



# Borland on Borland

A Case Study in Enterprise Transformation

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**“At Agile’s core is a process that seeks more predictable delivery schedules, higher quality products and greater user satisfaction. We made the decision that to be a more agile business, we needed to run a more agile software delivery organization.”**

–Pete Morowski, Senior Vice President of R&D, Borland Software

## Executive Summary

In 2006, Borland’s leadership made the decision to transition its development organization – more than 350 engineers, working on a broad portfolio of development projects from 13 different locations around the world — to a more agile approach as part of an effort to vastly improve performance, be more responsive to customers and improve quality.

There are many challenges that an established software organization faces when shifting to Agile. While there is a wealth of information and literature on the topic, much of it is most applicable to small teams working on Greenfield projects. But when you are contending with several teams, multiple projects and a mix of work – new products, existing products, maintenance – there is an art to figuring out how to adapt Agile so that it works for the business.

*How can enterprises adapt Agile to match the chemistry of an established software organization without losing any of the benefits of the approach?*

This paper draws upon Borland’s experiences to answer this question and highlight six major considerations that any enterprise making an Agile shift must tackle:

- Empowering self-managing teams in a distributed environment
- Measuring the benefits of transformation
- Applying Agile in a heterogeneous tooling environment
- Planning in an Agile world
- Quality in Agile – A new paradigm for QA
- Managing the incremental transformation

## Overview: Borland Agile

As Borland evolved over the last 25 years, acquiring companies and shifting business strategies, the delivery organization had become a collection of teams with different cultures, processes, release cycles and levels of performance. The cost structure of the organization wasn’t aligned with the strategic objectives of the company, and the teams were struggling to consistently meet delivery goals.

In February 2006, Borland piloted its first Agile project to determine whether Agile could help the organization achieve three key goals: more frequent releases, increased ability to demonstrate progress to senior management, and deeper customer involvement in the delivery process. The pilot was a success; the team released the product ten days early with more features than originally planned. The team also established a highly productive, collaborative relationship with a key strategic customer.

Borland decided on a stepwise, iterative approach to its transformation based on geography, converting one development location at a time. There would be no hollow mandated Agile “light switch” in which everyone would begin transforming immediately. Like most organizations considering an Agile transformation, Borland was facing the challenge of making a major process transformation while still needing to execute on an aggressive product roadmap.

Today, Borland is in “the thick” of its transformation; with approximately 50 percent of its teams utilizing agile methodologies – and the benefits are tremendous. “Borland Agile” is Scrum, with sprints of three to four weeks in length – depending on the team. Borland has more than 350 developers in five geographic locations, working on nine product groups. Some teams work independently on products, while other teams must coordinate as their products are part of integrated suites.

## **Empowering Self-Managing Teams in a Distributed Environment**

As Borland began to scale its Agile efforts, it quickly became apparent that teams needed a better way to collaborate, share information and manage their work. The whiteboards, corkboards, post-its and index cards used by many Agile teams were fine for those that were co-located, but they couldn’t scale as more of Borland’s teams made the transition. Self-managing teams make several decisions and changes in their “plans” each day, and keeping everyone on the same page was becoming impossible. Further, separate sets of boards and notes meant that managers and executives had no cross-project visibility – the plans, tasks, progress and backlog for each project lived only on that team’s board.

To this end, one of Borland’s Agile teams partnered with a strategic customer that was also managing an enterprise Agile transformation to develop an enterprise project management and execution application that would support both Agile and traditional models of development, Borland TeamFocus.

“TeamFocus is a lightweight, easy-to-use project management tool that sits on top of traditional ALM tools. In our case, we’re leveraging TeamFocus on top of Borland StarTeam and Borland Caliber,” said Julie Olivier, Scrum Master and product manager at Borland. “We use it to plan releases and sprints, manage our backlog and user stories, and collaborate with burn down charts and corkboards. The tool is designed to support the way Agile teams work, empowering them to be more effective at their jobs while automatically giving management and executives visibility into their progress.”

Today, Borland’s teams use TeamFocus to manage their daily stand up meetings and sprint reviews. It also serves as the daily “workbench” where Agile teams can chart progress against the daily plan, keep updated on changes, and stay on the same page throughout the execution of the sprint.

“TeamFocus has really made us more efficient – especially in our daily stand ups,” said Aditya Mishra, senior development director at Borland. “If a decision can’t be captured in two minutes or less during a stand up, then it’s likely to come up again and again. Small decisions that have big impact are made every morning. TeamFocus captures everything on the virtual team board, which is then reflected on every team member’s desktop, and completely takes the rework out of prioritization and QA meetings.”

TeamFocus has also significantly reduced the time and effort Borland’s teams spend communicating with customers and business stakeholders. Rather than having several conversations with a customer to update them on sprint progress, Borland’s teams can involve their customers in their processes, including them in the sprint reviews which are conducted using the team boards, backlogs and burn down charts.

From an organizational perspective, TeamFocus gives department heads a “roll up” of all their projects where they can view current, meaningful in-flight metrics such as features progress, schedule risks, and significant events. Since TeamFocus works directly with ALM artifacts such as requirements and tasks that are stored in StarTeam and Caliber, the status information is always accurate, up-to-date and in context of the plan.

## Measuring the Benefits

“The biggest fear in going Agile is that you will lose control. But, the reality is that you never really had control in the first place,” said Morowski. “Project managers build schedules, but there is really no connection between these dates and windows and what is going on underneath. No visibility into the actual work. Schedules become a reporting tool, not what is driving the delivery process. Agile can change that.”

Borland’s leadership understood that to achieve the ultimate goal of its Agile transformation – to get better at predictably delivering high-quality software – they would need to get visibility into processes, establish a baseline for performance and be able to measure progress.

Enter TeamAnalytics, which provides business intelligence for ALM. TeamAnalytics automatically collects data from all of the ALM tools Borland’s teams use. Its data warehouse analyzes current and historical data – key ALM metrics, including quality trends such as defects, code coverage, and test automation, as well as performance trends such as team velocity and schedule variance. – across all of the organization’s projects, presenting actionable information in interactive dashboards. Because TeamAnalytics interacts directly with the tools that team members use to manage their work, it contains current, “monitored” data that helps Borland’s managers and executives avoid unpleasant surprises, prioritize and make quick decisions.

“I use the TeamAnalytics project overview to start my day. It shows me which projects are coming close to release, where they stand as far as tracking to plan, defect rates, test coverage — everything I need to know,” said Chuck Maples, vice president of application development for Borland. “But, the best part is the time savings. In the past, I would spend two weeks working with my directors to gather status information and create a PPT deck for our monthly operations reviews. Then, inevitably, I’d be presenting a deck full of outdated information. Now, I have that information at my fingertips – all the time.”

With the ability to actually see across tools into the processes of execution, Borland’s executives have the confidence they need to trust their self-managing teams. Everyone from the individual project team members up to the organization’s chief executive can objectively measure and communicate the progress of individual projects and the Agile transformation as a whole.

“TeamAnalytics trending capabilities serve as an excellent ‘early warning’ system. For instance, it can show me the Sprint history for a team that is nearing release and is pushing through its ninth sprint,” said Maples. “If I see that that this team typically averages about 6 defects in the ninth sprint, but currently has 30 that is a big red flag that this team is not likely to make its release date.”

## Applying Agile within a Heterogeneous Tooling Environment

Borland's delivery teams – like those in most enterprises – use a mix of tools and processes to complete, manage and store their work. Borland's teams store requirements in several instances of Caliber, in Word documents and Excel files, and even in StarTeam. Different teams manage code and changes in multiple, separate instances of StarTeam. Release planning and tracking changes constantly, and the relevant data is housed in several different repositories. In essence, each team has its own ALM environment.

“Agile requires a great deal of discipline. To succeed, you need to have sound engineering practices and tooling,” said Maples. “Almost immediately, Agile exposes those areas that need greater attention. And how you deploy and structure your data will determine the accuracy and scale of your project.”

Because the process of shifting to Agile must have minimal negative impact on the organization's ability to maintain its aggressive release schedules, trying to standardize and consolidate tools and repositories all at once in order to transition to Agile wasn't an option. It would be too disruptive. Yet, to succeed at a transformation and become a more effective organization, Borland needed to establish certain standards and identify ways to improve in some of the core areas of ALM.

The first step was to define standards for data descriptions – uniform definitions for different activities and assets across the organization. A single definition for goal story, requirement, user story. This helped to make it easier for teams to understand each other's work, and allow them to manage dependencies across teams. Next, Borland made TeamFocus the standard management console for all of its delivery projects. TeamFocus sits on top of all the various ALM tools and repositories in Borland's delivery organization and provides a single Agile “dashboard.” This enabled Borland's teams to immediately begin adopting Agile practices without making significant changes to tool support.

“The beauty of TeamFocus is that it provides the management capabilities that I need to lead my teams – regardless of how the members choose to work,” said Olivier. “Stories, tasks, assets can be viewed and manipulated in TeamFocus – or in Caliber or StarTeam – and all of the changes are reflected across the various tools.”

## Planning in an Agile World

One fear that is common to organizations considering Agile is the perceived lack of planning in the approach. Self-managing teams are completely focused on the work at hand – the current Sprint. They have a list of priorities, and they plan in three week increments. While the pace and fluidity of Agile may give the impression that the teams are driving forward with little regard for a long-term road map, the “flatness” of Agile teams – and the increased interaction between developers and business stakeholders/customers – actually makes it possible for teams to be more aware of business objectives and priorities than they might be in a traditional model.

To drive alignment between its Agile teams, marketing and product management organizations, and ensure that the work that is happening – sprint by sprint – maps back to business goals, Borland relies on the connection between TeamFocus and its core ALM products to link strategic goals and plan items directly to the ALM artifacts that are associated with them: requirements, user stories, tasks, and test cases.

How does this work? Marketing creates the overarching goal of a product release, defining and storing the high-level requirements in Borland Caliber. Product management then breaks the requirements down into goal stories, and prioritizes these, along with any change requests, in a backlog. Teams then decompose the goal stories down into actionable pieces (user stories). The user stories are stored in TeamFocus, but are linked back to the goal stories and requirements. In planning their sprints, the teams estimate the size of the user stories and determine the content of a sprint based the team's velocity (capacity) and the user stories priority (business value).

Then, as the teams complete user stories, TeamFocus tracks progress and links this information back to the high-level goal stories and requirements in Caliber. At any time in the release, Borland's marketing or product management team has visibility into how the release is progressing in terms of which goal stories are completed, how much work is still outstanding, and how that work compares to remaining team velocity (capacity) for the release.

"It's really easy for me to see how a release is progressing in terms of its most critical goal stories," said Olivier. "At any time I can see which of these have been completed. For those that haven't been, I can see how many story points are remaining and how many estimated points I have left in my release based on my team's projected velocity. So, I know in any given sprint how the team's efforts are mapping to the established strategy."

Agile's short sprints require that project planning be fluid and compressed. Agile managers must be able to quickly make informed decisions to keep planning on track. Because TeamFocus gathers real-time status information from multiple sources – change requests from StarTeam, requirements from Caliber, tests from Silk Central Test Manager — management is able to evaluate all the pertinent information needed to make intelligent planning decisions. For instance, in every delivery project, a certain amount of time must be allocated to change requests. This remains true in Agile. However, it's difficult to effectively plan a sprint without an understanding of what types of work must be done – maintenance, fixes, patches, change requests, new requirements, testing – and the volume and priority of each. TeamFocus gives managers this visibility, and provides context in terms of business value, taking the guesswork out of sprint planning.

"You can't plan a sprint without a thorough understanding of what types of work are in the queue. Otherwise, you are just guessing. Oh, well let's just say we'll spend 50 percent of this sprint on new requirements and the rest on change requests," said Mishra. "That is not Agile planning. You need to know exactly what universe of work is on the table and how that work stacks up in terms of business priorities. Then you can figure out how to allocate your efforts in a Sprint. TeamFocus gives me more trust in my planning and prioritization."

## **Agile Quality: Turning Traditional QA Models on Their Heads**

Quality Assurance is an area that many enterprises struggle with when they shift to Agile. The initial tendency is to look at each sprint as a "mini-waterfall" with a testing window at the end. However, the reality is that Agile calls for a much bigger shift. It requires a fundamental change in the way traditional delivery organization's structure their teams and their work, because in Agile testing happens in concurrence with development activities in a sprint.

One area where Borland was particularly challenged was around test automation. According to Agile principles, every feature that gets developed within a sprint must have associated test cases that have been run. Unfortunately, automating the tests is not always possible – and sometimes creates waste. For instance, if the user interface of a release is going to change significantly in a given sprint, any test cases that are created and automated will have to be scrapped and redone.

To overcome this issue, Borland made a slight adaptation to this Agile practice. In “Borland Agile” a feature or story is completed in a given sprint if the team has designed the test cases and run them to ensure they work. The automation is then completed in the next sprint. There are many risks involved in taking this approach. One of the tenets of Agile is that there is a clearly defined set of deliverables that must be met before a user story (or feature) is considered complete. By changing the completion criteria, and signing off on a feature or user story pending an action that will take place in the following sprint, there is the risk that the team will forget to complete the action – automate the tests – when they get focused on the next sprint.

Because TeamAnalytics pulls data from SilkCentral Test Manager into its management dashboards, Team managers have the visibility they need to make this adaptation work. TeamAnalytics shows them the cumulative number of test cases for the release, and if this number fails to go up in a given sprint, it is likely that the tests from the previous sprint were not automated.

“The Silk products have been transformational in ensuring the quality of our products,” said Mishra. “And, by connecting them with our management solutions, they have helped us solve one of the thorniest issues related to our Agile shift.”

## **Managing a Successful Transition**

“The reality is that as I lead our Agile transition, I have to evaluate it from the perspective of the business – how is Agile working for us? I have to be able to look at both worlds and understand where the application of Agile will achieve the best results,” said Morowski. “Ultimately, I could care less what methodology we are using as long as we are able to deliver predictable, high-quality results. To manage that, I need intelligence. TeamAnalytics lets me see what’s working and what isn’t, identify trends, surface areas that need more attention, and make informed decisions.”

Chances are, most enterprise development organizations will never be completely Agile. Nor should they. The reason for any transformation is not to standardize on a process, but to create a high-octane, optimized delivery engine that makes the best use of its resources to deliver business value. Borland’s TeamFocus provides a single solution to manage both Agile and traditional projects – rolling them all up into a single dashboard. Further, TeamAnalytics gives Morowski a holistic view of delivery across his portfolio, into specific projects and down into teams and tasks. This information has helped him plan and manage Borland’s transformation.

“As you are making decisions on how to transform an entire organization, visibility into current and historical metrics is absolutely critical,” said Morowski. “It’s the only way to plan a successful transition. The data is what helped me to understand the key benefits that Agile brings to teams, so that I can identify the projects that make the most sense to transition.”

For example, Morowski could look at TeamAnalytics trend data from all of the completed Agile projects and perhaps identify three key areas where these teams have seen significant improvements: making release dates, decreasing defects and lowering escalations. He can now look at the rest of his projects to uncover which are struggling the most in these areas – perhaps these are the candidates to be transitioned in the next phase?

On the other hand, Morowski may find that he has a couple of product teams that are consistently delivering excellent results using traditional development. It is likely that he won't ever transition them to Agile. Why disrupt something that is obviously working - not every project is suitable for Agile, and Borland's leadership now has the information it needs to decide how to apply Agile to evolve the most efficient, productive organization.

## **Enterprise Transformation: Success Factors**

### **Visibility**

By nature, Agile promotes visibility. Daily stand up meetings and sprint reviews give excellent views into how projects and teams are progressing. However, in the enterprise, visibility must extend beyond the team room. Project managers need to be able to see how their teams are progressing, department heads need visibility across a portfolio of projects, and management needs to be able to look at all of these projects and teams from an organizational perspective for effective decision making. The key is that the visibility must be both automatic and monitored, meaning that it doesn't disturb the team members or require that they change the way they work, and it does not require the overhead of manual reporting.

### **The Right Tools**

Trying to cram a tool down a team's throat is a recipe for failure. However, scaling Agile to an enterprise is impossible without them. If you provide tools that truly map to the way the teams work, supporting them and enabling them to be more efficient and collaborate, they will adopt them.

### **Executive Commitment**

Borland's executives are committed and enthusiastic about the transformation. They attend sprints and sprint reviews (obeying all the protocols), and they make it a point to showcase and reward good sprints. They have also learned to accept that with visibility comes power, and to treat news as not good or bad – just news.

### **Agile for the business, not for the sake of Agile**

For Agile to work in an established software organization, management must be flexible and pragmatic in the application of Agile principles. They must also be judicious in selecting projects and teams for transition. Allowing teams to be a little bit different in their Agile flavor, and adjusting rules to account for different types of work projects can yield big results. It is absolutely critical to have the historical data and analysis capabilities to understand how your Agile projects are performing (are you actually getting benefits), evaluate which projects are good candidates for Agile, identify areas that have room for improvement, and ensure the quality of output.

## Results/Benefits

- 100% increase in number of product releases per year
- Deepened relationships with strategic customers, who have participated in more than 50 sprint reviews
- Reduced administrative and planning overhead by an average of 15 hours per 3 week sprint
- Eliminated 6 days a month of vice president and director time spent reporting – per product group
- Increased customer satisfaction by including minor features in maintenance releases
- Increased product quality, reducing issues open from release to release by 50%
- Increased team productivity through enhanced morale

Borland is the leading vendor of Open Application Lifecycle Management (ALM) solutions - open to customers' processes, tools and platforms - providing the flexibility to manage, measure and improve the software delivery process.