BEST PRACTICE
Staffing

Ideally, staffing would be done by identifying the needed skills and then acquiring members of the test project who possess those skills. It is not necessary for every member of the test team to possess all the skills, but in total the team should have all the needed skills. In some IT organizations, management assigns the testers and no determination is made as to whether the team possesses all the needed skills. In that case, it is important for the test manager to document the needed skills and the skills available by the team members. Gaps in needed skills may be supplemented by such individuals assigned to the test project on a short-term basis.

The recommended test project staffing matrix is illustrated in Table 13. This matrix shows that the test project has identified the needed skills. In this case they need the planning, test data generation skills, and skills in using tools X and Y. The matrix shows there are four potential candidates for assignment to that project. Assume that only two are needed for testing, the test manager would then attempt to get the two that in total had all the four needed skills.

If the test team does not possess the necessary skills, it is the responsibility of the test manager to teach those individuals the needed skills. This training can be on-the-job training, formal classroom training, or e-learning training.

Table 13. Test Project Staffing Matrix

	Skills Needed			
Staff	Planning	Test Data Generation	Tool X	Tool Y
A	✓		✓	
B		✓	✓	✓
C	✓			✓
D		✓	✓	✓

Test Team Approaches

The following four different approaches are used to build a test team:

- Developers become the Test Team Approach
- Independent IT Test Team Approach
- Non-IT Test Team Approach
- Combination Test Team Approach

Developers become the Test Team Approach

The members of the project team become the members of the test team. In most instances, the systems development project leader is the test team project leader. However, it is not necessary to have all of the development team members participate on the test team, although there is no reason why they would not participate. It is important that one member of the test team be primarily responsible for testing other member's work. The objective of the team is to establish a test process that is independent of the people who developed the particular part of the project being tested.

The advantage of the developers test team approach is that it minimizes the cost of the test team. The project is already responsible for testing, so using project members on the test team is merely an alternate method for conducting the tests. Testing using the test team approach not only trains the project people in good test methods, but also cross-trains them in other parts of the project. The developers test team approach uses those people in testing who are most knowledgeable about the project.

The disadvantage of the developers test team approach is the need for ensuring that the project team allocates appropriate time for testing. In addition, the project team members may lack team members who believe that the project solution is incorrect and thus find it difficult to challenge the project assumptions.

Independent IT Test Team Approach

Testing performed by IT personnel independently of the project does not relieve the project personnel of responsibility for the correctness of the application system. The independent testing is designed to provide a different perspective to testing in order to provide extra assurance of the correctness of processing. The independent testing normally occurs after the project team has performed the testing they deem necessary (i.e., unit testing). Frequently, the system development team verifies that the system structure is correct and the independent test team verifies that the system satisfies user requirements.

Independent testing is normally performed by either information services quality assurance or a professional testing group in the IT department. While the project team is involved in all aspects of the development, the quality assurance professional test teams specialize in the testing process. However, most individuals in these testing groups have had systems design and programming experience.

The advantage of independent information services is the independent perspective they bring to the test process. The group is comprised of information services professionals who have specialized in the area of testing. In addition, these groups have testing experience in multiple projects, and thus are better able to construct and execute tests than those individuals who only test periodically.

The disadvantage of independent IT testing is the additional cost that may be required to establish and administer a testing function. Also, the development team may place too much reliance on the test team and thus fail to perform adequate testing themselves, resulting in overburdening the professional testers. In addition, the competition between the test team and the project team may result in a breakdown of cooperation, making it difficult for the test team to function properly.

Non-IT Test Team Approach

Groups external to the information services department can perform testing. The three most common groups that test application systems are users, auditors, and consultants. These groups represent the organizational needs and test on behalf of the organization. They are concerned with protecting the interest of the entire organization.

The advantage of a non-IT test team is that they provide an independent view and at the same time can offer independence in assessment. Loyalty, or charter, to report unfavorable results to only the information services department, does not restrict the non-IT group. The non-IT group has greater ability to act and to cause action to occur once problems are detected than does a group within an information services department.

The disadvantage of non-IT testing is the cost of the test. Generally, these groups are not familiar with the application and must first learn the application and then learn how to test within the organization. The non-IT group may encounter difficulties in testing due to lack of knowledge of IT's test environment and the project.

Combination Test Team Approach

Any or all of the above groups can participate on a test team. The combination team can be drawn together to meet specific testing needs. For example, if the project had significant financial implications, an auditor could be added to the test team; if it had communication concerns a communication consultant could be added.

The advantage of drawing on multiple skills for the test team is to enable a multi-disciplined approach to testing. In other words, the skills and backgrounds of individuals from different disciplines can be drawn into the test process. For some of the test participants, particularly users, it can be an educational experience to make them aware of both the system and the potential pitfalls in an automated system. In addition, a combination test team has greater clout in approving, disapproving, or modifying the application system based upon the test.

The disadvantage of the combination test team is the cost associated with assembling and administering the test team. It also may pose some scheduling problems determining when the tests will occur. Finally, the diverse backgrounds of the test team may make the determination of a mutually acceptable test approach difficult.

References

Guide – CSTE Common Body Of Knowledge, V6.1