INTRODUCTION

The Aerospace & Defense MBA is a unique program for a very unique business education and development program for a unique and vital sector of the economy. Business in the aerospace and defense industry (A&D) has many unique features, including but not limited to:

- The government as a leading customer/consumer
- Heavier government regulations and oversight than most other sectors
- Life, safety and human health major factors in product design and operation
- Technology intensive – rapid innovation cycles
- High-dollar industry highly dependent on a healthy supplier base in small business
- Vital importance of information security and property right protection
- Paradox: A global industry with significant limitations on free flow of goods, services
- Highly conservative, risk-averse organizational cultures

In response, UT has tailored a unique MBA to serve high-potential leaders and sponsoring employers from all across the sector. The program is designed for self-motivated, high-achieving professionals from virtually any business function. Participants complete a high-compression MBA in 12-months while continuing to work. The design minimizes life disruptions and time away from work, keeping employers’ key programs on track. Industry leaders learn vital business skills from top faculty members in UT’s highly-rated College of Business Administration. The curriculum’s applied focus enables immediate application of new skills. Drawing “fast-track” leaders from diverse functions and sectors all across the industry, the ADMBA delivers unrivalled student-to-student learning and growth.

Most homework assignments are job based. Students increase understanding of their own business and that of their market, suppliers and customers as they demonstrate mastery of new knowledge. The Organizational Action Project, or OAP, is a key component in this design. In lieu of a thesis, participants complete the year-long project for their employer and produce reports of the work as an ADMBA requirement. Students work with their employer to identify a suitable, high-value business challenge. We then assign a faculty advisor with relevant expertise and experience. The advisor serves as both “coach” and evaluator. Through the OAP and other program features, the ADMBA delivers near-term ROI far greater than the cost of the program.

This book includes publicly releasable “abstracts” summarizing the focus, methodology and dividends from a few representative projects. Because the topics are usually proprietary or sensitive, we keep reports confidential. Students produce the abstracts to provide prospective sponsors and students a sense for the work that can be done in the OAP and the dividends they often yield. Projects can focus on virtually any element of business, including but not limited to: strategic planning, operations excellence, supply chain management, affordability, marketing and business development, information management, human resources and contracting.
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ADMBA Student Project Abstract

MC4 Knowledge Vault

Abstract:

This Organizational Action Project (OAP) examined the Document Management Process used by the U. S. Army’s Medical Communications for Combat Casualty Care Project (MC4). This process is cumbersome and inefficient. This project sought to improve how documentation is produced and managed in support of the Electronic Medical Record (EMR).

The author found that a fundamental change was needed in how documentation was produced and its quality was ensured. A formal review and editing process was implemented in preparation for further development of the Knowledge Management functions required by the Army.

After implementing the new quality process in Fiscal Year 2011, the per-page cost of quality was reduced by 70%.

It is clear that the new process is effective and will provide the required solid foundation for the Knowledge Vault project. This effort’s success has caught the attention of MC4’s higher headquarters, PEO EIS, and they have now adopted it in conjunction with this project. MC4 and PEO-EIS will jointly develop the follow-on capabilities for 3000 plus army personnel over the next two years with projected savings of over fifteen million dollars per year.

The Aerospace & Defense MBA program provides a traditional MBA education with a curriculum, student body and faculty team tailored for the industry. In lieu of a thesis, students complete a year-long, job-centered, business improvement project. The students apply their new knowledge and business skills to strategic, high-value challenges and opportunities at their workplace. They document their work in Organizational Action Project (OAP) reports submitted throughout the year. The ADMBA program appoints a faculty member to advise the student and evaluate the work. To protect proprietary interests and comply with government security requirements, we do not release the reports. However, we do provide abstracts of selected reports to demonstrate the type of projects commonly selected and their strategic value for sponsoring employers.
Abstract:

The large stockpiles of military rocket motors and ordnance requiring destruction or “demilitarization” offer a business opportunity for the commercial sector to participate in the demilitarization process. This paper provides a marketing plan for a commercial company to expand its rocket motor demilitarization business.

The plan provides a market assessment including use of customer data and interviews. The author also provides a situation assessment including strengths, weaknesses, opportunities and threats (SWOT), a demilitarization marketing strategy and a financial assessment. The paper details a proposed plan for executing the demilitarization marketing strategy over the next two years.
Subordinating Support Function in the Acquisition Process

Abstract:

The Defense Logistics Agency’s Defense Supply Center, Richmond (DSCR), found itself struggling with numerous concerns. These included the inability to commit to a true customer order delivery date, excessive purchase requests on hand, increasing lead times, constant expedites, and a stressful work environment.

To improve its performance as a reliable supplier of Aviation parts, DSCR studied and implemented Lean, Continuous Process Improvement, and the Theory of Constraints along with its subordination technique of Drum, Buffer, and Rope around its acquisition process.

DSCR named this new management execution method Disciplined Production Control (DPC) and established the performance objectives of reducing lateness and lead-time to award while increasing overall awards. Through this program, which is supported by this project, DSCR has realized a 39% decrease in lateness, 77% reduction in lead-time, and a 32% increase in awards while improving overall morale, communications, and productivity.

DSCR continues to strive for excellence by focusing on production control, sales and operational planning, and continuous process improvement while continuing to face future challenges. One concern moving forward will be leveling demand with throughput based on capacity while dealing with potential obligation authority and capacity reductions. Defense Supply Center Richmond remains focused on throughput, inventory, and operating expense while improving overall warfighter support.
Infrastructure Investment Planning Processes for the U.S. Army’s Tank, Automotive Research, Development and Engineering Center (TARDEC)

Abstract:

The Army’s Tank, Automotive Research, Development and Engineering Center (TARDEC), headquartered in Warren, Michigan, manages and executes research, design and development programs for all U.S. Army Tank and Automotive acquisition and sustainment programs. TARDEC leaders manage, maintain and develop a multi-million dollar family of unique test facilities to support these vital missions.

This project reviewed and analyzed how TARDEC’s infrastructure investment requirements are currently captured, presented for consideration, approved by senior leadership and managed through project completion. The author benchmarked infrastructure investment processes of major RDT&E facilities of other military services and other government agencies to identify best practices. The project also evaluated how lean principles could be applied to this process to improve its effectiveness and efficiency.

The project produced recommendations for a defined Infrastructure Life Cycle Management process that would be linked to complementary processes supporting technical requirements. This revised process established a framework for an annual TARDEC Infrastructure Investment Plan that more effectively aligns investment decisions and development requirements expected from future weapons programs.

As a result of this project, TARDEC leaders have established a more disciplined, efficient and effective process for making vital, multi-million dollar infrastructure investment decisions. This will help to ensure the Army has the RDT&E facilities needed to support the development of future weapon systems for decades to come.
Strategy for Management of Key Leadership in Air Force Acquisition

Abstract:

This Organizational Action Project (OAP) examined the Key Leadership Management process used by the Department of Defense for personnel acquisition. Both internal and external assessments have found this process to be cumbersome and inefficient. This project sought to improve how Key Leadership Positions (KLP) for the Air Force are managed in an effort to provide a more executable, repeatable set of processes with effective oversight.

By examining the current KLP management process, the author found that a shift was needed toward managing KLPs by position, not by person. Education (and training) in the form of MBAs was used here as a comparison for business education requirements of personnel filling KLPs.

After implementing the suggested improvements, the rate of qualified incumbents in Key Leadership Positions grew by 10% in the period from July – September 2010 as compared with the previous quarter. The decreasing number of unqualified personnel further confirmed that the process was working appropriately.

As a result of these findings, it became clear that the new measures used to assess KLP qualification fulfillment were effective. With a firm handle on these recommended activities, the Key Leadership Management process can become a more accurate and efficient process, saving the Air Force one million dollars in labor over five years.
AD MBA Student Project Abstract

**Lean Applied to Simplified Acquisition Processes: Discovering Waste & Implementing Efficiency**

Abstract:

This Organizational Action Project (OAP) explored applications of Lean and Six Sigma tenets within the United States Air Force Academy Base Support Flight simplified acquisition process. The Academy Base Support Flight is responsible for awarding more than 400 contracts annually for more than 8,000 cadets, professors and support personnel.

Although labeled simplified contracts, regulation, lack of standardization and entrenched procedures complicated and, thereby, lengthened the award process. This project analyzed customary procedures with the aim of reducing acquisition lead time by 30%. Benchmarking Lean commercial companies with a sustained competitive edge revealed that an iterative process is critical to successful change management.

Using Lean and Six Sigma ideologies, numerous process weaknesses emerged. Although time, manning and budget constraints proved to be hurdles, quick, high impact process improvement efforts conveyed immediate results by saving an average of 5 work weeks each year. The evaluation also pinpointed priorities for the next phase in creating a more efficient acquisition process.

Results of this project highlight the importance of objectively reviewing business procedures, identifying waste and implementing incremental change to modernize ingrained processes. This is crucial for the DoD as budget constraints continue to alter the business landscape and dictate a change to the status quo.
Lean Thinking Applied to Contract Definitization
For the Utility Helicopters Modification Division

Abstract:

This Organizational Action Project (OAP) examined methods for applying Lean principles to Department of Defense contract definitizations. Although there is a legitimate rationale for certain Undefinitized Contract Actions (UCAs), the current funding of contractual efforts prior to definitization represents a risk on the order of billions of government dollars.

After using historical data to identify the top cost drivers, the author sought to identify the sources of waste and risk in the contract definitization process and searched for ways to reduce the government exposure to risk. Benchmarking best-performing agencies, this OAP set the goal of a reduction in the time required to definitize a contract by 35% and an overall decrease in the cost of government acquisitions by 5%.

Cross-functional teams conducted a simulation to test these principles by mimicking a real contract definitization process, yielding an 86% reduction in process time. Based on the results of the simulation, a revised set of Lean tools was applied to the Utility Helicopters Modification Division. After implementing these techniques for five months, the program realized a savings of over $5 million.

The findings of this OAP show that the budgetary risks from UCAs can be significantly reduced using Lean techniques. This is essential to continue cost-effective technological improvement as defense spending is increasingly scrutinized.
Abstract:
This Organizational Action Project (OAP) examined F-22 Software Development Affordability, with a focus on Lockheed Martin developed software. The F-22 Modernization Program received $485 million in FY 2011 and software development accounts for 25 to 35 percent of the total program costs; therefore it is essential to find ways to reduce cost without sacrificing quality.

This project evaluated the current software development processes in order to reduce the software development costs, retain current business, and generate new business. The author benchmarked best in class organizations for military airborne software, including industry and government organizations. The author reviewed the current processes, conducted numerous Structured Improvement Activities (SIAs), and identified productivity improvements.

In response to the findings, the author implemented numerous process changes, refinements, and deletions throughout the F-22 Program, which allowed the F-22 software team to increase productivity between 15 and 30 percent. This has resulted in savings of over $15 million for the two ongoing development projects, with total lifecycle savings of $40 million.

The findings and results of this project highlight that F-22 software development costs can be significantly reduced by using Lean techniques, such as SIAs, to assess and improve processes, including those processes associated with knowledge work. The author recommends other similar organizations use these techniques to reduce software development cost. The customer has recognized the culture change that has occurred within the F-22 team and views the F-22 Program as one that is meeting the affordability challenges.
Abstract:

This Organizational Action Project (OAP) examined efficiency measures within the Space Based Infrared System (SBIRS) financial management portfolio. SBIRS provides overhead persistent infrared surveillance capabilities for the United States and its allies. Program offices at Los Angeles AFB, CA and Peterson AFB, CO jointly managed sustainment of the system.

Investigation of the sustainment portfolio discovered non-productive budget distribution and requirement analysis processes. A benchmark analysis performed by the author also revealed inconsistent requirement structures with similar Air Force Space Command satellite systems.

In response to these findings the author developed a realignment initiative designed to create a more efficient framework. Elimination of a two-channel budget distribution process will speed budget execution and unburden management resources within the Space and Missile Systems Center. Additionally the standardization of system sustainment requirements across the portfolio will provide clarity to all program stakeholders.

Execution of the portfolio realignment will occur in the next Air Force programming cycle. Through implementation of this initiative the program stands to achieve systemic efficiencies, portfolio simplicity, and better buying power. These objectives are essential to deliver a more effective and affordable platform from which to operate in today’s austere fiscal environment.

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