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Department of the Navy
**Information Management/
Information Technology
Workforce Strategic Plan**

Fiscal Years 2001-2006

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Foreword

Over the past few years we have seen a significant transformation in the Department of the Navy – one that capitalizes on the awesome potential of advanced information technology. We have focused on Network Centric Operations as the capstone concept for bringing networked organizations and technologies to bear in future battlespaces. Network Centric Operations leverage the distributed capabilities of our people, information, weapons and sensors to achieve faster and significantly improved effects with smarter, adaptive performance.

As we have refined our understanding of Network Centric Operations, we have developed insights into Knowledge Superiority, which places emphasis on our organizations and human dynamics. Knowledge Superiority provides power through people: what they know, how they bring their knowledge together, and how they translate that knowledge into action. Now is the time to set in motion the plans that will ensure we become a knowledge-centric organization, ready to conduct Knowledge Centric Operations to support the *Joint Vision 2020* concept of Decision Superiority.

The momentum generated by this transformation is powerful and challenging. The qualitative change in communications, information and knowledge will result in profound changes in the conduct of military operations. Decision Superiority requires organizational and doctrinal adaptation, command and control mechanisms, and relevant training and experience. These are the human dimensions of the knowledge equation. We must manage the full impact of these concepts so the Department can effectively employ its resources – both financial and human – and realize the benefits of this changing environment.

This plan acknowledges that people are the key to a knowledge centric environment. As we transform our Department through Information Technology, using Information Management to achieve Knowledge Management – and hence Knowledge Superiority – we must ensure that we focus on the people who support that transformation. We must identify specific ways to hire, develop and reward employees who possess the competencies needed to further the development of high quality IM/IT services around the world – wherever the Navy and Marine Corps operate.

The challenges in this high technology area are significant. Our civilian workforce is aging. There is great competition among commercial and government employers seeking to hire those who would enter civil service or the military. We are vying with private industry to recruit new personnel, and we are striving to provide meaningful career guidance and growth to sustain our personnel. In addition, we are striving to balance the desire for career stability and the demands for functional and technical flexibility in an IM/IT workforce that is affected by numerous initiatives responding to our changing warfighting needs.

We face new technology challenges that alter our approach to warfighting and daily business processes, as well as overall reductions in budgets and human resources. The DON must strengthen the partnership of the IM/IT community with the Human Resources community to ensure we are doing everything necessary to recruit, develop, and manage our IM/IT workforce.

We understand the challenges we face – now it is time to take action. This plan focuses on how the DON can address workforce issues so we can continue our transformation into a Knowledge Centric organization.

Introduction

The Department of the Navy (DON) Information Management/Information Technology (IM/IT) Workforce Strategic Plan is the roadmap for a systematic approach to IM/IT workforce planning for the DON. Given the dynamic environment in which we live and work, with its rapidly changing demographics, technology and associated skill sets, the DON vision is to ensure it has ***the right people with the right skills in the right jobs at the right times.***

Goal 8 of the *Department of the Navy IM/IT Strategic Plan 2000 – 2001* established high-level goals that responded to the Clinger-Cohen Act of 1996, that requires selected Federal government Chief Information Officers (CIOs) to "develop strategies and specific plans for hiring, training and professional development." The Department of the Navy then chartered a cross-functional / cross-organizational team to define an IM/IT workforce capable of performing the DON IM/IT mission and identifying the policies and practices needed to achieve that workforce.

Purpose

The DON IM/IT Workforce Strategic Plan identifies the goals and objectives that will allow the DON to identify, develop, and maintain the IM/IT Workforce of the future.

Scope

As the DON transforms into a knowledge-centric enterprise, ***all*** military and civilian personnel need an appropriate level of IM/IT competence. The DON population comprises three components:

- Those personnel, **users** of IM/IT, who will require foundational IM/IT skills, including such things as use of word processing, e-mail, on-line research tools, and decision-making aids. For these individuals -- who include virtually every member of the DON -- IM/IT is a tool required to execute their primary jobs.
- Those personnel who may be employed in a *specific* job for which they require an increased knowledge of IM/IT during their tenure in that billet/position. These are "**expert users**," and their required level of IM/IT expertise is specifically associated with the job they need to accomplish.

DON IM/IT Strategic Plan

Goal 8 of the DON IM/IT Strategic plan calls for the Navy and Marine Corps to:

Build IM/IT competencies to shape the workforce of the future.

This goal focuses on:

- Providing Sailors, Marines and Civilians with the IM/IT competencies essential for success in the Information Age.
- Facilitating critical thinking skills that take maximum advantage of the richness of data and information enabled by IT.
- Providing training and education focused on both the IM/IT workforce and the IM/IT needs of the DON workforce.

To support that goal, the DON identified 5 objectives:

- Identify and sustain IM/IT core capabilities.
- Organize and manage the military and civilian IM/IT Professional Community and provide career development opportunities for the IM/IT workforce.
- Provide cost-effective IM/IT education, training and learning opportunities for our Sailors, Marines and Civilians.
- Develop and implement a strategy to facilitate critical thinking skills.
- Take advantage of IM/IT Distributive Learning opportunities.

The goals and objectives in this plan provide the way ahead to satisfy this strategic goal.

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- Those personnel who are focused on military and civilian IM/IT careers. These are the **core IM/IT professionals**, and they will require specialized and concentrated competencies, reinforced with foundational and continual training and education.

This strategic plan focuses primarily on the goals and objectives that will ensure the DON makes the organizational changes in its policies and practices to ensure that: 1) **core IM/IT personnel** are recruited, retained and provided with clear career opportunities and management guidance; and 2) **expert users** are provided with timely, tailored training opportunities that meet the situational requirements of their task, assignment or billet/position.

The Changing Environment

As we move into the 21st century, the DON vision, as described in *Naval Vision 2020*, is to ensure that future Naval forces can exploit new opportunities and capabilities to project power and influence anywhere in the world in the Information Age. To achieve that vision and keep pace with the change in the global, political, economic, technological and security environment, the DON must identify and implement human resource management practices that are flexible and adaptable.

The Operational Environment

As stated in *Naval Vision 2020*, while the traditional objectives of the United States and its military remain largely unchanged, changes in technology, doctrine, and operations will compel us to reassess continually the methods by which we achieve those objectives. As future Naval forces focus on the capabilities that assure US access and influence to shape regions of vital interest in the Information Age, maritime power projection will rest on two key factors:

- Forward Presence: Credible forces to promote our economic, political, and military interests.
- Knowledge Superiority
 - Exploiting technology improvements in organization and processes resulting in unprecedented awareness and understanding of situations; and
 - Improvements in IT matched with an agile and adaptive command organization to dramatically enhance capabilities.

While there will always be a requirement to ensure freedom of the seas, the Information Age has revealed a new international medium – cyberspace – that is critical to global exchange. The escalation of globalization through electronic media has accelerated the proliferation of information and technology -- making cyberspace a crucial aspect of the battlefield.

The IM/IT Environment

Our ability to operate in a fully networked environment will lead to knowledge superiority, with improved decisions that give us the advantage of speed of command, which will be as important as our traditional weapons and platforms. At the same time, we will use our secure, robust, seamless networks to conduct enterprise-wide business processes, sustained by fully integrated and interoperable functional applications.

Our investments in the network infrastructure will support our operations and ensure that every command and every Sailor, Marine and civilian will have the appropriate level of access to exploit network applications and services. Today, that includes IT21 programs afloat and the Navy Marine Corps Intranet ashore. This end-to-end capability will provide full connectivity across the afloat and ashore elements of the DON, ensuring the technological foundation necessary to host the applications that allow us to streamline all aspects of command and business operations and make us capable of knowledge operations.

As we implement new technologies, we know our organizational structures and processes will also change. We will leverage the network's reach across organizational boundaries, encouraging enterprise collaboration, sharing information, and building knowledge that will improve our operations and our day-to-day business processes.

This extraordinary emphasis on the power of information and knowledge will focus unprecedented interest in the IM/IT workforce. We know the human element is one of the key drivers in our success, so we must ensure we have the policies, practices, and support for resource investment to ensure we have the versatile, motivated workforce needed to leverage the emerging IM/IT environment.

The Workforce Challenge

" The nature of careers is affected radically by: economic change; new technology; and changes in business culture." The Institute for Employment Studies

We must exploit our access to cyberspace to provide Naval, joint and combined forces with superior knowledge relative to that of our adversaries. Concurrently, we must develop the policies and practices to improve our business processes to achieve greater financial and knowledge efficiency.

The Best of Times? Current Workforce Demographics

These are among the most prosperous times in American history. The nation is experiencing its longest peacetime economic expansion ever, its lowest unemployment rate, and lowest inflation rate. Much of this growth is attributable to IT – and as a result, the demand for highly skilled workers is growing at an extraordinary rate.

- IT is responsible for more than 1/3 of the growth of the US economy over the last five years.
- Over 10 million Americans earn their livings in IT-specific jobs. This points to a fundamental shift in the type of work performed.
- The Bureau of Labor Statistics (BLS):
 - Reports a 177% growth in jobs for core computer occupations (computer scientist, programmer, computer analyst) between 1996 and 2006, compared to 14% for other job areas.
 - Projects a 1.1% unemployment rate for core IT jobs between 1996 and 2006.
- The Department of Commerce projects that the US economy will need more than 1.3 million new core IT workers by the year 2006.
 - 1.1 million will be needed to fill new jobs.
 - 250,000 will be needed to replace workers who exit IT jobs.
- The Information Technology Association of America (ITAA) projects that of the current 1.6 million jobs in the IT industry, approximately half may be unfilled due to lack of qualified candidates.
- ITAA has found that the shortfall in IT workers is reflected in rising salaries – and projects a double digit jump in starting pay.

What do these statistics mean to Federal IT managers? Most clearly, they mean that it is harder to recruit IM/IT professionals. And there are implications for the costs of outsourcing. All of these factors must be addressed organizationally to ensure the DON can meet the growing demands for increasingly integrated information.

Finally, the DON must address the way it executes workforce planning, so that we obtain and sustain IM/IT professionals with the competencies – knowledge, skills, abilities, and behaviors – needed to exploit new technology and information capabilities.

Trends in civilian employment are making it harder for the DON to attract the people it needs. Many believe the US is facing a shortage of key IT professionals, and the demand for highly skilled IM/IT workers continues to grow at an extraordinary pace. Leadership in IM/IT is considered essential to the health of the US economy and a key enabler of future warfare.

To ensure we can meet our IM/IT needs, the DON is examining its current workforce, identifying the competency requirements of the future, and laying the groundwork for the policies and practices that will support development of an adaptable organization and a flexible workforce that can respond not only to the knowledge environment currently envisioned, but to technology changes that are not yet imagined.

Today's Workforce Management Practices

Today's workforce management practices are, to use an IT analogy, legacy systems and must be transformed to adapt to new requirements. The current workforce culture tends to be characterized by a:

- Formalized structure in which knowledge is power and information and decisions flow along a defined chain of command (stovepipes);
- Slow organizational change despite more rapid technological, political and social changes; and
- Risk-averse management style.

This system has provided a stable, secure environment over the past several decades. This is the workforce that has dramatically changed the world through technology. Ironically, as those changes continue, the old paradigm will not meet the needs of the new knowledge world that is being created. All employers are faced with the need to develop new, responsive management techniques to be able to recruit and develop the next generation workforce.

DON Demographics

The DON faces significant challenges in its IM/IT workforce, which may be the catalyst for changing our IM/IT workforce policies and practices.

- An aging population:
 - One third of the civilian Computer Specialists will be eligible to retire in the next two years – i.e., by 2002.
 - Nearly one-half of all Federal workers are approaching retirement
 - The mean years of service is 19 and the mean age is 46
- Sixty-one percent of workforce positions are eligible for A-76 studies
- Competition with the private sector:
 - Perceived lack of "cutting edge" jobs
 - Fewer incentives to attract a younger workforce
- A serious disparity in pay with the private sector. Department of Commerce has found that the private sector pays between 50 and 100 percent more for entry level IT workers.
- Marine Corps officer statistics show that while the Corps estimates an 8.1% attrition rate for officers, actual attrition rates average 10.2% in general – and 12.7% for officers with specialties in IM/IT.

Tomorrow's Workforce

As we integrate the next generations of workers, we are faced with revolutionary workforce changes. Labor and workforce trends are redefining the traditional ideas of both jobs and careers. The way work is organized today, the rigid notion of a "job" doesn't allow organizations to adapt quickly enough to handle changing environments, groundbreaking technology, and the skills required to manage change.

While access to information was the single most important factor in traditional organizational structures, the generation brought up in an Information Age environment has a different approach to knowledge. We have entered an age in which technology gives the workforce access to increasing numbers of resources: telecommunications, the Internet, groupware connections and intranets all allow workers to share knowledge quickly and efficiently. The new generation is computer literate and used to having access to enormous amounts of information in a networked society. They expect to be part of a more autonomous, global and electronically networked workforce. Virtual offices, dispersed personnel, and broad access to information will make the next generation organization more fluid and require more flexible work rules.

These technological and workforce changes are propelling new levels of efficiency, organizational structure, and worker independence. Job titles and job descriptions will lose importance as organizations key on competencies to track and assign workers. Ad hoc project teams will replace rigid hierarchies. Workers will expect to transition across a range of tasks and positions in the course of their careers; they will expect to be in a continuous learning mode to increase their skills and knowledge, to add value to their functions.

These changes are redefining the relationship among the organization, the work and the worker and will change the face of the workplace forever.

Issues

How does the DON identify the requirements and competencies needed to meet future IM/IT requirements?

How does the DON ensure that workforce planning is institutionalized to continuously address future requirements and an evolving workforce?

How does the DON train the IM/IT workforce needed to support current Fleet requirements?

How does the DON recruit, retain and retrain its IM/IT workforce to meet its emerging needs?

How does the DON address compensation factors, so it can attract and sustain core IM/IT capabilities?

How does the DON address varying skill requirements, such as the ability to maintain and operate legacy systems while transitioning to new systems?

How can the DON develop and apply mechanisms to meet flexible staffing requirements? How can the DON better articulate its staffing requirements?

How does the DON provide its IM/IT workforce with developmental opportunities to satisfy the demands of changing technology?

How can the DON sustain professional advancement in its military officer corps?

How are DON outsourcing plans affected by IT worker shortages in the civilian job market – what are the funding ramifications?

What policies and procedures will allow the DON to manage a "mobile" workforce that wants to be able to transition in and out of government?

The Direction for the DON

As the DON moves forward, we are confronted with questions of how to deal with both the military and civilian sides of our workforce. For example, we must continue to recruit enlisted personnel and officers at the right rate, assign them to billets that nurture their careers *and* the needs of the Services, while ensuring promotion and retention levels meet Service needs for grade structure and experience levels. At the same time, we must periodically and expeditiously review and refine the requirements for each assignment so the job qualifications are current and reflect the changing work environment.

On the civilian side, our challenges include outdated system that does not include integrated planning for manpower needs, but rather one that consistently filters civilian labor decisions through a budget lens. In addition, the *image* of a system that is overregulated and inflexible is unappealing to many new and ambitious employees.

Finally, our training and education environment is inadequately funded and only now beginning to take advantage of the full range of technological advances.

As noted above, changes in the demographics of the workforce, in the education and skills required of its workers, and in basic employment structures and arrangements are all starting to unfold. More and more, the work of the DON requires a knowledge-based workforce that is sophisticated in new technologies, flexible, and open to continuous learning.

Workforce Planning

The DON is committed to comprehensive workforce planning – identifying the actions necessary to acquire and develop a workforce that meets our changing mission and environment. This is the key that will allow us to capitalize on technology advances and ensure that all members of the DON II/IT workforce have the competencies that match the needs of the organization.

To develop an adaptive IM/IT workforce that is competency-based and flexible enough to respond to emerging technologies and demands for knowledge, this document takes a strategic view of our “human capital” – that is, the technical and interpersonal competencies needed to ensure accomplishment of the organization’s mission and strategic goals. This includes a conscious decision to invest time, money, status and energy to improve our workforce.

Defining The IM/IT Workforce

Mission of the IM/IT Workforce

The DON IM/IT workforce identifies, initiates and supports advances in technology and business processes that improve management of technology, information and knowledge to support the Department of the Navy's goals of Forward Presence and Knowledge Superiority.

Scope of the IM/IT Workforce

To capture the relevant workforce in the IM/IT core and expert user groups, this plan concentrates on three elements: IM/IT functions, occupational classification, and jobs. The relationship among these elements is shown in Figure 1.

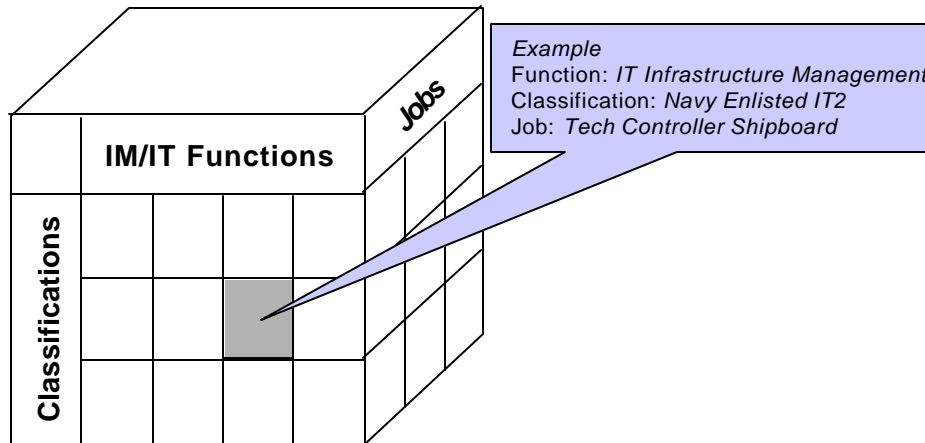


Figure 1. Elements of the IM/IT/KM Workforce

IM/IT functions identified in the *DON IM/IT Inherently Governmental Functions* include the management, leadership and military operation of the following:

- Information Management
- Knowledge Management
- IM/IT Strategic Planning
- IM/IT Investment Planning
- IM/IT Workforce Planning
- IM/IT Architecture
- IM/IT Acquisition
- IT Infrastructure Management
- E-business
- Information Operations

The core group of the IM/IT workforce is defined as those military and civilian personnel who perform these functions throughout their careers and hold IM/IT occupational classifications (listed in the appendix). Expert users are those whose job assignments occasionally require them to perform IM/IT functions, and whose occupational classifications may not lie in the IM/IT specialties. Individuals who are performing IM/IT functions, but whose occupational classifications are not shown in the appendix, may need to have their jobs reviewed.

Determining "Core" and "Expert Users" for Military Personnel

Core enlisted personnel are identified by their ratings, Navy Enlisted Classification (NEC, or Military Occupational Specialty (MOS). While they may be assigned to jobs outside their rating, their primary duties are within the IM/IT discipline. Officers may alternate between assignments in their warfare specialty and their IM/IT subspecialty and may not be assigned continuously in IM/IT until later in their careers. If their non-warfare tours are consistently in IM/IT and show consistent growth in IM/IT expertise, they are treated part of the core community. Core assignments include:

- Information Technology Specialists assigned afloat and ashore operating DON networks
- Space, Information Warfare, Command and Control (SIWCC) Subspecialists assigned to staffs as Chief Information Officers or Chief Knowledge Officers
- A Department Head at a Communications Station or Network Operations Center
- A Limited Duty Officer with an IM/IT designator

Examples of jobs in the Expert User group include:

- A warfare qualified officer assigned the task of overseeing the development or acquisition of an IT system for a platform
- A Fire Controlman responsible for operating and maintaining an electronic system

IM/IT Workforce Planning Assumptions

- The DON will continue to need a "core" IM/IT workforce for the foreseeable future to manage existing information technology, to identify future technology that will further the DON mission, and to determine how best to employ that technology.
- The rate of change of technology and information management will continue to increase. Work efforts will be created, changed, or eliminated rapidly, necessitating vigorous management and maintenance of IM/IT competencies.
- Rapid advances in technology, coupled with the shift in the use of information and knowledge in the workplace, will have a profound impact on training requirements for the DON workforce.
- The core IM/IT workforce is likely to decrease in size. The core KM workforce will increase in size.

Workforce Planning Goals

"Leading organizations understand that effectively managing employees, or human capital, is essential to achieving results. Only when the right people are on board and provided the training, tools, structure, incentives and accountability to work effectively is organizational success possible." GAO Report "Addressing High Risks and Improving Performance and Accountability"

Shaping a workforce requires a knowledge of the *competencies* required, as well as an understanding of *how many* employees are needed to accomplish the mission. To achieve a knowledge centric environment, and effect streamlined business operations, the DON will require a special kind of workforce – engaged in new activities, working across organizations as an enterprise, employing new skills, and moving through changing career paths.

A systematic approach to workforce planning will facilitate the development and management of that workforce, facilitating more efficient and accurate alignment of people, competencies, and job requirements to meet organizational goals, commitments and priorities.

The workforce planning goals presented on the following pages are designed to help the DON develop plans and policies to ensure it plans for, recruits, retains, advances and nurtures the workforce that can meet its IM/IT strategic vision.

Determining "Core" and "Expert Users" for Civilian Personnel

Examples of job titles in the core include:

- Librarians who provide research and information management
- Electrical Engineers who deal with computers and communications
- Operations Research Analysts who deal with IT and Business Process Reengineering

Examples of Expert User jobs include:

- Budget analysts who manage resources for IT programs
- Operations Research Analysts who manage computer based analytical tools, including modeling and simulation, optimization programming, etc.

Future jobs that will be considered core are those currently under development in the area of knowledge management, including knowledge engineers and a knowledge community leaders.

Some job titles will require case-by-case evaluation to determine their status as core or expert user. These include some civilian series, such as Program Analysts and Environmental Specialists, where the actual work being done may fall into the IM/IT area.

Goal 1: Restructure the processes used to identify and manage IM/IT workforce manpower requirements.

Re-engineer the processes within the DON to identify the work and the number of billets/positions needed. Establish quality standards and competencies for all billets/positions, so DON can validate the needs and adequately resource them.

Implement best practices for developing IM/IT manpower requirements for both military and civilians. The DON must better integrate requirements definition processes (and develop new processes as necessary), to give the DON the ability to structure our IM/IT workforce to meet current needs, and respond more quickly to changing operational requirements and technology cycles.

Objectives

- Implement a competency based process for determining manpower requirements.
- Re-engineer the manpower processes to improve the speed with which requirements are approved and acted upon.
- Exploit best practices for managing evolving manpower requirements.
- Build a process that aligns IM/IT requirements with the readiness needs of the customer.
- Modernize the processes to identify DON manpower needs for future systems and migrating from legacy systems.
- Strengthen partnerships among CIOs and other leaders who have administrative or operational influence on the IM/IT workforce.
- Ensure processes are in place to provide appropriate IM/IT competency in all career paths.

Best Practices

The National Security Agency (NSA) converted its current occupational structure from task-based to skills-based and developed a personal skills inventory tool to account for the discrete skills, abilities and experiences of the individual members of the workforce. This allows them to define jobs in terms of the skills required to improve their workforce planning process, as well as to determine job requirements and gaps between the requirements and the competencies of the workforce.

The Department of State has developed an IT Training Project in which it identifies employee skills, reconciles the department's skill needs with skills availability, and then develops an IT career development process to ensure employees transition to the needed areas of expertise.

Goal 2: Optimize recruiting of the IM/IT workforce.

Recruit and hire individuals with the competencies to accomplish IM/IT functions or (in the case of entry level personnel) the aptitude to learn IM/IT functions. Shape the workforce through improved recruiting efforts across the personnel spectrum: entry, mid and senior levels.

Objectives

- Re-engineer processes for determining IM/IT recruiting goals.
- Ensure recruiting policies incorporate and meet IM/IT recruiting goals.
- Investigate and apply appropriate incentives to attract IM/IT professionals to the DON.
- Exploit the best sources for recruiting, both inside and outside the Federal government.
- Establish/improve the evaluation process to ensure recruiting processes meet identified manpower requirements.
- Identify and implement metrics to measure IM/IT aptitude and capability.

Best Practices

The Department of State accelerated its recruitment activities by offering 10 – 25% bonuses to applicants in the computer specialist and telecommunications series.

Goal 3: Modernize training and education and maximize IM/IT learning opportunities for the workforce.

Investing in the DON's human capital will improve mission accomplishment by ensuring the workforce is knowledgeable and effective. As information management techniques and information technology advance, investments in training, education and continuous learning become critical to ensuring a trained workforce capable of achieving the DON's mission goals.

Objectives

- Develop a DON Human Capital Investment process for the IM/IT workforce.
- Create a continuous learning environment that allows individuals to obtain the skills necessary to adapt readily to change.
- Ensure training and education content and delivery reflect new technology and state-of-the-art business practices.
- Improve the process for identifying and managing training and education requirements.
- Partner with industry to create alternative learning programs and opportunities.
- Ensure all members of the DON workforce are provided adequate opportunity to gain the IM/IT competencies required to accomplish their jobs.

Best Practices

The Federal Aviation Administration (FAA) Office of Research and Acquisition, after identifying the need for significant change in the organization's performance, established a human capital investment strategy to achieve improved organizational performance.

The US Fish and Wildlife Service was one of the first federal agencies to develop a continuous learning policy. The policy is intended to ensure appropriate investments in human capital to maintain a high quality workforce.

The Army Medical Department's Center for Healthcare Education launched the Knowledge Management Network. The goal is to provide the workforce with access to the needed amount of knowledge and information on a "just in time" basis. The system is based on the belief that leveraging the organization's human capital will lead to performance improvements.

The Census Bureau has implemented a competency-based training program that is designed to develop a more diverse, effective, and skilled workforce.

Goal 4: Employ the right person in the right job at the right time.

Optimize DON IM/IT workforce effectiveness and mission performance by using both proven and innovative ways to place people in traditional and non-traditional job settings.

Objectives

- Implement strategies that encourage flexibility to align personnel with job assignments.
- Foster the capability to staff *ad hoc* teams and organize for short-term project assignments.
- Develop distinct IM/IT career paths for both military and civilian personnel.
- Establish IM/IT competency standards that support qualitative performance assessment (by function and grade).
- Encourage the use of civilian appointment positions (permanent, term, or temporary) to balance continuity needs with requirements for rapid workforce shaping.

Best Practices

The National Security Agency (NSA) has used its skill inventory tool to improve the way it employs its people. When special projects or crises arise, NSA Human Resource specialists use the skills inventory to facilitate the identification of personnel with the required competencies so they can be moved to respond to crises or support new teaming efforts.

Goal 5: Sustain the right capabilities in the IM/IT workforce.

Identifying and sustaining critical competencies is the bedrock of a high-quality IM/IT workforce. Focusing retention efforts on those individuals with the demonstrated talent and the motivation for high performance and continuous learning will ensure key competencies are supported. Creating a culture that is intellectually and technologically stimulating for the workforce will ensure motivation. Retention can be enhanced through the use of innovative incentives, including expanded opportunities for mobility, including work in the private sector. At the same time, academia and industry personnel can be brought into government to share their knowledge and experience. This revolving door policy will enable synergy between the two sectors.

Objectives

- Balance the IM/IT workforce through structured retention and innovative partnerships with industry and academia.
- Baseline and continuously update the competencies required for the IM/IT workforce.
- Encourage career mobility.
- Develop a process to identify appropriate policies and incentives to retain DON IM/IT professionals.
- Implement staffing procedures that support “job exchanges” between federal and private sector personnel for specific assignments or “short tours.”
- Identify the IM/IT competencies that are critical to the DON and implement strategies to retain individuals with those competencies.
- Provide a quality of work life and a work environment that encourage people to remain in Federal government (including maximum flexibility in work alternatives, employee involvement in Quality of Life issues, etc).
- Establish metrics to ensure workforce retention goals meet identified manpower requirements.

Best Practices

On 1 October 1999, Department of State (DOS) announced a new IT Professional Skills Pilot Program, aimed at retaining employees with critical IT skills and increasing the expertise and stability of the DOS IT workforce through financial recognition of formal education and certification in key technical areas. Bonuses of 5%, 7%, 10% and 15% are provided for specific education and certification. To support employees acquiring professional skills for the Department’s benefit, technical courses have been revamped to support professional exam requirements, and distance learning opportunities have been geared to industry certification exams.

Goal 6: Establish best practices within the IM/IT community

Promote IM/IT best practices that nurture an organizational culture that emphasizes teamwork, knowledge sharing, employee involvement, empowerment and results. Create incentives that encourage the IM/IT community to share knowledge within its own discipline, as well as to develop the tools and technologies to support knowledge sharing across the DON.

Objectives

- Communicate a shared vision for mission, strategic goals, and core values.
- Establish and share best practices in IM/IT leadership.
- Lead the DON in knowledge sharing and support pilot programs that give visibility to successful KM concepts.
- Use performance management systems, including pay and other meaningful incentives, to link rewards to leadership performance.
- Support and reward team and knowledge sharing to achieve high performance.
- Encourage the development of IM/IT Communities of Practice and Interest.
- Develop the role of community integrator as part of the IM/IT workforce.

Best Practices

The DON CIO Investment Practices IPT has established a Community of Interest for portfolio management. When the IPT representatives participate in meetings and conduct briefings, they provide a brochure to anyone interested in joining. The Community of Interest ensures that members receive and are able to exchange information through the use of web tools, events and workshops.

The DON CIO has created a CD ROM that describes the Knowledge Centric Organization and provides background, concepts and tools that help DON organizations become more proficient in KM.

Glossary of Terms

Competencies: Knowledge, skills, abilities, and behaviors.

Corporate Capital: The intellectual property, databases, processes, organizational agility, and so forth, possessed by the organization.

Decision Superiority: The ability to take advantage of superior information, convert it to superior knowledge and make better decisions that are arrived at and implemented faster than an opponent can react, or in a non-combat environment, at a tempo that allows the commander to shape the situation, react to change, and accomplish his mission. Decision superiority takes into account organizational and doctrinal adaptation, relevant training and experience, and proper command and control mechanisms and tools.

Human Capital: All the expertise, experience, capability, capacity, creativity, adaptability, and so forth, possessed by the individuals in the organization.

Information Superiority: The capability to collect, process and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same. Information superiority is achieved in a noncombat situation or one in which there are no clearly defined adversaries when friendly forces have the information necessary to achieve operational objectives.

Intellectual Capital: All the learning and infrastructure that contribute to organizational success. Intellectual capital includes human capital, social capital, and corporate capital possessed by the organization.

Knowledge Centric: The ability to leverage personnel and technology assets jointly, creating knowledge and then delivering the insights created quickly to the right person at the right time to solve problems.

Knowledge Management: A business process that enables an organization to leverage knowledge to create advantage. It can be viewed as a process for optimizing the effective application of intellectual capital to achieve organizational objectives. This manifests itself in innovation, productivity, agility, competencies, individual or team performance.

Knowledge Superiority: The ability to achieve a real-time, shared understanding of the battlespace at all levels through a network that provides the rapid accumulation of all information that is needed -- and the dissemination of that information to the commander as knowledge is needed -- to make timely and information decisions inside any potential adversary's sensor and engagement timeline. In peacetime, it is the assured knowledge that allows the commander to shape events in a region.

Social Capital: The relationships, human networks, language, and so forth, possessed by the individuals in the organization.

**APPENDIX
Core and Expert Users**

To capture the relevant workforce in the IM/IT core and expert user groups, this plan concentrates on three elements: IM/IT functions, occupational classification, and jobs. The tables below list the key military occupational classifications (designators, subspecialty codes, NECs, MOSs) and civilian occupational series associated with IM/IT.

The core group of the IM/IT workforce is defined as those military and civilian personnel who perform these functions throughout their careers and hold IM/IT occupational classifications. They will require specialized and concentrated competencies, reinforced with foundational and continual training and education.

Expert users are those who may be employed in a *specific* job for which they require an increased knowledge of IM/IT during their tenure in that billet/position. Their required level of IM/IT expertise is specifically associated with the job they need to accomplish. Almost any individual may be assigned to a position in which they serve as an expert user; the ratings and series listed below are examples provided for understanding.

Table 1. Navy Core IM/IT Officer Designators and Subspecialty Codes (SSC)

Designator	Description
1100/5/7	Fleet Support Officer (SEW)
1440/5/7	Engineering Duty Officer
15xx/5/7	Aerospace Engineering Duty Officer
1610/5/7	Special Duty – Cryptology
6120/5/7	Limited Duty Officer Operations Technician
6180/5/7	Limited Duty Officer (Surface) – Electronics
6280/5/7	Limited Duty Officer (Submarine) – Electronics
6190/5/7	Limited Duty Officer (Surface) – Communications
6290/5/7	Limited Duty Officer (Submarine) – Communications
6420/5/7	Limited Duty Officer – Management in Data Processing
6440/5/7	Limited Duty Officer – Cryptology
6490/5/7	Limited Duty Officer – Security
7180/5/7	Warrant Officer (Surface) – Electronics
7280/5/7	Warrant Officer (Submarine) – Electronics
7380/5/7	Warrant Officer (Aviation) – Electronics
7190/5/7	Warrant Officer – Communication (Surface)
7490/5/7	Warrant Officer – Security Technician
7420/5/7	Warrant Officer – Supervisor in Data Processing
7440/5/7	Warrant Officer – Cryptologic Technician

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Table 1. Navy Core IM/IT Officer Designators and Subspecialty Codes (SSC) (cont'd)

Subspecialty Code	Description
5302 (0055)	Electronic Systems
5303 (0091)	Computer Systems
5500 (0077)	Space Systems Engineering
6100	Information Systems and Operations
6200	Space Information Warfare, Command & Control
6201 (0089)	Information Systems and Technology
6203 (0091)	Computer Science and System Design
6204 (0045)	Joint C4I
6205 (0046)	Information Warfare
6206 (0076)	Space Systems
6500	Systems Engineering Integration

Table 2. Navy Core Enlisted NECs

NEC	Description
0000/2399	Basic IT A School Graduate
1425/1427/1430/1486/1491/ 1493/1494	Electronics Technician
1613/1646/1647/1654/1677/ 1678	Electronics Technician for Specific Systems
2301	Enlisted Frequency Manager
2379	Transmission System Technician
2709	TBMCS/CTAPS Administrator
2720	Tactical Systems Administrator
2730	Non-Tactical Systems Administrator
2735	Information Systems Administrator
2739	Information Systems Supervisor
2779	Information Systems Security Manager
2780	Network Security Vulnerability Technician
2781	Advanced Network Analyst
2782	Defense Message System Administrator
9188	Navy Integrated Cryptologic Comm Systems Specialist
9199	CT (Communications) Cryptologic Technician
92XX	Communications Technician
9295	Network Systems Maintenance Technician
9301	Entry Level Programmer/Analyst
9302	Cryptologic Network Configuration Manager
9304	Database Administrator
9605	Naval Automated Comm Systems II Maintenance Technician

Table 3. Marine Corps Core Officer MOSs

MOS	Description
0602	Command and Control Systems
0610 (2510)	Network Management
0605 (4010)	Data Systems and Software
2802	Communications and Electronics Maintenance
2805	Data/Communications Maintenance
2810	Telephone Systems Officers
9646	Data Systems Specialists
9648	Management, Data Systems Officer
9658	C3 Systems Officer

Table 4. Marine Corps Enlisted Core IM/IT MOSs

MOS	Description
0651 (2542, 2818, 4066)	Information Systems Specialist
0659 (2549, 4066)	Information Systems Chief
0661 (2542, 4066)	Data Network Systems Specialist
0669 (4068)	Data Network Chief
0671 (4067)	Basic Application Programmer
0672 (4067)	Advanced Application Programmer
0679 (4067, 4099)	Application Software Manager
0681	Basic Information Assurance Marine
0689	Information Assurance Chief
0696	Information Systems Chief
0699 (4099, 2591)	Communications Information Systems Chief
2818	Personal Computer (PC)/Tactical Office Machine
2821	Computer Technician
2822	Electronic Switching Equipment Technician
2834	Satellite Communications (SATCOM) Technician
2847	Telephone System Personal Computer Intermediate
2881	Communications Security Equipment Technician
2891	Data/Communications Maintenance Chief

Table 5. Navy and Marine Corps Enlisted Sample Expert Users

Navy Rating / Marine MOS	Description
OS, IS, AW, EW, AG	Communications and Intelligence Specialists
STG & ET (not the Core NECs), AT, FC	Electronic Equipment Repairmen
AE, AM, GSE, EM, IC, EN, HT, DC	Electrical/Mechanical Equipment Repairmen
YN, PN, SK, DK, AZ, AK, CTA, LI, HM	Functional Support and Administration
QM, SM, BM	Seamanship Specialists
0612, 0613, 0614, 0619	Wiremen
0621, 0622, 0623, 0624, 0629	Radio Operators
0626, 0627, 0647, 0648	Communications Operators
2811, 2813, 2823, 2826, 2827, 2831, 2832, 2833, 2841, 2842, 2848, 2861, 2862, 2867, 2871, 2874, 2886, 2887, 2889,	Communications Maintenance
26xx, 59xx, 63xx, 64xx, 46xx	Additional MOSs in staffing

Table 6. Civil Servant Core Occupational Series

Occupational Series	Primary Occupational Title
301	Information Management Specialist; Data Mgmt; TQL
303	Visual Information Clerk; Data Clerk; Information Processing Ass't; TQL Ass't
332	Computer Operation
334	Computer Specialist
335	Computer Clerk and Assistant
356	Data Transcriber
357	Coding
382	Telephone Operating
385	Teletype Operations
390	Telecommunications Processing
391	Telecommunications
392	General Telecommunications
394	Communications Clerical
850	Electrical engineering
854	Computer Engineering
855	Electronics Engineering
856	Electronics Technician

Table 6. Civil Servant Core Occupational Series (cont'd)

Occupational Series	Primary Occupational Title
1001	General Arts and Information
1071	Audiovisual Production
1084	Visual Information
1410	Librarian
1515	Operations Research
1550	Computer Scientist
2502	Telecommunications Mechanic
2504	Wire communications Cable Splicing
2508	Communication Line Installing & Repairing
2511	Misc. Wire Comm. Equip. Install & Maintenance
2601	Miscellaneous Elec. Equip Install & Maintenance
2602	Electronic Measurement Equip. Mechanic
2604	Electronics Mechanic
2608	Digital Computer Mechanic
2610	Electronic Integrated Sys Mechanic
3736	Circuit Board Making

Table 7. Civil Servant Expert User (Sample) Occupational Series

Occupational Series	Primary Occupation Title
0080	Security Administrator
0301	Program Management
0340	Program Management
0343	Program Analyst
0560	Budget Analyst
0861	Aerospace Engineer
1102	Contracting Specialist
1520	Mathematician