a significant stake in this program. The Crusader is a key program in demonstrating the needed technologies and operational capabilities called for in the Army's transformation.
- UDLP and its sub-contractors. The company, and the sub-contractors, and vendors involved with it, have a substantial financial stake within this program. It best serves all of their paramount interests for the Crusader to succeed. To do this, Mr. Crowell says, they must ensure that Crusader delivers the best combat capabilities possible.

3. Strategic Champions

Mr. Crowell feels that Crusader has two significant champions: the Army itself and the members of Congress. He stated that the Army has "successfully defended the need for Crusader in every critical juncture it has faced." More specifically, he points to the Secretary of the Army as a very vocal supporter of the program. Furthermore, Mr. Crowell believes that the Oklahoma congressional delegation has been key to maintaining support for the program. In addition to Oklahoma, congressional members from Minnesota, where UDLP is based, and New Jersey, have been supportive.

4. Mission Statement

"Protecting freedom through excellence in armaments" is the vision statement at Mr. Crowell's division at UDLP. He feels that this can also serve as their mission statement. Along with this, he lists the following core values. His division is committed to:

- Providing quality products and services on schedule at the lowest achievable cost.
- Maintaining the highest standards of integrity.
- Fostering diversity, teamwork, and employees reaching their full potential.
- Rewarding innovation and sound business risk-taking.
- Promoting community and environmental responsibility.
- Balancing technical excellence with control of costs.
- Emphasizing continuous improvement and best practices.
- Achieving superb financial performance through excellent execution.

5. SWOT

Mr. Crowell feels that Crusader's greatest strength is the united front that Team Crusader puts forth. He feels that OPM-Crusader and TSM-Cannon, along with UDLP, have presented a consistent and coherent message during any challenging time. This message has been centered on the notion that Crusader is the first true 21st Century combat vehicle.

The program's greatest threat is the perception that Crusader is not representative of the transformed Army and should not be included in the objective force. With this in mind, Mr. Crowell feels the program's greatest opportunity is for it to be successful and demonstrate how the Army's vision can be achieved.

6. Strategic Issue

Mr. Crowell feels that the top issue facing Crusader is the timely execution of the program as laid out in regards to cost, schedule, performance. Another key issue is the Army's ability to define Crusader's role and ensure that the top military leaders understand this role. Finally, Mr. Crowell mentioned a more current issue. After the September 11th attacks, he fears that Crusader's budget may be cut to provide funding for homeland defense and to support the war against terrorism.

7. Current Strategies

Mr. Crowell spoke of a strategic approach of maintaining and expanding support for the program by executing several public relations campaigns, along with lobbying efforts and maintaining strong relationships with industry partners. This strategy has been successful insomuch that Crusader is still considered a very high priority for the Army and its funding has been maintained.

8. Vision

In the near-term, Mr. Crowell envisions Crusader to survive some funding cuts that will help pay for the Army's transformation and other needs. This loss of money will be made up with the cut in the number of howitzers to be produced. Although this funding cut may not be avoidable, Mr. Crowell still sees the program fielded on time with the capabilities set forth by the ORD. In the long-term, Mr. Crowell feels that the Crusader will be produced in greater numbers than currently projected for the U.S. and in significant numbers worldwide.

9. Assessment

Mr. Crowell's division assesses its strategies as part of the "classic process" that he described earlier. Throughout this process, there are a series of iterations and contributions from the various stakeholders within the division. He stated that any of

these sources might initiate a change as needed. This formal cycle takes about three to four years for major re-looks with continual updates.

F. SUMMARY

The responses to the questionnaire clearly indicate a common goal between these somewhat dissimilar organizations. Although the representatives from OPM-Crusader, TSM-Cannon, and UDLP emphasize different aspects of their internal and external environments, they have been able to maintain a common objective. It is now possible for the researcher to combine the different responses and analyze Team Crusader's strategic planning methods as a whole.

IV. ANALYSIS

A. PURPOSE

This chapter expands on the data just presented and applies it to the Bryson model and other strategic planning tools in Chapter II. At the conclusion of this chapter, a strategic plan for Team Crusader will be presented in the form of four strategies the team is using in order to advance the weapon system.

B. AGREEMENT

As the Bryson model indicates, there must be agreement between the members of the organization in order to begin the strategic planning process. Although the members of Team Crusader did not meet formally to conduct this research, their individual responses to the questionnaire demonstrate their agreement that strategic planning would assist the Crusader program. With this assumption made, Step 1 of the Bryson model can be considered accomplished.

C. MANDATE

The identification of the organization's mandates is one of the necessary steps prior to creating the organization's mission statement. Listing Team Crusader's mandates will carry out Step 2 of the Bryson model. In the case of a military procurement program, these mandates should reflect the requirements listed in the MNS and the ORD. Reviewing the responses to the questionnaire, the following is a list of Team Crusader's formal mandates:

- Provide the field artillery, and the Army at large, with an effective replacement for the M109 howitzer that meets all of the key performance parameters.
- Give the American soldier the most effective, sustainable, and safest combat vehicle in history.

An additional informal mandate could be:

- Assist the Army in its transformation process by incorporating into the Crusader design needed technological advances that could be used in the Objective Force and the FCS.

D. STAKEHOLDER ANALYSIS

The respondents identified several organizations that can place a claim on the Crusader howitzer, and therefore, will be affected by the success or failure of the program. It is these organizations that Team Crusader must satisfy in order for the program to be truly successful. This analysis, along with the creation of the team's mission statement, will fulfill Step 3 of the Bryson model. Of all the organizations named, three groups stood out.

1. The American Soldier

The three respondents to the questionnaire all agreed that the ultimate stakeholder for the Crusader program is the individual American soldier. Those who will be fighting within the system, and those who be fighting along side of the system, must stay at the forefront of the minds of those who are building the system. The effort, made during the development and production of the system, to tailor it to the needs of the soldier should produce a system that is more efficient in battle and easier to maintain throughout its life cycle.

2. The Military Community

The Army, and the military at large, will be able to benefit from the successful deployment of the Crusader. In respect to the Army, the Crusader will undoubtedly fit into the Legacy Force, giving the Army the added artillery capabilities necessary to defeat emerging foreign artillery systems. The respondents have argued that the Crusader will benefit the other phases of the Army's TCP as well. If the Crusader is truly the first installment of the Objective Force, and if Crusader allows for an easier transition to the FCS, then the Army will be reaping the benefits of this program for the next 30 years and beyond.

Furthermore, there are several independent Army programs that want the Crusader to succeed. The AFATADS program, the Excalibur projectile, and the new fire support vehicles will perform most efficiently when they are used in conjunction with the Crusader. Also, Army testing centers will stay employed when utilized by the Crusader.

Finally, the M1A1 tank program now shares a common engine with the howitzer; therefore, it will benefit by its success as well.

The other branches of the military, most notably the Air Force, have a claim on Crusader's success. In order for the howitzer to deploy overseas, it will need to be transported by the Air Force. The weight reduction effort that Crusader has undergone will allow the Air Force to airlift the system more easily, thus assisting in one of their wartime missions.

3. The Business Community

It is clear that several businesses have a financial stake with the Crusader program. UDLP and its sub-contractors have invested a large amount of time and money to produce this system, and therefore, need it to succeed. Certainly, the potential employees of the Englin, Oklahoma production plant have a vested interest in the program's success. Furthermore, the numerous vendors and suppliers, who will be employed throughout the system's life cycle, want this program to succeed.

E. MISSION STATEMENT

Team Crusader's mission statement should be its declaration of purpose, and should incorporate the results of the stakeholder analysis. Bryson states that a mission statement should be short, but should be able to answer the following six questions (Bryson, pgs 75-80):

- Who are we?
- What are the basic needs we exist to meet?
- What do we do to respond to these needs?
- How should we respond to our key stakeholders?
- What are our values?
- What makes us distinctive or unique?

Keeping this in mind, these principles would suggest that an appropriate mission statement for Team Crusader would be:

"Team Crusader is the organization that will provide the United States Army's soldier with the most effective replacement for the M109 howitzer system by producing a new weapon system that meets all of the user's key performance

parameters within the allotted time and budget and assists the Army in its transformation efforts."

F. SWOT ANALYSIS AND VALUE NET

Throughout the responses to the questionnaire, the Team Crusader representatives supplied the researcher with a long list of the organization's strengths, weaknesses, opportunities, and threats. During the SWOT analysis, a clearer picture emerged of Team Crusader's internal and external environments, and how the elements of these environments interact with each other. This analysis, along with the creation of Crusader's Value Net, completes Step 4 of the Bryson model. A consolidated list of Team Crusader's SWOT's follows:

1. Strengths

- United Front. Team Crusader's ability to form a consensus and speak as one although it is formed from three individual organizations.
- Political/Army/Industrial Champions. Team Crusader enjoys a large amount of support in Congress, throughout the Army, and within private industry. Congressional, Army, and industry leaders have consistently supported the need for the program and its continuous funding. Furthermore, other Army programs connected with the Crusader will promote the system for their own benefit.
- Credibility. The Crusader howitzer is the product of a credible military need and analysis of alternatives. The weapon system will meet the necessary key performance parameters that the Army requires. Furthermore, it will remain relevant throughout the Army transformation.

2. Weaknesses

- External Misperceptions. Team Crusader is faced with outside organizations and individuals that feel that the program is unnecessary or will not fit into the Objective Force or FCS. These perceived misperceptions could damage Crusader's reputation within the military and political communities.
- Time and Budget Constraints. As with all procurement programs, the Crusader program is restricted in its actions by its schedule and funding. Trade offs must be made in order to obtain optimal results.
- Separation of Team Members. The members of Team Crusader must deal with the fact that, although they are working towards the same goal, they are separate and

unique entities and they are geographically located in different parts of the country. This separation in distance affects their ability to coordinate.

3. Opportunities

- Successful Deployment. Bringing Crusader through the complete procurement process and delivering it to the Army will have several positive ramifications. Not only will this mark the completion of a successful business endeavor, but it will also provide the Army with a solution to the Paladin howitzer's shortcomings.
- Early Deployment. The sooner that Crusader can be put into the hands of its users, the sooner that Team Crusader can demonstrate its overall worth, and the sooner the Army's soldiers can benefit from its capabilities.
- Assist in the TCP. Team Crusader can also assist the Army by successfully demonstrating certain technological capabilities that will be necessary in the Objective Force and the FCS. Crusader can be seen as the program that "initiates" the Army's technological revolution.

4. Threats

- Budget Cuts. Although a certain amount of funding cuts may be unavoidable, any significant cut, or outright termination of funding, would threaten the program with cancellation. In particular, the President's 2003 budget may become a threat to Crusader's funding.
- External Misrepresentations. Unlike the misperceptions that some may have about the Crusader and its capabilities, there are negative misrepresentations outside of the Crusader that are being actively spread by other organizations with their own agendas. This could be being done in an effort to damage the program in order to strengthen the position of another program.
- Time. The longer it takes to deploy Crusader, the greater potential that it will lose its relevance due to the advancement of an FCS program (which does not rely on Crusader) or the emergence of a new threat.

5. Crusader Value Net

In order to fully comprehend how these strengths, weaknesses, opportunities, and threats interact together in Crusader's internal and external environments, it is necessary to translate them into a value net. By doing this, it is possible to view Team Crusader's environment is terms of its costumers, competitors, complementors, and suppliers.

The organization's customers are those stakeholders who will take possession of the weapon system. Its competitors are the individual potential threats poised against the team. Its complementors are those strategic champions or organizations that assist or work with the Crusader organization. Finally, its suppliers are identified here as the prime and sub contractors and production workers who will build the howitzer, along with those vendors who will supply the items necessary throughout the program's life cycle.

Based on the strategic planning principles used in this thesis, Team Crusader's Value Net should look like this:

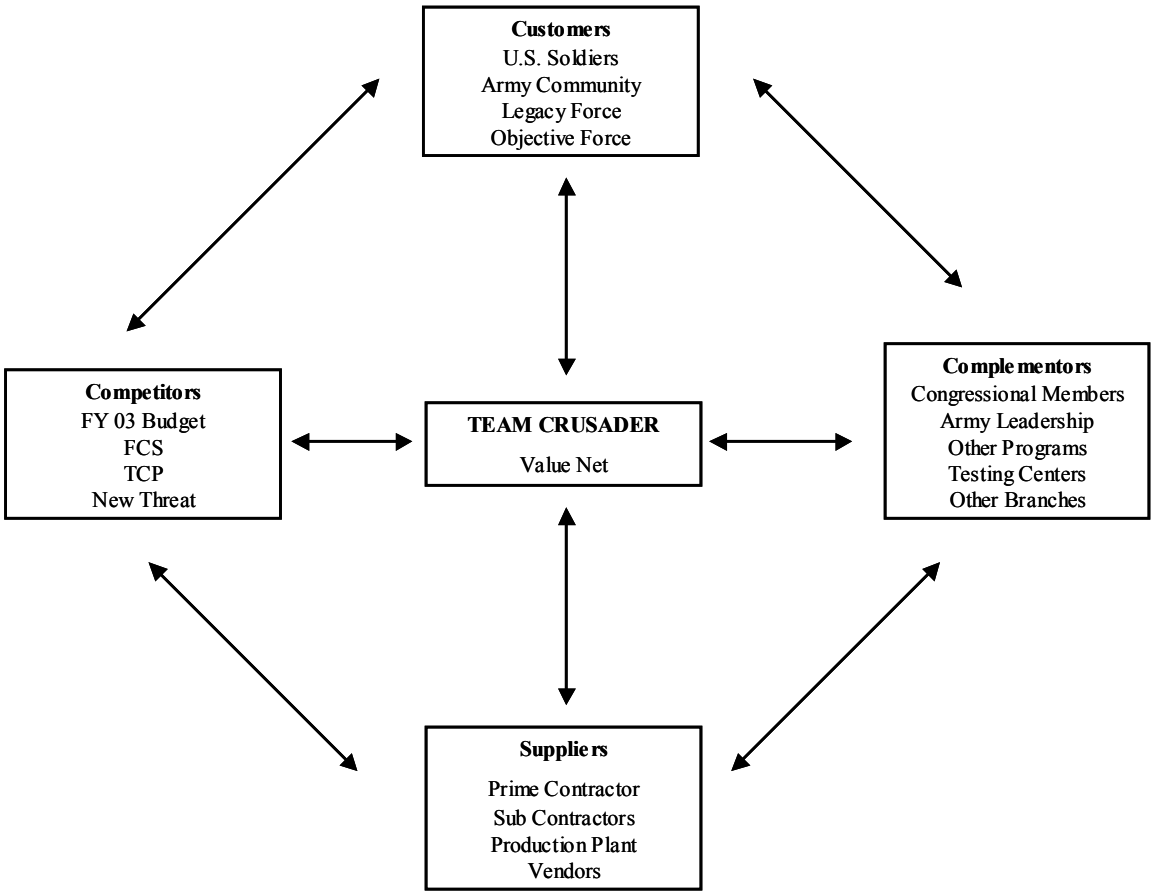

Figure 7. Team Crusader's Value Net

G. STRATEGIC ISSUE

Like all organizations, Team Crusader must deal with fundamental policy questions that will affect its mission and mandates. If these policy issues are ignored,

Team Crusader's very existence may be jeopardized. According to Step 5 of the Bryson process, Team Crusader must first identify these issues, identify what specific threat that they pose to the organization, and what consequences will result if they fail to address these issues. With that done, Team Crusader can develop a SWOT matrix that results in strategies designed to ameliorate these issues.

The questionnaire revealed several key issues that Team Crusader is facing at the present time. Chief among these issues is the need to maintain Crusader's current level of funding. Also, Team Crusader must keep the program relevant during this transition period within the Army. It is important to list these issues in detail to fully understand their implications.

1. Funding Cuts

Obviously, Crusader will not survive if its funding is either severely cut or terminated altogether. What makes this threat a strategic issue is the fact that it is, to a large degree, out of the hands of the members of Team Crusader. The team must continuously work at maintaining its required level of funding by staying vigilant with Congress and remaining aware of any other organization attempting to raid their funding for another program. If they cannot justify their funding needs, others most certainly will find justification to limit their funding. Furthermore, the new war on terror may drain the Army's budget to the point that it cannot afford to fund Crusader. If Team Crusader fails to address this issue, it will undoubtedly fall victim to lack of funding and fail in its mission to deploy the weapon system.

2. Remaining Relevant

The Crusader program began with the identification of a particular need within the Army. Team Crusader's mission is to deliver to the Army a howitzer that will be an effective replacement to the M109 series and counter a particular threat. However, if this need, and the perceived threat, changes or goes away, than the need for Crusader may very well change or go away as well.

The possibility of this happening has been increased with the Army's transformation and the new perceived threat in the world. The Army's TCP calls for an Objective Force and a FCS that, some argue, does not include the Crusader howitzer.

Some would say that, at best, Crusader is part of the Legacy Force and will not be deployed in time to have an impact on the latter stages of the TCP.

If this is the case, the argument follows, than the development of Crusader should not continue in order to make room for other needed programs. Of course, this is not the opinion of Team Crusader. Team Crusader cannot allow itself to suffer from its association with the Legacy Force.

If Team Crusader fails to address the issue of the programs relevance, then it will allow others to dictate the program's future for them. As stated earlier, all programs begin with an identification of a threat and a mission needs statement. Other organizations can reduce Crusader's significance to the future Army by demonstrating Crusader's inability to meet future threats and needs. If this were to happen, then Crusader would become a program without a need, and therefore, there would be no requirement for the program.

H. SWOT MATRIX

With the identification of the two critical strategic issues facing Team Crusader, it is possible to develop a SWOT Matrix. This matrix will align the organization's strengths, weaknesses, opportunities, and threats in a way that will optimize the team's strategies to counter their key strategic issues. These strategies are required as part of Step 6 of Bryson's model. Based on the responses to the questionnaire, Team Crusader already has several strategies in place. This process will formally present and validate these strategies. The strategic planning principles outline in this thesis suggest that Team Crusader's SWOT Matrix should look like this:

	Strengths List •United Front •Political/Army/Industry Champions •Credibility	**Weaknesses List** •External Misperceptions •Time/Budget Constraints •Separation of Team Members
Opportunities List •Successful Deployment •Early Deployment •Assist with TCP	*•Strategies that take advantage of strengths to seize opportunities* **▪Communications Dominance**	*•Strategies that counter weaknesses by selecting opportunities* **▪Accelerated Deployment**
Threats List •Budget Cuts •External Misrepresentations •Time	*•Strategies that take advantage of strengths to minimize threats* **▪Maintaining and Expanding Support**	*•Strategies that minimize weaknesses and avoid threats* **▪Remaining Vigilant on Cost, Schedule, Performance**

Figure 8. Team Crusader's SWOT Matrix

I. EXPLANATION OF STRATEGIES

The representatives contacted for this thesis describe several strategies developed over time to advance the Crusader program. The SWOT matrix above formally documents the major strategies in place and validates their need through the strategic planning steps taken up to this point.

The four strategies identified within the SWOT matrix address one or both of the strategic issues facing Team Crusader. The members of Team Crusader are implementing each of these strategies at the present time. It is important to provide a detailed explanation of each of these strategies.

1. Communications Dominance

The responses to the questionnaires indicate that Team Crusader realizes that "he who communicates first, wins." The organization should be the dominant group among the other weapon procurement programs and among those who make the funding decisions. This is to say that Team Crusader must continue to effectively communicate the applicability of their program and the benefits it offers. This strategy will help defend against budget cuts and promote the relevance of the program.

This can be done through an effective lobbying campaign designed to educate and inform those who may have misperceptions of the program. It will also counter the efforts of those who may misrepresent the program for their own benefit. Furthermore, this strategy can be done in conjunction with the successful deployment of the program.

This strategy will enhance the program's credibility by demonstrating its need for the weapon within the Legacy Force and the Objective Force as well. Furthermore, it will promote the idea that the technological advancements used within the Crusader will be a stepping-stone for the development of the FCS.

2. Accelerated Deployment

Crusader will benefit greatly by deploying the system to the field as quickly as possible. To delay the fielding of the program will increase the possibility that another weapon system will meet its needs and replace it within the Legacy and Objective Forces. The SWOT analysis and the SWOT Matrix presented in this research indicate that Crusader needs to "beat the FCS to punch." That is to say, Crusader should become the system that the Objective Force's FCS indirect fire component is designed around.

As discussed earlier in this thesis, the Army has decided to accelerate the deployment schedule for the Crusader, and get the weapon system into the hands of the soldiers two years early than originally planned. This strategy would benefit the program by formally tying the program to the Legacy Force and thus making it a required piece of the Army's counterattack force. This strategy is specifically designed to disprove any misrepresentations of the program and keep the need for the Crusader relevant.

3. Maintaining and Expanding Support

Team Crusader has benefited greatly in the past from a long list of champions within the political, military, and industrial worlds. However, the organization has implemented a strategy to maintain and expand this support for the future. The respondents to the questionnaire have indicated the need to strengthen Team Crusader's strategic alliances with general officers and members of Congress. Team Crusader's united front with their champions will also help dismiss any negative misrepresentations that other programs may spread. This strategy greatly assist against budget cuts and keeps the program relevant.

4. Remaining Vigilant on Cost, Schedule, and Performance

Ultimately, the Crusader procurement program will be judged by its ability to meet its cost, schedule, and performance criterion. Due to this, Team Crusader must remain vigilant on deploying a program that meets the Army's needs, and that is also on time and on budget. This is made more difficult by Team Crusader being made up of three different organizations in three different locations. Team Crusader must maintain their coordinated effort to deploy the program within the allotted time available. This strategy will defend against budget cuts and keep the program relevant.

J. ADOPTION AND IMPLEMENTATION OF STRATEGIES

Steps 7 and 9 of the Bryson model call for the adoption and implementation of the strategies described above. As indicated previously, all of the strategies discussed have already emplaced by the members of Team Crusader. Therefore, these steps can be considered completed.

K. ORGANIZATION VISION

With these strategies in place, the strategic planning approach dictates that Team Crusader should make fundamental decisions about the future of their organization and give its members a clear definition of what that future will be if these strategies are successful. To do this, Team Crusader should create a vision for the future. This vision of the future will act as a beacon or guideline for its members to use throughout the implementation of the team strategies. When in doubt, those working within Team Crusader can look at the vision statements to determine what actions they should take. Step 8 of the Bryson model calls for Team Crusader to create just such description. In particular, Team Crusader should speak of what the program will look like once successfully deployed.

The respondents to the questionnaire supplied information to create vision statements for both the near-term and long-term future. These statements presented here reflect what a successful Crusader program will resemble after the next 5 years and beyond.

1. Near Term Vision

After achieving success in the 2003 Presidential budget, Team Crusader will maintain enough funding to continue its progress through the Concept and Technology Development Phase and successfully pass through its next milestone decision point. Furthermore, Team Crusader will deliver the weapon system to the first active duty unit in 2006.

2. Long Term Vision

By 2008, the Crusader howitzer will be in full-rate production and supplying the Legacy Force with a compelling system that meets all of the key performance parameters set forth in the ORD. The system will then be produced in greater numbers than originally projected for both the U.S. Army and foreign military sales.

L. ASSESSMENT OF PLAN

Bryson's final step calls for the reassessment of the implemented strategic plan and to review the progress of the plan and make changes if necessary. The Department of Defense supplies Team Crusader with a tool that will assist in this step. The Defense Acquisition System provides a method for procurement programs to translate user's needs into sustainable weapon systems. Part of this acquisition system is the Defense Acquisition Management Framework, or program schedule. This schedule requires certain milestones to be met before the overall program can advance into the next stage of procurement. These milestone reviews offer Team Crusader a chance to assess their strategic plan.

This tool also gives Team Crusader a way to measure the success of the strategies that they have implemented. Achievements in the schedule may indicate the success of a certain strategy, while setbacks in the schedule may call for changes to be made in the strategic plan. Furthermore, changes in their internal and external environment may warrant a change in their strategic plan. Such an instance occurred when it was determined that Crusader needed to become lighter in order to fit into the Army's transformation plans. This demonstrated Team Crusader's ability to alter their organizational direction and adapt strategies to reflect the change in environment.

As Team Crusader progresses through the schedule, it will be able reinitiate the ten-step process and develop new strategies for the future. A sample representation of the Crusader program schedule is supplied below:

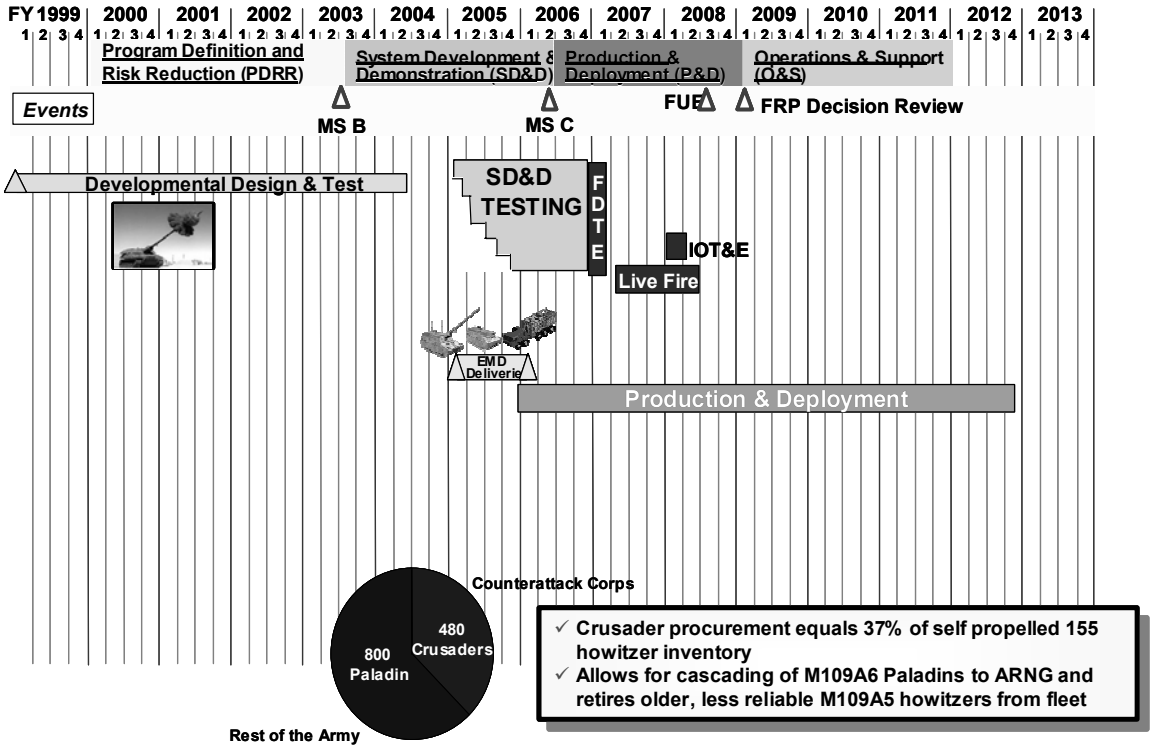

Figure 9. Crusader Program Schedule (From: OPM-Crusader)

M. SUMMARY

This chapter has applied the experience and opinions of the individual members of Team Crusader to the Bryson 10 Step Strategic Planning Model. It has demonstrated the ability to use the model to create or validate strategies that are assisting in the Crusader howitzer's development and deployment. Furthermore, it has shown the iterative nature of the strategic planning model, or what Bryson refers to as the Strategy Change Cycle.

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V. CONCLUSIONS

A. PURPOSE

This chapter will present a summary of conclusions based upon the research presented in this thesis. Recommendations will be made in regards to the members of Team Crusader and other organizations. Finally, areas for further research will be suggested.

B. CONCLUSIONS

1. Primary Research Question

In Chapter I, the researcher asked the following primary research question: What strategic planning actions are being taken by the OPM-Crusader, TSM-Cannon, and UDLP in order to maintain the funding for the Crusader Howitzer and bring the weapon system into full production and deployment? The researcher is now prepared to answer that primary question.

Either in a formal or informal manner, OPM-Crusader, TSM-Cannon, and UDLP have each made a conscious decision to take a strategic outlook for their individual actions in regards to the Crusader Self-Propelled Howitzer. Furthermore, the three members have rallied together in a united cause to bring about the completion and deployment of the weapon system. Their actions have resulted in the implementation of four strategies aimed to advance this program. Namely, Team Crusader is presently engaged with achieving communications dominance, accelerating the deployment of the system, maintaining and expanding their support outside of their organization, and remaining vigilant in regards to the program's cost, schedule and performance.

2. Secondary Research Questions

In Chapter I, the researcher asked the following four secondary research questions:

- What is the Crusader howitzer and what are its planned capabilities?

- What is strategic planning?
- How can strategic planning be applied to the Crusader howitzer?
- What strategic planning model can be used for the Crusader howitzer?

Chapter II presented a detailed description of the Crusader howitzer and its planned capabilities. Furthermore, that chapter introduced the reader to the strategic planning management approach. Therefore, these two secondary research questions can be considered answered. What is left is to show how strategic planning can be applied to the Crusader program and what strategic planning model can be used. To do this, the researcher will present the Crusader Strategy Change Cycle and demonstrate how Team Crusader can use this model.

3. Crusader Strategy Change Cycle

The actions taken by the individual members of Team Crusader can be applied to Bryson's Strategy Change Cycle and his 10 Step Strategic Planning Method. The analysis conducted in this research shows that Team Crusader is meeting all of the required steps within Bryson's plan. The results of that analysis can now be superimposed onto Bryson's Strategy Change Cycle to demonstrate its applicability to the Crusader program.

The following graphical representation of Crusader's Strategy Change Cycle shows how the organization is continuously evaluating its mission in regards to its internal and external environments. This allows for key issues to be identified and for strategies to be formulated that are best suited to deal with these issues. Finally, the organization's vision can be assessed for progress and changes in the environment, thus reinitiating the cycle.

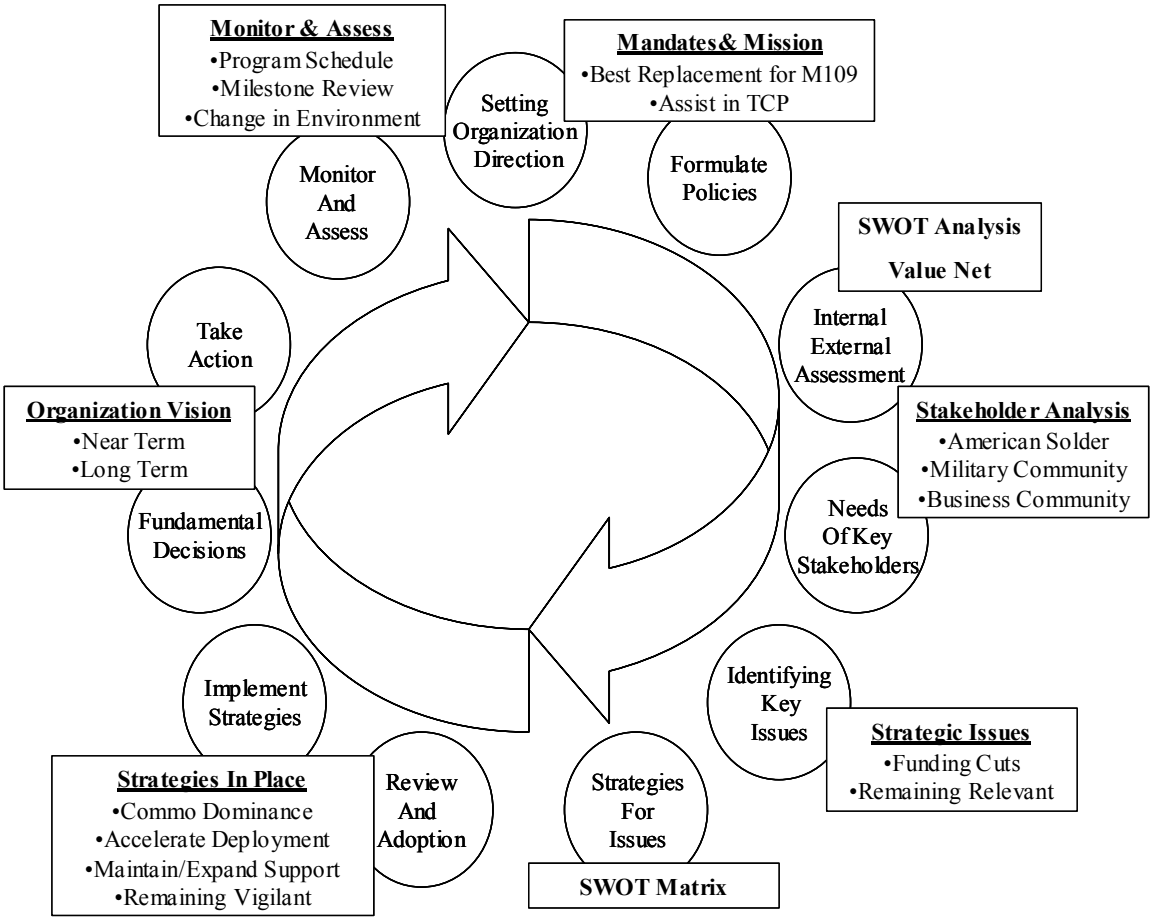

Figure 10. Crusader Strategy Change Cycle

This research indicates that strategic planning is not just for profit-making organizations. In fact, the Bryson model is designed specifically for public organizations, such as the Department of Defense procurement program. Therefore, this strategic planning model can be applied to Team Crusader.

C. RECOMMENDATIONS

1. Recommendations for Team Crusader

The members of Team Crusader should recognize that they are utilizing strategic planning even though they may not be doing so in a formal manner. The actions that they have taken and the strategies they have implemented fit neatly into the Bryson Strategy Change Cycle and his 10 Step Planning Method. Furthermore, they should realize the benefits of this strategic planning process.

Team Crusader should continue with its united efforts to deploy the weapon system. Additionally, it should explore the future use of the Strategy Change Cycle and

reinitiate the 10 Step Planning Method when it monitors a change in its environment or when the effectiveness of its strategies warrants it.

2. Recommendations for other programs

The researcher believes that any other weapon program could use the strategic planning model presented in this thesis. The Bryson model is not limited by the size or nature of the organization that uses it. Other Department of Defense procurement organizations, regardless of acquisition category, should be shown the value of strategic planning and how the Bryson model can be applied to their efforts.

D. AREAS OF FURTHER RESEARCH

1. Reassessment after Milestone B

The Crusader program is currently schedule to reach its Milestone B decision point in 2003. This event would offer a good opportunity for a reassessment of Team Crusader's Strategy Change Cycle that was presented in this thesis. A researcher could document Team Crusader's effort to reinitiate the Strategy Change Cycle to reflect changes in the program's internal and external environments.

2. Further Scrutiny of Implemented Strategies

This thesis presented four strategies that Team Crusader is currently using to advance the weapon system. Future researchers could scrutinize one or more of these strategies in depth to determine its effectiveness. In particular, a thesis could be written around the efforts to accelerate the Crusader's deployment and any strategic planning considerations required with that endeavor.

3. Application to Different Procurement Program

The applicability of strategic planning to Department of Defense procurement organizations can be further tested by relating the method presented in this thesis to another procurement program unrelated to the Crusader howitzer. Researchers could make use of the Bryson Strategy Change Cycle and 10 Step Planning Method and verify its overall utility by applying it to another weapon system in development. Furthermore, a researcher could attempt to apply a different strategic planning model to the Crusader program.

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