Agile Project Management with Jira

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1 Introduction

This essay will introduce and discuss the agile project management tool Jira, as well as some advantages that come with using Jira and similar project management tools to assist with the software development. In this essay some particular features will be introduced and explained as well as the advantages that come with using these features. This essay will also bring up the compatibility between Jira and other software products and what advantages that comes with integrating other software products into Jira.

2 The project management tool Jira

In this chapter the project management tool Jira will be introduced and discussed and the advantages of using a project management tool for agile project management.

2.1 What is Jira?

Jira is a project management tool developed by Atlassian and was originally developed as a bug and issue tracker, but has today grown to be a powerful management tool [10].

First the features that help individual developers and small teams to organize their work and optimize their time will be shown. After that, the features that help managers plan and organize important milestones, get actionable data, achieve long-term goals, beat the competition and deliver value to customers will be discussed.

First things first, what are the tools that individual teams can use to organize their work in the simplest and most clear way possible?

2.2 Why Jira matters for DevOps

The reason why Jira (and Agile methodologies in general) is complementary to DevOps in an organization is that they enhance each other's strengths, and they share underlying goals. Sikender says in a paper from 2017 about DevOps and Agile methodologies:

> They both believe in quick software development. Both approaches emphasize speed and consistency. Both are sufficiently malleable and therefore can be integrated into any business models and industries. Both DevOps and Agile are mutually complementary [5].

DevOps and Agile are complementary because they try to optimize different aspects of software development with the same end goal in mind.

- Agile is a work-management strategy that focuses on helping development teams develop, test, and adapt to deliver higher quality products faster [2].
- DevOps focuses on perfecting the underlying teams and infrastructure [5].

Together they enhance each other's strengths and mitigate each-others weaknesses.

Agile development, and by extension, agile project management, matters for DevOps teams because DevOps teams are more independent, can ship features more easily and respond to change faster. Agile project management provides the toolset that waterfall-style project planning lacks where adaptability and speed of development matters [4].

2.3 Organize tasks, introducing Kanban

Kanban is a tactic introduced in lean manufacturing that was later adopted by the software development industry and integrated into agile development. If you cannot see what problems exist, it's hard to fix them. By visualizing problems, backlog, and future improvements, individuals can be more productive by working on these problems individually. According to Atlassian themselves:

> *Kanban* is the Japanese word for visual signal. If you work in services or technology, your work is often times invisible and intangible. A kanban board helps make your work visible so you can show it to others and keep everyone on the same page [9].

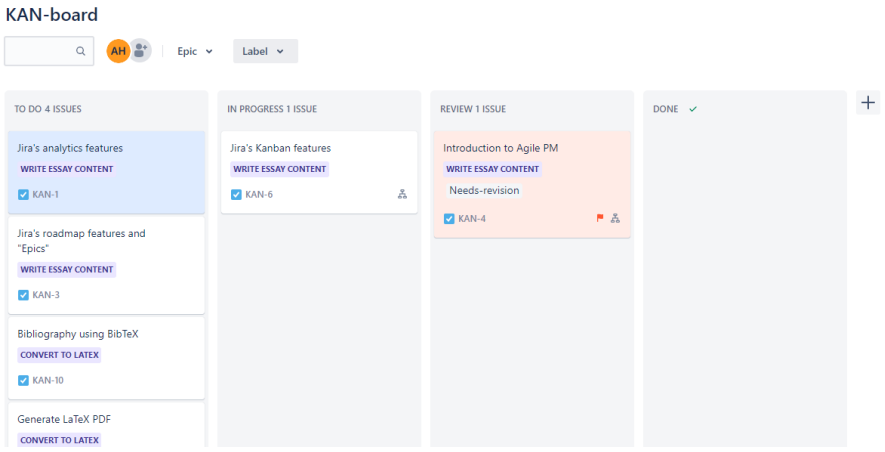

Figure 1: Jira Board using "Kanban template" configuration

Jira improves on this very simple concept by adding advanced filtering and visualization (see Figure 1), so anyone can find answers to important questions:

- How much of the work that's assigned to me is left, and how many hours of work does that represent?
- How many tasks are more than a month old?
- How many "high-priority" bugs are there?
- How many to-do issues are blocked by a specific issue?

Visualizing tasks that need to be finished for the entire team in a clear and concise way, and show the progress of those tasks is central to Agile. It helps the team plan, work towards the common goal and collaborate more effectively. Although, this system breaks down if you have too many tasks that need to be completed, or even worse, too many tasks that never get completed.

2.3.1 Limiting Work-In-Progress

By creating constraints on the number of tasks being worked on at a time, you will reduce distractions that pull individual team members in every direction and increase the throughput of the entire team. Though limiting work-in-progress and clutter on issue tracker is important for short-term productivity, managers still need some way to plan features and releases in the long-term.

2.3.2 Iterative development and sprints

By using a Scrum board template for your project instead of Kanban, you can group issues in "sprints". A sprint represents a cycle in the "Design", "Develop", "Test", "Review" cycle. Issues included in a sprint will be a part of that sprint's release candidate when finished, and the goal of the team is to complete all issues in a sprint. Issues that are not completed will be put into a backlog of issues that will be prioritized for the next sprint.

By structuring development into sprints, teams can release new product versions more reliably. There are plenty of tools that managers can use within Jira to plan sprints and track the progress of the teams. Early adopters of Agile principles and tactics like Kanban and sprint planning were small teams and startups. More and more today, large companies are throwing away waterfall development practices in favor of agile principles to achieve the same velocity.

2.4 Roadmaps

Large companies have their own challenges unique to large enterprises.

- How can you make long-term time estimates when you have to respond to changes and new demands from the stakeholders?
- What tools can you use to make sure that your teams are neither under-utilizing or exhausting your teams?

Jira's Roadmap features have been designed to solve these types of problems that company executives and project managers face. Roadmaps bring a set of features that allow managers to formulate long-term plans that show what the team is working towards and explain why it is important. According to Atlassian:

> A product roadmap is essential to communicating how short-term efforts match long-term business goals. Understanding the role of a roadmap—and how to create a great one—is key for keeping everyone on your team headed in the same direction [6].

An epic usually corresponds to a major software release of some sort, whether it's a new product or a new major version release. Roadmaps are not just a specification of features though. Knowing the overall goals of an epic, and the amount of sprints you have to achieve that goal helps teams know both if they can finish their planned work on time, and how many times they can afford to make new design decisions before they reach the end of their runway. Jira provides a set of tools to analyse progress across multiple sprints towards a specific epic [7] (see Figure 2).

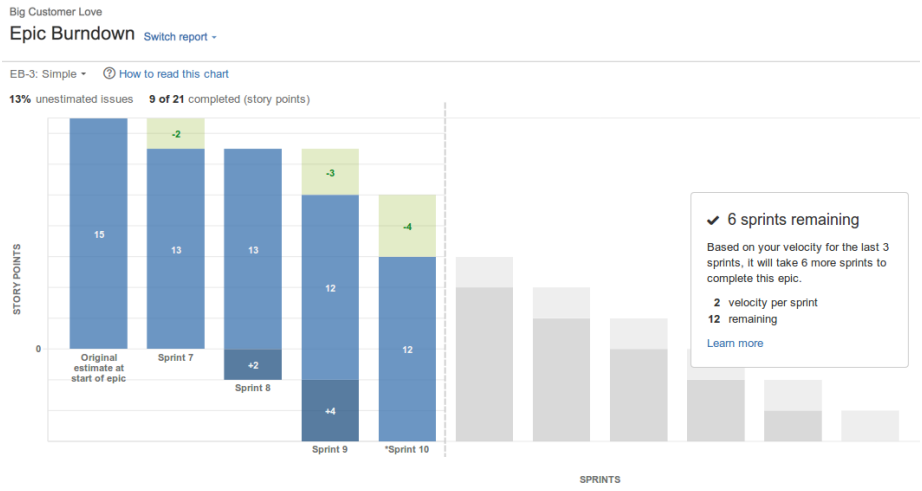

Figure 2: Roadmap burndown chart that shows the progress towards a specific epic across multiple sprints. Source: Atlassian [7]

Epics are not limited to just managing work. In Jira you can use epics to trigger automation tasks like building and deploying an app or API when an epic is finished, publishing a new major version of a library, or starting a comprehensive test suite.

2.5 Knowledge management with Confluence

Confluence is a standalone service created as a complement to the Agile project management features in Jira. Confluence is designed to be the teams central knowledge-hub, and is designed to host knowledge documents like:

- Product requirement documentation - What are the formal requirements of the product and the regulations that need to be followed.
- Retrospectives and analysis - What did the team do well and what did the team do poorly during a sprint.
- Decision documentation - What decision was approved, and what data was that decision based on.

Confluence is designed to store knowledge from all parts of the organization and restrict access to critical business documents within your organization wherever necessary. The collective knowledge base is one of the most valuable resources a technology company has, and organizing knowledge well improves the effectiveness, longevity and overall value of an entire organization.

2.6 Compatibility with other software products

Jira is compatible with multiple other software products. According to Atlassian, with over 3000 different software integrations there will be a great amount of variety in how one can customize one's working environment [1]. By customizing Jira to fit one's needs, the effectiveness within project management and the software development may be increased just by using the right tools for one's purpose.

By integrating other software products that are used by the developers into Jira, the tools that are used will be all gathered in the same place. Gathering the tools in Jira will help keep the tools and the teams working with them in sync and at the same time make it easier for the teams working the tools by having all them in the same place [3]. Some popular and useful tools that are often integrated with Jira are for example Github/Gitlab for version control, Zephyr for testing, Jenkins for automated builds and continuous integration, Gmail and Slack for communication, and many more [1]. As an example, by integrating Slack into Jira, the teams can use the Jira Slackbot to send custom notifications to specific channels, automatically preview issues when they are mentioned in a channel and event logging to when an issue is created or updated [8].

3 Conclusion

This suite of products deliver a powerful tool set for managers striving to implement the agile workflow, so teams can quickly learn, change and grow over time, while still meeting its obligations and long-term goals. Jira contains multiple features and tools that helps with the software development and facilitates the development process by giving a good overview of the current progress and future work. The ease of which Jira can be integrated into other DevOps and collaboration tools make Jira very customizable and gives managers and developers the opportunity to tailor Jira into the exact needs of the development teams.

Today, there are more alternatives that offer similar features to Jira at a similar price point, but what made Jira unique is that it was able to deliver on all these points at a very low price point where independent developers and small teams can use it for free. Jira has evolved from a simple issue tracker to a fully featured enterprise tool for agile development, and all these features are making agile development more manageable to work with. This makes project management tools like Jira very useful when it comes to managing projects of all sizes, and we believe that it is worth spending the time to set up a tool like Jira to help development teams organize and plan their work more effectively while also using Jira with continuous integration within projects.

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