Mosca del WIP

Mosca means fly in Spanish.

Being busy all the time isn’t the same as making progress

A game with a real fly that shows why it pays to limit work in progress



Felipe Fernández · October 2026 · updated November 2026

Inside, a real fly brain
Male CNS v1.0 · CC BY 4.0

WHY YOU'RE SEEING THIS

Busy all day. So what did you finish?

Monday, 9 a.m. Three things left over from yesterday, two emails waiting for an answer, the report, a colleague's emergency and the two things you meant to finish today. Nine things open. You work nonstop. By 6 you haven't closed a single one.

Almost all of us work like this, and it feels productive. But there's a question few people ask. How many things should you have open at once? This report shows the answer, in one minute and with a fly.

Why a fly? Because a fly's entire central nervous system has been mapped, neuron by neuron. That's 166,700 neurons, in a map published in 2026. So we made a game. We gave her a tie, a task board and an office day that lasts one minute.

This report tells what the game shows and how to try it with your team. Underneath there's a computer experiment, with rules based on studies and a real fly brain. It doesn't measure people or teams, because it's a single fly and a single day. That's why every number says where it comes from, whether the game, the simulation or studies. The rules and the success criteria were written before running the simulations, and no number was adjusted afterward.

WHAT YOU CAN DO WITH IT read it in 10 minutes · play it at mosca.deliverycraft.ai · try a limit with your team (page 12).

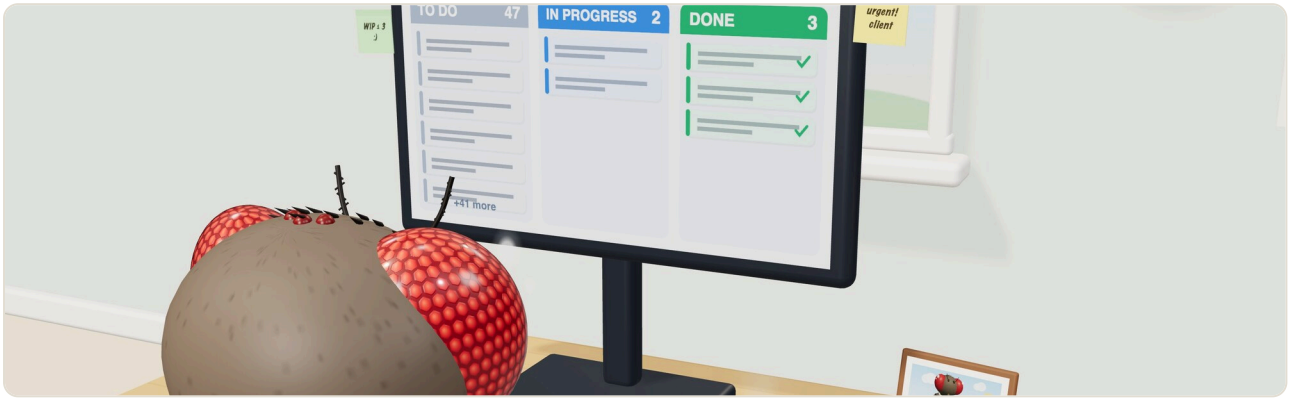
We put the same fly to work on the same office day twice, once with 2 tasks open at a time and once with 9. We repeated each day 200 times and took the average. With 2 she finished 18 tasks. With 9 she finished half as many, even though she was busy all day, and each task took almost nine times longer. Page 3 shows that day from the inside.

Being busy all the time isn't the same as making progress.

FUN FACT Five Nobel Prizes in Medicine have gone to work done with this fly, the first in 1933 and the most recent in 2017. (nobelprize.org)

A real fly in a make-believe office, with rules you can see

It's your desk, but on a screen, with a three-column board, a cup of coffee, an ashtray and an office worker in a tie.



The fly at her board, with its three columns To do, In progress and Done.

The star is a fly, one of the most studied animals in biology. She has been in labs for more than a century. Her brain is real (page 10), but her office is a game. Before the day starts, you choose how many tasks she can have in progress at once, from 1 to 10. Teams call this a work-in-progress limit, or WIP limit. Then she does her thing. She works, switches tasks, waits for answers and, if she gets stressed, goes out for a smoke. During the day you can send her an urgent task with a button (page 11).

The rules of her world (which part of each number is ours, in Appendix B)

THE RULE	INSPIRED BY
Each task takes 15 to 35 minutes of work.	Our rule
Switching tasks has a cost. With 2 tasks each minute yields 85%, and with 10, 50%.	Weinberg (1992)
1 in 5 tasks gets stuck for 30 to 60 minutes waiting on someone else.	Bertolotti et al. (2015)
Whatever is left half-done takes away a little focus.	Leroy (2009)
More open tasks, more stress. It rises fast and falls slowly. The game splits it into four levels, which are Calm (under 25%), Busy, Stressed and Overwhelmed (from 75%).	Dickerson and Kemeny (2004)
When stressed she goes out to "smoke" (8 minutes without working). Without much stress she has a "coffee," a short break.	Parrott (1999) · Taylor et al. (2014) · Albulescu et al. (2022) · Lovallo et al. (2005)
At the same output rate, each task takes longer the more tasks are open.	Little's law (1961)
Urgent tasks arrive without warning, jump over the limit and get done right away, one at a time, up to 5 a day.	Anderson (2010) · Mark et al. (2005, 2008) · Perlow (1999)

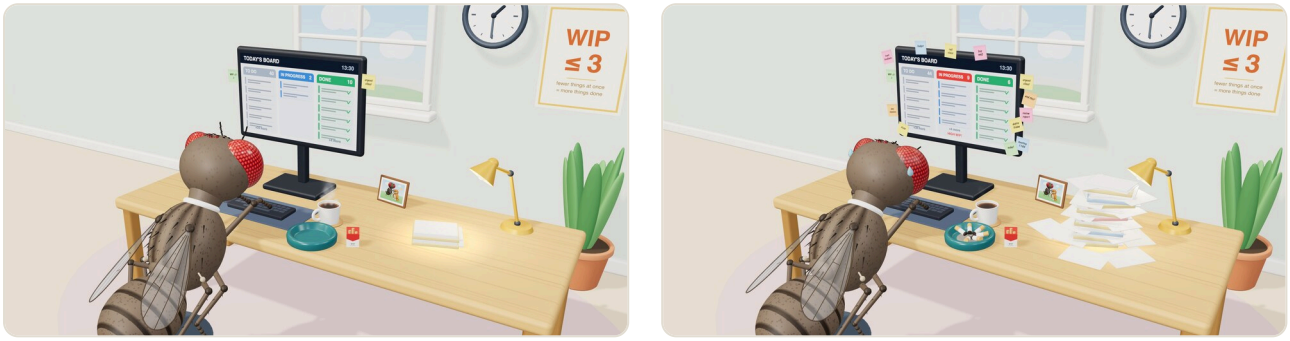
We played 200 days with each number of tasks and took the average. Your Monday with nine things open is on the next page, on the right.

FUN FACT The fly's brain has about 139,000 neurons joined by about 50 million connections. The first complete map of all of them was published in 2024. (Dorkenwald et al., 2024)

THE SAME DAY, TWICE

With 9 tasks she was busy all day and finished half as many

In both photos it's half past one in the afternoon. The only difference between the two days, in the game, is the limit on tasks at once. You can see it in the ashtray, the coffee and the stack of papers.



With 2 at once (left), calm, an empty ashtray and steaming coffee. With 9 (right), sticky notes, a tower of papers, sweat and cigarette butts.

IN THE GAME, AVERAGE OF 200 DAYS	2 TASKS AT ONCE · FINISHES THE MOST	9 TASKS AT ONCE · OVERLOAD
Tasks finished per day	18	9
Time per task, from start to finish	1 h	8 h 54 min
Minutes of each hour that really count	50	25 loses 35 of every 60
Cigarettes and coffees	0 cigarettes, 5 coffees	13 cigarettes, 0 coffees

With 9 tasks she spent the same hours at the office and was busy almost the whole time. It will sound familiar, because she jumps between tasks, loses a while picking each one back up and goes out to smoke. Since she moves each task forward a little at a time, taking turns, they all take a long time. Her coffee went cold without her touching it. With 2 the opposite happened. Each task was done in an hour, and she had time for five coffees.

The sign in the office says up to 3 and the table says 2. The next page explains why.

FUN FACT In the lab, each task switch costs just a few tenths of a second, and more if the task is hard or unfamiliar. It seems like nothing, but over a day full of switches it adds up. (Rubinstein, Meyer and Evans, 2001)

FROM 1 TO 10 TASKS

There's no number where everything breaks. Each extra task costs a little more

Before you choose your limit, it's worth seeing the whole table. Each row is an average day out of 200, in the game, with that number of tasks open at once.

TASKS AT ONCE	FINISHED	TIME PER TASK	USEFUL MINUTES PER HOUR	CIGARETTES	STRESS AT DAY'S END
1	**15.9**	34 min	44 min	0	**Calm**
2 · finishes the most	**18.0**	1 h 00 min	50 min	0	**Calm**
3	**16.9**	1 h 36 min	47 min	0	**Calm**
4	**15.4**	2 h 20 min	43 min	1	Busy
5	**14.0**	3 h 14 min	39 min	3	Busy
6	**12.3**	4 h 24 min	34 min	6	Stressed
7	**11.2**	5 h 40 min	31 min	8	Stressed
8	**10.0**	7 h 11 min	28 min	11	**Overwhelmed**
9 · overload	**9.1**	8 h 54 min	25 min	13	**Overwhelmed**
10	**8.2**	10 h 34 min	23 min	15	**Overwhelmed**

Shaded, the two days from the previous page, green for 2 and red for 9. Time per task in office hours. The other columns and the source of each number are in Appendix B.

With 1 she ends up waiting, because when her only task gets stuck she has nothing else at hand, and in the game she spends more than 2 hours a day with nothing to do. That's why she finishes less than with 2.

From 2 to 3 she finishes almost the same and ends the day calm, without a single cigarette. The sign in the office measures stress, and that's why it says up to 3. Up to there she lasts the whole day, and the game calls that the sustainable limit. The table measures something else, what gets finished, and with 2 she finishes one more task a day than with 3. That one-task difference comes from the cost of switching tasks, an assumption of ours with no data behind it. If that cost were zero, 3 would win (Appendix B). That's why the game says up to 3 and not a single number.

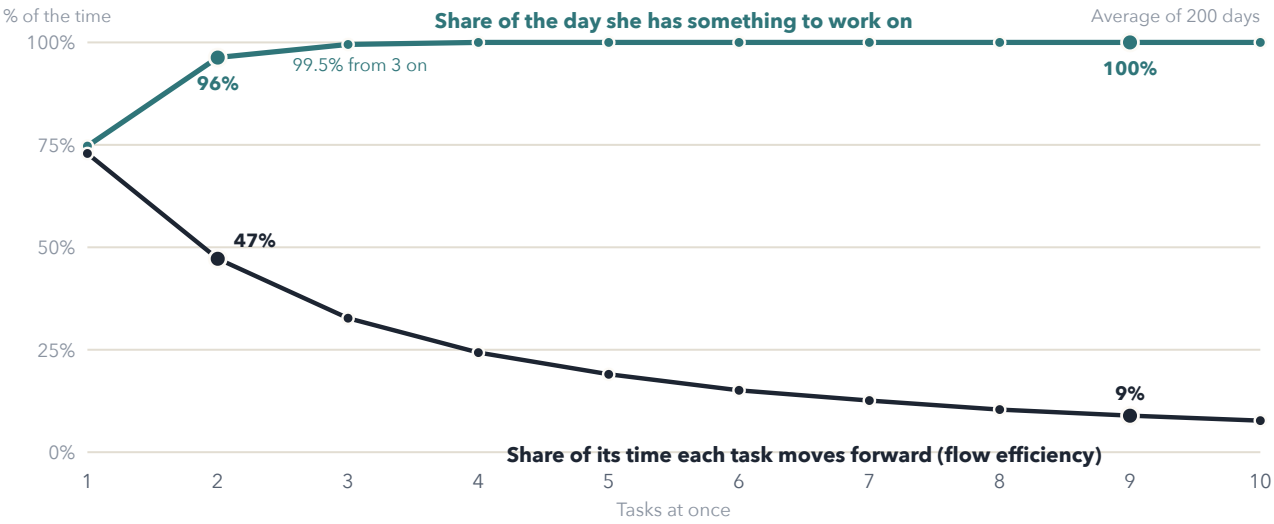
From 4 on, each extra task makes everything a little worse, and the order in which things show up is curious. Stress and cigarettes start at 4 tasks, but what she finishes only drops to half at 9. So it shows in the fly first and on the board much later.

FUN FACT In the labor courts of Milan, a lottery assigned cases to judges. The judges who by chance had more cases open at once took longer to close them, and the quality of their rulings didn't change. (Coviello, Ichino and Persico, 2014 and 2015)

THE PARADOX

With more tasks she never runs out of things to do, but each one spends more time waiting

Your boss sees you busy and likes it. But there are two ways to be efficient. One is being busy all the time (resource efficiency) and the other is keeping the work moving without waiting (flow efficiency). Optimizing the first hurts the second (Modig and Åhlström, 2012).



In the game. For example, with 9 tasks she has something to work on 100% of the day, but each task moves forward only 9% of the time it's open. The other 91% it waits its turn.

With today's waits, from 3 tasks on she has enough to do all day. Opening more doesn't give her more work, it just puts tasks in line to wait their turn. In factories that point has a name, "critical WIP" (Hopp and Spearman, *Factory Physics*).

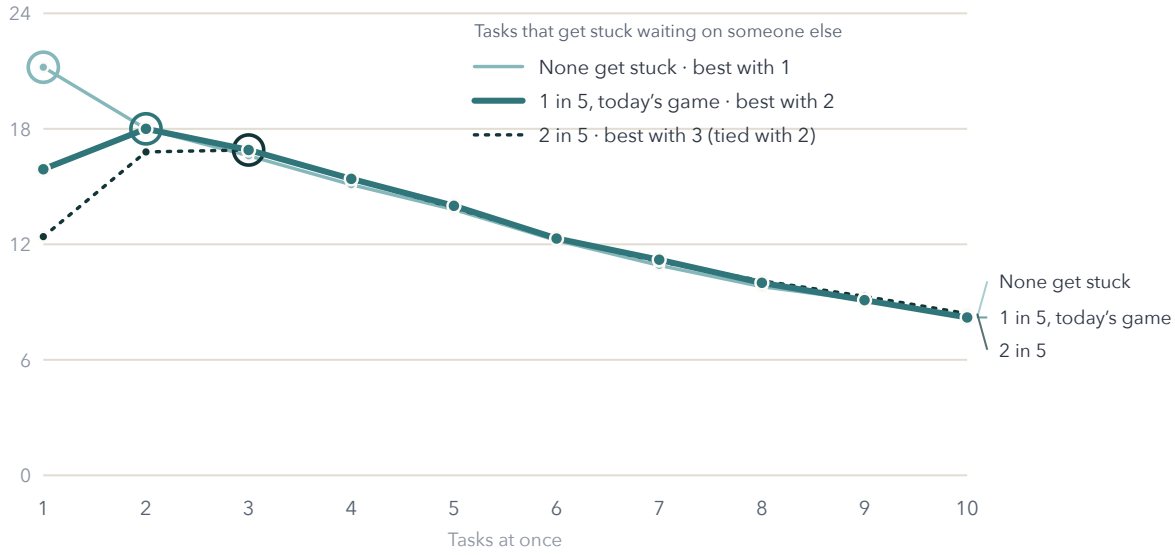
That each task takes longer when more are open is almost a matter of splitting time among all of them, which makes it math and not a finding. It's what happens when you split one hour among nine tasks. Each one gets a few minutes and the other eight wait.

The theory only says that what gets finished stops going up. That it also goes down comes from our rules, the cost of switching tasks and the cigarettes.

FUN FACT That, at the same output rate, each task takes longer when more are open is not an opinion. It's a theorem, from 1961. (Little's law)

Your ideal limit depends on how much you wait on others

The obvious question is whether one thing at a time is best, then. We tried 20 combinations of rules, and in 16 of the 17 cases with waits the best limit landed between 2 and 4.



In the simulation. Tasks finished per day by how many she has at once, and the circle marks the best.

Waits push toward more tasks, because if one gets stuck it helps to have another at hand. With just one, in the game, she waits more than 2 hours a day. Switching tasks pushes toward fewer, because every jump has a cost, and the more it costs, the less it pays to open more. Your limit sits between those two forces.

That 2 to 4 is a result of the simulation and not a scientific number, so your team has its own. The fly works alone and can't unblock what she's waiting for, but a team can. That's what DORA recommends (page 8), going after the wait instead of opening something else when someone is left waiting.

> Reducing waits lets you lower the limit. Raising the limit doesn't reduce the waits.

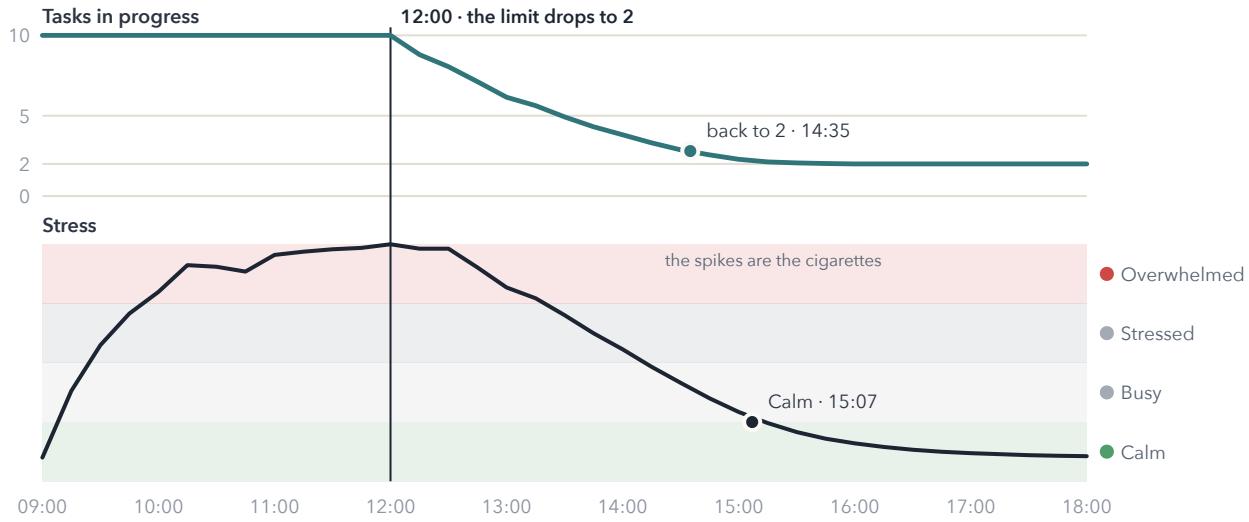
A sustainable limit, not one thing at a time holds when there are waits you can't avoid. With fewer waits, the limit gets closer to one.

FUN FACT For DORA, Google's research program on software teams, the ideal would be for a team to work on a single thing at a time. It admits this may not be achievable, but proposes it as the direction to head in. (dora.dev)

WHAT'S STARTED DOESN'T DISAPPEAR

Lowering the limit doesn't calm her right away. What's started takes over 2 hours to clear

Say that at noon you decide to get organized and go from ten open things down to two. In the game the ten are still there, so she doesn't take new ones and closes the ones she has.



In the game, average of 200 days. She starts with 10 at once, and at 12:00 the limit drops to 2.

Only at 14:35 does she have two open again. That held with every set of rules we tried, because what's started takes more than two hours to clear. The time she calms down, 15:07, comes from how we modeled stress, which rises fast and falls slowly.

When we say sustainable we mean something simple, that the fly lasts the whole day without collapsing. The idea is years old, and not just in software.

> In British munitions factories during World War I, past a certain point each extra hour yielded less. Those who worked 70 hours a week produced almost the same as those who worked 56.
>
> Pencavel (2015), *The Economic Journal*.

FUN FACT In the lab, the stress hormone peaks in 20 to 40 minutes and takes longer to come down. (Dickerson and Kemeny, 2004)

WITH REAL PEOPLE

It’s not just the fly. Judges, recruiters and teams point in the same direction

Maybe you’re thinking this is a game, and with a fly at that. You’re right. No study with real people gives a number, but the ones we found point in the same direction.

Italian judges

Judges who carried more cases at once, because of the lottery that assigned them, took longer to close them. The quality of their rulings didn’t change.

Coviello, Ichino and Persico (2014), *American Economic Review*

Recruiters

A bit of parallel work helped them finish more, but past a point they finished less.

Aral, Brynjolfsson and Van Alstyne (2012), *Information Systems Research*

Research teams

Teams whose members were on very few or too many teams at once performed worse than those at a middle point.

Bertolotti et al. (2015), *Research Policy*

Large surveys of software teams

Limiting work in progress helps teams deliver better, especially together with visible boards and feedback.

DORA, “Work in process limits” (dora.dev) · Forsgren, Humble and Kim (2018), *Accelerate*

Real offices

At three large companies, researchers tracked 137 people over 3,200 workdays. They switched applications or web pages almost 1,200 times a day and lost almost 4 hours a week getting reoriented, 9% of their time. It measures screen switches, not open things.

Murty, Dadlani and Das (2022), *Harvard Business Review*, “How Much Time and Energy Do We Waste Toggling Between Applications?”

None of them is a lab experiment. The judges study comes close, because a lottery decided who got more cases. The rest show that things go together, but they don’t prove the cause.

What these studies have in common is that none of them measured how many things it’s best to have open. They measured what happens when there are too many, and found more delay per task, less finished, or both. The fly doesn’t add a proof to that list. What she does is show that same trend on a screen, in one minute, so your team can see it before debating it.

That’s four studies and a survey. None of them gives a number, so you’ll have to measure yours.

FUN FACT In a 2008 experiment, one group was interrupted while answering emails and another wasn’t. Those interrupted finished a little sooner and just as well, but with more stress and a stronger sense of rush. (Mark, Gudith and Klocke, 2008)

THE DISGUISE

The fly doesn’t smoke. The cigarette is a disguise for cleaning her antennae

If you were wondering why a fly smokes, the answer is that she doesn’t, and she doesn’t know what a task is either. So that her brain can feel the load, we translate the office into something she does feel.

IN THE OFFICE		IN THE FLY		BACK IN THE OFFICE
Lots of open tasks More tasks, a stronger irritation.	→	**A touch on the antenna, like dust** It switches on the circuit she uses to clean her antennae with her legs.	→	**The cigarette** Cleaning herself is drawn as going out for a smoke. The game decides how many cigarettes she smokes.
A break with little stress	→	**A taste of sugar** It’s the signal that makes the fly extend her proboscis to eat.	→	**The coffee** In the simulation this signal wasn’t enough to move the proboscis, so the coffee is just a drawing.

Only these two stimuli. We never used pain.

According to studies with real people, smoking doesn’t calm you down. It gives brief relief followed by a rebound, and people who quit smoking have less stress than those who keep smoking. The game’s coffee shows up only when there isn’t much stress, because caffeine raises the stress hormone, even more so if you’re already tense. What helps is the break, not the caffeine. If coffee is your only break, it’s still a break.

What’s a cigarette in the game is, in her brain, the order to clean her antennae.

FUN FACT Across 22 pooled studies, breaks of 10 minutes or less raised energy and lowered fatigue. Performance barely changed. (Albulescu et al., 2022)

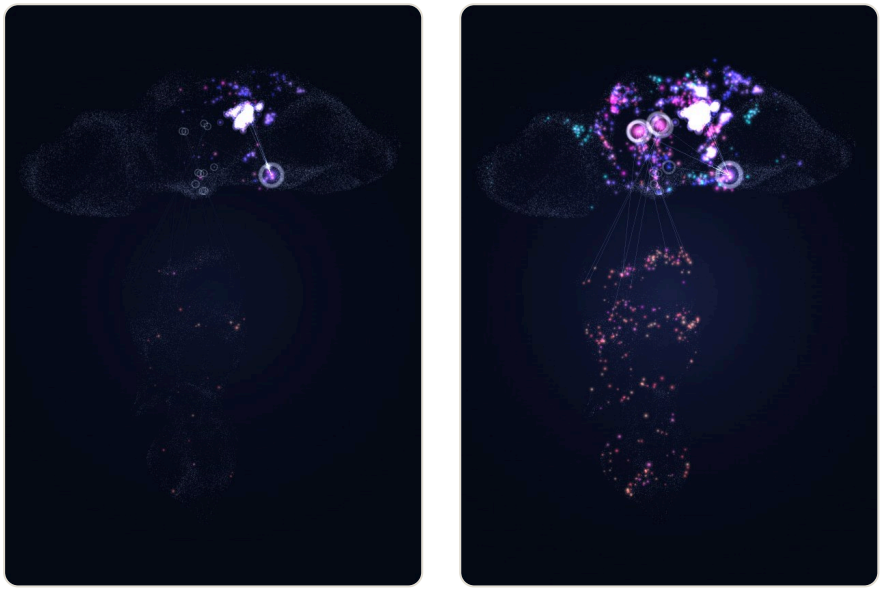
THE BRAIN

This is how her brain lights up with 2 and with 9 tasks

What you see lighting up comes from a real map. A public science project traced the central nervous system of a male fruit fly, the brain and the nerve cord, neuron by neuron.

WITH 2 TASKS AT ONCE

WITH 9 TASKS AT ONCE



THE BRAIN ON TOP. BELOW, THE NERVE CORD THAT CARRIES ORDERS TO THE BODY

In the simulation, 423 neurons firing with 2 tasks and 1,328 with 9, three times as many.

That's 166,700 neurons, each in its place and with its connections. Each neuron is simulated as a glass with a small hole, which fills up with signals and slowly empties. When it reaches the mark, it spills into the next ones. That model got 9 out of 10 predictions right in living flies, on another map (Shiu et al., 2024).

Of the 815 neurons that move the body, with 2 tasks almost none fire in the simulation, and with 9, 65 fire. Even with 10 tasks, less than 1% of her neurons fire. So your nine open things light up something small and precise, the cleaning circuit.

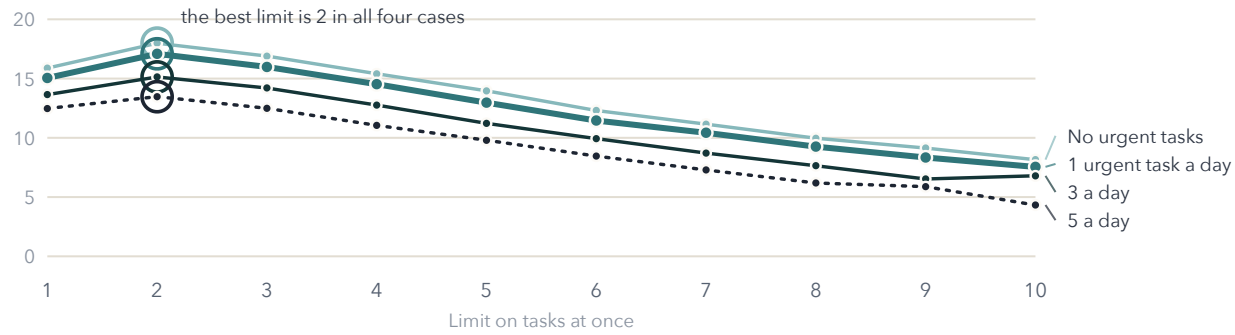
Making the tasks dust on the antenna was our choice. The brain reacts to that irritation, but it doesn't prove the game's lessons. Those you have to test yourself, with your team.

FUN FACT Your brain has about 86 billion neurons. The fly's entire central nervous system, 166,700. (Azevedo et al., 2009, and Berg et al., 2026)

URGENT TASKS

With urgent tasks the best limit is still 2, and each one costs a regular task

We added urgent tasks that arrive unannounced, jump the limit and get done right away, one at a time.



In the simulation. Regular tasks finished, by limit.

IN THE SIMULATION, WITH LIMIT 2 OR WITH LIMIT 10	NO URGENT TASKS	1 A DAY	2 A DAY	3 A DAY	5 A DAY
Regular tasks finished per day, with limit 2	**18.0**	**17.1**	**16.2**	**15.1**	**13.5**
Each regular task took, with limit 2	1 h	1 h 03 min	1 h 07 min	1 h 11 min	1 h 21 min
Each urgent task took from arrival, with limit 2	–	34 min	37 min	41 min	41 min
Regular tasks finished per day, with limit 10	8.2	7.5	6.9	6.8	4.3
Each urgent task took from arrival, with limit 10	–	52 min	55 min	1 h 02 min	1 h 06 min
If it waits in line, with limit 2, it took	–	1 h 17 min	1 h 18 min	1 h 22 min	1 h 23 min

In the simulation, 200 days per combination, with 0, 1, 2, 3 and 5 a day and every limit from 1 to 10. Our rule, inspired by the kanban expedite lane (Anderson, 2010, secondary source) and by studies of interruptions (Mark et al., 2005 and 2008, and Perlow, 1999), with no extra stress from the interruption. Last row, the variant where the urgent task waits in line like a regular one.

Each urgent task costs one regular task, nothing more. Raising the limit doesn't help it, because with more things half-done it takes longer too.

If it waits in line like a regular task, the regular ones don't suffer and it takes twice as long. You're choosing whom to keep waiting, and it follows almost by construction, because respecting the limit leaves the limit unchanged.

One fly, no slack, one day. That fits one saturated person, not a team that shares them out, and nobody has measured it with people.

> With your team, let urgent work in one at a time, over the limit. Count how much arrives each week and discuss it with data.

FUN FACT In real offices, interrupted work gets picked up again twenty-some minutes later, with other things in between. (Mark, González and Harris, 2005)

WHAT TO DO WITH THIS

Four steps to try a limit with your team

The game doesn't tell you your number, because the fly works alone and your team hands work off and helps each other. These four steps help you find it.

1 **Make the work visible**

Three columns are enough (To do, In progress, Done). What you can't see, you can't limit.

2 **Count what's open and set a limit**

Count how many things each person has open today. Agree on a low limit, write it on the board and stick to it. If some waiting can't be avoided, make it more than one.

3 **When someone is left waiting, go after the wait**

Don't open something else to "make good use of the time." Help unblock what's waiting. With fewer waits, the limit can go down.

4 **Try it for two weeks and measure**

On each card, note the day it started and the day it finished. After two weeks, compare how many got finished, and how long each took, with the two weeks before.

Limiting work in progress is one of the habits of high-performing teams, according to DORA, and it helps most with a visible board and feedback on what happens in production. Don't expect the change on day one, because what's started takes time to clear.

The first step needs no meeting. Count right now how many things you have open. The workshop kit (slides, quick guide and team sheet) is free at mosca.deliverycraft.ai/en/workshop/, in Spanish for now.

FURTHER READING

Popular books and a practical guide. They aren't studies, but they tell the same idea in other words.

Modig and Åhlström, *This is Lean* (2012). The two efficiencies.
Goldratt and Cox, *The Goal* (1984). Go after the bottleneck instead of loading on more.
McKeown, *Essentialism* (2014). Less but better, and how to say no.
Newport, *Slow Productivity* (2024). "Pseudo-productivity," which is mistaking visible activity for progress.
DORA, *Work in process limits* (dora.dev). Free, short and practical.

The studies cited in this report are in Appendix C.

A sustainable limit, not one thing at a time.

FUN FACT A Norwegian software company started working with a board and work-in-progress limits. The time it took to fix a bug dropped from 12 to 5 days. (Sjøberg, Johnsen and Solberg, 2012)

APPENDICES

For anyone who wants to check

To follow the story, what came before is enough. These three pages are for checking where everything comes from.

A **Is it real?** 13

What's math, what comes from studies and what we added.

B **The numbers** 14

The columns missing from page 4, where each number comes from and how we tested that the result holds.

C **Sources and credits** 15

Where each idea comes from.

What's math, what comes from studies and what we added

Every claim in the report, with its origin. In short, the direction is backed by evidence and the numbers come from the game.

WHAT WE SAY	WHAT IT IS	WHY
Each task takes longer with more tasks open	MATH	By Little's law, if the same amount comes out and there's more inside, each one takes longer. The game follows it.
From 3 tasks on she has enough to do all day	THEORY + SIMULATION	The "critical WIP" of production lines, applied to a single person by analogy. In the game, the number comes only from how much waiting there is.
Past the best limit, she finishes less	FROM STUDIES + OUR ASSUMPTION	The direction shows up in judges and recruiters. The size of the drop (half with 9) comes from the cost of switching tasks and of smoking, which are our rules.
With waits, the best limit is 2 to 4	SIMULATION	The result of 20 combinations of rules, in the game. It isn't a scientific number.
What's started takes more than 2 hours to clear	SIMULATION	It holds when the rules change. That she calms down in about 3 hours comes from the stress assumption, inspired by lab studies.
With urgent tasks, the best limit is still 2 and each one costs a task	SIMULATION	Our rule, inspired by the kanban expedite lane and by studies of interruptions. Nobody has measured it with people.
More open tasks, more stress	OUR ASSUMPTION	Inspired by studies of interruptions and of the stress hormone. No study measures open tasks against stress.
Smoking doesn't calm you down, and what helps is the break, not the caffeine	FROM STUDIES	The direction comes from studies with real people, and the minutes and stress points come from the game.
The neurons and their connections	REAL DATA	A public scientific map of a male fly's nervous system. Each dot is where a neuron is, and we simulate the ones whose connections are complete.
The lights in the brain	SIMULATION	A simple model calculates how that wiring would respond (each neuron is a glass with a small hole, and some signals take water out instead of pouring it in). It was validated in living flies with another map, and hasn't been tested on this one. Where it starts lighting up comes from the tuning, not from the fly.
"More tasks, more dust on the antenna"	OUR CHOICE	The translation we chose. The brain reacts to the irritation, not to the tasks.
The cigarette and the coffee	DISGUISE / ILLUSTRATIVE	Flies don't smoke. The cigarette disguises the antenna cleaning, which really does light up, and the coffee is just a drawn break.

The limits of this experiment

- **A single fly.** It doesn't measure handoffs, help between people or urgent work shared out.
- **It doesn't measure people.** It's a computer experiment. A test with real teams would be another project.
- **A single day.** With the same limit, each morning starts over the same way, and a week's worth of fatigue isn't in the game.
- **The brain doesn't decide.** It shows how a fly reacts to an irritation. The game's rules are ours.

Types of evidence, from strongest to weakest (page 8). Experiment, one thing is changed on purpose and measured (none of those cited is one) · field study with a cause, a lottery decides who gets more (the judges) · field study, correlation, you see what goes with what (recruiters, teams, offices) · survey (DORA) · simulation, rules and assumptions on a computer (the fly).

Changing the rules barely moves the best limit, but it does change how much output drops

It all comes from the same game, with 200 days for each number of tasks, and then the same again, changing the rules one at a time.

What the table on page 4 doesn't show (average of 200 days)

TASKS AT ONCE	1	2 · FINISHES THE MOST	3	4	5	6	7	8	9 · OVERLOAD	10
Finished	**15.9**	**18.0**	**16.9**	**15.4**	**14.0**	**12.3**	**11.2**	**10.0**	**9.1**	**8.2**
Has something to do	74.7%	96.3%	99.5%	100%	100%	100%	100%	100%	100%	100%
How much each task moves	73%	47%	33%	24%	19%	15%	13%	10%	9%	8%
Coffees	6	5	4	3	1	0	0	0	0	0

Green, the 2, which finishes the most. Red, the 9, the day in the photos. Finished is repeated for reference, and has something to do and how much each task moves are the two curves on page 5.

Each number and where it comes from

THE RULE AND THE NUMBER WE USE	THE STUDY THAT INSPIRES IT	WHICH PART IS OURS
How much work each task has. 15 to 35 minutes	None	The number.
Switching tasks has a cost. With 2 tasks each minute yields 85% and with 10, 50%	Weinberg (1992), a consulting rule of thumb with no data behind it	The softened version the game uses.
Gets stuck waiting on someone else. 1 in 5 tasks, for 30 to 60 minutes	Bertolotti et al. (2015) found that being on several teams has a middle point. They didn't measure blockers	Both numbers.
What's left half-done takes away focus. 3% for each half-done task	Leroy (2009) found that what's left half-done stays on your mind	The 3%.
More tasks, more stress. It rises fast and falls slowly, with levels at 25, 50 and 75%	Dickerson and Kemeny (2004) found that the stress hormone peaks in 20 to 40 minutes and comes down more slowly	That it rises with the tasks, and the three levels.
Smoking and coffee. Smoking is 8 minutes without working, and coffee is a short break, only without much stress	Parrott (1999) and Taylor et al. (2014) found that smoking doesn't calm you down. Albulescu et al. (2022), that the break helps. Lovallo et al. (2005, 2006), that caffeine raises cortisol	The minutes and the stress points.
At the same output rate, each task takes longer with more open. It follows on its own	Little's law (1961), which is math	Nothing.
Urgent tasks. They arrive without warning, jump over the limit and get done right away, one at a time, up to 5 a day	Anderson (2010), the kanban expedite lane, secondary source. Mark et al. (2005, 2008) and Perlow (1999), on what interruptions cost	The whole rule and the numbers.

Changing the rules, with how much waiting, which limit works best

TASKS THAT GET STUCK WAITING ON SOMEONE ELSE	BEST LIMIT WITH TODAY'S RULES	IF SWITCHING TASKS COST NOTHING	IF IT COST MUCH MORE	HAS ENOUGH TO DO ALL DAY FROM
None	**1**	2 (1 to 5)	1	1
1 in 10	**2 (1 to 2)**	3 (2 to 5)	1 (1 to 2)	2
1 in 5 (today's game)	**2**	3 (2 to 5)	2	3
3 in 10	**2 (2 to 3)**	3 (3 to 5)	2	3
2 in 5	**3 (2 to 3)**	4 (3 to 5)	2	4

In parentheses, the ones that finish almost the same. In 16 of the 17 cases with waits the best landed between 2 and 4, and with no waits, at 1. How much output drops with 10 tasks changes with the cost of switching. It drops 21% with no cost, 55% today and 79% with full Weinberg. Going from 10 down to 2 at 12:00 took from 2 h 14 min to 3 h 25 min to get back to 2 open (5 cases). How it was tested is on page 1. The rules and criteria were written before running, and no number was adjusted afterward.

Where each idea comes from

Only sources we verified. They back the direction of the game, not its numbers.

FLOW AND QUEUES

More open tasks, more time per task
If the same amount comes out and there's more inside, each one takes longer. It's a theorem.
Little (1961), *Operations Research*, 9(3).

The two efficiencies
Being busy or keeping the work flowing. A popular book, not a study.
Modig and Åhlström (2012), *This is Lean*.

Critical WIP
With less, the line runs out of things to do, and past a certain point more open work only makes the wait longer.
Hopp and Spearman, *Factory Physics* (1996 and later editions).

PEOPLE AND TEAMS

Judges with more juggling, more delay
With more cases at once, each one took longer, and quality didn't change.
Coviello, Ichino and Persico (2014), *American Economic Review*, 104(2), and (2015), *J. of the European Economic Association*, 13(5).

Recruiters, neither too little nor too much
Aral, Brynjolfsson and Van Alstyne (2012), *Information Systems Research*, 23(3).

Teams at once, a middle point
Bertolotti et al. (2015), *Research Policy*, 44(4).

Limits help, with a board and feedback
Instead of raising the limit when someone is waiting, help unblock the work.
DORA, dora.dev/capabilities/wip-limits (CC BY 4.0). Forsgren, Humble and Kim (2018), *Accelerate*.

In offices, switching screens has a cost
137 people at three companies made almost 1,200 application switches a day and lost almost 4 hours a week getting reoriented. It measures screen switches, not open things.
Murty, Dadlani and Das (2022), *Harvard Business Review*, "How Much Time and Energy Do We Waste Toggling Between Applications?"

A real team with a board and limits
A Norwegian software company switched to working with a board and work-in-progress limits, and the time to fix a bug dropped from 12 to 5 days. A single case.
Sjøberg, Johnsen and Solberg (2012), *IEEE Software*, 29(5).

Long hours yield less and less
Women working in munitions factories, 1914–1918. Below a certain number of hours a week, output rose in step with the hours, and beyond that, less and less.
Pencavel (2015), *The Economic Journal*, 125(589).

TASK SWITCHING, STRESS, TOBACCO AND COFFEE

Every task switch has a cost
Tenths of a second that add up, and more if the task is hard or unfamiliar. The "20% per project" table is a rule of thumb, not a measurement.
Rubinstein, Meyer and Evans (2001), *J. of Experimental Psychology. HPP*, 27(4). Weinberg (1992), *Quality Software Management*, vol. 1.

What's left half-done stays on your mind
Leroy (2009), *Organizational Behavior and Human Decision Processes*, 109(2).

Interruptions are stressful
Those interrupted worked a little faster and just as well, but with more stress and more rush.
Mark, Gudith and Klocke (2008), *CHI '08*.

Stress rises fast and falls slowly
The stress hormone peaks in 20 to 40 minutes, in the lab.
Dickerson and Kemeny (2004), *Psychological Bulletin*, 130(3).

Smoking doesn't calm you down
It gives brief relief and a rebound, and people who quit have less stress.
Parrott (1999), *American Psychologist*, 54(10). Taylor et al. (2014), *BMJ*, 348.

The break helps, and caffeine raises cortisol
Across 22 studies, breaks of 10 minutes or less raised energy and lowered fatigue, and performance barely changed. Since caffeine raises cortisol, the game's coffee only appears without much stress.
Albulescu et al. (2022), *PLOS ONE*, 17(8). Lovallo et al. (2005), *Psychosomatic Medicine*, 67(5), and (2006), *Pharmacol. Biochem. Behav.*, 83(3).

URGENT TASKS AND INTERRUPTIONS

Interrupted work is picked up much later
More than half of the work gets interrupted, and it is picked up again twenty-some minutes later, with other things in between.
Mark, González and Harris (2005), *CHI 2005*, ACM, 321–330.

Much urgent work could have waited
Nine months with a software team. Many interruptions could have waited, and interruption-free hours helped while the study lasted. We don't use its percentages.
Perlow (1999), *Administrative Science Quarterly*, 44(1).

The kanban expedite lane
One urgent item at a time, outside the limit and used very sparingly. A practice, not a study. Secondary source.
Anderson (2010), *Kanban*, Blue Hole Press, ch. 11.

THE FLY AND HER BRAIN

How she cleans her antennae
Sensors in the antenna, relay neurons and the ones that give the order to the legs. With dust, the eyes come first.
Hampel et al. (2015, 2020), *eLife*. Seeds et al. (2014), *eLife*.

Simulating the brain from its map
A simple model on the real wiring got 9 out of 10 tested predictions right. In our simulation, with the connections shuffled at random, the cleaning disappears.
Shiu et al. (2024), *Nature*, 634.

The map of the male fly
166,700 neurons of the central nervous system, and we simulate 164,587, the ones whose connections are complete.
Berg et al. (2026), *Cell*, 189(18).

The first complete map of an adult brain
About 139,000 neurons and 50 million connections in the brain of a female, without the nerve cord. The one in the game is another map, the male fly's.
Dorkenwald et al. (2024), *Nature*, 634.

The fly in science
Five Nobel Prizes in Medicine with flies (1933, 1946, 1995, 2011, 2017), and the neurons in the human brain.
nobelprize.org/drosophila and the 1946 and 1995 summaries at nobelprize.org. Azevedo et al. (2009), *J. of Comparative Neurology*, 513(5).

Brain data. Male CNS v1.0. "This project is a collaboration between FlyEM (HHMI Janelia), the University of Cambridge (Dept. of Zoology), the MRC Laboratory of Molecular Biology, and Google Research." "The Male CNS dataset is licensed under CC-BY." License CC BY 4.0 · male-cns.janelia.org.

Images. All come from the Mosca del WIP game and its cover art. **Author.** Felipe Fernández, October 2026 · updated November 2026. This is the English version of the original report in Spanish.



A sustainable limit, not one thing at a time.

Play at mosca.deliverycraft.ai

Near the end of a good day, in the game, with two tasks open, the Done column full and the coffee still hot.

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