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# Attracting the Best

## How the Military Competes for Information Technology Personnel

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Supported by the Office of the Secretary of Defense  
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The research described in this report was sponsored by the Office of the Secretary of Defense (OSD). The research was conducted in the RAND National Defense Research Institute, a federally funded research and development center supported by the OSD, the Joint Staff, the unified commands, and the defense agencies under Contract DASW01-01-C-0004.

**Library of Congress Cataloging-in-Publication Data**

Attracting the best : how the military competes for information technology personnel / James Hosek ... [et al.].

p. cm.

"MG-108."

Includes bibliographical references.

ISBN 0-8330-3550-9 (pbk. : alk. paper)

1. United States—Armed Forces—Recruiting, enlistment, etc. 2. Electronic data processing personnel—Recruiting—United States. I. Hosek, James R.

UB323.A85 2004  
355.2'2362—dc22

2003028056

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Published 2004 by the RAND Corporation  
1700 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138  
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## Summary

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The late-1990s peak in demand for information technology (IT) workers led private firms to respond by offering higher pay, enhanced on-the-job training opportunities, flexible work hours, and support for career development. The economic boom, the rapid growth of information technology as an occupation, and the record low unemployment rates in the private sector created recruiting and retention challenges for the military, which found itself depending more and more on information technology. In fact, during this same period, the military services embarked on initiatives to employ information technology in a host of ways that extended military capability on the battlefield, in intelligence, and in support activities. The services also implemented programs to certify a member's expertise in information technology, e.g., in system administration or in networks.

The convergence of IT trends in the public and private sector intensified the competition between the military and private corporations for IT workers. In addition, the military's efforts to recruit into IT were complicated by several factors. The general increase in civilian wages outpaced the increase in military pay, and civilian wages in IT rose more quickly than in non-IT. Because military pay in IT and non-IT occupations remained similar to each other, the military/civilian wage ratio not only declined overall, but it declined more for service personnel in IT occupations than in non-IT occupations. Furthermore, the budget for enlistment and reenlistment bonuses and educational benefits were low in the mid-1990s, contributing to recruiting difficulties and to retention difficulties in some specialties.

These conditions—burgeoning private-sector demand for IT workers, escalating private-sector pay in IT, growing military dependence on IT, and faltering military recruiting—led to a concern that military capability was vulnerable to a large shortfall in IT personnel. What basis, if any, offered assurance that the supply of IT personnel would be adequate to meet the military's future IT manpower requirements?

In addressing this question, we undertook a number of related tasks. We surveyed literature on managing and compensating IT workers in private firms and in government, conducted field interviews on selected IT occupations in the Army and the Air Force, studied data on military personnel in IT and non-IT occupations, and compared military pay with civilian wages in IT and non-IT occupations. The results of our research led to the preliminary conclusions that not only had the military competed successfully for IT personnel, but that the value and transferability of military IT training had been a key factor in this competition. To gain a more rigorous conceptual understanding of these conclusions, we proceeded to develop a dynamic, stochastic theoretical model of IT personnel supply. The model provides a cohesive framework for exploring a set of factors that affect the enlistment and retention of IT versus non-IT personnel and for absorbing and rationalizing the observations

drawn from our surveys and regressions. Taken together, the literature review, field interviews, data analysis, and dynamic model compose an integrative perspective on the issue we set out to study and offer some policy implications for military planners in terms of how to recruit and retain qualified IT personnel. In addition, the insights of this research seem likely to apply to other high-tech occupations in the military that, like IT, offer valuable, transferable training in addition to the opportunity to serve.

## **The Services Have Been Successful in Attracting and Keeping IT Personnel**

Despite obstacles the military faced in recruiting IT personnel and competing with private-sector firms, our research indicates that each service succeeded in recruiting and retaining IT personnel. In fact, we find that compared with non-IT recruits, IT recruits were of higher quality, signed on for somewhat longer terms, had lower attrition, and had similar rates of reenlistment (except in the Army, where IT reenlistment was lower).

## **IT Training Appears to Be Central to the Attractiveness of Military IT Positions to Potential Recruits**

To explain the attractiveness of IT to a potential military recruit, it is necessary to look at the value and transferability of military IT training to civilian jobs. A prospective recruit who is not already in IT will be drawn to the military not only by the challenge of military service, but also by the opportunity to gain IT training, especially considering that many of the IT skills learned in the military can be used in civilian IT jobs. Enlistment incentives, namely, bonuses and educational benefits, can also be used to attract recruits to IT or other specialties. However, we found only minor differences in bonus and benefit usage between IT and non-IT specialties, which suggested that the value of IT training may have reduced the need for higher enlistment incentives in IT.

Our results indicate that military IT training is an important ingredient to the successful fulfillment of IT manpower requirements because of its ability to attract IT personnel. However, it would also seem that as a result of the private-sector value of IT training received in the military, IT military personnel would have a higher incentive to leave the military for civilian jobs with higher wages. This implies that keeping trained IT personnel may be more of a challenge than recruiting IT personnel. Yet while trained IT personnel may have more of an incentive to leave the military, we found that IT reenlistment rates were slightly lower in the Army and the Navy, about the same in the Air Force, and slightly higher in the Marine Corps than non-IT reenlistment rates. Although we expect that reenlistment behaviors were influenced by reenlistment bonus usage and/or bonus amounts, which we found to be higher in IT than in non-IT occupations in several services, we also believe that reenlistment was influenced by the expectation of receiving still further valuable training and career growth opportunities in IT.

## **Even If Future IT Manning Requirements Change, the Military Should Be Able to Meet Its Needs**

The services have long-term visions of future military capabilities and force structures, but, not surprisingly, these visions do not detail manpower requirements. However, the services have a much firmer idea of the weapons systems and doctrinal changes that will come into effect in the near term. These changes typically affect only a portion of the force at any given time. Furthermore, the services have processes to define the manpower requirements for these changes, and the planning cycle is generally long enough to allow manpower supply to adjust. As a result of these established planning cycles, if IT manpower requirements continue to change at a gradual pace, and if military IT training continues to be valued in civilian jobs, there is reason to believe that the services will be able to meet their future IT manpower requirements.

As a caution, large, abrupt increases in IT manpower requirements will decrease this likelihood. Yet it is worth noting that the number and percentage of recruiting slots designated as IT in our study have declined over the past 20 years. The enormous increases in the productivity of information technology may have enabled the military to do more with fewer people, and further, some IT tasks may have been outsourced. Finally, because success in IT recruiting has depended on the value of military IT training in civilian jobs, a softening of the civilian demand for IT workers can only reduce that value and increase the difficulty of recruiting into IT. However, enlistment and reenlistment incentives such as bonuses can help to compensate for such a loss in value.