Successful Project Implementation

- A Practical White paper

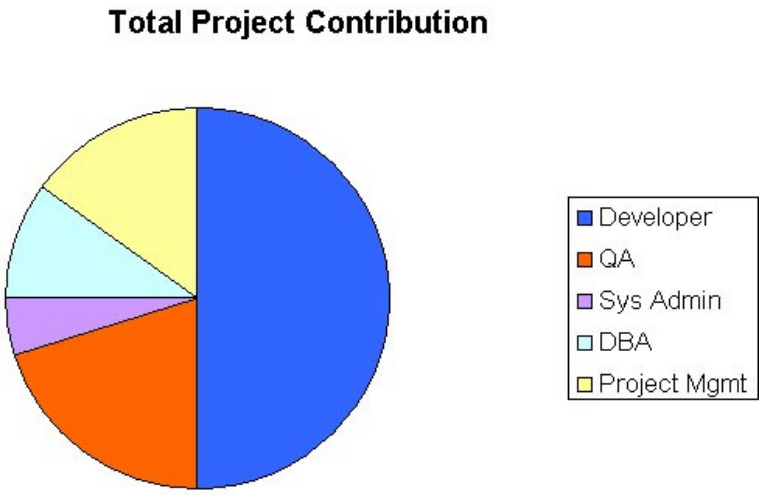
This white paper provides some important techniques on various topics of a development life cycle. Most of the techniques may be applicable to your project and some may not be. The white paper is a guiding tool and we encourage you to develop such methodologies to suit your project.

One of the key roles of a project manager is to estimate project time and cost. Time is Money. Sometimes projects are overspent or not completed on time. There are many challenges to accomplish this task. The factors could be defining scope, gathering requirements, identifying right team resources and expected delivery time. When you adjust one variable, many other variables gets affected. If you try to force a variable, undesirable results occur.

Requirement gathering is a topic of it's own. Requirements gatherer should be an extraordinary resource to document requirements. There may be situations to negotiate, re-engineer or adapt. How well the requirements are gathered is the key to design a module.

Analysis and design is the foundation of a project. If the foundation is not laid properly, you have to abandon subsequent phases and redo it and may be very expensive to do so. So lot of thought and time is required for this phase. You may be able to crunch development by assigning extra resources but analysis and design cannot be crunched.

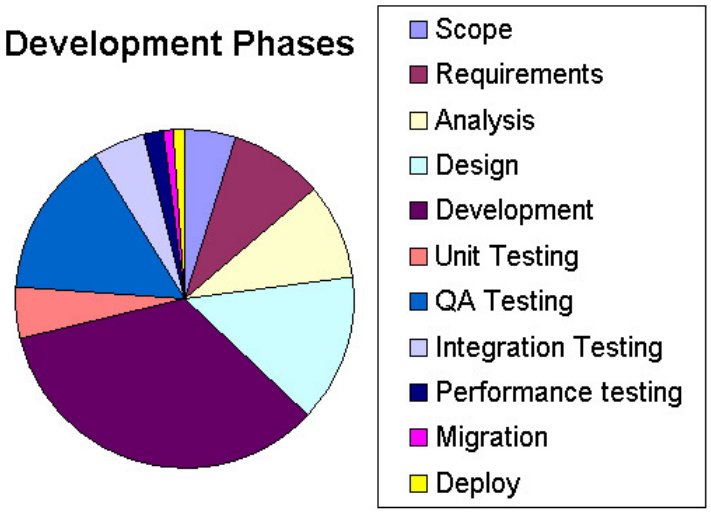
There is always a contingency factor to each phase of a project. A good estimate for each task should come from the team member who is actually going to perform the work. A rule of thumb is to estimate average time that would take to complete a task based on the resource pool. For example, an expert may do a task in 4 hours whereas an average developer might take little longer due to lack of experience or challenges. So on an average 15-20% of contingency is required.



One of the factors that affect timeline of a project is a conflict with other projects running at the same time and resource allocation. An ideal situation would be dedicated resources for a project. In a typical enterprise project this may not be ideal. It is very difficult for a resource to be pulled from a project and put back and it takes lot of his/her time to get back where they were.

The above pie chart shows a sample project resources. It is very important to include all necessary department/inter-department resources required for the project. For example ftp tasks, Automation of jobs, helpdesk, SOX team, Internal audit, PMO etc.

A good project plan should have any task that take at least 4 hours to complete. There should be tasks for module stabilization. There may be a confusion that why can't this task be a unit test or integration test. It is a good idea to allocate some percentage of time for module stabilization, which may include unit/integration tests. The reason for this is that there is no time to perform necessary fixes right after integration tests. The project manager/leader may be pushing the project to next phase whereas the development team may be uncomfortable moving forward without stabilizing the module. This will only jeopardize the implementation and the problems after that may be too expensive to fix.



The above picture is an example of various phases of a project. When setting up timeframe to complete a project, any delay in one phase is going to have an effect on the project. In most organizations, lot of phases other than development gets delayed and finally developers get the pressure to complete it on time. The organization may add additional resources to complete development project on time even though it did not start on time. This approach may or may not work and depends on the resources. There may be a learning curve for new resources in order to contribute to the project.

There may be situations where there are roadblocks, which prevents certain activity. It is the responsibility of a project manager to mitigate the risk and keep the project going. If the team consists good technical resources, any roadblocks and risks can be handled. A strong technical lead is very important to a project. Tech lead should work with all other developers and provide technical assistance and make sure the quality is consistent. It is the tech lead's responsibility to enforce coding standards at the time of development. Tech leads should perform periodic review of the product development. It's easy to correct anything when identified at the early stages of the process.

There is an approach to mitigate risks when dealing with multi department development projects. Even though the project plan may have sequential tasks for each department, there may be situations where one department is dependent on others. For example, if dept B requires an interface from dept A, department B does not need to wait for Dept A to complete it's development. Instead of that as mockup test interface can be produced based on design specifications. This is a parallel approach rather than serial one. This kind of approach reduces development risk and makes everyone on board at the same time.

There can be various test phases. It is very important to document test cases/scripts for testing. A negative testing is more important. The timing of integration test can be crucial to the project. The integration test cannot happen unless development is complete. When integration testers find issue in this phase, there should be enough time to fix and re-test. By changing one business rule should not conflict with other rules. A tight peer review process will definitely enhance the quality of any development project.

Performance tests are performed by simulating volume or concurrent processes and create a base line for future tests. This baseline can be used for future upgrades.

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