Ensuring Change Control Procedures are in place

Top Ten Tips to Reduce Development Costs #3

Executive Summary

by Martin Adcock, Managing Director of Experimentus

Without change control, system development can find itself in an uncertain state. "*For example*," Adcock explains, "*development may be initially performed against what is believed to be the final version of a requirements document. However, more changes might be made to the requirements while development continues each change without a proper impact assessment."*

"*As there is no procedure for consulting with or informing development of the changes, it may not be the case that the knowledge of the changes is passed on in a timely fashion*, Adcock says. "*Additionally, the impact of some changes might be so large that they can't easily be incorporated into the software at a late stage. In this case, if the changes are deemed to be vital, major development rework might have to take place. For these reasons, every change should be strictly controlled. Change can be allowed, but should take place only after a full impact assessment, to see how it will affect the project timescales and costs."*

Purpose of this document

This document contains an article on the subject of the importance of Change Control. The article is one of a series based on the 'Top Ten Tips to Reduce Development Costs' initially published in June 2008.

Ensuring Change Control Procedures are in place

By Tim Moore, Experimentus Senior Consultant

Change is inevitable and constant. After all, it's what drives us as human beings, evolving and adapting is what we do best as a species. When confronted with change, the human brain can calculate masses of data instantly in order to assess impact, firing new instructions to the parts of our mind and body that need to react or be aware.

It's surprising then, that so many organisations face problems when changes are made to software under development. With so many human brains and all that raw processing power, one would think that change would come easily, except we all know it doesn't. We constantly struggle to control and fight against change, even when deep down we know it's probably for the best. Why?

The problem most organisations face is Communication. Ensuring that everybody involved understands what a change is, what it means to the project and what it's going to cost (not just in monetary terms). Only once you have these three aspects working can you begin to 'control' change. Common occurrences on projects range from Scope changes that fundamentally shift the delivery objectives, to enforced regulatory changes, to minor wording, usability or aesthetic changes. Each change will impact the project, so gathering all the available information on risk and impact, deciding which changes to make and effectively communicating those decisions to the rest of the project team and the stakeholders, is absolutely vital to ensure the best chance of success.

Having a formal change process in place can help prevent scope creep and maintain the quality of the end product, but it's important to **ensure your process and procedures fit your needs**. Long-winded review and sign-off cycles for Change Requests often lead to teams bypassing or misusing the process, but not seriously considering the impact of a change can mean rework has to be done later once the true impact is seen.

Having a process that fits is only any good if you actually **follow it**. Baseline your requirements at a relatively early stage (certainly before any high-level designs are issued for sign-off) so that you can control & monitor the flow of change through the project, even if at this stage, controlling the changes themselves will be nigh-on impossible. If your organisation is subject to high levels of enforced change (e.g. regulatory) or minor cosmetic adjustments, build in the capability to react with a 'fast-track' element. Be aware though, that everyone needs to be invested in the change philosophy by agreeing to quick turnarounds and you will have to be stern with those that want to place every change through that route. Getting the raiser to document the deadline and the impact of not meeting that deadline is a good way of sorting out the really important ones.

Always assess the impact of a change. Get all the information you can in about how the change will affect your project and the system, documenting any risks and issues the change might generate (were it implemented or not). Ensure you seek impact from as many areas as you can – both on the project and externally - as changes can be far more wide ranging than a well meaning Business Analyst initially anticipates. It's far easier to discard a "no impact" response than it is to field a "why didn't you tell us about this" one three weeks later! Ensure that for each change you get a Red, Amber,

Green (RAG) statement (for delivery, not priority) and an effort estimate from each area impacted as this will feed your overall decision making process.

Empower individuals to make decisions where the assessed impact of a change is low. The Project (and or Release) Manager should be able to approve small changes without the need to wait for a Change Board meeting which might be a week away. Conversely, large or complex changes must not be the sole responsibility of any individual. The approval of higher risk changes should be decided on a consultative basis with the involvement of as many stakeholders as possible, especially those in your organisation with a strategic or organisation-wide perspective, like Enterprise Architects and Operations.

Document and communicate. Ensure that changes are communicated right across the project. Many artefacts may need to be amended, depending where the change occurs. It is important to ensure that traceability though documentation is maintained so that no conflicts or contradictions occur. Change records should be living documents in themselves and include a list of impacted documents and artefacts. Everything from the Budget, Project Plan, Requirements Specification and Test Approach through Design and Code to Test Cases, Implementation Plans and User Guides might need to be updated as the change ripples through your project and your organisation, and increasing the visibility of those that have changed will benefit the team. Use of collaborative software such as SharePoint, Drupal or Confluence to create a project space can help to engage, involve and inform team members and stakeholders alike.

Know when and how to stop. Late changes are a major pain point on many projects. Some are unavoidable, but many are entirely unnecessary. Setting a 'Change Freeze' is an important first step and only 'Showstoppers' should be allowed to breech that freeze. This shouldn't be confused with a 'Code Freeze' which exists at a lower change level - normally the few days before a system is packaged up for migration. Setting a longer period before completion where only urgent changes are considered allows delivery of the stated objectives with retained quality, and will allow team members to effectively concentrate on delivering the final push rather than impacting and re-estimating.

Saying no to a change can be difficult, especially where the customer might be demanding it. It's all too easy to sacrifice the quality of the product (and the social life and sanity of those working on it) just to placate a stakeholder that may not appreciate all the work that needs to be done to "just display the name" or "make it change colour" and the ripple effect it can have on areas like testing and training. But being strong and pushing back on changes is actually in the best interests of all parties, as it challenges the raiser to really think about the need for change and allows them (provided you've got all the information from your impact assessment) to make an informed decision on whether to affect the Cost, Time or Quality of the deliverable.

Implementing and sticking to a formal change control process is not an easy task, especially where project teams are pressed for time. But convince your team and stakeholders that controlling change will result in a better quality system being released into production; saving time and costs in the long run, and you will quickly start to see a change culture developing in your organisation. Who knows, some may even begin to embrace change (and as long as it's justified and controlled, so can you!)