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# TECHNICAL REPORT

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## Information Systems Technician Rating Stakeholders

### Implications for Effective Performance

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Prepared for the United States Navy

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## Summary

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### Introduction

The U.S. Navy is organized by five warfare enterprises and with various providers that contribute services, materiel, and human resources to achieve overall readiness. This system is characterized by complex networks of organizations with disparate goals and priorities. For example, the relative emphases on efficiency and effectiveness vary throughout this enterprise system.

The CANES initiative is designed to consolidate and improve the networks on tactical platforms with a common computing environment. This consolidation was intended to result in greater training and operating effectiveness, specifically for information technology enlisted personnel. The greater effectiveness could increase performance or be translated into efficiency savings. However, preceding research (Thie et al., 2009) indicated that the complex pattern of stakeholders involved in the manpower, training, and personnel processes for the IT rating confounded the pursuit of increased effectiveness.

This report describes the relationship among stakeholders involved in the manpower, personnel, and training processes for information technology personnel. For comparison purposes, this report also describes the stakeholder relationships for two other Navy ratings (hospital corpsman and Aegis firecontrolman), as well as an IT rating counterpart in the Air Force, cyber operations.

This effort is intended to contribute to maximizing the performance outcomes from technology insertion, create greater awareness of and support for effectiveness as an objective, highlight the conflicting stakeholder patterns that shift decisions away from effectiveness; and recognize decision tradeoffs. Further, the intent of this report is to provide insights for IT stakeholders regarding the organizations with which they interact, and to facilitate better interaction among those stakeholders.

### Stakeholders and Ratings

This report adapts stakeholder theory to the issue of IT rating “ownership” in the Navy and, thus, interprets stakeholders as individuals or groups that can affect, or that are affected by, an organization’s actions in pursuing its goals. We specifically focus on the stakeholders that affect (or that are affected by) the manpower, personnel, and training (MPT) decisions for the ratings considered. Because the landscape of stakeholders can be extensive, we focus primarily on a subset of those IT stakeholders.

There are many stakeholders that influence MPT decisions for the IT rating. Overall, the IT rating lacks “ownership” by any single organization or individual. This lack of ownership is

further confounded by the distribution of IT personnel in the Navy. Typically IT personnel are assigned in relatively small numbers to many different units and types of units, to include units represented within four different Type Commanders (TYCOMs) (Naval Air Forces, Naval Surface Forces, Submarine Forces, Navy Cyber Forces). Thus, any performance outcome for IT personnel is diluted among many different organizations, and there is no concerted voice regarding IT rating management or acting on behalf of IT personnel. The other ratings we reviewed provide distinct stakeholder pattern comparisons to that of the IT rating.

An Aegis firecontrolman (FC) follows similar MPT processes as does an IT, but the IT rating stakeholder patterns have a couple of key differences. First, the resource sponsor for new equipment training for the FC rating is N86, a well-established office. In comparison, Office of the Deputy Chief of Naval Operations for Information Dominance (N2/N6), a newly established office, is the resource sponsor for new equipment training for the IT rating. Although the FC rating also lacks clear ownership by a single stakeholder, there is a key difference between the IT and the FC rating. FC performance affects only a single TYCOM user: Naval Surface Forces. As a result, and because an FC operates a combat warfare system, FC performance is emphasized to a greater degree than is the case for the IT rating, and recent revisions to FC training to accompany the new Aegis system have received the necessary funding and support.

Hospital corpsman (HM) has a very different stakeholder pattern from that of IT, since the HM rating is managed with the “czar” leadership model, with the Navy Bureau of Medicine and Surgery (BUMED) actively involved in all MPT decisions. BUMED personnel are involved in accessing, training, and assigning each HM. As both the primary user and also the clear owner of the HM rating, BUMED is capable of and enabled to set efficiency and effectiveness priorities, such as decisions to man an organization with fewer, better-trained, individuals. This stakeholder pattern is especially of interest to the IT rating because the first indication of the Information Dominance Corps suggested that the IT rating might be managed within the Information Dominance Corps with a “czarship” model similar to that used to manage HM.

The Air Force management of cyber operations personnel follows a different pattern. As for the HM rating, there is clear ownership of the occupation; the Air Force’s Chief Information Officer is the functional authority for this occupation and is involved in MPT decisions. Although the Air Force cyber operations community is not managed by a czar, the major command (MAJCOM) user is involved in training decisions and has the opportunity to fund additional individual training to benefit the MAJCOM. Such effectiveness and efficiency decisions (spending user resources to improve individual and systemwide performance) are not possible in the MPT processes for the IT or the FC rating because of defined stakeholder responsibilities.

Our review of three Navy ratings and one Air Force Specialty Code led us to the observations in Table S.1. We recognize that the observations are based on a limited sample and make no claims that they are generalizable across all occupations. Moreover, in terms of favorable program (e.g., MPT) outcomes based on practices and policies for these occupations, we rely on interviews and our own assessments. There are differences in policy, practice, and outcomes across the four occupations, particularly within the Navy and between the Navy and the Air Force.

Even this limited sample illustrates significant differences within the Navy and between the Navy and the Air Force. In our scoring system, indicated in Table S.1, a check mark represents at least partial agreement with the observation. Some of these observations are for condi-

**Table S.1**  
**Observations Regarding the Four Communities**

Observation	IT	FC	HM	Air Force Cyber Systems Operations
<b>With Respect to Power</b>				
Focus on efficiency and effectiveness, with ability to make tradeoffs between the two			√	√
The ultimate decisionmakers: users, rather than program and budget providers			√	√
<b>With Respect to Legitimacy</b>				
Training emphasized, with an identified functional lead, regular reviews, and hard metrics			√	√
A clear "ownership" of the specialty, with ultimate authority and central decisionmaking for policy and directives related to the community			√	√
Considerable influence in training and budgeting decisions by those with expertise in the career field			√	√
Fewer stakeholders involved; easy to gain consensus			√	√
A smooth transition of new equipment training into steady-state training			√	√
<b>With Respect to Urgency</b>				
Specialty concentrated: assigned to units in large numbers		√	√	Not observed
Central involvement in decisionmaking for the occupation by the units that benefit from performance improvements or suffer from decreases in performance			√	√
Performance prioritized		√	√	√

tions outside the control of the manpower, personnel, and training community (e.g., where and how used). However, most observations should be within the control of these communities.

## Effectiveness and Efficiency Objectives

Goals or objectives of organizations can be considered within an effectiveness and efficiency framework. *Efficiency* is a primary focus on inputs, use of resources, and costs. *Effectiveness* features a primary focus on outputs, products or services, and growth. Organizational strategies can be located within these two dimensions (Burton, DeSanctis, and Obel, 2006).

An organization must make decisions along two dimensions of goals: effectiveness and efficiency. Goals may be in conflict if the organizational structure that fixes stakeholder decisionmaking leads some parts of the organization to focus on effectiveness, without considering efficiency, and other parts to focus on efficiency, without considering effectiveness. There is a potential tension between effectiveness and efficiency that is not an inherent conflict but, instead, one created by organizational structure and decisionmaking patterns. Our assessment

in Chapter Four shows that all of the organizational stakeholders that we assessed have an efficiency strategy but that not all of them have a positive effectiveness strategy.

## Recommendations

Navy leadership should be cognizant of the goal orientation and strategy of organizations in order to assess whether those goal orientations are the most appropriate for organizations. Further, awareness of differing goal orientations can facilitate interactions by bringing explicit awareness of differing stakeholder strategies. Our recommendations are specific to the IT community but might also apply to other Navy communities.

The IT community should have a single identified stakeholder with responsibility for performance and MPT oversight. Ideally, this stakeholder would have sufficient legitimacy and power (i.e., money) to influence change. Since the IT community has many different users, this predominant stakeholder should interact with all users as part of an institutional process for gathering feedback from users and making improvements. Organizationally, who should that be and how could it be implemented? For the HM community, the BUMED organization has the legitimacy of the Office of the Chief of Naval Operations instruction authority; the “power of the purse” (resourcing of training); and urgency, as the user of the outcome of training. This model has appeal, and early documentation for the creation of an Information Dominance Corps cited such a model, but it has not eventuated. The FC model appears currently workable for that community because of a strong system command, resource sponsor, and a TYCOM with stable, consistent relationships. The IT stakeholders—whether enterprise, TYCOM, or Office of the Chief of Naval Operations staff—have changed structural relationships considerably in recent years. Absent radical change either to an HM model or change of a type we did not consider,<sup>1</sup> an Air Force model might offer the best path to effectiveness and efficiency. The N2/N6 would be the dominant stakeholder in this model and would be responsible for development and training of IT personnel. Similar to the Air Force model, this authority would be supported by functional authorities within N2/N6 and by a career field manager in an operational unit with authorities designated in Navy instructions. The N2/N6 would have ultimate responsibility for effectiveness of the community. This arrangement would need to be supported by more-workable processes than currently exist.

For example, there should be regularly scheduled, periodic reviews of IT sustainment and new equipment training. For this community, a periodicity of 18–24 months (rather than three years) may be appropriate because of the rate of expected change in technology. As with the Air Force, these reviews should be under the auspices of the functional lead and chaired by the functional career manager with support provided by NETC and the schoolhouse. These reviews should include users, and have the oversight of the N2/N6, the predominant stakeholder for decisionmaking and resourcing. Such reviews and resulting periodic change could move the IT MPT communities toward effectiveness as an outcome.

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<sup>1</sup> For example, N2/N6 assigned training resource provider and TYCOM responsibilities with SPAWAR as training provider. These could have merit to consider. In particular, because the IT community appears to have more technology change and thus more new equipment training than many other communities, it may increase effectiveness and efficiency to have one organization responsible for resourcing and executing both sustainment and new equipment training.

At the type commander level, IT users should have the opportunity and capability to make efficiency and effectiveness decisions. For example, the opportunity to have fewer, better-trained personnel should be one such decision regularly considered. Because of the number and diffused nature of the user stakeholders, the functional authority (N2/N6) needs to take the prevalent role in these manpower reviews supported by the N12 manpower community.

While these recommendations are consistent with good management practices, we recognize that it will be difficult to improve the effectiveness of IT personnel for several reasons. First, because they are generally diffused throughout the Navy in small numbers, there may not be users who will see significant organizational performance increases because of increased IT performance. Second, IT personnel do not operate or maintain a Navy combat system. Unlike the Air Force, which has recognized and publicly stated that information technology is vital to their mission performance, the Navy has not prioritized IT personnel performance.<sup>2</sup> Given the institutional emphasis on efficiency foremost, additional investments in IT performance are currently unlikely without significant changes in organizational structure and processes and in stakeholder responsibilities.

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<sup>2</sup> The Chief of Staff of the Air Force has stated that “cyber operations reinforce and enable everything we do, from administrative functions to combat operations, and we must treat our computers and networks similarly to our aircraft, satellites, and missiles” (Lieutenant General William Lord’s introduction to *Cyberspace—Shaping the New Frontier*, 2010). The Navy considers its networks to be in support of Navy weapons systems.