Equilibrium in Managing Outsourced Testing

Even organizations with internal quality assurance departments may have to rely at one time or another on outsourcing to test their products. Unanticipated projects may come up or current staffing may be unable to meet demands. Whatever the reason, managing outside testers can be very challenging, especially the first time you do it. Combining external and internal testing resources can help minimize the impact if the right balance is maintained. This presentation details some of the lessons I learned in my first assignment managing outsourced testing. It explains how we can find equilibrium between managers and testers and between internal and external people, what we can do to ensure that the product maintains our high standard of quality, and how we can prepare for and respond when things go wrong.

Balancing People

One of the first things you'll need to figure out is how many people you're going to need. You will likely have the most success if you can mix your own in-house testers with outsourced people, because you gain certain advantages using your own people:
- You know them and how they work.
- You know their abilities and can better estimate their workloads.
- They know your product.
- They know your processes.

However, the reason you're outsourcing resources is usually because you don't have enough of your own people to do the job. And there are benefits you can gain from outsourced testers that you can't get with internal people. Outsourcing gives you the ability to quickly build up a large team of testers, you can look for people with specific skills, and if you only need them for a short-term project you don't have to invest in a long-term employee. Some of these benefits are especially valuable in web development projects where time to market is so important and development cycles are so short.

To determine the number of internal people you should try to include on your team you should evaluate which test areas are:
- The most difficult to learn
- The most critical to your product
- The most affected by development changes

These areas should be assigned to an internal person, if possible, to minimize the risk to product quality and maximize the benefit you will get from outsourcing. If your outsourced testers are assigned test areas that are very difficult to learn they will likely either not learn them well enough to test them well, or they will spend so much time learning the area that they won't have time to test them well. Once you know which features you should try to have tested by an internal tester you can estimate the amount of work those features will require and thus the number of in-house people you'll need.

Another issue you will want to consider is how many people you will be able to manage. External testers will likely require closer management than internal people, so you will want to maintain a lower ratio of testers to managers than usual. You may be able to use one or more of the outsourced testers to help manage as well, but remember that they will be best suited for time and resource management, and less suited for managing technical issues. Getting one of them to help you manage helps you bridge the gap between how they're used to doing things and how you want them done.

When we first started out I felt that a team of five outside testers and one inside tester would adequately cover the job. From our outsourced testing firm I requested that one of the testers be experienced as a lead to help with the management. After some time I found that I was overextended trying to manage all those people myself. The outsourced testing lead was able to help with distributing information and ensuring that people on her team were working on the right things. But because she was just as inexperienced as the rest

with our products she was unable to help manage all the technical questions, reviews of test plans, and oversee testing areas. One internal and five external testers ended up being too much for me.

Once another project finished I was able to rebuild my testing team and achieve a better balance of internal and external people as well as improving the tester to manager ratio. I added an internal testing lead and split the team in two. I also added two extra internal testers to pick up some of the mission critical test areas that I didn't feel were being adequately tested. When all was said and done I ended up with myself as the QA Manager with two teams comprised of a mix of internal and external testers. This mixture allowed us to balance the amount of internal people we had with the external people we needed to get the project done. And with fewer people for the leads and me to manage we were able to ensure that the right work was getting done well.

Standard of Quality

When you're working with an outsourced testing organization for the first time one of your biggest concerns is whether their level of quality will meet your expectations. Careful evaluation of the testing organization can help you find one that will most closely meet your standards. When looking at an outsourcing group you shouldn't assume that all consulting companies and all testers are alike. And just because a particular company is renowned for good programming doesn't mean that they're testing group is just as good.

You should ask for and check references of other clients to see how satisfied they were with everything from staffing flexibility to testing quality. You should also scrutinize their testing methodologies, the backgrounds of the testers assigned to you, and what tools they're familiar with. In short, you should do everything you would normally do when hiring an individual tester – because you are.

This is one of the biggest errors that I made in managing my project. I decided to take the easy route and use testers from the same organization that we had contracted our programmers from. Then I let them assign me testers without carefully reviewing what they had done. It would have been worth my time to interview each person at the start to make sure I was getting what I expected.

Once you've selected the testing organization you will use and you have people working for you they will need training. Regardless of how experienced they might be you will still have to teach them how you want some things done. They will most likely need to be trained in the following areas:
- Your product – They can test it a lot better when they know how it's supposed to work.
- Your testing processes – This will include testing phases, how to create test plans, and organization of tests and cases.
- Bug reporting procedures
- Your testing tools

You will have to vary the amount of training you give outsourced testers depending on the experience they have. If they already have experience using your test automation tools they won't need much help there. But if your application is web-based and they are only experienced with testing desktop applications then you'll have to do some training there first.

In my experience with outsourced testers I found that much more training was required than I had planned. As I reviewed the test plans being created by my new outsourced testers I discovered a common problem: they were all focusing almost exclusively on interface tests and very little on functional tests. So I sat down with them and found out that their principle experience and training in testing was working with interfaces to databases. They understood really well how to test that controls were aligned correctly, hotkeys worked and weren't duplicated, and text was displayed properly. But they didn't know how to build a set of data values to verify that functionality for a particular control worked properly. I ended up having to spend several days doing rudimentary testing training and then having them start over in the planning process.

In addition to providing training to outsourced testers it is essential to provide lots of documentation. This will give people something to refer to as they follow through with testing your product. You should provide documentation of most or all of the following:

- Specific quality measures – By having specific measures documented you let people know what quality means to you, what your ultimate goals are, and how you're going to know when you're done.
- Specifications of features – Because they're not as familiar with your company and products they will need more detailed explanations of how things are supposed to work.
- Test processes – Similar to training you should document how you do testing. This would include providing examples and templates of test plans and other testing deliverables, checklists and test guidelines.
- Instructions - This would be documentation for how to do things, like bug reporting, test automation source control, and other procedures.

By providing specific documentation on these issues you clarify many of the things that can get confused. When dealing with internal testing resources we frequently make assumptions about what people already know. By documenting this information you avoid the problem of false assumptions. Hopefully you have most of this information already well documented, but if not then this is definitely the time to start. And be sure that the documentation you and your testers create is stored in a central location, preferably with some type of document management software, so that when consultants move on their work is not lost.

When I first set my outsourced testers to the task of creating testing documents (plans, bug reports, and overview documents) they kept coming back to me to find out how I wanted things formatted and where documents should go. I realized that they needed examples to follow because they wanted to do things the way we were used to doing them. I had to create a document infrastructure with examples for them to follow so that their work could be carried on after they left.

Be Prepared for the Unexpected

There are enough things that can go wrong when you're working with an internal test group. But when you add a group of outsourced testers to the mix you also include the additional challenges that can come with them. Knowing what can go wrong can help you be prepared when the unexpected happens.

Since few projects are completed exactly according to plans, changes in the project are almost always necessary. These changes can be in the amount of time you have to work on the product, the amount of work you have to do, or both. In the case of time you may be given more time than planned, or your time frame may be cut short. Similarly you may have new features added to the scope of your project or features could be dropped. All of these cases will force you to change what testing work needs to be done and who should be doing it.

To anticipate these types of changes you need to be sure you have the flexibility to bring additional outsourced resources in as well as being able to let people go when they are no longer needed. In my project we didn't finish development until four months after our originally planned completion date. We were able to keep most of the people on that we had contracted with, but the additional time requirements did cause problems for some who had already made plans for things they would do when we were finished. Also, as we were able to bring more internal people in to test we no longer needed some of the external testers. We were fortunate enough to be working with a company that gave us the versatility to add and remove people as needed.

Aside from the changes in the amount of time you have or the scope of your work you may also encounter changes in your personnel. This is always a possibility with internal people but working with outside testers adds an additional risk. While your own people may feel some sense of loyalty to the company or the product you will not necessarily get that from contractors.

Outsourced testers may have to leave the project for a number of different reasons. If they have relocated to work on your project the demands of being away from friends or family may prove too much for them. Temporary absences may be required for everything from work on other assignments to vacations to renewal of visas. Be sure you have made arrangements ahead of time so you know how to handle such circumstances with your outsourced testing organization. Ask plenty of questions up front about why people may need to leave to see what other problems you might encounter. The fewer surprises you have the better off you'll be.

Finally, you may have to deal with personnel changes if someone just doesn't work out. You should not have to tolerate substandard work from outsourced testers. One of the advantages of using them may be that you've invested less in them so it's easier to let them go. You should take care to clearly document any problems you have with anyone's job performance, with as many specific details as possible. And the sooner you decide whether someone will work out or not the better off you'll be because the amount of time invested won't be as high.

In the project I worked on I had both internal and external people leave for all the above reasons and more. It was very frustrating to try to work around those issues, and some of the problems could have been avoided or minimized with better advanced planning. For instance if I had known that there would be Visa problems I would have been able to plan the required leaves into our schedule. And if I had been more willing to let people go early for poor work I would have been able to get someone better in to replace them before it was too late.

Conclusion

Although there are a lot of extra challenges when managing a group of outsourced testers there are benefits you can take advantage of. And if you can gain from the lessons others have learned you'll be that much better off in the long run. By learning to balance the number of outside people with the number of inside people and managers you can create an environment that capitalizes on the strengths of both groups. Properly evaluating, documenting, and then training the outsourced testers helps ensure that your expectations of quality are adequately met. And preparing in advance for changes in the project and personnel will help you deal with the unexpected challenges that you will face.