

Exposed Tracking

Rachel Davies

Connextra
Studio 312, Highgate Studios
53-79 Highgate Road
London, NW5 1TL, UK
+44 (0)20 7692 9898
rachel@connextra.com

Abstract

This report outlines a technique used by developers, at the company Connextra, to monitor their actual software development practice and to improve their software development process.

The technique used is to “expose” an aspect of development practice, by visibly tracking the teams day-to-day use of a practice. It has been observed at Connextra that the simple act of making team activity more visible causes change in the team’s ongoing daily practice. Exposed tracking of development activity creates a stimulus which can improve the way the team works.

The experience on which this practitioners report is based is drawn from working in a team using XP practices. However, the exposed tracking technique is considered by the author to be independent from any specific XP practices and so is available for use by any software development team.

Keywords

Agile, Tracking, XP.

INTRODUCTION

Increasing the visibility of project artifacts is not a new technique. XP already makes use of it, by increasing visibility of what is actually being worked on. For example, in an XP team the iteration plan is physically exposed, being made up of index cards, representing stories and tasks, on a pin-board rather than stored as an electronic file.

Exposed tracking takes this principle further, by making visible to the team not just what is being worked on but how well our actual practice meets our intended plan.

APPLICATION

The development process used by the team at Connextra is based on XP with some additional, complimenting practices. The company was founded from the start to work on XP principles in 1999 and the development team at Connextra is made up of seasoned developers, all of whom have been using XP for at least a year.

Due to the level of experience and maturity of the team, a mode of working has evolved where the team does not rely on individual team members in the role of Coach or Tracker but practices Collective Ownership of their software development process.

To provides a way to review and improve aspects of their development process, the team has incorporated a retrospective [1] into their three week iteration cycle. At the end of each iteration, this retrospective allows the team to look back on the last iteration and make adjustments to the way they work in the next.

In this retrospective, the team identifies the good, the bad and the ugly (things that puzzled them) in the previous iteration. Following group discussion, actions are agreed by the team. Sometimes an action is to use exposed tracking, that is to track a particular team activity by using a visible record maintained by the team as it works.

At the start of the next iteration, the actual tracking mechanism is setup. This may be a simple checklist on an index card, but it must be located where everyone will see it so that it gets updated as part of our normal days work. As the iteration progresses, individual team members will update the log, with pairing acting as our conscience.

In the next iteration retrospective, the team reviews the iteration and agrees any future action. Team feeling acts as a barometer on the way the team is working. The team may agree there was no problem and that the tracking mechanism should not be maintained in the next iteration.

Tracking artifacts are owned by the development team, the data gathered may be discarded after the retrospective. At Connextra, exposed tracking has been instigated by the development team for their benefit. It is not known whether this technique would work where it was imposed on a team by the business.

EXAMPLES

Below are some samples issues to which the Connextra team has applied exposed tracking.

Frequent Releases

For reasons outside the scope of this report, no automated Continuous Integration tool (such as Cruise Control) is used by the team. Pairs have to make a conscious effort to release code into the baseline frequently (several times a day). Frequent releases help to reduce the pain of integration, as there are fewer code collisions. To release code frequently during the day, each pair need to remember to think about how they can break down their work to incorporate several release points. The team decided at a retrospective to track how often pairs were actually releasing code a day.

Implementation

Our team use a single release point, a workstation we call it the “Moo Station”, so our release log became the “Moo Log”.

For this log, we used an index card per week stuck to the monitor of the release machine, with a row on the card for each day of the week. Every time a pair released code, they added a checkmark (in the form of a cartoon sketch) to the log.

Observation

Pairs really started to notice when they were neglecting the practice of frequent releases. The number of releases per day increased.

Pair Rotation

Pair Rotation, was raised as an issue in a retrospective. The team aim to pair with a different developer every day and to avoid pairing “cliques”. Rotating pairs has the benefit of spreading knowledge across the team quickly.

The team agreed to use an index card above each story on the planning board, for pairs to sign up on each day. Being able to see past pairings over the iteration when picking partners, helped us to circulate more frequently.

Story/Task Progress

To make it easy to see what tasks are complete on the Planning Board a simple scheme of colored stickers has been adopted.

Each Story card starts with a red sticker, when it is “developer finished” the red sticker is eclipsed with a yellow one and green when it’s customer accepted. This scheme allows us to make the sticker red again, where issues arise such that the story does not pass a customer acceptance test. We use blue stickers for task cards which just go green when developer finished. This gives us a JUnit “green bar” effect across the planning board as the iteration progresses. If the team can tell at a glance when we are not progressing as expected then we can make adjustments during the iteration.

Gold Cards

Each developer in the team has two Gold Cards [2] to take a month.

To help us to remember to take our Gold Cards throughout the month rather than leaving them to the end we use a “Gold Card O-Meter”. The team’s Gold Cards are pinned up on our Planning Board in a row and every day, at our morning standup meeting an arrow is moved along to show how many cards should have been taken. This gives us a daily reminder as we can see whether the ar-

row is ahead or behind the row of cards which have actually been taken.

Also, weekly “Show & Tell” sessions have also been introduced. On Friday afternoons developers show the rest of the team what they did with their Gold Card time. The opportunity for a developer to show off what they actually achieved on their own projects is a good way of sharing the information but also helps to keep developers focused on using their Gold Card time sensibly, so in this way the “Show & Tell” is also exposed tracking.

CONCLUSION

Although exposed tracking appears similar to traditional software process improvement methods, being based on tracking measurements over time, the key difference is that the aim is not to obtain objective measurements over several iterations, in order to compare and contrast ways of working, but to directly address issues raised by the team about the way they are working now by generating feedback.

The feedback gained by using exposed tracking to help the team to focus on smarter ways to work in a development team retrospective. As a situation improves tracking it is dropped.

The exposed tracking technique reinforces good practice but might be an indicator of manual practices which are in need of automation. A team need to ask why have they need to resort to using this technique and try to establish the root cause of the problem.

A limitation of exposed tracking is, that like many other XP practices, this technique works best for a small co-located team.

INFORMATION AND QUESTIONS

For more information, contact: rachel@connextra.com.

ACKNOWLEDGEMENTS

Working with the team at Connextra has been a great experience without which this paper would not be possible.

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