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Simulating WIP Effects with Balls and a Banana

WIP is the silent productivity killer of many organizations. Too much WIP leads to many “bad things”:

- Increases overall lead time
- Reduces throughput
- Increases context switching (and so reduces capacity to apply to work)
- Delays delivery of value
- Reduces quality
- Distracts from improving ourselves (as “we are too busy digging ditches to watch the backhoe demonstration”)

The problem is that most organizations really do not understand how bad it is to have to much WIP. After all, if you have WIP, doesn't this mean you are always busy and so producing more stuff.

The idea behind this simulation / game is to help people understand that just being busy doesn't mean you are being productive and that there is probably a target amount of WIP that that is optimal from the perspective of an organization delivering something to the customer.

Setup

You have 5 people in a star formation. Balls will be passed in a specific order around the star. 6th person (or facilitator) is the counter - number of balls completed, number of balls dropped. Idea is to count how many balls you can get through each person and back to start in 60 seconds with 3 balls and a (rubber) banana, then 5 balls and banana, then 7 balls and banana. Facilitator feeds in balls to one person.

Debrief

You then plot number of balls vs throughput (number of balls) on one line , and then subtract number of balls dropped on another line. Result is that from 3 to 5 balls you typically see increase in throughput but also increase in defects (total usually goes up), but from 5 to 7 you'll see lots more defects and often just general throughput goes down without even factoring in the defects (chasing dropped balls). Note sometimes you see a person holding on to a ball in the 7 ball case - facilitator makes sure they pass the ball on. Leads to discussion about optimal WIP and effect of defects etc.

Want to Know More

- How Do We Control Work-in-Progress (WIP)?

games, simulation, WIP

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