



Accurate Deliverables and Increased Communications with Predictive Forecasting

When working in cross-team environments with numerous stakeholders, it can be difficult for all parties to easily understand the current state of the project, which items have been delivered, and where priorities stand.

7Factor uses predictive forecasting to ensure transparency and deliver data-backed deliverables.



▶ What is Predictive Forecasting?

Predictive forecasting is an automated forecasting method that is capable of receiving continuous adjustments to output the most accurate and complete prediction. Predictive forecasting uses previous events with similar circumstances and parameters to simulate the most likely outcome with additional randomness added to account for the possibility of future complications. 7Factor connects our predictive forecasting software to our project storyboards to track ticket life cycles from backlog to deployment.

The algorithm runs numerous simulations, each with a level of randomness added. The outcome of these simulations is when the event will occur. Each simulation is plotted on a timeline, with the Y axis representing the frequency of occurrence and the X axis representing time. This is used to derive the probability of the event occurring over a given period by observing the percentage of times the simulation finished within that period (Figure 1.).

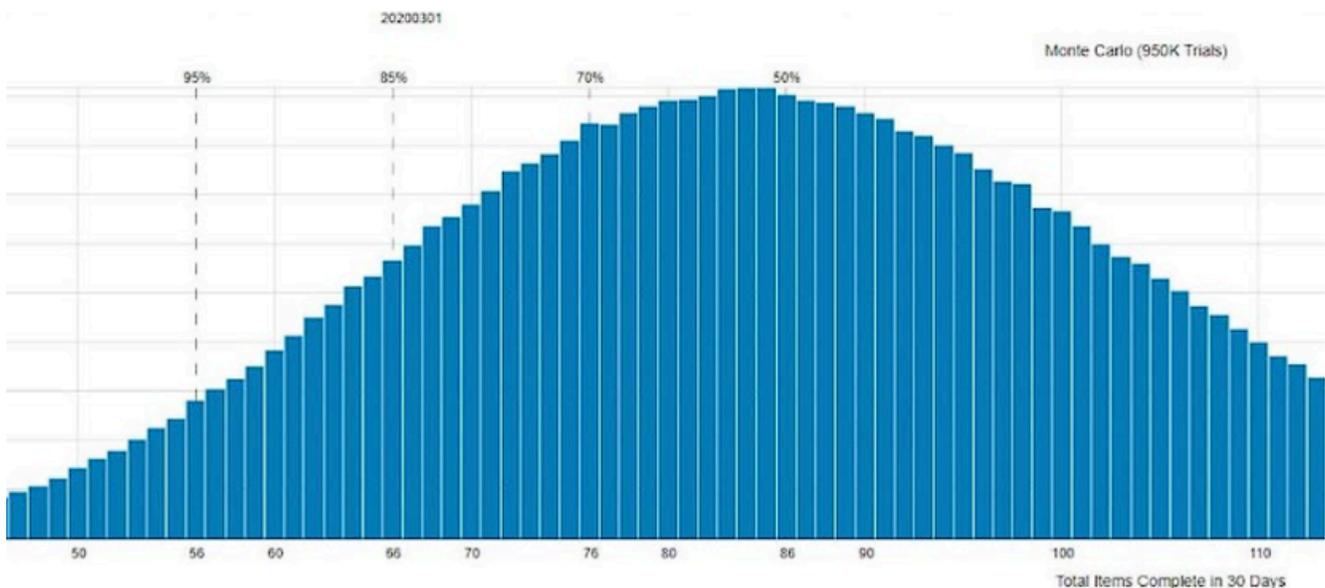


Figure 1: Monte Carlo simulation for 950,000 trials showing a 95% chance of completing 56 items in 30 days, 85% chance of completing 66 items, 70% chance of completing 76 items, and 50% chance of completing 86 items.

Using certain predictive forecasting software allows the generation of other data sets as well. The software used by 7Factor allows us to see Work-In-Progress (WIP) charts and Throughput charts using the data from our project storyboards. These charts provide insight into the rate of progress and where potential slowdowns are originating.

When a stakeholder wants to submit new work, they create a high-level review document (HLDR) outlining the project, which the Product Owner breaks down into individual tickets. These tickets progress through the storyboard as 7Factor engineers work on them and add data to increase prediction accuracy.

A lack of familiarity with predictive forecasting often leads to its rejection without an understanding of its benefits. Predictive forecasting is an incredible method of tracking productivity and identifying where a workflow is being held back.

7Factor used predictive forecasting with our healthcare client to increase transparency on the status of the project, estimate the completion of tickets, and work collaboratively to readjust ticket priority.

WIP Limit

The use of a WIP limit helps keep 7Factor's team focused on a limited number of tasks for maximum efficiency. Using a WIP limit graph, we can see the age of all in-progress tickets. This provides insight into how 7Factor's team is handling its workload. Large spikes in the graph can represent a large increase in tickets or that tickets have been in progress for longer than expected.

Throughout the project, 7Factor received information from different client stakeholders on the priority level of tickets, leading to many instances where work would stop on a certain aspect to favor the new high-priority tickets. When this occurs before the new work can be completed, the age of tickets spikes massively as no tickets are being cleared while priority is changing rapidly.

During 7Factor's meeting with stakeholders, they explained that there was a large amount of inconsistency concerning the priority level of tickets, which was slowing down the development process. The stakeholders were able to use this information to conduct internal restructuring to make priority levels clearer. This allowed 7Factor to deprioritize tickets that had been increasing the WIP limit, and focus on the most important aspects of the project for launch.

Once the changes were made, 7Factor was able to clear out the backlog, and ticket age fell to an expected level (Figure 3).

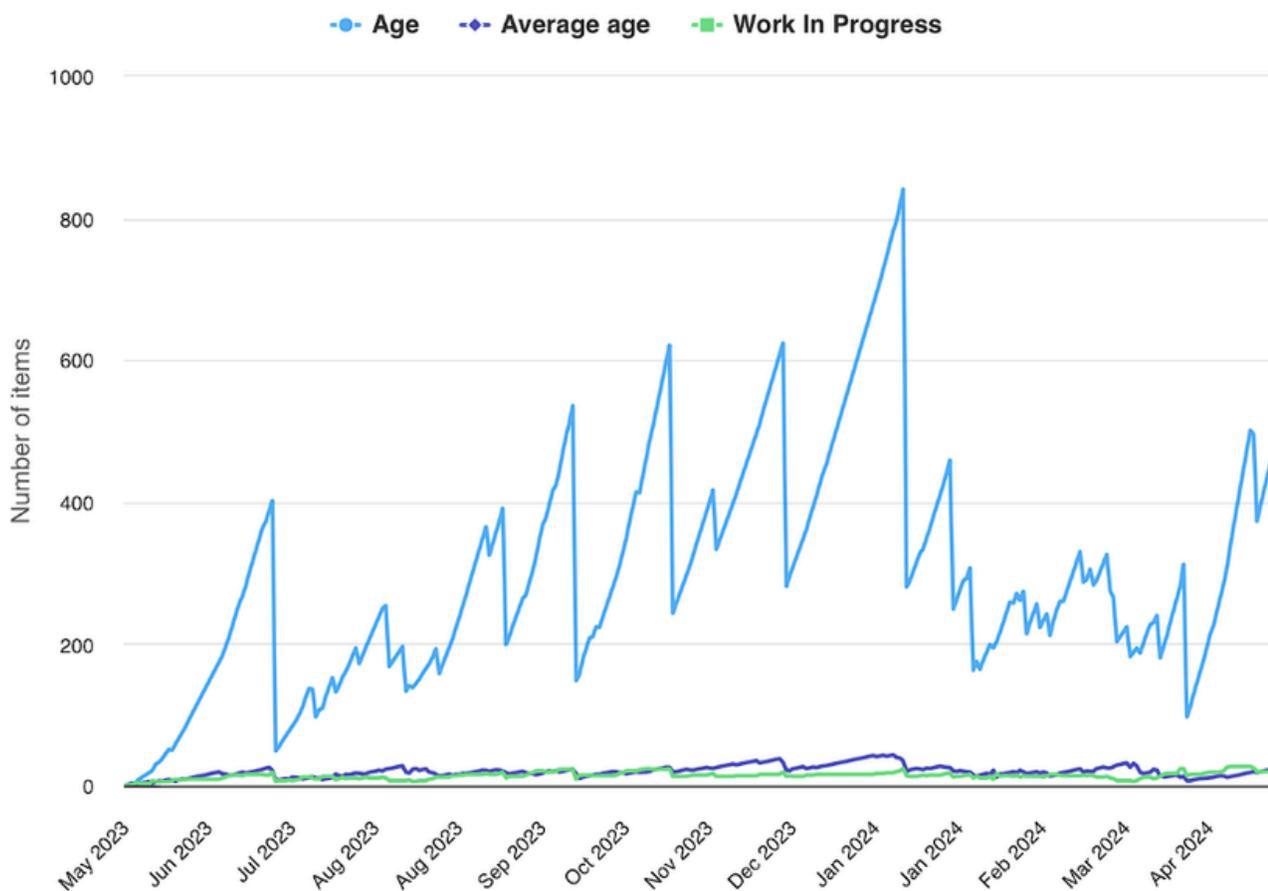


Figure 3: WIP Limit graph showing a large spike in total ticket age around Dec 2023 and a stabilization in Jan 2024 (light blue). The height of the line represents the number of days a ticket has been in progress (purple) or the number of tickets (green). The sum of the ages of all in-progress tickets is shown in blue.

Throughput Chart

A throughput chart shows the number of tickets in each development stage over time. 7Factor uses this chart to show how many tickets have been completed, and the overall rate of progress for the project.

7Factor's reports contained the number of in-development and to-do tickets. The number of in-development tickets rose over the course of the project as 7Factor attempted to complete all the high-priority tickets. The number of to-do tickets rose as the rate of incoming tickets was higher than the rate of tickets cleared (Figure 4).

The increase in these numbers was a key factor in the stakeholders' understanding that progress was not being made. After 7Factor's meeting with stakeholders, there was an understanding that the team was being given too many tickets within deadlines. After the client understood this, 7Factor worked collaboratively to readjust timelines and ensure ticket prioritization. This resulted in the number of tickets in progress decreasing and the rate of ticket clearance increasing, as shown in the later section of the longer timeline (Figure 4).

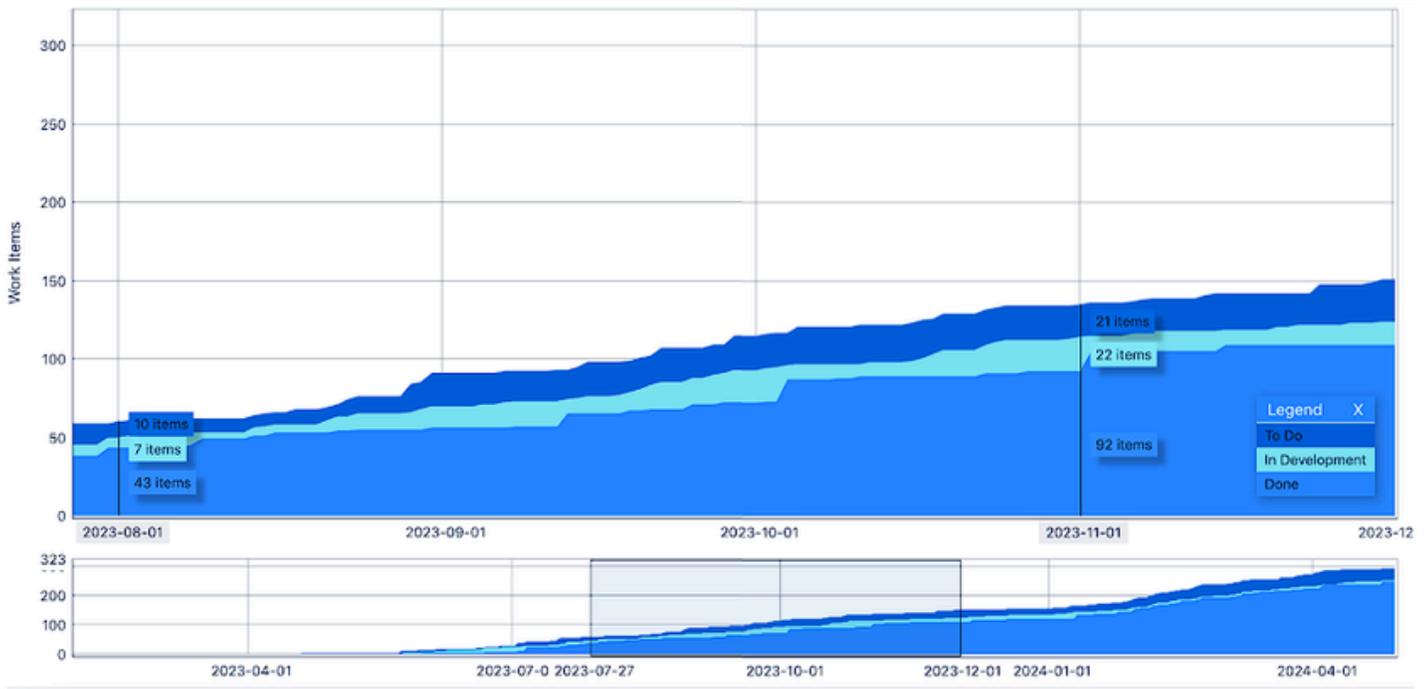


Figure 4: Graph showing 7Factor's To Do, In Development, and Done tickets. The graph shows that 7Factor completed 43 tickets from Aug 8th, 2023 to Dec 1st, 2023. The To Do tickets increased from 10 to 21. In Development tickets increased from 7 to 22.

▶ Conclusion

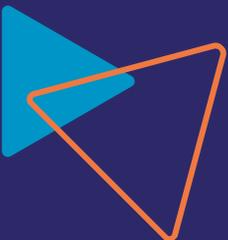
7Factor's use of predictive forecasting increased productivity, correlating with the client's understanding of the data, including the client's restructuring, which led to more streamlined and cohesive project prioritization. 7Factor can say with confidence that the implementation of predictive forecasting by the client was the driving reason for the increase in productivity.

7Factor's use of predictive forecasting is another industry differentiator that results in more accurate timelines and satisfied clients.

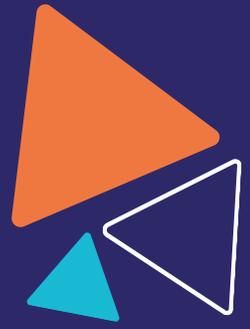


"Employing predictive forecasting eliminates unexpected delays in project timelines. It provides our clients with insights into the underlying causes and offers the team early warnings, allowing for the development of contingency plans. This approach facilitates challenging discussions with the support of robust data."

Allen Brooks
Director of Engineering
7Factor Software



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