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RESEARCH BRIEF

Can the Military Successfully Meet the Demand for Information Technology Personnel?

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In the final years of the 1990s, private-sector demand for information technology (IT) workers seemed insatiable. IT unemployment was practically nonexistent, pay was high and rising fast, and the Bureau of Labor Statistics forecast (and even more recently, continues to forecast) far faster growth in IT jobs over the next decade than in any other occupational area.

In such an increasingly tight labor market, leaders in the national security community began to doubt that military, intelligence, and other public agencies would be able to compete for IT workers. Civilian pay increases in the 1990s generally were outpacing those in the military, and wages for civilian IT occupations were rising more quickly than those for civilian non-IT slots. These factors resulted not only in an overall decline in the military/civilian wage ratio, but in an even more pronounced decline in that ratio for IT occupations. Policymakers' concerns were intensified by the increasing dependence of the military services and intelligence agencies on IT.

Although the scramble for IT workers has ceased, it lasted long enough to jolt state and federal agencies into modifying their personnel policies (e.g., through increased pay levels and enhanced professional development opportunities) and to cause national security planners to question whether future force structures would be vulnerable to shortages of IT personnel. To address this concern, the RAND Corporation was asked to examine a key component of the IT personnel issue—namely, the factors affecting the supply of IT personnel to the active duty enlisted force. RAND's study found that, contrary to popular perception, the services have been successful in attracting and keeping IT personnel. Potential recruits appear to be particularly attracted by the training opportunities offered in this field. The findings also indicated that, even if future IT manning requirements change, the military should be able to meet its IT needs.

Abstract

Despite concerns that the military might face a shortage of information technology (IT) personnel within the active duty enlisted force, the services have been successful in attracting and keeping IT personnel. IT training appears to play a critical role in attracting recruits. Even if future manning requirements change, the military should be able to adjust sufficiently to meet its IT personnel needs.

The Services Have Been Successful in Attracting and Keeping IT Personnel

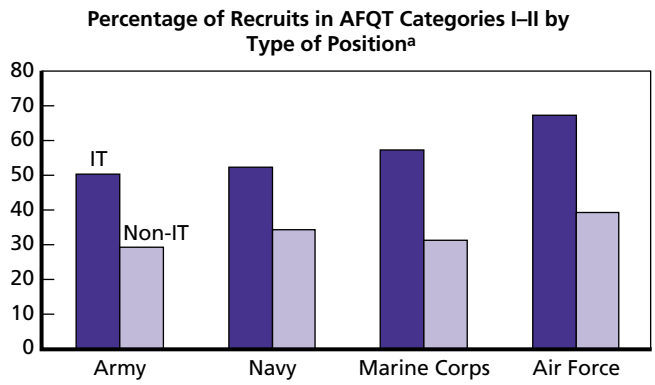
The RAND study used a combination of literature review, field interviews with Army and Air Force personnel, data analysis, and modeling. Using a dynamic model of IT personnel supply, researchers were able to provide a cohesive framework for exploring the factors that affect enlistment and retention of IT versus non-IT personnel.

The study found that each service—despite facing obstacles—succeeded in recruiting and retaining IT personnel. In fact, 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, whose IT reenlistment rate was lower). For example, the findings indicated that it was not uncommon for Armed Forces Qualification Test (AFQT) scores in IT occupations to average 10 to 20 points or higher in IT than non-IT, a very large difference (see the figure).

IT Training Appears to Be Central in Attracting Potential Recruits to Military IT Positions

The value and transferability of IT training appear to provide key advantages in the military's success

IT Specialties Attract Recruits with Top AFQT Scores



[a]AFQT Categories I–II = top one-third of test score distribution.

in attracting recruits into military IT occupations. The researchers hypothesized that prospective recruits who are not already in IT are drawn to the military not only by the challenge of military service, but by the opportunity to learn IT skills they can later use in civilian jobs. The incentive offered by training was apparently strong enough to induce recruits to choose long terms if need be (i.e., if only long terms were offered or if all shorter-term positions had already been filled at the time the recruit was signing up). Consistent with the high value of IT training and experience, IT recruits had lower attrition than non-IT recruits. Although the services use enlistment incentives—bonuses and educational benefits—to attract recruits to IT and other specialties, the study found only minor differences in bonus and benefit usage between IT and non-IT specialties. This suggests that the value of IT training reduced the need for higher enlistment incentives in IT.

Given that the value of training appears to be responsible for the higher quality and lower attrition of IT recruits and that the private sector values IT training so highly, one might expect service members with that training to have greater incentive to leave the military for civilian jobs with higher wages. However, the reenlistment picture offered by the study was mixed. IT reenlistment rates were slightly lower than non-IT reenlistment rates in the Army, about the same in the Navy and the Air Force, and slightly higher in the Marine Corps. Although researchers suspected that reenlistment behaviors were influenced by reenlistment bonus usage and/or bonus amounts, which were found to be higher in IT than in non-IT occupations in several services, they also argued that reenlistment was influenced by soldiers' expectations of receiving still further valuable IT training and career growth in the second term of service and beyond.

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

The findings of this study indicate that the military is currently well suited to compete with private-sector firms for high-aptitude individuals at the entry level in IT. However, because manpower requirements for IT and non-IT personnel change over time as weapons systems and doctrines adjust to new circumstances, the future supply of IT personnel could potentially be affected.

The services have processes in place to define the manpower requirements for these changes as well as planning cycles that are generally long enough to allow manpower supply to adjust. As a result, 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.

However, the study cautioned that the services' ability to meet future personnel needs could be affected if there were a large, abrupt increase in IT manpower requirements. Such a turn of events may not be likely: Not only have the number and percentage of IT recruiting slots declined over the past 20 years, but the services also have taken advantage of enormous increases in IT productivity to do more with fewer people or to outsource some IT tasks. At the same time, 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 would reduce that value and increase the difficulty of recruiting into IT. If necessary, enlistment and reenlistment incentives such as bonuses can help to compensate for such a loss in value. ■

This research brief describes work done for the National Security Research Division documented in *Attracting the Best: How the Military Competes for Information Technology Personnel*, by James R. Hosek, Michael G. Mattock, C. Christine Fair, Jennifer Kavanagh, Jennifer Sharp, and Mark Totten, MG-108-OSD, 2004, 144 pages, $27.50, ISBN: 0-8330-3550-9, available from RAND Distribution Services (phone: 310.451.7002; toll free: 877.584.8642; or email: order@rand.org). The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND**® is a registered trademark.

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