



DEPARTMENT OF THE NAVY INNOVATION

VISION

PEOPLE

IDEAS

INFORMATION



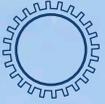
“CHALLENGE THE FORCE...
CHANGE THE GAME”



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As I travel across the globe to meet our talented Sailors, Marines, and Navy Civilians, I am constantly impressed by their intellectual curiosity, boundless energy, and ingenuity. It is clear that we are the world's greatest Naval Force thanks to the talented people in our ranks today and the innovative spirit of those who have gone before them. As an institution, we have a responsibility to put their innovative ideas to work solving the demanding challenges that lie ahead of us.

Sixty days ago, I challenged my staff to develop an innovation agenda for the Department. It is clear that innovation is not just about buying a new platform or weapon system; rather it is about changing the way we think, challenging outdated assumptions, and removing bureaucratic processes that prevent great ideas from becoming reality. Innovation, and ultimately the success of our naval mission, is based on three fundamental things: People, Information, and Ideas.

The global rate of change continues to accelerate, creating a complex future filled with uncertainty. Yet the Navy and Marine Corps must remain America's first line of defense, deployed worldwide ready for any challenge that may come over the horizon. I am confident that by fully using our talented workforce we will remain the world's preeminent naval force.

I want the entire workforce, from the most senior Admirals, Generals, and Civilian Executives to recruits and officer candidates striving to earn the title of United States Navy Sailor or Marine, to look for ways to improve their organizations and accomplish their missions today, as well as, push to develop capabilities and concepts that make us more agile and resilient regardless of challenges on our horizon. Leaders across the department must be open to new ideas and unafraid if they all do not succeed.

Throughout our history the Navy and Marine Corps have been agile, innovative, and adaptable, ensuring global stability and American prosperity. With increasing complexity and shrinking budgets, now is the time to remove barriers and foster a culture of innovation that unleashes the ingenuity intrinsic in our people. Innovation has been our tradition and it must also be our future.

Ray Mabus
U.S. Secretary of the Navy

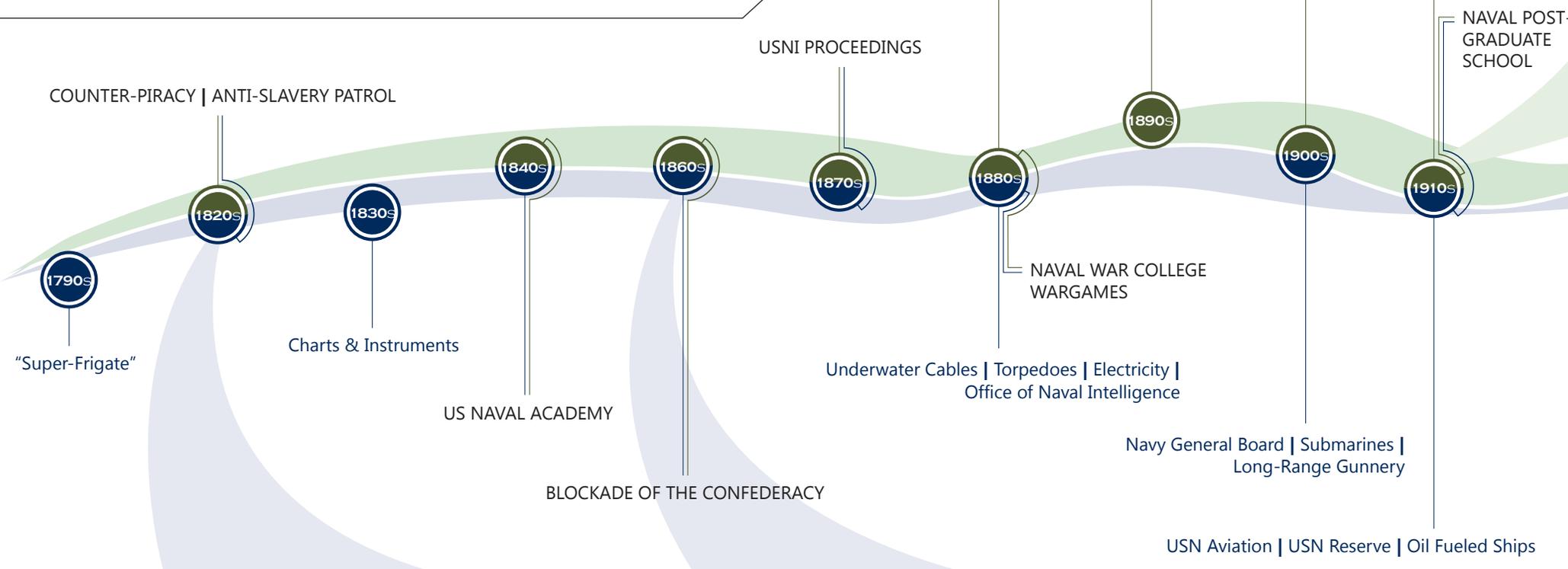
HISTORY OF NAVAL INNOVATION

The United States Navy and Marine Corps have a rich and long history of innovation. Dating back as early as the 1790s, our Sailors and Marines have been at the leading edge in pioneering new technologies and techniques to grow the strength and reach of the Fleet. Today, naval innovation continues to push the boundaries of what is possible and what will be possible in the near future.

To read more about Department of the Navy Innovation check out:
 Marine Corps History Division:

<http://www.mcu.usmc.mil/historydivision/SitePages/Home.aspx>

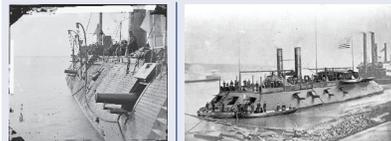
Naval History and Heritage Command: <http://www.history.navy.mil>



Steam Power | Counter-Piracy | Anti-Slavery Patrol



Ironclad Warships | Mines | Rifled Guns | Blockade of the Confederacy



Ellis Amphibious Assault | Close Air Support | Dive Bombing



MAGTF | Vertical Envelopment | Limited War | Marine Corps Test Unit



MV-22 | MARSOC | SPMAGTFs | F-35B | ACV | FAST on CVN / DDG / T-AKE



Tentative Manual for Landing Operations | Small Wars Manual

1920s

1930s

Higgins Boats

1940s

1950s

LVTP-5 | AV-8A | Combined Action Platoons

1960s

Naval Tactical Data System

LHA | LVTP-7 | LCAC

1970s

Maneuver Warfare

1980s

Maritime Strategy

1990s

SSGNs | Ballistic Missile Defense | F-35C

2000s

GREAT GREEN FLEET

2010s

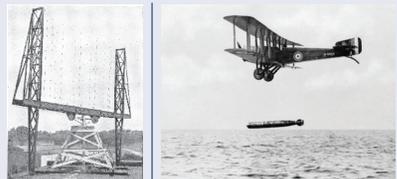
Anti-Submarine Warfare | Refueling | Carriers | Dirigible | Seaplanes

Nuclear Power | SOSUS | Ballistic Missile Submarines | COBOL Programming Language

LSTs | Combat Information Center | Underway Replenishment | Missiles | Jet Aircraft | Helicopters

TLAMs | Trident | AEGIS | Airborne Electronic Attack | F-14 | Z-grams

Sonar | Radar | Torpedo Planes



CVNs | SATCOMs | Drone Anti-Submarine Helicopter | SEALs | Outer Air Battle



UAVs | Maritime Interception Operations



WHY NOW

"The world is experiencing some deeply disturbing technical, economic, and geopolitical shifts that pose potential threats to US preeminence and stability." - *Arati Prabhakar, DARPA*

Because our Navy and Marine Corps teams maintain global presence, we are vital in maintaining world-wide stability and ensuring freedom of access to the maritime commons. However, changes in the global environment demand that the Department of Navy (DON) reshape its practices to remain the flexible adaptive force it has always been and at the cutting edge of emerging technology and advanced concepts. A dynamic security environment and tightening fiscal constraints demand that the DON change to shape its future. Failing to do so now adds unnecessary risk to our operating forces and ultimately the nation.

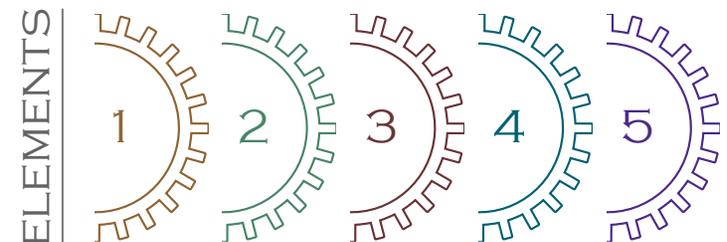
Advances in technology, information systems, and the sciences all offer remarkable new opportunities which will change every aspect of how we operate in the future. The accelerated rate of change challenges the responsiveness of our bureaucratic processes and pushes against DON cultural norms. Task Force Innovation was a catalyst to identify and connect the pockets of innovation occurring across the naval enterprise, share best practices, and remove administrative barriers that prevent innovation from thriving.

Innovation combines the ideas, insights, and resources of our Sailors, Marines, and Civilians in new ways to benefit the naval services.



The Department of Navy must take advantage of the current energy stemming from innovation and use this once-in-a-generation opportunity, where leaders from the White House to the Secretary of the Navy, to the Commandant of the Marine Corps and the Chief of Naval Operations have made a commitment to innovation. Innovation not only improves the way we operate each day but offers the Navy and Marine Corps a competitive advantage over potential adversaries.

To stimulate innovation within the DON, the Secretary of the Navy has identified these five essential elements for innovation:

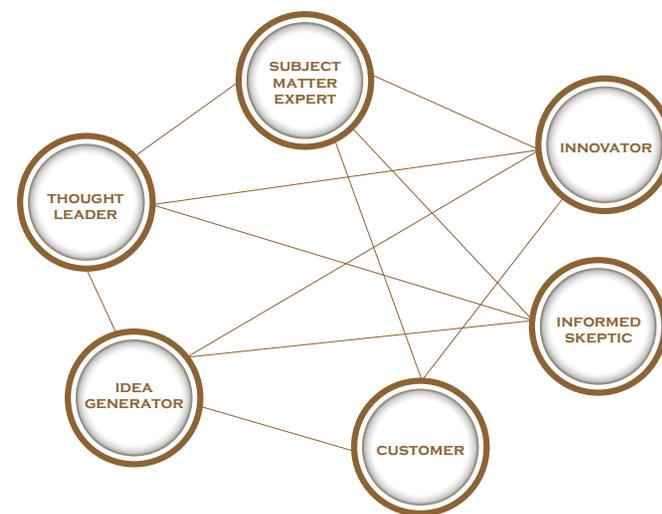


INNOVATION ELEMENT 1: BUILD THE NAVAL INNOVATION NETWORK

The DON has a multitude of virtual and physical resources to support innovators. We must improve how we connect these resources to aspiring innovators and innovative organizations. The Naval Innovation Network (NIN) will serve as the backbone of this endeavor, creating a virtual environment to connect innovators from across the DON enterprise. It will provide a forum to connect and exchange best practices, share information, develop ideas through an ideation platform, and scale successful local programs. A mature and functional NIN captures the essence of innovation within the DON – People, Ideas, and Information.

The best innovative organizations rely upon the talents of their workforce to solve important problems and to identify opportunities. We must challenge the DON workforce and empower it to strengthen the naval services of the future by sharing ideas and insights, and creating an environment that accepts and rewards prudent risk. By working together, we can build a responsive innovation engine to power our naval forces through the rough seas of an uncertain future.

To ensure the success of the NIN, the DON will develop new incentives to reward innovators and their leaders across the department. To support them, we must provide greater access to the tools, training, and technology that will shape the 21st century. This includes boosting workforce interaction with emerging technologies, such as 3D printers and software development, and engaging other innovators. This will both provide greater access to aspiring innovators at existing naval facilities and support the development premiere facilities in Fleet concentration areas.



The Innovation Network connects across organizational and functional stovepipes.



KEY OBJECTIVES:

- Crowdfund the DON and Enable the Ideation Process.
- Incentivize and Assess Innovation.
- Support Innovators Locally.
- Create an Environment that Institutionalizes Innovation.

“Right now, there are examples of innovation occurring in pockets all over the Fleet. We owe all our Sailors, Marines and civilians a platform by which their ideas can reach the decision makers.” - *Secretary Mabus*

INNOVATION ELEMENT 2: MANAGE THE TALENT OF THE DON WORKFORCE



The Department of Navy has a diverse and talented workforce; however, no single individual can bring a great idea to operational reality alone. This requires an innovation culture built upon foundations of trust, mutual respect, and the embracement of diverse thoughts. We must create an environment that seeks out, appreciates, and supports the creativity, expertise and insights of our Sailors, Marines and Civilians to solve the difficult challenges which lie ahead of us.

Managing the workforce must evolve from industrial age practices aimed at simply filling vacancies to ensuring personal career interests, professional development needs and mission demands are all considered throughout the various phases of a naval career. To accomplish this challenge, the civilian and military personnel systems must leverage data analytics to inform career paths, offer transparent career options and provide the workforce with greater flexibility. Crucial changes to DON workforce practices include knowing what skills and training our people possess. With that information in hand, we can take good ideas for solving problems and match creative people to solve them.



KEY OBJECTIVES:

- Modernize the Personnel Systems in the DON.
- Implement Ready, Relevant Learning Programs.
- Enrich the Culture.
- Improve the Accession, Hiring and Promotion Processes.
- Further Develop Critical Thinking Skills.

“When our team draws on the talent, dedication and skills of all our Sailors we will remain the finest Navy in the world.” - Admiral Greenert, CNO

INNOVATION ELEMENT 3: TRANSFORM HOW THE DON USES INFORMATION

The Department of the Navy collects more data each day than the total amount stored in the Library of Congress. Yet, the DON is organized and funded around systems and hardware and lacks the tools to ensure the information is used to its full potential. DON organizations dedicate time and resources to turn their data into useful information, then face institutional bottlenecks in sharing that information, vastly restricting its value.

The DON recognizes that information is a strategic asset which empowers people to make informed decisions. Sharing information across organizational boundaries enables innovation to thrive. The DON will integrate technology and learn from other organizations' best practices to maximize the value of our existing information and become a learning organization by mastering the information cycle.

"Someday, on the corporate balance sheet, there will be an entry which reads, 'Information'; for in most cases, the information is more valuable than the hardware which processes it." - *Rear Admiral Grace Hopper*



KEY OBJECTIVES:

- Become a Data-Centric DON.
- Develop an Advanced Analytics Agenda.
- Increase Agility in Training and Acquisition Processes.
- Build Analytics Expertise and Certification Pathways.
- Reduce the Burden Associated with Sharing Information.

INNOVATION ELEMENT 4: ACCELERATE NEW CAPABILITIES TO THE FLEET



The development of new technology or repurposing existing resources gives rise to innovative operational capabilities for the Fleet. By their nature, many of the new capabilities challenge bureaucratic processes developed for a different era, but cyber/information technology, unmanned systems and advanced manufacturing must not be placed in the same developmental process as is used to buy ships or aircraft. Allowing outdated practices to hinder the building of operational capabilities permits potential adversaries to gain a competitive advantage.

Advanced manufacturing, for example, has the potential to revolutionize our logistics, supply-chain and acquisition systems. For the DON to realize advanced manufacturing's full potential, we must aggressively test and evaluate new capabilities in an operational environment and reform processes that are designed for legacy systems.

The DON must create test beds for emerging operational capabilities to accelerate their delivery to the Warfighter. This involves identifying and removing barriers to new capabilities, distinguishing between manned and unmanned systems, and defining operational risk tolerance in emerging fields to keep pace with the rapid evolution of technology. Promoting a culture that tolerates and recognizes the value of risk includes a more robust experimentation process where risk can be better understood and mitigated.



KEY OBJECTIVES:

- Create an Effective Organizational Model for Fielding Unmanned Systems.
- Test, Evaluate, and Utilize Advanced Manufacturing.
- Identify Changes in Legacy Practices Across the DOTMLPF Spectrum.
- Increase Experimentation and Test & Fail Rapidly as Part of the Learning Cycle.
- Accelerate Speed to Fleet by Scaling Best Practices and Identifying Barriers to Rapid Execution.

"Too many new assets are mired in outdated bureaucratic practices that were developed for another era. As we enter the age of cyber, unmanned systems and advanced manufacturing, we cannot allow these overly complex, form-over-substance, often useless, and too often harmful, practices to slow or prevent development of some game changers, while simultaneously giving our potential adversaries the competitive advantage." - Secretary Mabus

INNOVATION ELEMENT 5: DEVELOP GAME-CHANGING WARFIGHTING CONCEPTS

Considering the complex and uncertain future global security environment, there is no single approach to warfighting or projecting naval influence which is suited for all scenarios. Therefore, it is critical that we develop a variety of concepts to give joint force commanders and national policy makers effective options to consider during all phases of military operations and to continually challenge our adversaries' assumptions.

Changes in the future operating environment, the maturation of technology available to us (as well as to our potential adversaries), and operational capabilities currently under development must be redirected to new warfighting concepts to maintain our naval preeminence for the foreseeable future. We cannot afford to shoe-horn innovative concepts into outdated warfighting paradigms.

In recent years, the naval services have made great strides developing new warfighting concepts: adaptive force packaging, electromagnetic maneuver warfare, and unmanned swarming all offer great potential but are not fully integrated into operational plans. We must continue to use our naval ingenuity, and deliberately dedicate time and resources to develop, test, and implement new warfighting concepts in our operating forces.



KEY OBJECTIVES:

- Increase the Frequency and Breadth of DON Wargaming and Connect Outcomes to the Planning, Programming, Budgeting, and Execution System (PPBES).
- Develop Effective Forecasting, Red Teaming, and Scenario Planning Competencies.
- Create Challenges to Identify Diverse Solutions to Operational Problems.
- Develop Integrated Naval Capabilities.



*"We will aggressively develop concepts of employment for alternative platforms that are consistent with mission requirements and platform capabilities."
- General Dunford, CMC*





OUR FUTURE...

“ . . . THE IDEA OF THE FUTURE BEING DIFFERENT FROM THE PRESENT IS SO REPUGNANT TO OUR CONVENTIONAL MODES OF THOUGHT AND BEHAVIOR THAT WE, MOST OF US, OFFER A GREAT RESISTANCE TO ACTING ON IT IN PRACTICE.”

JOHN MAYNARD KEYNES, 1937

QUESTION THE FUTURE

It is impossible to predict the future and the only certainty is that its challenges will differ from those we are planning for today. The DON must continually monitor and assess global trends and adapt accordingly. Creating an innovative, learning organization, willing to accept the best ideas of the workforce, is critical to sustaining the world's preeminent Navy and Marine Corps.



GLOBAL TRENDS



DEMOGRAPHICS



TECHNOLOGY



CLIMATE/ENVIRONMENT



DATA/INFORMATION



ENERGY



SHIFTING POWER

“WE MUST BE FASTER, MUCH MORE INNOVATIVE AND QUICKER OR WE CAN — WE WILL — LOSE.”

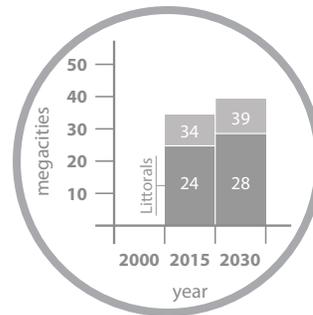
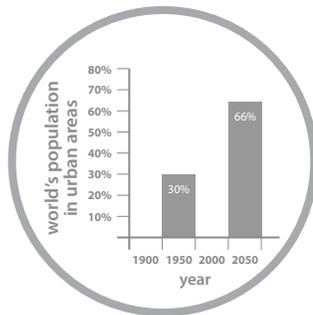
SECRETARY OF THE NAVY, RAY MABUS

DEMOGRAPHICS



OBSERVATIONS *

- Countries amassing a large proportion of seniors face the possibility of slower or stagnant aggregate GDP growth.
- Large youth bulge in **28 countries** of Africa, East Timor, and Afghanistan.
- Globally, more people live in urban areas than in rural areas. In **1950, 30 percent** of the world's population resided in urban areas and by **2050, it is projected to grow to 66 percent**. Growth of megacities: **currently 34 megacities** with **24 along the littorals**. By **2030, expected to be 39 and 28** respectively.
- Migration will become more globalized as both rich and developing countries suffer from workforce shortages.



*Observations from the Global Trends 2030 report

FUTURE NAVAL IMPLICATIONS

EXTERNAL

- Will migrations cause more frequent conflict and regional instability?
- How do operational concepts evolve to face large urban areas and mega cities in the littorals?

INTERNAL

- Will defense spending decrease because of the aging US population?
- How will the DON incorporate diversity of thought into its decision-making process?
- How will the DON attract, develop, and retain world class talent?



TECHNOLOGY

OBSERVATIONS *

- Robotics will eliminate human labor in more applications. Blurring between industrial and service robots will occur.
- Automation and advanced manufacturing technologies are changing mass production and how future products and services will be delivered to the middle classes in both developed and developing countries.
- The nexus of nano-, bio-, information-, and materials technology will likely yield future disruptions to U.S. national security.
- UAVs will routinely monitor intrastate and interstate conflicts, enforce no-fly zones and survey national borders.
- Non-state actors increase use of technology from Commercial Off-The-Shelf (COTS) technology.

**Observations from the Global Trends 2030 report*

FUTURE NAVAL IMPLICATIONS

EXTERNAL

- How to defend against unique "one-shot" weapon systems?
- Will adversaries exploit human enhancements prohibited by American ethical standards?
- How will DOD compete with adversaries with access to disruptive technology and more agile acquisition systems?

INTERNAL

- Will internal DON certification processes keep pace with advanced manufacturing capabilities?
- How will expeditionary/shipboard robotics change manning requirements?



CLIMATE/ENVIRONMENT

OBSERVATIONS *

- The severity and frequency of existing weather patterns will intensify, with wet areas getting wetter and arid ones becoming more so.
- Demand for food and water will grow substantially owing to an increase in the global population.
- Rapid changes in precipitation patterns - such as monsoons in India and the rest of Asia - could sharply disrupt that region's ability to feed its population.
- Arctic summer sea ice is diminishing in area and volume faster than any models anticipated and could vanish earlier than the original predictions of 2030-2050.
- A more crowded and interconnected world increases opportunities for human and animal diseases to emerge and spread globally.

*Observations from the Global Trends 2030 report



FUTURE NAVAL IMPLICATIONS

EXTERNAL

- How will the creation or alteration of geographic terrain features affect geo-politics?
- How will climate changes impact our current operational concepts?
- Will the inability to provide food, water and energy serve as cause for wars?

INTERNAL

- To what extent can afloat basing be used to minimize shore infrastructure?
- How will changes in environmental conditions impact DON installations around the globe?



DATA/INFORMATION



OBSERVATIONS *

- Cloud computing, cheap data storage and smart devices will put increased computing capability and meaningful analysis in the hands of 80 percent of the world's population.
- Since modern data solutions have emerged, big data sets have grown exponentially in size. At the same time, the various building blocks of knowledge, as well as the software tools and best practices available to organizations which handle big data sets, have not kept pace with such growth.
- As societies become more dependent on software and systems become more interconnected, the potential levels of damage inflicted by cyberweapons will increase.
- Private companies in the future will possess mountains of data and have more real-time information at their fingertips than most governments. Non-state actors will be able to influence behavior on as large a scale as state actors.
- "Internet of Things" is an enabler for super empowerment (primary source to facilitate recruiting, training, financing, command and control for non-state actors/terrorists).

**Observations from the Global Trends 2030 report*

FUTURE NAVAL IMPLICATIONS



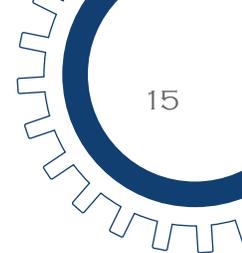
EXTERNAL

- Will the line between homeland security, intelligence, and military action become less definitive?
- What tools does the military need to escalate and de-escalate conflict against asymmetric opponents in the cyber domain?



INTERNAL

- How can the DON share its data with the public while protecting networks and essential data?
- How can the DON use its data and IT tools to become a true learning organization?



ENERGY

OBSERVATIONS *

- The demand for energy will rise dramatically over the next 15-20 years largely in response to rapid economic growth in the developing world.
- A transition to bio-based energy produced from nonfood biomass would radically alter world energy markets and be essential to improving food security.
- Solar energy could disrupt the global energy environment if it achieves a competitive cost with electricity produced from other sources of energy.

*Observations from the Global Trends 2030 report



FUTURE NAVAL IMPLICATIONS

EXTERNAL

- As North America emerges as a leading natural resources/fuel exporter, will defense requirements change?
- Will global energy demands/flow change naval presence requirements?

INTERNAL

- How does the DON reduce vulnerabilities associated with long fuel supply transport lines?
- How does the DON insulate its critical infrastructure from the fragile and aging commercial power grid?



SHIFTING POWER

OBSERVATIONS *

- Power is shifting from states to networks and coalitions in a multipolar world.
- The shift in national power may be overshadowed by an even more fundamental shift in the nature of power.
- Social networking will continue to be a potentially potent political weapon.
- Individuals and small groups will have the ability to perpetrate large-scale violence and disruption - a capability formerly seen as the monopoly of states.

FUTURE NAVAL IMPLICATIONS

EXTERNAL

- Will new concepts and instruments of power change approaches to force projection?
- Can conventional military power serve as an effective deterrent to state aggression in the future?

INTERNAL

- How do military personnel structures adapt to more empowered civilian recruits?
- How does the DON provide military personnel more control over their career paths and personal goals?
- Can the DON leverage the power of internal social networks?

**Observations from the Global Trends 2030 report*



VISIONS OF AN UNCERTAIN FUTURE

Throughout our history, the DON has been fortunate to have renowned visionary Sailors and Marines, such as CAPT A.T. Mahan, LtCol Pete Ellis, and Admiral Hyman Rickover, in our ranks. These visionaries looked 10 to 20 years ahead and anticipated future security challenges. As we look to the future, we must challenge current assumptions, ask tough questions about plans, programs and concepts and consider new ways to address the complex challenges looming on our horizon. The following are a few examples of the great minds associated with the DON today and their personal thoughts on the future operating environment.

INNOVATION ESSAYS

SWARMING TACTICS

"With just a little imagination, ...we see even farther ahead, ...the possibility of developing very small undersea swarming systems. These would clear minefields, engage enemy submarines, and so on. Small aerial swarm weapon systems could prove exceptionally useful in dealing with air defense of carrier strike groups."

- Dr. John Arquilla, NPS

VIRTUAL INSTABILITY

"An increasingly chaotic global information environment will require ... complex manipulations of systems and the data passing through them. In a world where any representation of military action is potentially negated by an equally plausible counter-representation, militaries must deny their enemies such representative capacity." - LTJG Kat Dransfield, CHINFO

GENOME MANIPULATION

"Over the next 20 years the world will see a proliferation of the means to supplement human performance. A parallel rise in their use will impact both the battlefield and supporting military functions from shipyards to watch floors." - Mr. Scott Cheney-Peters, OPNAV

"A SYSTEM BUILT IN THE COLD WAR COULD KEEP PACE WITH A LARGELY PREDICTABLE SOVIET OPPONENT VIA A DECISION CYCLE MEASURED IN YEARS. THAT ENVIRONMENT IS GONE."

THE HONORABLE RICHARD DANZIG, SECRETARY OF THE NAVY 1998-2001

AUTONOMOUS WARFARE

"The Navy faces the historically unprecedented simultaneous confluence of two Macro-Revolutions: the emergence of a new realm of combat, dominated by autonomous Machines; and imminent Cyber battle for any and every smart machine in the Navy." - Dr. Mark Hagerott, USNA

HYBRID WARFARE

"The rise of non-state actors, information technology, and proliferation of advanced weapons gives rise to modern hybrid war,...The United States requires, but does not have, a credible strategic-level ability to address incremental, persistent belligerence and interdict and roll back external sponsors of insurgent and separatist movements."
- CAPT Robert Newsom, U.S. NAVY SEAL

DRONE WARFARE

"The biggest danger to the US is smart, small, but long range underwater drones. They could be used to mine US or allied ports or as self-deploying torpedoes to seek out and attack US forces. The advent of cheap, autonomous drones means our base camps, fuel supplies, ammo dumps, and flight lines are easy to attack and very expensive to defend." - Dr. T.X. Hammes, NDU

VIRTUAL BATTLEFIELD

"Future conflicts will not be won simply by using the EM spectrum and cyberspace, they will be won within the EM spectrum and cyberspace & require changes to our operating concepts, military systems and – most importantly – a new way of thinking in our Navy." - Admiral Greenert, CNO

RESOURCE SCARCITY

"Sources of conflict will include water, energy and food scarcity... ungoverned spaces, territorial and tribal disputes, and regional competition."
- General Dunford, CMC

AN UNCERTAIN FUTURE NECESSITATES INNOVATION

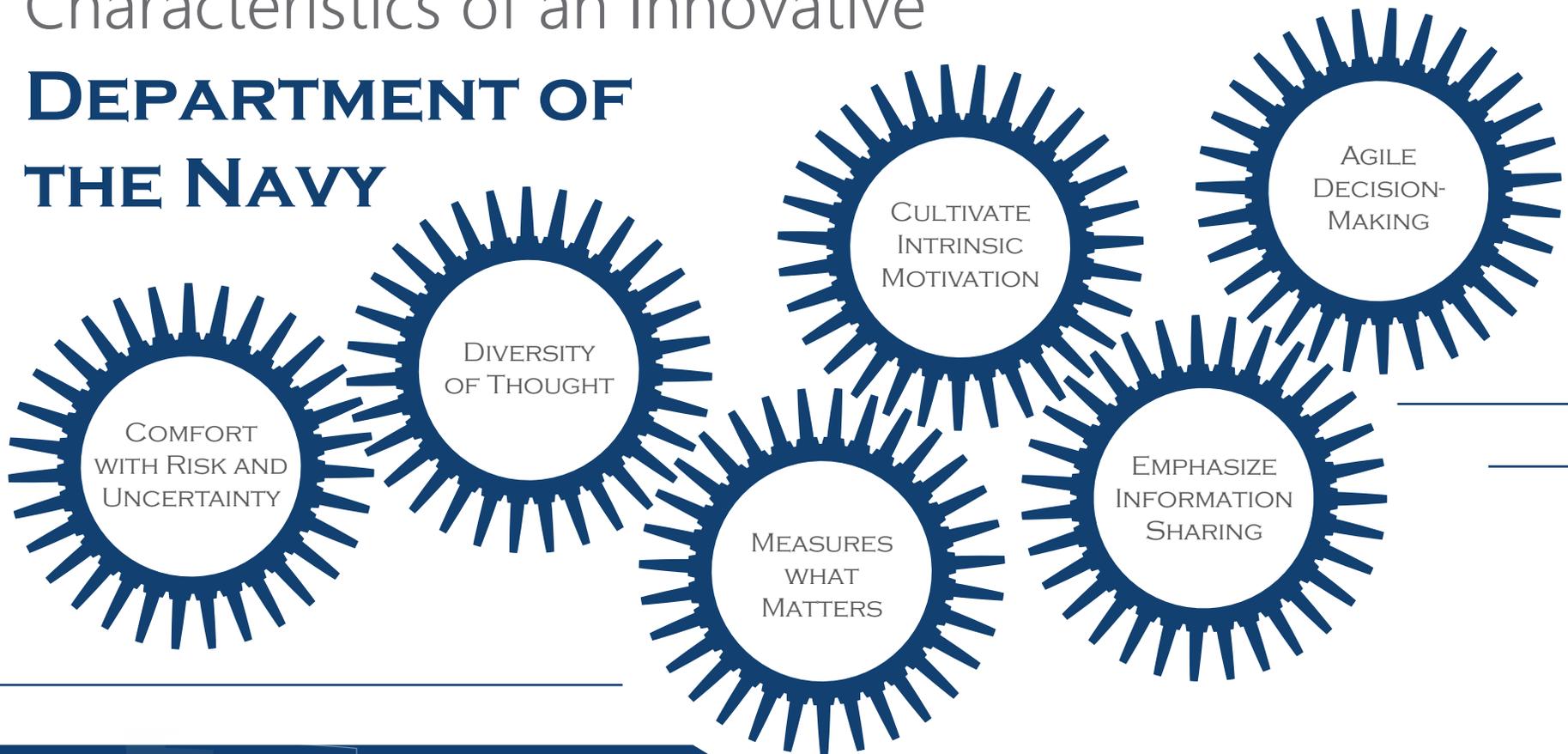


Given today's process-driven environment, it is difficult to consider the full breadth of challenges and opportunities our naval forces will encounter in the future. Being wedded to a single view of the geopolitical environment was acceptable when preparing for a predictable adversary but such an approach does not prepare us for the dynamic, uncertain environment we face today. Successfully innovating for the future begins by embracing uncertainty.

Defense-wide and joint processes channel us into a "least common denominator" view of the future. Instead, it is more prudent to foster an environment that creates a competition of ideas and which accepts the reality that the threat we are preparing for today is not the threat we will encounter in the future. While cumbersome processes affect the way we build weapons programs and procure resources, we must never allow them to constrain our ability to think and innovate.

Characteristics of an Innovative

DEPARTMENT OF THE NAVY



CHARACTERISTICS OF AN INNOVATIVE DEPARTMENT OF THE NAVY

The mission of the Department of the Navy requires strategic thinking, operational excellence, and coordination of complex issues in geographically dispersed, stressful conditions. Structure and hierarchy are critical components to success. At the same time, the DON must anticipate, adapt, and thrive in a rapidly changing environment, which requires freedom, the flexibility to innovate at all levels, and the ability to flatten the organization, break-down silos, and create cross-disciplinary synergies. The mission and structure are unique, but we can learn from other innovative organizations to cultivate the organizational characteristics and culture which will provide the foundation for an innovative DON.

COMFORT WITH RISK AND UNCERTAINTY



Innovation means assuming risk of failure, as the outcome is by nature uncertain. An organizational mindset consumed by driving risk to zero foregoes the opportunity for innovation.

The rich history of innovation in the Naval Services is underscored by the fact that operations are routinely conducted in unpredictable environments. Uncertainty can provide opportunity, both in the battlespace and in the business enterprise. Rear Admiral Raymond Spruance assumed such risk at the Battle of Midway, when committing his force's aircraft to strike Imperial Japanese aircraft carriers. If organizational leaders stifle or neglect creativity and innovation, they unwittingly drive it into the shadows. If this occurs, warfighters are denied the benefit of our best thinking, our most creative individuals may leave, and the organization's future preeminence jeopardized.

The commitment of organizational leaders to champion new thinking and thoughtful risk is critical to fostering innovation within the DON. We must provide the freedom, space, time, resources, and organizational support to experiment at every level from everyday training scenarios to large programs of record. We must continue to challenge a Zero-Defect mentality, make allowances for fast failure, and learn from our fruitless efforts so that in the long term we may have greater success.



SECNAV GUIDANCE:

- Commanders at every level must create an environment which allows for the challenging of assumptions, the creation of novel ideas and strategies, and the support to follow-through and make an impact.
- Commanders at all levels must identify the appropriate conditions for taking risks.
- Prudent risk takers, and the failures which result in learning, must be recognized and rewarded.
- Zero-Defect thinking must not permeate promotion boards or performance assessments. Failure that occurs in a learning environment ultimately benefits the organization.

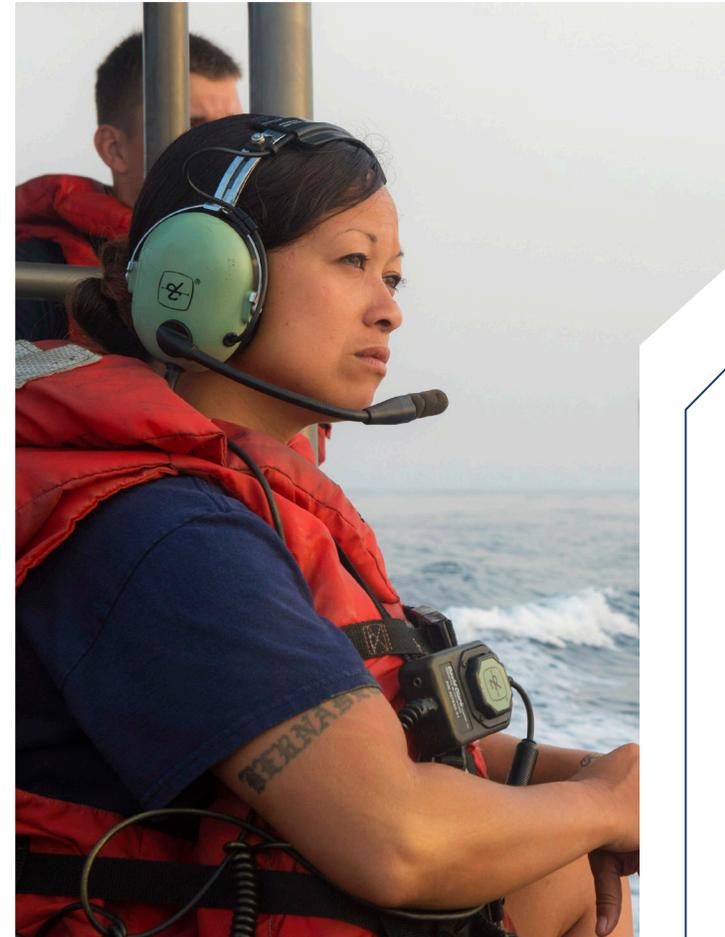
DIVERSITY OF THOUGHT

Innovation requires the ability to question norms, synthesize different views, and collaborate to develop unique and powerful solutions. Cognitive diversity is the DNA of innovation. Fully using cognitive diversity inside and outside our organization requires acknowledging the unique traits of individuals, and rethinking who and how we bring people together to collaborate and solve problems. Such cooperation often avoids group-think, a condition which has created past national security failures. Innovation cannot be restricted to stovepipes within the organization and leadership has to be trained to build teams not just using lists of qualifications, but rather through understanding the complexity of thought processes and organizational dynamics.



SECNAV GUIDANCE:

- Military and Civilian promotion/selection panels must seek out candidates with diverse, well-considered perspectives and break the cycle of monolithic thinking.
- Organizational leaders must ensure diverse groups take part in concept development and decision making.
- Inclusive leadership must be taught at every level in the DON.
- Functional Community managers must identify professional development opportunities to increase the diversity of experience of the workforce.
- Crowdsourcing, in all of its forms, is emerging as a powerful tool in the quest to harness cognitive diversity. Organizational leaders should take every opportunity to examine and use the various methods for crowdsourcing at every phase of their thinking.



MEASURE WHAT MATTERS

Metrics can supply the evidence that forces us to confront our assumptions and change our ways of thinking about accepted realities. This creates a foundation for innovation. During the Battle of the Atlantic in World War II, operations research created usable evidence for operational success against German U-boats. Well-designed metrics supply the fuel for positive change, but too often we measure what is easy to quantify, rather than what is important. An innovative DON ensures that our approach to measurement is thoughtful, comprehensive, and continually-assessed to cultivate and inform innovation.



SECNAV GUIDANCE:

- Incorporate measurements of the five previously described innovation characteristics in the performance plans of Senior Leadership.
- All DON organizations must incorporate the five characteristics of an innovative organization into their performance planning.
- Leadership will share with the SECNAV how they incorporate the five characteristics and the results of measuring them.



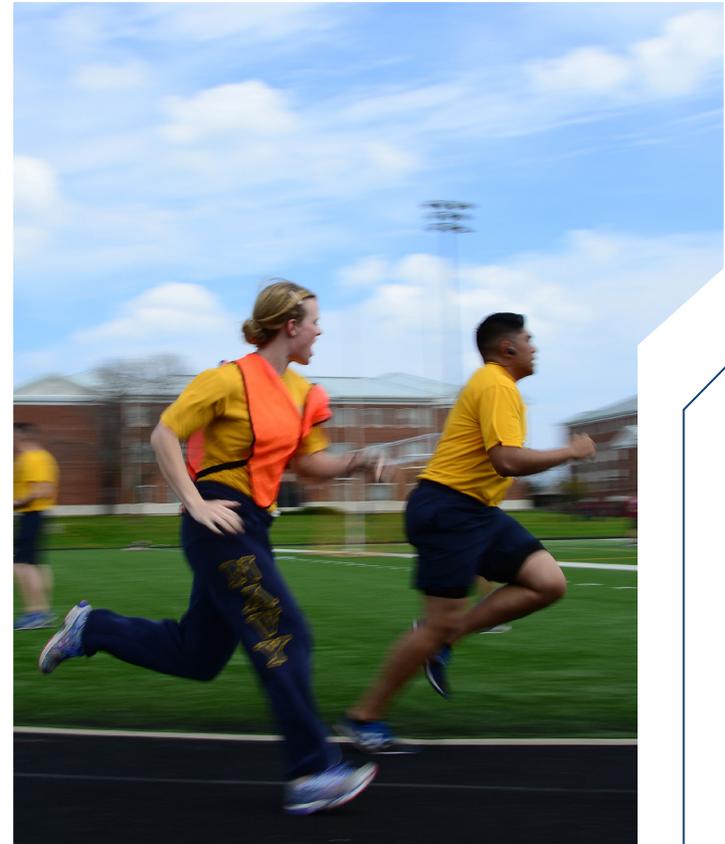
CULTIVATE INTRINSIC MOTIVATION

The DON has the unique advantage of possessing a motivated workforce inspired by its mission and empowered to pursue innovative solutions. Every Sailor, Marine, and Civilian employee voluntarily joined the Department. With such advantages, the return on investment is much greater from efforts to improve the strengths of an individual or organization, rather than trying to fix weaknesses. An innovative DON aligns organizations and individuals into positions capitalizing on their strengths, allows more freedom of choice, and provides an environment where individuals can develop and pursue passions.



SECNAV GUIDANCE:

- DON leaders and supervisors must acquaint themselves with the professional interests of their workforce and attempt to align those interests with mission requirements, and provide the means by which their talents can be cultivated and best applied.
- All DON personnel should have a means to relay professional interests and developmental goals to community managers. In turn, community managers should consider professional interests in personnel assignments and school selections, to the maximum extent possible.
- DON personnel should be encouraged to learn and grow by developing their professional interests and identifying opportunities to align those interests with organizational missions.



EMPHASIZE INFORMATION SHARING



Innovation thrives on collective brainpower and cross-disciplinary thinking. Our ability to innovate in the future directly depends on leveraging ideas and executing them both vertically and horizontally across the organization. Awareness and accessibility to the vast amount of relevant information within the DON must be universally viewed as a strategic asset. As such, we must prioritize sharing and the removal of cultural barriers so that collaboration occurs freely and the right information enables data-driven decisions.

Historically, the DON has focused on protecting information from outside threats. This view often prohibits sharing knowledge across organizational boundaries. Broader individual awareness enables warfighting, business, and technical comparative advantages. We must evolve from the industrial age culture of “need-to-know” to one of “need-to-share.” Doing so will move us towards becoming a true learning organization.



SECNAV GUIDANCE:

- We must recognize and harness the power of our collective intelligence across the DON Enterprise.
- We must invest in virtual collaboration forums which connect innovators across traditional organizational boundaries and promote a culture encouraging information sharing.
- Every command must establish practices to facilitate better information sharing internally and with other DON organizations.

AGILE DECISION-MAKING

Organizational agility is increasingly an information age need. The landscape is littered with once successful institutions which did not move away from bureaucratic management processes, did not embrace sharing information, and did not develop a tolerance for failure. Those organizations no longer exist. We are at a tipping point in history, and the future is inherently uncertain. Relying solely on our traditional, slow-moving forms of operational dominance is no longer sufficient.

Many of our bureaucratic processes trace back to the Cold War, an era when stability and preserving a symmetrical balance of power were paramount. While these processes began with good intentions, when rigidly applied, they are the antithesis of innovation. In today's environment, these same processes are now a source of competitive disadvantage. With our own decisions mired by endless layers of process, our adversaries, freed from such constraints, are outpacing and outmaneuvering us in the innovation cycle.

As the past decade of combat operations has shown, enlisted Sailors and Marines were empowered to make life or death decisions every day. Similarly, mid-level military officers are entrusted with commanding multi-million dollar warfighting platforms, forward deployed around the globe. The same level of trust, empowerment and agile decision-making needs to spread throughout the naval enterprise and we must work together to streamline bureaucratic processes, remove unnecessary levels of review, and decentralize decision-making to increase agility.



SECNV GUIDANCE:

- Senior DON Leaders, working with Congress, the Office of the Secretary of Defense and the Joint Staff, must re-examine our processes using the lens of innovation to focus on reforming those processes which overvalue risk reduction at the expense of capitalizing on opportunity.
- Leaders within the DON must make a concerted effort to eliminate unnecessary overhead, streamline processes, and allow more freedom and flexibility to develop creative and novel solutions to our challenges.
- Organizational leaders must instill a sense of accountability and trust to effectively streamline decision-making and avoid unnecessary internal reviews.

INNOVATION MUST ENDURE

Task Force Innovation was intended to be short-term, and to jump-start innovation across the DON enterprise. Innovation, with its continuous cycle of self-assessment, future scanning and adaptation, must endure over the long term to ensure the success of our naval forces. Above all, we must remember that innovation is a means, or a process, not an end in itself. Just as we cannot dictate the direction or intensity of the wind at sea, neither can we simply demand innovation to occur in the Navy and Marine Corps. Innovation must be viewed as a continuous cycle as represented by the graphic below.

A department-level forum is necessary to assist, accelerate and enable innovation to thrive across the DON and to bring the influence of senior leaders to bear in providing resources, streamlining policy, and removing other bureaucratic roadblocks that prevent innovation from occurring within the Fleet. This forum will also ensure the innovation elements for the enterprise are implemented but, more importantly, the DON continues to improve its innovative culture and processes for the foreseeable future. Additional information will be provided as this concept matures.



INNOVATION MEMO HIGHLIGHTS

NAVAL INNOVATION ADVISORY COUNCIL

Owner: DUSN (M)

Establish a Naval Innovation Advisory Council to accelerate nascent innovative ideas, concepts, and initiatives.

ASSESSING INNOVATION IN THE WORKFORCE

Owner: ASN (M&RA)

Assess innovation skills and contributions to innovation in the performance reviews of all Officers, Senior Enlisted, and GS-13 and above.

DON KEY STRATEGIC ISSUES LIST

Owner: ASN (RD&A)

Compile and publish an authoritative list of unclassified DON strategic research needs.

WARGAMING

Owners: Services

Reinvigorate, strengthen, and expand the wargaming competency across the DON.

ARTIFICIAL INTELLIGENCE AND ROBOTICS FOR SUPPORT FUNCTIONS

Owner: CNO

ID opportunities for integrating proven AI/robotics applications in Navy and Marine Corps operations

DEPARTMENT OF THE NAVY SUBJECT MATTER EXPERT REGISTRY PILOT

Owner: DUSN (M)

Establish an accessible directory of Subject Matter Experts within the DON Secretariat.

MODERNIZE CIVILIAN HIRING PROCESS

Owner: ASN (M&RA) and DON BSOs

Improve the civilian hiring process through the elimination of bureaucratic barriers, improved hiring incentives and flexibility, and the identification of new hiring authorities.

VIRTUAL ENVIRONMENTS

Owners: ASN (M&RA) and ASN (RD&A)

Develop a roadmap of value-added virtual environment opportunities within the DON.

INNOVATION INCENTIVES

Owner: DUSN (M)

Create an Innovation Award program to reward and incentivize innovation throughout the DON.

CREATING THE DATA SAVVY WORKFORCE

Owner: ASN (M&RA)

Develop a strategy and the professional development pathways to modernize the skills and proficiencies of the DON workforce.

ANTICIPATE FUTURE MILITARY PERSONNEL DEMANDS

Owner: ASN (M&RA)

Ensure that the skills of the DON workforce keep pace with advancing technologies and align to future warfighting demands.

USING THE CIVILIAN TALENT OF NAVY AND MARINE CORPS RESERVE FORCES

Owner: ASN (M&RA)

Identify and more properly engage the civilian skills, training, and experience of Reserve Force personnel, particularly as they apply to emerging workforce, technology, and mission demands.

INNOVATION MEMO HIGHLIGHTS (CONT'D)

IMPROVE COMMUNITY MANAGEMENT FOR THE DEPARTMENT OF THE NAVY WORKFORCE

Owner: ASN (M&RA)

Invigorate workforce community management by creating active communities of practice, improved community skill requirements and qualification standards, and clear, professional development paths and opportunities.

ADDITIVE MANUFACTURING

Owner: DON

Enable and broaden agile manufacturing implementation across the DON.

ADAPTIVE FORCE PACKAGES

Owner: Services

Identify and develop new, sustainable, operational warfighting capabilities using Adaptive Force Packaging.

OPEN DATA

Owner: DUSN (M)

Launch and manage a DON Open Data Portal to publish publically-releasable datasets and improve DON information sharing.

MULTI-RATER ASSESSMENTS

Owner: ASN (M&RA)

Establish a process to modernize performance assessments for the DON military and civilian workforce.

INCREASE RESOURCES AND OPPORTUNITIES FOR EXPERIMENTATION

Owner: ASN (RD&A)

Reinvigorate DON experimentation through suitable funding, elimination of barriers, integration of DON experimentation management systems, and coordinated Fleet opportunities.

AFLOAT AND ASHORE INSTALLATION POLICIES FOR EXPERIMENTATION AND EXERCISES

Owner: Services

Identify measures to reduce barriers and improve the DON's ability to conduct experiments aboard ships.

INNOVATION FUNDING AT LABORATORIES AND WARFARE CENTERS

Owner: ASN (RD&A)

Improve the ability of laboratories to innovate independently using flexible authorities, methods, and funding.

TREAT UNMANNED AS UNMANNED

Owner: ASN (RD&A)

Recommend ways to eliminate manned system requirements that unduly limit unmanned system innovation, and develop aggressive goals for accelerating this operational capability.

AGILE ACQUISITION

Owner: ASN (RD&A)

Quickly prioritize warfighting requirements, identify the resources suited to execute a solution, and balance the risk between cost, performance, and schedule to cut our operational vulnerability.

TASK FORCE INNOVATION

TFI WORKING GROUPS

DUSN (M)
(TRI-CHAIR)

N4
(TRI-CHAIR)

DC,CD&I
(TRI-CHAIR)

S&I
(EXEC DIRECTOR)



Thomas W. Hicks
*Deputy Under Secretary
of the Navy (Management)*

**Vice Admiral
Philip Cullom**
*Deputy Chief of Naval
Operations for Fleet Readiness
and Logistics*

**Lieutenant General
Kenneth J. Glueck, Jr.**
*Deputy Commandant
for Combat Development
and Integration*

Maura Sullivan, PhD
*Chief of Strategy and
Innovation, Deputy Under
Secretary of the Navy
(Management)*



**EMERGING
OPERATIONAL
CAPABILITIES**



**ADAPTIVE
WORKFORCE**



**INFORMATION
AS AN ASSET**

“...TFI WILL PROVIDE A DETAILED INNOVATION AGENDA AND GOALS THAT CLEARLY ARTICULATE RESPONSIBLY BOLD ACTIONS TO PREPARE OUR NAVAL FORCE FOR THE FUTURE.”

SECRETARY MABUS

ORGANIZATIONAL SUPPORT

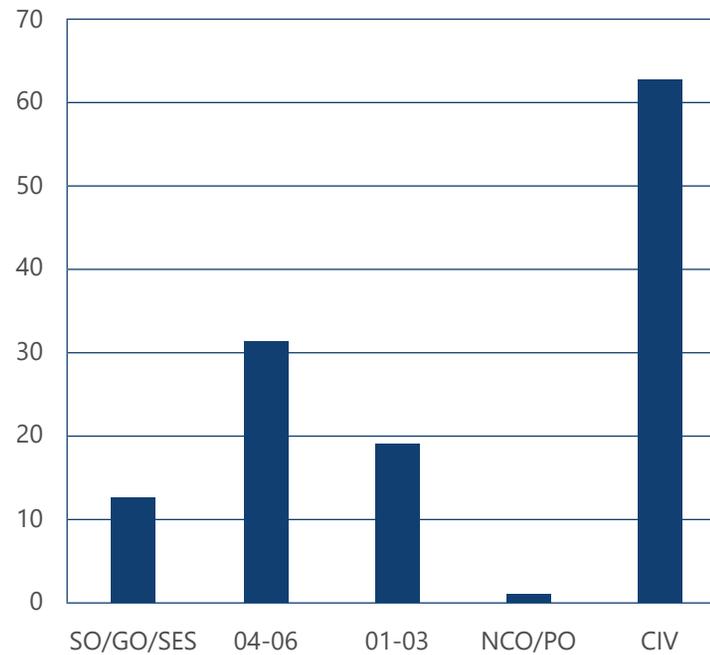
ORGANIZATIONS PARTICIPATING IN TFI

ASN FM&C	NAVSEA - NUWC
ASN M&RA	NAVFAC
ASN RD&A	NAVSOC
ASN EI&I	NAVSUP
CHINFO	USFF/NWDC
COMPACFLT	OCHR
DUSN (M)	OJAG
DUSN (P)	OLA
EODS	ONR
FMS	ONI
FUTDIR/MCWL	OPNAV
HQMC	PEO SHIPS
JIEDDO	SPAWAR
MSC	TFI
MTAG	TTGP
NAVAIR	USCC/CNMF
NAVSEA - NSWC	VFA-106

“TASK FORCE INNOVATION (TFI) COMPRISES EXPERTS FROM ACROSS THE DEPARTMENT, AND THEIR CHARGE IS TO DEVELOP A STRATEGY THAT BRINGS TOGETHER THESE INDEPENDENT EFFORTS TO PROVIDE A COHESIVE INNOVATION AGENDA FOR THE DEPARTMENT OF THE NAVY (DON).”

SECRETARY MABUS

TFI BY RANK/GRADE



JOIN THE CONVERSATION IN
THE DEPARTMENT OF THE NAVY
INNOVATION HATCH!



DON Innovation - <http://www.secnav.navy.mil/innovation>

The Hatch - <http://doninnovation.ideascale.com/>

Provide Feedback - DON_Innovation@navy.mil