A Project Management Primer: Basic Principles - Scope Triangle

By Nick Jenkins

Called the "Scope Triangle" or the "Quality Triangle" this shows the trade-offs inherent in any project.

The triangle illustrates the relationship between three primary forces in a project. Time is the available time to deliver the project, cost represents the amount of money or resources available and quality represents the fit-to-purpose that the project must achieve to be a success.

The normal situation is that one of these factors is fixed and the other two will vary in inverse proportion to each other. For example time is often fixed and the quality of the end product will depend on the cost or resources available. Similarly if you are working to a fixed level of quality then the cost of the project will largely be dependent upon the time available (if you have longer you can do it with fewer people).

The astute reader will be wondering what happens when two of the points are fixed. This is when it really gets interesting. Normally this occurs when costs are fixed and there is a definite deadline for delivery, an all too familiar set of circumstances. Then, if the scope starts to creep you are left with only one choice - cut functionality. This more common than you might think, in fact its more common than not!

Cutting functionality may seem a drastic measure, but an experienced project manager will happily whittle away functionality as if they were peeling a potato. As long as the core requirements remain, everything will be fine. Additional functionality can always go into "the next release," but if you don't deliver the core functionality, there won't be a next release.

A really experienced project manager might even pad his project with a little superfluous functionality that could be sacrificed when the crunch comes (but you didn't hear it from me!).

A phenomenon known as "scope creep" can be linked to the triangle too. Scope creep is the almost unstoppable tendency a project has to accumulate new functionality. Some scope creep is inevitable since, early on, your project will be poorly defined and will need to evolve. A large amount of scope creep however can be disastrous.

When the scope starts to creep, new functionality must be added to cover the increased scope. This is represented by the quality arm of the triangle, representing the ability of the product to fulfil users' requirements. More requirements fulfilled = a better quality product.

In this situation you have three, and only three options:

1. Add time - delay the project to give you more time to add the functionality
2. Add cost - recruit, hire or acquire more people to do the extra work
3. Cut quality - trade off some non-essential requirements for the new requirements

If the art of management lies in making decisions, then the art of project management lies in making decisions quickly! When faced with scope creep you cannot ignore it. You need to
tackle it in one of the ways described above (more later) and the sooner the better. Delaying raises the risk of your project failing.

A poor project manager will see the scope triangle as a strait-jacket by which their project is irrevocably constrained. A better project manager will make better use of one or more of the axes and will shift the emphasis in the project to one of the other axes. The best project managers will juggle all three like hot potatoes and will make decisions every day which effectively trade-off time vs quality vs resources.

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