

A close-up photograph of a hand with the index finger pointing towards a wall. The wall is covered with numerous yellow sticky notes, some of which are slightly overlapping and peeling. The background is a plain, light-colored wall.

A STICKY SITUATION

Low-tech Test Tools to the Rescue

by Michael Bolton

Paul Holland, a senior test manager responsible for modem testing at Alcatel-Lucent, had a problem. On the one hand, he had an experienced team of four testers—the newest member had arrived two years earlier with five years of experience elsewhere in the company. Paul himself had a good handle on what needed doing and how it was being done. On the other hand, he had a challenge: to convey his understanding of the team's status to project managers in a way that not only kept them informed but also kept their attention directed toward the most important bugs and project issues.

Paul had tried session-based test management (SBTM) as described by James and Jonathan Bach [1], using both the ninety-minute timeboxed sessions and lightweight tools to report test coverage. He ran into two obstacles: Since his testers were highly skilled, they were often in demand for special projects and immediate advice from programmers, other testers, and product managers ("high-priority interrupts," as Paul calls them). Phone calls, in-person requests for help, and follow-up emails meant that the testers found it hard to set aside uninterrupted testing time. Paul also found that the coverage data generated from the SBTM sessions was subject to mis- or over-interpretation by stakeholders.

He tried at first to use an Excel spreadsheet as his tracking tool. This might have worked well had Paul been the only person who needed access to it. Since several people needed access to the sheet for reviewing and updating, file locking was a problem. Having opened the sheet, people would inadvertently leave it open (and locked), and upon encountering a locked file, people who were temporarily unable to update the sheet would forget to do it later. As a result, the work and the project tracking got out of sync. For about a year and a half, Paul used a simple file in OneNote to manage charters—mission statements for the testing sessions—and their results. This worked reasonably well within the test team, but something was missing. Paul had to push out both charters and project status to the team, and visibility outside the team was poor.

The company had recently begun to adopt some agile practices, but these were largely focused on the programmers and the product managers. One day, as Paul went past a Scrum meeting, he noticed a whiteboard covered in sticky notes. The whiteboard was the center of an active discussion between programmers and project managers about the project status. After the meeting, the whiteboard and the notes on it remained as a kind of information radiator [2].

"I suddenly realized that if they could do that, I could too," Paul said. He began by dividing the whiteboard into three columns: To Be Done, Work in Progress, and Done. He used stickies to represent sessions based on half-day units of work, as shown in figure 1. "Half-days are really easy to see on the board, and they're really easy to calculate. There didn't seem to be any point in tracking things more closely than that. With all the other stuff they have to do, I figured that a tester could accomplish between one-and-a-half and two hours of on-charter work in the morning and in the after-

noon. We could track time down to the hour, but why bother? Everybody would feel micromanaged, and it doesn't serve any purpose. So our approach was a blend of session- and thread-based test management." [3]

On each sticky, Paul wrote a short description of what needed to get done in each session, in the form of a specific charter or concisely expressed test ideas. He arranged the stickies so that the highest-priority work appeared at the top of each column.

Color provided the opportunity to add more detail at a glance. "The two big coverage areas we had to deal with in this cycle were, first, a new physical layer retransmission feature to reduce the impact of impulse noise and second, seamless rate adaptation to give us a more stable line in varying noise conditions. We wrote those charters on green and blue stickies respectively. In order to work through a test cycle, we needed to set up our lab equipment. That represented a distinct category of work, so we gave that bright yellow. We assigned purple to the testing of a new modem firmware release, which was separate from the retransmission and SRA work. Then, we got started on performing the testing."

As a tester took on an assignment, he wrote his name on the sticky and moved it from the To Be Done column to the Work in Progress column. As each task was completed, the tester moved the sticky to Done.

The board started to reveal information almost immediately. Since there were four testers on the team and ten half-days in the week, Paul expected forty stickies per week to move across the board. That didn't happen. By the end of the first week, only thirteen charters had been fulfilled. "We seemed to be missing about three-quarters of the work! People were busy doing useful things, but that wasn't being reflected on the board, and, therefore, it wasn't visible to me, the team, or our clients. So we started asking ourselves some questions."

The first observation was that setup had taken a lot more time than expected—not one person-day, but six. "We talked about that. One proposal on the table was to make sure that we allocated six person-days for each new round of testing, but when we talked it over, we realized that this was the first time we'd done this kind of setup, and we'd learned a lot. So we wrote the six-day business down as a one-time learning expense. But the exercise was really cool, because making the progress (or lack of it) visible helped us realize that some is-

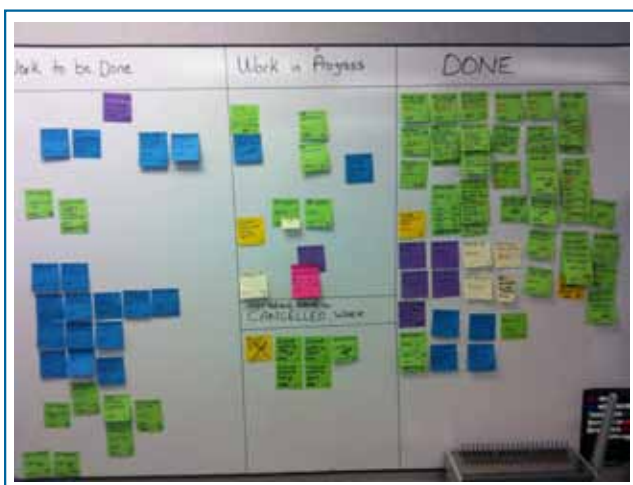


Figure 1

sues weren't visible enough quickly enough." That led to a sticky of a new color. "Now, when a tester runs into an issue—anything that slows down testing or makes it more difficult—the tester notes the issue on a bright pink sticky. When that appears, the issue is visible to the whole team, including programmers or managers who are visiting. Bright pink stickies are also used to indicate charters that have found bugs. Those charters will stay in the Work in Progress column with the pink sticky attached until the bug is resolved and re-tested."

Many of those visits from programmers or managers were for the aforementioned high-priority interrupts, i.e., unanticipated and unscheduled tasks. "Initially, we weren't tracking these interruptions, but they accounted for a good portion of the missing work. We decided that we had to keep a handle on those tasks. Now, when we have an interruption from a product manager or a customer request, we create a sticky note for it. We almost always put them in the To Be Done column first, but if they were high-enough priority, testers would start with them right away and put them in the Work in Progress column. To differentiate the interrupts from work we had expected to do, we started tracking interrupts with pale yellow stickies, so we could see them at a glance, too." Why use not a bright yellow sticky, to indicate both the urgency and the unexpectedness of the work? "Simple: Bright yellow was already taken."

The combination of missing and "interruption" stickies revealed even more information. "One tester was still being asked to do a lot of work on the previous project and didn't realize that he needed to use the board to account for that, too. We also found that we were receiving about two person-days per week of urgent special-case work. Knowing that, we can prioritize incoming work and set our expectations about the routine stuff. We revisit the priorities and update the board one to three times a week."

The team found that specific charters sometimes involved more work than expected, so as work moved into the Done column, testers noted right on the sticky the amount of actual sessions needed to complete the work. "We can't ever know

for sure how long a charter takes until it's been fulfilled. Still, the board has been really helpful to us in terms of calibrating how much work to assign to a session."

Working with the board helps to frame discussions about how to distribute work. "The testers sometimes choose to do pair testing when they're working on a charter in an area that's unfamiliar to them or that they feel needs the extra attention of two testers. In this case, they simply write both testers' names on the sticky note and proceed as normal." It also helps to stimulate thinking about coverage. "I always want to see a backlog of work that we could do in the To Be Done column. If I don't, I get concerned that we're not using our imagination with respect to new test ideas."

"The backlog also helps us to line up testing with the ship dates. Like most other development groups, we're really heavily date-driven. Conversations with our project managers are a lot easier when we all compare what's in the To Be Done column with the intended release date. By the end of the project, we aim to have nothing but low-priority test ideas in the hopper. So we move all the most important stuff to Done as fast as we can. We advise the project managers, but, ultimately, they set both the priorities and the release date."

Toward the end of the project, Paul reviews the test effort with the managers. "I keep a spreadsheet with a list of all of the sessions that we've chartered. Within that, there's a set of sessions performed, along with the bugs and issues that we've found and that are still open. Nobody's really interested in closed bugs or issues, so we don't usually bother talking about those. What's much more interesting to the team is the list of charters that we haven't performed and the risks associated with not performing them. But, typically, those have been on the board for a while, and we've already had conversations about them. People have been thinking about them for a while, so the reviews go pretty quickly."

Paul and his team have been using the board for almost a year now. "Since we brought this in, we've found we can be aware of what's on the plate, so that we can adapt to whatever's coming at us. And when we have to say 'No' or 'Not yet,' people can see why right away. The visibility really helps us to be responsive."

In the software business, we often think of tools as the application of high-technology automation. Yet a tool is anything that extends our capability. Sometimes the simplest, lowest-tech tools—even the humble sticky note—give us just the help we need. **{end}**

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Sticky Notes

For more on the following topic go to www.StickyMinds.com/bettersoftware.

■ References