

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY MANAGEMENT

MIGRATION OF THE UNITED STATES MARINE CORPS DISTANCE LEARNING PROGRAM (MCDLP) TO THE NAVY/MARINE CORPS INTRANET (NMCI)

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The Marine Corps has provided distance learning in the form of paper-based Marine Corps Institute (MCI) courses for seventy-five years. Only since the mid to late 1990s, however, has the Marine Corps sought to capitalize on modern distance learning technologies in order to maximize the Marine Corps' limited training and education resources. The Marine Corps believes there is tremendous momentum across industry, academia, and the other Services to exploit modern technology in order to improve instruction and increase opportunities for educational access.

To that end, the Marine Corps Combat Development Command's Training and Education Division developed the *Training and Education Modernization Initiative*. Furthermore, the Marine Corps devised a *Marine Corps Distance Learning Roadmap* to guide its distance learning endeavors. However, these initiatives were developed prior to the conception of NMCI. Obviously, NMCI will significantly impact any network-based, Navy or Marine Corps system. Modern distance learning programs rely on networks for their very existence and MCDLP is no exception. NMCI promises greatly increased network capability. Will that capability, if it comes to fruition, apply equally to MCDLP?

KEYWORDS: Distance Learning, NMCI

DESIGNING A RELATIONAL DATABASE FOR THE BASIC SCHOOL; SCHOOLS COMMAND WEB ENABLED OFFICER AND ENLISTED DATABASE (SWORD)

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The Basic School (TBS) is the first school assignment for every new Marine officer as they begin their careers. As the first example of life in the Marine Corps, the school should be a model of efficiency and display all of the traits that will be taught in the course of the Period of Instruction (POI). The information management system at TBS is a mixed bag of stand alone applications, memorandum books, and self generated spreadsheets. The current system is not efficient in regards to time management or visibility of the data. The primary data storage systems used by the Marine Corps do not accommodate the type of text documents that are recorded at TBS nor do they allow for adequate visibility of an officers performance during the POI. The result is a duplication of effort at each level of the command.

This joint thesis team has produced a Two-Tier Client/Server Information Management System for use at The Basic School, known as SWORD. The system was developed using current industry

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standards that are compliant with the policies of the Department of Defense. The management tools are also compliant with the anticipated policies of the Navy and Marine Corps Intranet (NMCI).

KEYWORDS: Database, Internet, Web Enabled, Information Systems, Information Technology

**TRANSITION OF ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (ACTD)
INITIATIVES FROM RESEARCH TO OPERATIONAL FUNCTIONAL PROGRAMS: A CASE
STUDY OF THE JOINT THEATER LOGISTICS ACTD
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This thesis examines the transition policies, procedures, and outcomes of the Joint Theater Logistics (JTL) ACTD. It evaluates the current Department of Defense ACTD transition guidelines against the JTL program through a series of literature reviews and individual interviews. It also looks at what, if any, correlations there are between the transition policy of the ACTD program and that of the Future Naval Capability Program of the Office of Naval Research. This thesis is focused on whether the participants in the JTL ACTD were able to effectively plan for and execute a transition strategy by following the current guidelines. Finally the thesis gives recommendations on how the transition policies and procedures could be better designed to support software ACTD programs.

KEYWORDS: Acquisition, Technology Transition, Advanced Concept Technology Demonstration, ACTD, Evolutionary Acquisition, Joint Theater Logistics

**RESEARCH IN COMPUTER FORENSICS
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Computer Forensics involves the preservation, identification, extraction and documentation of computer evidence stored in the form of magnetically encoded information. With the proliferation of Ecommerce initiatives and the increasing criminal activities on the web, this area of study is catching on in the IT industry and among the law enforcement agencies.

The objective of the study is to explore the techniques of computer forensics from the computer security perspective. Specifically, the thesis looks into the application of forensic principles and techniques, security designs of computer hardware and software, and network protocols, in an effort to discover the trails of the computer hackers. The thesis subsequently packages this knowledge into a curriculum for a twelve weeks resident course at the Naval Postgraduate School.

Complementing the course materials are surveys conducted on agencies and vendors currently providing computer forensic courses and training, reading materials, and software tools applicable to computer forensic investigation. The purpose of these surveys is to provide a depository of useful information related to this specialized discipline of computer security.

It is the hope of the study that students in the future will benefit from the knowledge gathered in this thesis and the exposure gained from the course and laboratory exercises will allow them to correctly respond to computer intrusions and unauthorized activities they may encounter on their C4I systems.

KEYWORDS: Computer Forensics, Cyber Crime Investigation, Computer Security

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DEVELOPMENT OF A CIVIL ENGINEER CORPS COMMUNITY PORTAL PROTOTYPE

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The Civil Engineer Corps (CEC) is a relatively small Navy community consisting of approximately 1300 officers. Billet locations for the CEC range from Bahrain, Saudi Arabia to Keflavik, Iceland. CEC officers have a broad range of professional skills including contract management, public works management, Seabee operations, and other various fields. The information associated with these fields is abundant, and a common point of reference would be beneficial to all members. The community is wide spread and requires the ability to disseminate information as efficiently as possible to all corners of the world. Currently, information resources are available in both print and electronic forms in numerous locations. This thesis explores the concept of providing a single on-line location where CEC officers can go to access the information they need.

This thesis provides a summary of the development of a working prototype web portal, which grants the community access to the vast amounts of information available. The intent of the thesis is to explore the possibilities of how modern web-based technologies can be leveraged to provide a wealth of information to hundreds of officers around the world. In addition to the web development necessary for this prototype, the project also includes the development of the relational database to deliver data to the portal.

The research focuses on the methodology used to develop this portal prototype. The methodology used for the development of the project is a form of Rapid Application Development (RAD) including the following phases: definition, requirements, design, and implementation. Rapid Application Development is an iterative method of delivering an end product. The method focuses on delivery of small pieces of the whole and builds up to the final deliverable in an iterative fashion.

The completion of this thesis project demonstrates that a community portal is viable concept for information delivery to the entire Civil Engineer Corps. The results of this thesis can be used to pursue implementation of a similar concept for use by the entire community.

KEYWORDS: Database, Internet, Web-enabled

INFORMATION TECHNOLOGY (IT) ETHICS: TRAINING AND AWARENESS MATERIALS FOR THE DEPARTMENT OF THE NAVY

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Information ethics is a relatively new field of study that aims to identify and to analyze the impact technology has on society, personal values, and the application of ethics in cyberspace. The Department of the Navy (DoN) continues to experience incidents of unethical behavior by personnel using government computers and accessing the Internet from within government networks. These incidents will continue and grow in number as the Navy and Marine Corps' dependence upon information technology (IT) increases. There are circumstances requiring ethical decision making encountered by naval personnel that are not sufficiently addressed by policy. Many of these situations do not neatly translate from ordinary experience to the IT world. These topics include the right to privacy, the protection of intellectual property, the collection and stewardship of information, and cyber crime. To address this problem, training materials on a CD-ROM have been created with the objective of giving DoN personnel a better understanding of the

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ethical responsibilities that are required when using IT. The training materials provide decision making tools to better prepare naval personnel when facing ethical dilemmas in the IT context.

KEYWORDS: Ethics, Information Technology, Networks, Training, Awareness