Successfully Automating Development Workflows

by Allan McNaughton

Every software development organization has a workflow, whether that workflow is formally established or not. Some workflows have evolved by chance; others are the product of much thought and careful planning. Regardless of how well-defined your workflow is, no development team can survive without an efficient issue management system for managing their work.

Just as no two development projects are exactly the same, there is no such thing as a one-size-fits-all workflow. Although it is clear that a workflow should fit the team, up until now you may have been hard-pressed to find a reasonably priced issue management system that lets you work the way you want to—instead of requiring you to change your business processes to it.

Fortunately, those circumstances have changed. With TestTrack Pro from Seapine Software, you can finally adopt a team-based issue management solution and know it will work the way you do—without breaking the bank.

What Are Workflows?

Software process improvement consultants love to talk about "improving an organization's workflow". But what exactly is a workflow? The concept is actually quite simple. A workflow is a set of activities that moves an issue through a lifecycle effectively. It's the process, official or not, that allows work to get done.

A good workflow allows an organization to function efficiently, follow clearly defined paths, require specific decision points, and communicate rules that ensure work issues move forward. Does your team have a well-defined workflow? If not, it's vital to put one in place before projects get out of hand.

Perhaps you already have a functional workflow but you're not sure if it is the best fit for your team. If not, it's time to ask yourself certain questions. Is your workflow too rigid? If so, the workflow can kill productivity just as quickly as having no workflow at all. Conversely, if your workflow is not specific about how issues progress through the project's lifecycle, it's probably time to tighten operations up a bit.

Why Flexibility Matters

No matter what your current workflow looks like, TestTrack Pro can support it. Of course, TestTrack Pro includes a default workflow. But it can also be easily customized to fit your team's processes as they grow or change. TestTrack Pro's workflow capabilities are flexible, so much so that they can manage the large number of activities inherent in any complex, distributed business process.

TestTrack Pro's flexibility allows workflow decision points and rules to be added or changed on the fly. You can set up a workflow now, and still change it as your processes mature. It's also simple to ensure that issues don't fall through the cracks. TestTrack Pro has auto-assignment rules that act as a safety net to help enforce your development methodology.

You can even capture a multitude of task-specific information as issues progress through each step in the workflow. TestTrack Pro lets you easily add multiple custom fields to the workflow, thereby more closely matching TestTrack Pro to the task.

Automate Your Workflow

TestTrack Pro's workflow features are easy to set up and even easier to use. There are no complex configuration files or other hurdles to get in your way. You simply start TestTrack Pro, then point-and-click your way to a custom-tailored workflow solution that is specific to your business needs.

In TestTrack Pro, a workflow consists of building blocks that can be combined to support nearly any process. There are four key elements: states, events, transitions, and assignment rules.

- *States* - As an issue progresses through the various steps of a workflow it changes states along the way. Although issues are either open or closed, there are also different states that an open or closed issue can have. For example, an open issue could be Open, On-Hold, Fixed, or Pending Verification. Similarly, a closed issue might be Fixed, User Error, or Not Reproducible. You can easily define new states if the default states do not meet your needs.

- *Events* – An event defines an operation in the workflow that can cause the issue to move to a new state (e.g., Open to Fixed). Events can even trigger other operations, such as assigning the issue to other users, or just simply record that the event occurred.

- *Transitions* – A transition controls which events are allowed at a certain state in the workflow. You define the states and events appropriate for your process and then create transitions to guide the users' progress through the workflow. You can also define assignment rules to restrict which users can enter an event or which users an issue can be assigned to.

While the relationship between states, events, and transitions can become tricky in a complex workflow, TestTrack Pro's workflow diagrammer lets you visualize how your workflow will operate. The diagrammer presents the workflow model in an intuitive color-coded graph that makes understanding the relationships between workflow components simple.

Track Your Workflow

A custom workflow is a must for projects that require extensive audit tracing such as compliance with Sarbanes-Oxley or 21 CFR Part 11. You can tailor a custom workflow to meet your needs and ensure that every change to an issue is tracked quite specifically throughout its lifecycle.

TestTrack Pro can be configured to log changes at one of several administrator-selected levels of completeness. The most basic form of change tracking is historical issue logging. In this mode TestTrack Pro records the fields that change when an issue is modified. It does not record the values that change or protect the log from permanent deletion (when the issue is deleted, so is the log).

If historical issue logging does not suffice, you can enable comprehensive audit trail logging. With this type of logging, any information that changes when an issue is added, edited, or deleted is permanently recorded in a read-only audit log. You can easily trace back the workflow to view a complete trail of when and how the data was modified. This capability provides a more secure environment for a workflow with stricter auditing of changes and more accountability. Furthermore, when issues are deleted the logging remains because the audit trail is maintained in a separate repository.

Finally, if you really must be sure who made a change to an issue, as highly regulated environments often can require, TestTrack Pro supports electronic signatures. Electronic signatures require that users sign off on each change to an issue. You can also require that users enter a reason for making a change. TestTrack Pro further guarantees authenticity by limiting login attempts and sending notifications when logins fail.

Streamline Your Work

Sure, you can continue doing things the way you have, but wouldn't life be better with an issue management tool that actually adapts to how your team works? TestTrack Pro not only does everything an issue management solution should do—it does it the way you want it done.

No matter how simple or complex your workflow is, TestTrack Pro will provide a solid platform for growth. You can start as a one-person shop and grow into a Fortune 500-sized team, all while using the same tool. If you have struggled to work with other so-called "solutions", you'll be pleasantly surprised to discover that TestTrack Pro will bring an efficient end to your workflow problems.
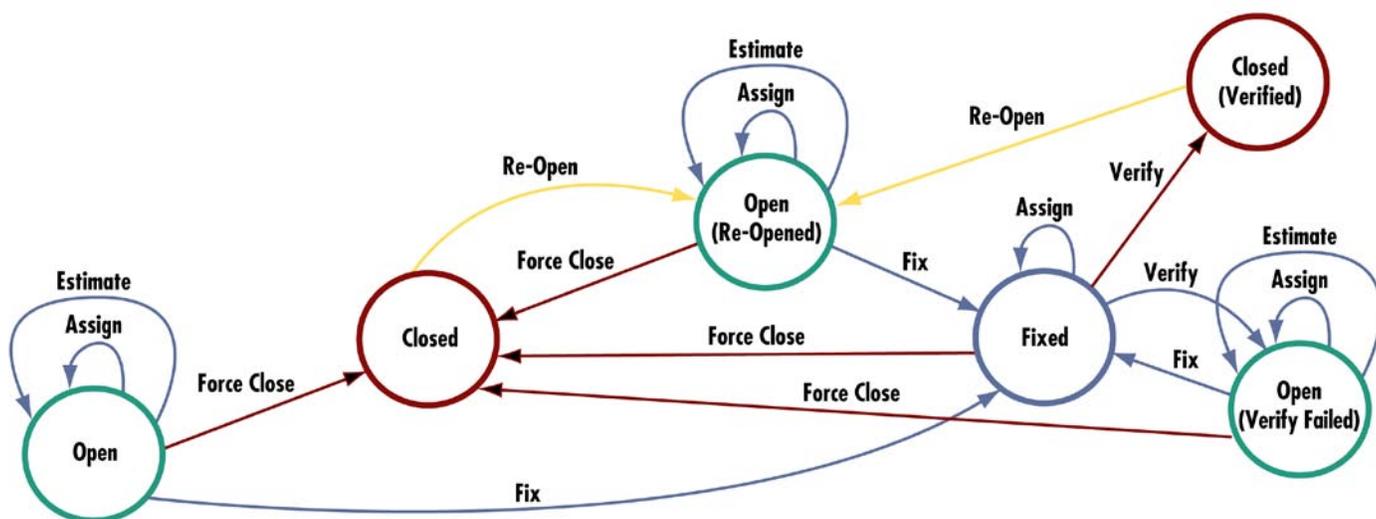

Figure 1: Diagrammed TestTrack Pro workflow

Select the Right Workflow for Your Team

Small, medium, and large teams all have different workflows. How does your current workflow fit your team?

- *Small Teams* — Many projects start out this way with one developer, no quality assurance, and no clear process. When an issue is found, the sole developer is responsible for qualifying, fixing, and closing the bug. If things go wrong, the developer may have to re-open the issue. Workflow needs are minimal because all key tasks are the responsibility of one individual.

- *Medium Teams* — Needs grow in a medium-sized team. It's now a collaborative environment with separate development and quality assurance teams. Workflow becomes more important because process plays a larger part in how teams interact. A suitable workflow lies somewhere between no process and a restrictive process.

- *Large Teams* — The workflow of large teams starts out as complex and becomes even more complex as the interaction between multiple stakeholders grows. The need to control the flow of activities tightly is very high. All changes must follow a strict approval process. The need to log exactly who changed what also increases greatly.

Regardless of your current workflows complexity, it's bound to change as your team grows. Be sure to look for an issue management solution that grows with you and can be easily adapted to your changing workflow needs.

About the Author

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