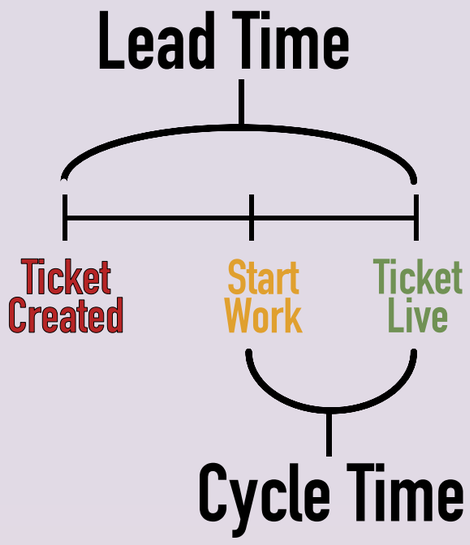
CUMULATIVE FLOW DIAGRAM

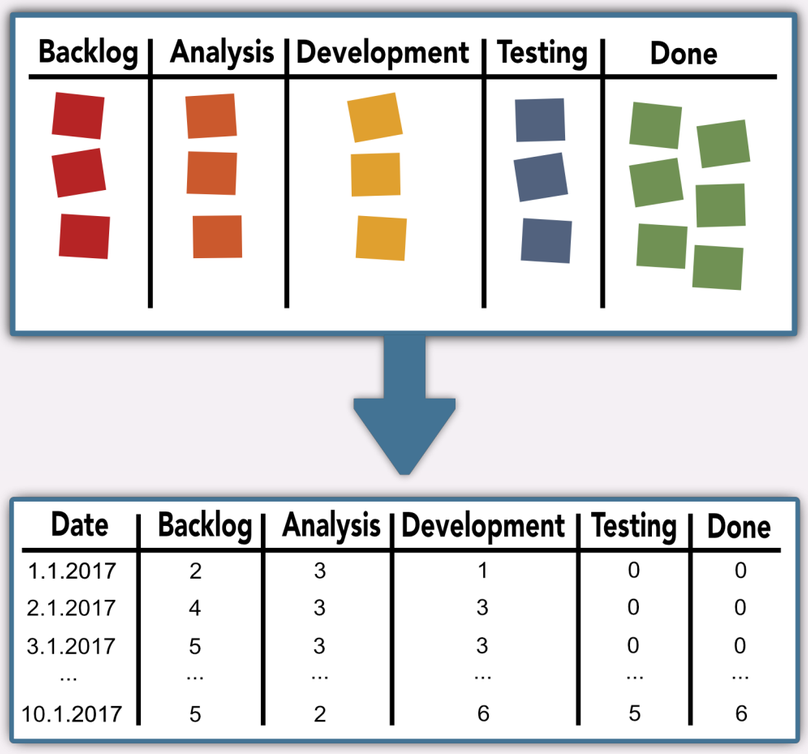
Why?



A Cumulative Flow Diagram (CFD) is a chart based on multiple metrics. It is used in Kanban as a lightweight method for steering and improving processes. A major improvement goal is to stabilize and then reduce lead and cycle time - that is the amount of time it takes to finish a task. Using a CFD, a team can therefore determine its current status and detect whether it improves over time or not.

A CFD helps a team to rely on data instead of gut feeling and enables them to collaborate effectively by helping them to smooth out the flow and limiting work to capacity. A far better method than simply adding more people to the team or working more hours.

How do I create one?

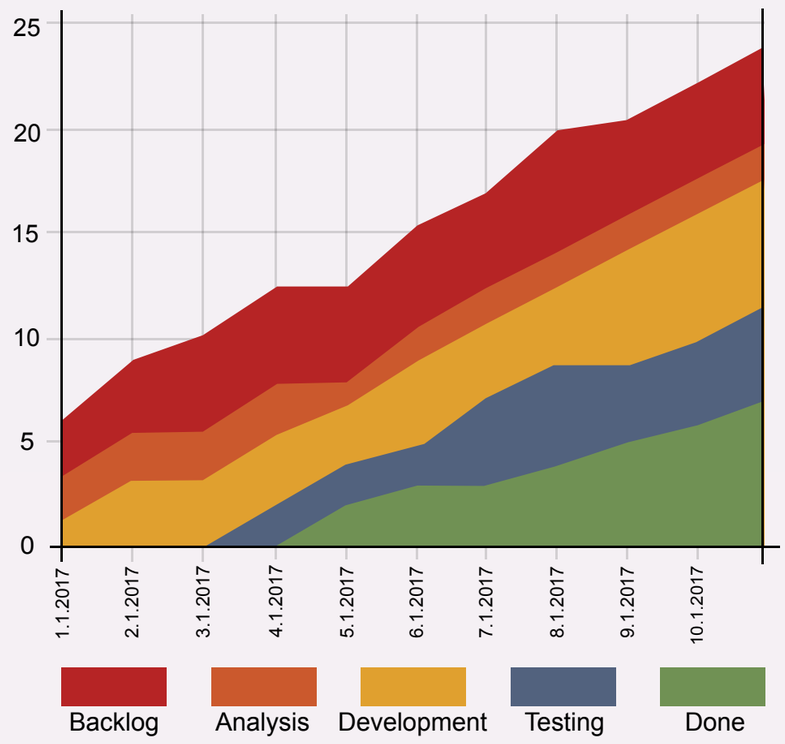


Date	Backlog	Analysis	Development	Testing	Done
1.1.2017	2	3	1	0	0
2.1.2017	4	3	3	0	0
3.1.2017	5	3	3	0	0
...	...	...	...	...	...
10.1.2017	5	2	6	5	6

Many teams use cards, sticky notes, tasks or any kind of tickets on a board to organize themselves. In such a board they can see different process steps. There are at least three: “Backlog”, “Doing” and “Done”, but often more. An example of such a board is shown on the left.

To create a CFD, the team counts the amount of sticky notes on the board in each process step for every day. The result is a table containing data. From this data the team can create a stacked area chart with the X axis for the time and the Y axis for the amount of sticky notes.

Notice that the amount of sticky notes is accumulated. So the size of the areas in the chart increases over time. It is easy to do this using a charting tool like Excel or Google Spreadsheets.

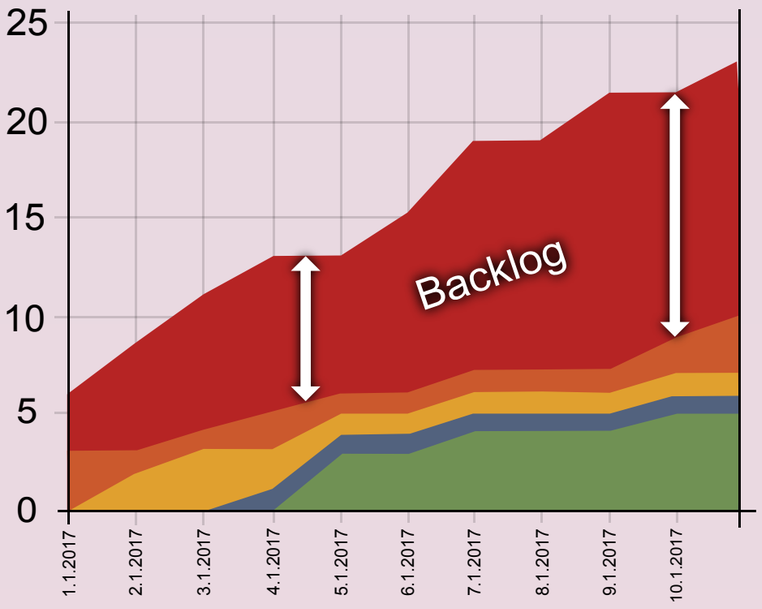


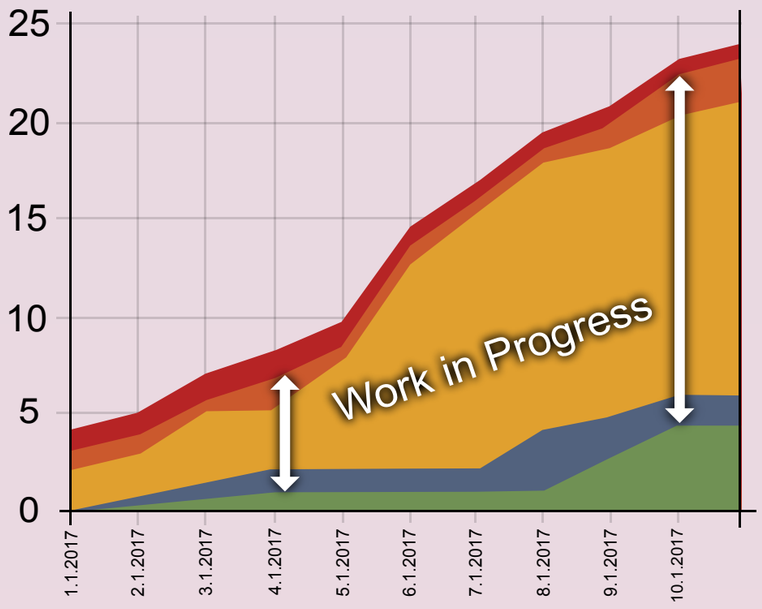
What does it tell me?

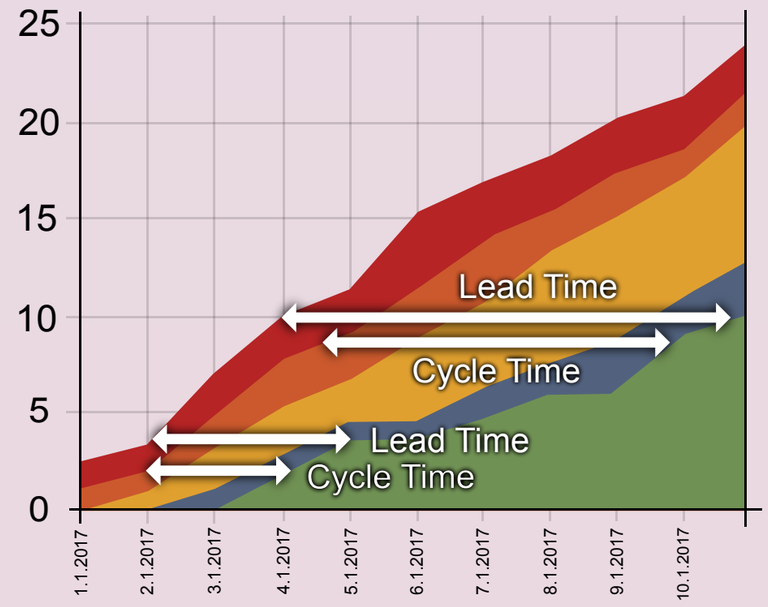
Imagine the CFD would end up looking like the chart below. The amount of sticky notes in the team’s backlog is growing. This means that they have much more ideas than they have capacity for implementing. The team can resolve this by throwing away ideas more aggressively before starting to work on them and by doing more thorough and regular prioritization.

Now imagine another scenario where the team very quickly starts implementing many ideas. The problem here is that they are starting things much faster than they finish. The CFD notifies the team about this in the size of the Work in Progress area, which is the combined amount of all the steps between Backlog and Done.

Over time this will lead to a less stable system and to a slowdown. This slowdown can be seen in the CFD below. It reflects the increase of the average cycle and lead time. But the team could do something to fight this, for example add WIP limits. Over time they should notice a change back to shorter cycle and lead time.







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