



The Two-Bin System

A field guide to kanban — the idea from the Toyota factory floor that quietly runs the best shops in the world, and how to make it the core yours runs on.

WHY THIS GUIDE EXISTS

I didn't come to lean from a business school. I came to it from a shop floor — mine — standing in a building I was proud of, watching it drift toward the kind of disorganized place I never wanted it to become.

I'd read the books on systems and processes. Most of them are written for clean, simple, abstract businesses. None of them were written for a shop that's actually dirty, actually loud, actually complicated. So I went looking for shops that had figured it out, and I found a whole world of them — companies running more volume, more parts, more chaos than mine, and doing it calmly. That was the moment it clicked: they weren't special. They found a reason, and they started.

At the center of almost every one of those shops was the same humble thing. Not a consultant. Not an expensive system. A card, a bin, and a simple rule about when to reorder.

This guide is about that card. Where it came from, why it works, and how it can become the rooted core your whole shop runs on. It's not a sales pitch. It's the road map I wish someone had handed me.

Everything can always be improved. This is where a lot of shops start.

1. WHAT KANBAN ACTUALLY IS

The word *kanban* (看板) is Japanese for “signboard” or “signal card.” That’s the whole idea in one word: a signal that tells you when to act.

Strip away the jargon and kanban answers one question that every shop wrestles with every single day: **when do I reorder, and how much?**

Most shops answer it with memory and panic. Someone notices a bin looking low, tries to remember if it’s already on order, guesses at a quantity, and either over-buys “to be safe” or under-buys and runs out next week. Multiply that by hundreds of parts and you get the quiet, constant background stress of running a shop — the shortages, the expedite fees, the cash tied up in shelves full of the wrong stuff.

Kanban replaces the guessing with a signal. Instead of ordering based on what you *think* you’ll need, you reorder based on what you’ve *actually used*. When stock drops to a set point, a card — the signal — tells you to replenish. No memory required. No panic. The shelf tells you what it needs.

That shift, from guessing to signaling, is the entire game. Everything else in this guide is a variation on it.

2. THE SUPERMARKET THAT CHANGED MANUFACTURING

Here's the story worth knowing, because it explains *why* the system is shaped the way it is.

After the Second World War, Toyota was nearly broke and building a fraction of the cars its American competitors did. It couldn't afford to do what Detroit did — make enormous batches of everything and pile up inventory. It had no cash to tie up in mountains of parts, and no space to store them. Necessity forced a different way of thinking.

Toyota's founder, Kiichiro Toyoda, had already put a phrase on the goal: *just-in-time*. Make and move only what's needed, only when it's needed, only in the amount needed. But it was an engineer named **Taiichi Ohno** who had to figure out how to actually run a factory that way — and the answer came from an unlikely place.

Ohno had heard about the American self-service supermarket, and the idea fascinated him. In a supermarket, no clerk decides in advance how much of each item to push onto the shelf for the week. The customer takes what they need, when they need it. And the shelf gets restocked to replace *only what was taken* — no more, no less. The customer's action is the signal. The shelf pulls new stock from the back exactly at the rate it's consumed.

Ohno looked at his factory and saw a supermarket. What if each work station was a “customer” that pulled parts from the station before it, only as it used them? What if a simple card traveled with each bin of parts, and when the bin emptied, that card became a request to make or fetch more — a signal to restock the shelf?

In the early 1950s Toyota began experimenting with this “supermarket method” on its shop floor. When Ohno finally walked through American supermarkets in person on a 1956 trip to the United States, it confirmed everything. He brought the model home and built it into the beating heart of what became the **Toyota Production System** — the most studied, most copied way of making things in the modern world.

The card that traveled with the bin was the kanban. Seventy years later, it still works for the same reason it worked then: it ties replenishment to reality instead of to a forecast.

3. WHY PULL BEATS PUSH

The supermarket insight has a name: it's a **pull** system, and it's the opposite of how most shops naturally operate.

A **push** system makes or buys to a plan. You forecast what you'll need, you order to the forecast, and you push that stock onto the shelf whether the floor is ready for it or not. Push feels responsible — you're planning ahead. But push runs on prediction, and predictions are wrong. Push too high and you drown in inventory: cash frozen on shelves, parts going obsolete, aisles clogged, hours lost searching. Push too low and you're back to shortages and expedites.

A **pull** system, by contrast, makes or buys only to replace what's actually been consumed. Nothing moves until the floor signals it needs it. You're not predicting the future — you're responding to the present. The result is less stock, less cash tied up, less obsolescence, and less searching, because you only ever hold roughly what you use.

There's a deeper reason lean shops swear by pull, and it's counterintuitive: **inventory hides problems**. When you have a huge pile of every part, a slow vendor, a bad forecast, or a broken process never hurts — the pile covers for it. But it's also silently costing you, and you never fix the root cause because you can't feel it. Pull runs leaner on purpose, so that when something's wrong, you see it *fast* — and seeing it is the first step to fixing it. A lean shelf isn't just cheaper. It's honest.

4. THE TWO-BIN SYSTEM: KANBAN AT ITS SIMPLEST

You don't need a factory or a computer to run kanban. The simplest, most elegant version fits on a shelf, and it's called the **two-bin system**.

Here's the whole thing. For a given part, you keep two bins instead of one:

- Your team draws from **Bin 1** until it's empty.
- The moment Bin 1 runs dry, that's your signal to reorder. The kanban card in the empty bin is the trigger — you scan it, or drop it in a reorder slot, and the replenishment is on its way.
- While you wait for the new stock to arrive, the team works out of **Bin 2**. Bin 2 is sized to cover exactly that waiting period — the lead time.
- When the order arrives, it refills Bin 1, which goes back on the shelf as the new reserve. The cycle repeats, forever, on its own.

That's it. No spreadsheet of reorder dates. No one trying to remember what's low. The empty bin *is* the reminder. The card *is* the order. The system is visual, self-regulating, and nearly impossible to get wrong, because the trigger is a physical fact — a bin is either empty or it isn't.

The genius of two bins is that it builds a safety buffer directly into the physical layout. You never touch your reserve until you've already triggered the refill, so a

normal reorder never becomes an emergency. Shortages stop being surprises.

There is really only **one decision** that matters in a two-bin system: **how big to make the bins**. Size them right and you never run out and never over-stock. That single number — driven by how fast you burn the part and how long the vendor takes to deliver — is where all the skill lives. Get it right and the system is invisible. Get it wrong and you either run dry or drown. (It's also exactly the number a good tool should learn for you over time, from your real usage — more on that shortly.)

5. THE MANY FACES OF KANBAN

Kanban isn't one rigid recipe. It's a family of ideas built on a single principle — *signal replenishment from actual consumption* — and shops adapt the form to fit their world.

Two-bin and three-bin. The classic physical form. Three bins add an extra buffer for parts with long or unreliable lead times, or high consequences if you run out.

Card kanban. A card travels with a bin or batch. When the stock is consumed, the card is freed and becomes the reorder signal. The original Toyota form.

Scan / electronic kanban. The card carries a barcode or QR code. Instead of shuffling physical cards to a purchasing desk, you scan the empty bin's card and the request appears instantly in a reorder queue. Same principle, far less paperwork — and, crucially, it leaves a timestamped record of every pull, which turns your replenishment loop into a stream of real data about your shop.

Kanban boards. The idea traveled far beyond the factory. The sticky-note “to do / doing / done” boards used by software and office teams are direct descendants of Toyota's kanban — visualizing work and pulling the next task only when there's capacity for it. Same DNA, different shop.

Supplier kanban. The signal reaches past your four walls, triggering replenishment directly from a vendor on a standing arrangement.

For a working shop floor, the two-bin card system — especially in its scan-based form — is usually the cleanest. It's physical enough to be foolproof and visual, and digital enough to give you a memory.

6. WHAT KANBAN REVEALS

Here's the part nobody tells you when you start. Kanban's first job is to keep you stocked. But once it's running, it quietly becomes something more valuable: **a lens on your business.**

The moment every reorder flows through a single signal, your shop starts generating a record of its own true behavior — and that record answers questions you could never answer before by memory:

- **What do you actually burn?** Not what you think you use — what you genuinely consume, part by part, week over week. Real burn rates, measured, not guessed.
- **How long do your vendors really take?** The gap between “ordered” and “arrived,” tracked over time, tells you which suppliers are quietly slow and which you can count on.
- **Where are your bins sized wrong?** The parts you reorder constantly are under-sized and nagging you. The parts that never trigger are over-stocked, sitting on cash. The system shows you both.
- **What are you spending, and where does it go?** Total spend, spend by vendor, the handful of parts that quietly eat your budget.
- **What don't you actually use?** Every shop is carrying dead parts nobody's touched in a year. Kanban makes them obvious, because their cards never move.

You didn't do anything extra to learn all this. You just ran your shop through the system, and the system remembered. This is where a modern tool earns its place: a paper card can trigger a reorder, but it can't tell you your burn rate or flag the vendor who's slipping. A system like **TwoBin** runs the same simple two-bin loop your team already understands — scan the empty bin, the reorder appears — but because every scan is a timestamped event, it hands the insight back to you. What you're spending, where it's going, and where your bins are sized wrong. The loop keeps your shelves full; the data quietly makes you a better operator.

7. KANBAN AS A CATALYST

Most people think of kanban as an inventory tool. The shops that get the most out of it understand it's really a **culture tool**.

Think about what running a shop feels like without a system. A huge share of your day — and your team's day — is spent firefighting. Chasing down what's missing. Remembering what to order. Discovering a shortage at the worst possible moment. That constant low-grade scramble doesn't just cost time; it costs *attention*. It's hard to think about making the business better when you're always putting out the same fires.

Kanban puts those fires out. Replenishment becomes automatic and visible. The shortages stop. And when they stop, something changes in the room: the team stops reacting and starts *improving*. The mental space that was going to "do we have any of these?" gets freed up for "how do we make this better?"

That's why lean shops treat the two-bin system as a **first domino**. It's the beachhead. Once your team trusts that the system tells them what's needed and they simply respond, they've learned the core habit of continuous improvement — the Japanese call it *kaizen* — in the safest, lowest-stakes way possible. From there it spreads. Organized bins lead to organized benches. Standard reorders lead to standard work. The signal-and-respond rhythm you built for inventory becomes the way the whole shop thinks.

The pride comes back, too. A shop that's visibly under control is a shop people want to work in. The gap between the business you show customers and the business behind the doors starts to close. And that pride is self-reinforcing: nobody wants to be the one who lets a dialed-in system slide.

Kanban won't transform your shop by itself. Nothing will. But it's the rooted, reliable core you can build everything else on top of — the one system that, once it's holding, makes every other improvement possible.

8. GETTING STARTED

A word of honesty before the how-to: this is work. Getting your shop in shape is like getting your body in shape. You can't do it in a day, you can't buy your way out of the effort, and anyone who tells you otherwise is selling something. But it's the good kind of work — the kind that compounds, the kind that makes tomorrow easier than today. If you're the kind of owner who's ready to dig in, here's a sane way to start.

Start with a pilot, not the whole shop. Pick one area, or your twenty most painful parts — the ones that run out and ruin your week. Prove the system there first. Early wins build belief.

Set your bin sizes roughly, then refine. Don't wait for perfect numbers. Make your best estimate of how fast you burn each part and how long the vendor takes, size the bins, and adjust as real usage teaches you. The system gets smarter the longer it runs.

Make the card the single source of truth. One signal, one way to reorder. The empty bin and its card are the only trigger. Kill the side-channels — the sticky notes, the texts, the “hey can you grab some of these.”

Put the location right on the card. The card should tell whoever's holding it exactly where the stock lives. It's not just a reorder trigger; it's a put-away instruction. This one habit saves more time than almost anything else.

Batch the setup. Getting parts and locations into the system is the heaviest lift. Do it in focused blocks rather than dragging it out. Every part you set up is a fire you'll never fight again.

Expect it to feel like effort — and expect it to be worth it. The first few weeks are the climb. Then one day you realize you haven't run out of anything, nobody's asked you what to order, and the shelves just... stay right. That's the system working. That's when it stops being a project and becomes the way you run.

THE FIRST MILE OF THE ROAD MAP

Kanban is old, proven, and beautifully simple. It solved an impossible problem for a broke post-war car company, and it's been quietly running the best shops in the world ever since. It works because it's honest: it ties what you hold to what you actually use, it makes problems visible instead of hiding them, and it frees your team to stop firefighting and start improving.

You already know your shop can be better. This is one of the most reliable places to start — a rooted core you can build on, a system that holds so the rest of your improvements have something to stand on.

The idea is free. The history is settled. The road map is in your hands.

TwoBin exists to make the system stick — the same simple two-bin loop your team already understands, built to run every day on a real floor, and quietly handing back what it learns about your shop. When you're ready to start, we built it for you.

Everything can always be improved. Come do the work.

A QUICK GLOSSARY

Kanban — Japanese for “signal card.” A signal that triggers replenishment based on actual consumption.

Just-in-Time (JIT) — Making or moving only what’s needed, when it’s needed, in the amount needed.

Pull system — Replenishing only to replace what’s been consumed. The opposite of pushing stock to a forecast.

Two-bin system — The simplest physical kanban: draw from one bin, reorder when it’s empty, work from the reserve bin during lead time.

Lead time — The gap between placing an order and the stock arriving. It sets how big your reserve needs to be.

Kaizen — Continuous improvement. Small, constant, everyone-involved betterment of how work is done.

Muda — Waste. Anything that consumes resources without adding value.

Gemba — “The actual place.” Where the real work happens — the shop floor. Lean says go see for yourself.

Toyota Production System (TPS) — The manufacturing philosophy Toyota built around JIT, kanban, and continuous improvement; the root of modern lean.

Burn rate — How fast you actually consume a part over time. The truth kanban lets you measure.