



By Sandra J. Smith

Assessing the IT Civilian Workforce of Today

The first ever federal-wide information technology (IT) workforce skills assessment survey was conducted during September 2003. Sponsored by the Federal Chief Information Officers (CIO) Council, the Office of Management and Budget (OMB) and the Office of Personnel Management (OPM), the Web-based survey was designed to collect information from federal IT employees regarding their current proficiency in a variety of competencies and skills, certifications held, time spent on a variety of specialized job activities and demographic information essential for workforce planning.

Drivers for IT Workforce Planning

The survey fulfills certain legal requirements for workforce assessment and analysis and will assist in the development of Human Capital Plans. It satisfies the E-Government Act (Section 209) requirement to analyze the personnel needs of the federal government relating to information technology and information resources management, and the annual requirement of the Clinger-Cohen Act (CCA) to assess the skills of the federal government IT workforce.

Defining the IT Workforce

The survey was completely anonymous and voluntary, and targeted civilian employees in IT and IT-related positions. Although they are an integral part of the IT workforce, military members and contractor personnel were not surveyed. Civilian occupational series were used to identify the appropriate survey audience including the following traditional and nontraditional IT series:

- GS-0332 Computer Operation
- GS-0334 Computer Specialist
- GS-0335 Computer Clerk & Assistant
- GS-0390 General Telecommunications
- GS-0391 Telecommunications
- GS-0392 Telecommunications Processing
- GS-0854 Computer Engineer
- GS-1550 Computer Scientist
- GS-2210 Information Technology Management

Survey Statistics

The survey took approximately 10 to 20 minutes to complete. The

DON had a 20 percent response rate based on 6,533 respondents. While the survey was self-selecting (not a random sample), the follow-on analysis is statistically valid with a small margin of error and a high confidence level. The 1,333 DON respondents were well-distributed across all major claimants and commands.

Now that the survey data has been collected, the DON Information Management/Information Technology (IM/IT) Workforce Management Team will review and analyze the data as the first step of the DON CIO's workforce analysis approach. This includes identification of potential skill and competency gaps based on forecasted IM/IT workforce requirements. When this is complete, an enterprise IT workforce strategic human capital plan, in line with the President's Management Agenda, will be developed as a guide to fill identified gaps. More information on the workforce planning guide will be forthcoming from the Federal CIO Council and DON CIO.

Survey Demographics

Survey demographics included questions relating to grade, age, retirement, years of government service, years of IT industry experience and other factors. What emerged based on the responses was a profile of the "average IT worker" in the DON, which is shown in Figure 1.

Profile of the DON Average IT Worker
...is between 46 and 50 years of age
...is a GS-12
...has over 20 years of federal government experience
...has little to no private sector experience
...is likely to retire in the next 10 to 20 years
...is fairly mobile (may leave the organization in the next 3 years)
...holds a Bachelor's Degree

Figure 1.

The profile of the average DON IT worker matches the overall federal profile with the exception that federal IT workers are generally GS-13s, and have slightly more graduate degrees but fewer doctorate degrees. Most respondents have a significant amount of federal government service, they are relatively mobile and have little private sector IT experience. Most respondents plan to retire when they are eligible. Approximately 30 percent of respondents indicated that they are eligible to retire within six years; 80 percent are eligible to retire in 20 years.

Initial Top Level Assessment

The survey asked respondents to assess their current proficiency in a set of general (16 total) and technical (53 total) competencies. The competency self-assessment used a five-point scale based on the competencies that make up the GS-2210 occupational series, since they can be mapped back to other job functions and series (e.g., CIO competencies, GS-391s, GS-1550s). Figures 2 and 3 order the highest-rated technical and general competencies based on the number and percentage of respondents who said they were at the "5-Expert" proficiency level. The percentage is based on the total number of DON responses (1,333).

The survey also asked respondents to indicate their IT-related certification areas and estimate the amount of time they spend

Top 10 Technical Competencies (n=1,333)		
Technical Competencies	Responses	%
Configuration Management	205	15.38%
Software Development	201	15.08%
Hardware	196	14.70%
Computer Languages	184	13.80%
Project Management	168	12.60%
Requirements Analysis	154	11.55%
Operating Systems	146	10.95%
Software Engineering	146	10.95%
Systems Life Cycle	142	10.65%
Software Testing and Evaluation	131	9.83%

Figure 2.

Top 10 Certifications Areas			
Certifications Areas	Certified	%	Rank
IT-Related Technical Certificates from accredited Technical Schools (military or commercial)	154	11.55%	1
Microsoft	132	9.90%	2
Comp TIA	50	3.75%	3
Cisco	41	3.08%	4
Information Systems Security	38	2.85%	5
Project Management	38	2.85%	6
Novell	33	2.48%	7
Business Applications	31	2.33%	8
Oracle	29	2.18%	9
Network Support	27	2.03%	10

Figure 4.

Top 10 General Competencies (n=1,333)		
General Competencies	Responses	%
Interpersonal Skills	373	27.98%
Problem Solving	340	25.51%
Customer Service	328	24.61%
Decision Making	251	18.83%
Oral Communication	232	17.40%
Leadership	228	17.10%
Planning and Evaluation	222	16.65%
Organizational Awareness	186	13.95%
Influencing/Negotiating	155	11.63%
Managing Human Resources	145	10.88%

Figure 3.

Top 10 Job Activities		
Activity Name	Responses	%
IT Project Management	292	21.91%
IT Security Information Assurance	194	14.55%
IT Workforce Management Development	172	12.90%
Knowledge Management	116	8.70%
Solutions Architecture	111	8.33%
Records Management	94	7.05%
Privacy	71	5.33%
Enterprise Architecture	70	5.25%
Capital Planning and Investment	50	3.75%
eGovernment	24	1.80%

Figure 5.

(extensive, moderate, minimal or none) on 10 different "specialized job activities." Figure 4 shows the top certification areas. Figure 5 shows the top activities where employees spend an extensive amount of time.

The Analysis Phase

As noted, the survey collected the respondents' estimates and/or self-assessment of the amount of time spent on specialized job activities, proficiency in general and technical competencies, proficiency in IT-related skills and certifications held. The analysis of the survey data is a necessary step of workforce assessment that precedes workforce planning. When the data are paired with other indicators such as the Federal Information Security Management Act (FISMA) or the Capital Asset Plan and Business Case (Exhibit 300s), a more comprehensive view of the actual "bench strength" of the workforce is provided. By correlating competencies, skills and certifications to the amount of time individuals spend on specialized job activities, we can make inferences about adequate skills and competencies or the gaps in specific areas.

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Editor's Note: Go to page 22 for an article about the Federal Information Security Management Act (FISMA).