The Hundred Factories

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How to Start, Run and Grow a Manufacturing Business in India That Keeps Earning

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INKORA PRESS

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For every first-generation owner who switched on a machine before sunrise and hoped the customer would pay.

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CHAPTER 1

Nothing Always Earns, and What Comes Closest

The man in Bhosari

The machines were still warm when I first saw them. That is the detail I remember best, more than the price or the paperwork: I put my hand on the frame of a second-hand slotter in a shed off the Bhosari industrial road in March 2004, and it was warm, because the man selling it had run a job that morning. He was closing his factory and he was still making boxes.

I will call him Vilas. That is not his name, and he would not thank me for using the real one. He was perhaps forty-five, with a ballpoint pen behind each ear and a habit of tapping the order book on his desk while he talked, as if to remind himself it was there. It was a thick register with a red cloth spine. Every page I saw had entries in it. Orders for March, orders for April, two lines pencilled in for May.

"Work is not the problem," he said. "Work, I have."

I was thirty-one and still an accounts clerk at an auto-parts supplier in Chinchwad, earning ₹9,500 a month and spending my Sundays looking at other people's machines. I had saved some money and borrowed more from my wife's brother, and I had decided, with the confidence of a man who had never run anything bigger than a ledger, that corrugated boxes were a sen-

sible business. Everyone needs boxes. I still believe that. What I did not yet understand was how a man with a full order book could be selling his slotter and rotary cutter to a clerk for ₹3.8 lakh.

The answer took about twenty minutes to come out, and most of it came out sideways.

Vilas had one large customer, a biscuit maker out towards Talegaon, which took roughly seventy per cent of everything he produced. The biscuit company paid at ninety days. In the good years it paid at ninety days. Then it changed its purchase manager, and ninety became a hundred and twenty, and a hundred and twenty became "next month, definitely", and by the time I was standing in his shed it owed him a little over ₹11 lakh. Meanwhile his kraft paper supplier wanted payment in thirty days, his eleven workers wanted wages every month, and the electricity board did not care who owed whom.

"On paper I am making profit," he said, and he said it without any irony at all. He opened a file and showed me. Sales up. Margin per box perfectly respectable, by his reckoning. He had worked out his costs once, three or four years earlier, and had been pricing off that sheet ever since, through two rounds of paper price increases he had absorbed because he was afraid of losing the biscuit account.

I asked him, because I was an accounts clerk and could not help myself, what a 3-ply box for the biscuit company actually cost him that month.

He looked at me for a while. Then he said, "Roughly."

That word has stayed with me for twenty-one years.

I bought the machines. I negotiated him down from ₹4.2 lakh, which I felt rather proud of at the time and now feel slightly ashamed of, because he had no position to negotiate from and we both knew it. A tempo came on a Thursday to take them to the shed I had rented on a lane behind the MIDC water tank. MIDC, for readers outside Maharashtra, is the state's in-

dustrial development corporation, and its estates are where most of Pune's small factories live.

Vilas helped load. He was careful with the cutter, careful in the way you are with something that used to be yours. When the tempo pulled out he went back inside, and through the open shutter I could see him sit down at his desk and open the red register, as though there might be something in it he had missed.

What the market does, and what you do

For about a year afterwards I told the Vilas story as a story about bad luck. A purchase manager changed, a big customer turned slow, a decent man went under. It made a good tale at weddings. Then I began running my own boxes through my own shed, and the more I learned about what each one cost me, the less the luck explanation held up.

There are two ways a small factory dies, and it helps to keep them in separate drawers.

The first is **demand risk**: the market stops wanting what you make, or stops wanting it from you at your price. A product goes out of fashion. A technology makes it unnecessary. A cheaper version arrives from Guangdong in a container. In 2004, two lanes from my shed, a man I'll call Prakash was moulding plastic shells for audio cassettes. He was good at it, his tooling was sharp, his workers were loyal. By 2008 almost nobody in India was buying blank cassettes, and no amount of good management could have saved the shells. He sold the moulding machines and, to his credit, went into bottle caps, which people still throw away by the crore.

The second is **management risk**: everything the owner does to himself. Selling on credit he cannot fund. Letting one customer become seventy per cent of the business. Pricing from a cost sheet four years old. Hiring a cousin as supervisor because it feels safer than hiring a stranger. Buying a machine before

finding a buyer. None of these arrive from outside. They are decisions, and usually they are decisions made on an ordinary Tuesday without anyone noticing a decision is being made.

Vilas had almost no demand risk. Biscuits get eaten, biscuit cartons get torn open, and the biscuit company was still ordering when I bought his slotter. His order book was full because the market was doing exactly what he needed it to do. Everything that killed him came out of the second drawer.

I have kept an informal list, over fifteen years of helping other people set up, of units I knew well that shut down. It is a notebook, not a survey, and I would not defend it in front of a statistician. There are thirty-four names in it. In five cases, by my reading, the product itself stopped selling. In the other twenty-nine, people were still buying the thing when the shutter came down. They were just not paying for it on time, or not paying enough, or the owner did not know which was happening.

The two drawers are not equally in your hands.

Demand risk is **partly** controllable, and almost all the control comes at the start, when you choose what to make. Pick a product that people use up, buy again within the year, and keep buying when money is tight, and you have removed a good part of the danger before you sign a lease. You cannot remove all of it. In 2021 kraft paper prices jumped so fast that I lost eleven per cent of my margin in six weeks, and there was nothing I could have chosen in 2004 that would have prevented that. Steel, palm oil, polymer granules, cotton: every raw material in this book has had a year like that, and will have another.

Management risk is almost entirely yours. That sounds like bad news. I have come round to thinking it is the only good news in this business, because it means the larger share of what closes factories is something an owner can watch, measure and change, often with nothing more expensive than a pen and a fixed time each morning.

I did not see it that way in 2004. In my first eighteen months I made four of the five mistakes on that list above. I avoided the cousin only because I do not have one who wanted the job.

Vilas, as far as I know, now runs a small transport business out of Moshi. Somebody told me a few years ago that he keeps his accounts on a whiteboard in the office, updated every evening, and will not let a lorry leave until the previous trip is paid.

Five questions before the first machine

Over the years, people who came to see me about starting a unit usually arrived with a product already in their heads. A cousin was doing well in it, or they had read about it, or a supplier had shown them a machine running at an exhibition in Pragati Maidan. I started asking them the same five questions every time, mostly to slow them down. Somewhere along the way the questions hardened into a test, and I now ask them about every product before I let myself get interested in it.

- **Is it consumed or worn out?** Eaten, burnt, torn, thrown away, worn down.
- **Is it bought again within twelve months?** By the same buyer, not by a new one you have to go and find.
- **Is it bought in a recession?** When a family or a factory cuts back, does this survive the cut?
- **Is it hard to import cheaply?** Because of weight, bulk, freshness, duty or the need for local service.
- **Can a buyer switch to you without retooling?** If a customer has to change his own machines or redo his approvals to try you, a newcomer will wait years.

Four "yes" answers out of five and the product earns a place in the hundred. Three, and I would want a very good reason. I call this the **Repeat-Purchase Test**, and it is less clever than it

sounds. It is simply a way of asking whether the first drawer is mostly shut before you start worrying about the second.

Three products on the table

Corrugated boxes. I would be a poor witness for my own trade, so take the answers on their merits. Consumed: yes, nearly every box I make is cut open with a blade within weeks and ends up with the kabadiwala. Bought within twelve months: my biggest pharma customer orders every nine days. Recession: yes. In the slowdown of late 2019 my volumes fell about eight per cent, while one customer making washing machines cut his order by a third, but the dal mills and the medicine makers kept shipping, and everything they ship needs a box. Import: a corrugated box is mostly air, and nobody pays sea freight to move air from Vietnam to Pune. Switching: a box is a specification on a sheet of paper (size, number of plies, paper grade, bursting strength), and any competent unit can match it. Five out of five. That last answer cuts both ways, and I will come back to it.

LED decorative lights. In 2016 a young man called Rohit (I have changed his name) asked me to look at his plan to assemble festive light strings in a shed in Chakan. He had priced it carefully. I ran him through the test across my desk. Consumed: partly, since the strings fail after a season or two, though many families keep them in a carton in the loft for years. Within twelve months: once a year if you are lucky, and in a three-week window before Diwali. Recession: no. Decorations are the first thing a household drops. Import: no, and this is the killer, because finished strings were landing from China at prices below what Rohit would pay for the components. Switching: yes, a retailer will buy from anyone. One and a half out of five, on a generous day.

"But everyone buys them," he said.

"Everyone buys them once a year from whoever is cheapest," I said. He went into it anyway, with ₹9 lakh. The unit lasted two

Diwalis.

Steel fasteners. Bolts, nuts, studs, washers. Here the answers depend on which fasteners you mean. Consumed: yes, they go into assemblies that leave the factory and never come back, and maintenance departments replace them constantly. Within twelve months: yes, every month for an assembly line. Recession: only partly, since a fastener maker serving auto plants rides the auto cycle, and in 2019 several in the Hosur belt saw orders drop by a quarter. Import: for standard M8 and M10 hex bolts, no, they arrive cheaply by the container load. For special fasteners made to a particular drawing, with short delivery times to a plant two hours away, yes. Switching: standard parts, easily. Specials, only after samples, trials and a vendor audit.

So fasteners pass, but only if you make specials for nearby buyers, accept the audit delay at the start, and spread your customers so that no single industry can starve you. Make the commodity bolt and you fail on imports. I have watched both kinds of unit open within a kilometre of each other in Bhosari.

Year three

That fifth answer for boxes, the one that cuts both ways, is where this section starts. Any competent unit can match my specification, which means any competent unit can take my customer. The same ease that let me win my first orders in 2004 lets a new shed in Chakan quote ₹1.50 less per box tomorrow morning. A product that passes the test protects you from the market going away. It does nothing to protect you from your own buyer walking across the road.

Of the units I have watched close since I started keeping count around 2010 (somewhere above thirty, in Pune and the clusters I visit), very few died in their first year. The first year has adrenaline in it. The owner's savings are still there, the bank loan usually carries a moratorium of six months or so before the

full instalment begins, and every new order feels like proof. The second year is busier and slightly more tired.

The third year is when the bills from the first two arrive together. Look at what lands on a typical small unit in months twenty-five to thirty-six:

- The loan instalment is now at full size, every month, with no grace left.
- The second-hand machines need their first serious overhaul: rollers, bearings, a gearbox, a motor rewound.
- Sales have grown, so debtors have grown with them, and the cash locked in unpaid bills is double what it was.
- The owner's own money, the cushion he quietly used to cover gaps, is gone.

None of these is a disaster on its own. Together they make a factory that is profitable on paper and cannot pay its wages on the seventh. Here is the arithmetic I showed one founder in 2018. He sold ₹10 lakh of goods a month and gave ninety days' credit. That meant ₹30 lakh of his money was sitting in other people's accounts at any moment. His margin was a respectable twelve per cent. It made no difference. He was profitable and broke at the same time, which is a condition accountants understand and bank managers do not forgive.

One name in the ledger

Then there is the third killer, the one Vilas had. When I went through his order book in March 2004, I saw that one buyer, a consumer-goods distributor in Pimpri, made up roughly seventy per cent of his sales. His books were full. They were also, in practice, one book. When that distributor slipped from sixty days to ninety and then to "next month", Vilas had no other customer large enough to keep the corrugator running while he waited.

I did not learn from him as quickly as I should have. By 2007 a single pharma buyer accounted for forty-one per cent of my turnover, and I remember a Diwali when his payment was three weeks late and I sat in this office working out which suppliers I could ask to wait. He paid. Many do not. Since then I have kept a rule: no customer above a quarter of my sales. I break it sometimes, for a few months, and I sleep worse while I do.

So these are the places where small factories actually die: in the third year, of cash rather than of losses, and very often of one name in the ledger that was allowed to grow too large. A good product helps with none of that directly. It only buys you the right to fight these battles instead of a worse one.

The slotter I bought from Vilas is still at the back of my floor. We use it for short runs now, odd sizes that are not worth setting up the bigger machine for, and the operators call it *buddha*, the old man. It has outlived his business by twenty-one years. A hundred products follow that would pass the test it has passed. The first of them is something nearly every kitchen in India runs out of by Thursday.

CHAPTER 2

The Hundred, Part One: Things Homes and Shops Use Up

Thursday at the kirana shop

Thursday afternoon is restocking day at the kirana shop at the end of my lane in Bhosari. The owner, whom I will call Dattatray (not his real name), sits on an upturned crate with a ruled notebook and reads out what he needs to the distributor's boy on the phone. I stood there one Thursday last October while he did it and counted. Twenty-two lines. Haldi in 200-gram packets, two cartons. Urad papad, one carton. Phenyl, the black bottle and the white one. Agarbatti, three brands, because his customers are loyal to brands of incense in a way they are not loyal to anything else. Matchboxes. Cotton buds. Paper cups for the tea stall next door. Not one item on that list was something a family decides to buy. They simply run out.

Dattatray's order was worth ₹14,600 that week. He places one like it every Thursday of the year, including the weeks in 2020 when the shutter was half down and he served people through the gap.

Most of the fifty businesses in this part of the book make something on that list, or the box, pouch or bottle it arrives in. Before the entries begin, it helps to know how each one is built, because I have squeezed a lot into very few lines.

The four things every entry tells you

Each entry has the same four parts, and I chose them because they are the four questions I ask first when someone walks up the stairs to my office with a plan.

- **Capital range.** This is the rupee figure, in lakh, to get the unit producing and selling: machinery, installation, electrical work, a rented shed's deposit and roughly three months of working capital. It leaves out land, because most of you should not be buying land yet. The prices are what I and the people I advise were quoted in 2024–25, mostly in Pune, Rajkot and Coimbatore. Used machines bring the bottom of the range down; a new automatic line pushes past the top. If an entry says ₹8–25 lakh, someone has done it on eight, and they were busy.
- **Pollution colour.** The Central Pollution Control Board sorts industries into white, green, orange and red. White units barely touch the environment and in most states need no consent at all. Green and orange need consent from the state pollution board, with more paperwork the further up you go. Red units, the dyeing, electroplating and solvent-heavy work, belong only in notified industrial areas and take months to clear. I give the colour as most states list it, but **state lists differ and they change**, so check your own board's current list before you pay a deposit on anything.
- **Key machine.** One machine sets the speed of every one of these units. In a namkeen plant it is the fryer; in a box plant it is the corrugator. That is the machine you inspect hardest when buying used, the one whose hourly output decides your capacity, and the one whose breakdown stops your dispatches. When you reach the costing chapter, it is also the machine your contribution per hour is measured against.
- **Main risk.** One risk, never a list. Every business has thirty things that can go wrong. I name the one that has actually

closed the newcomers I have known, the thing that sank them in year two or three while the order book still looked fine.

Crowded and open

I have also added a plain note where it matters on how full the field is. Some of these businesses have a unit in every second shed of every estate in Maharashtra, and a newcomer competes on price from the first day. Others still have room, usually because the product is boring, or the buyers are fussy, or the work is dirty enough that clever people walk past it. I would rather you knew that before you fell in love with a machine catalogue.

I made my own first decision with none of this written down. I bought a slotter because it was cheap and the seller was desperate, and I worked out the rest over about four years and roughly ₹6 lakh of mistakes. Dattatray, when I told him I was writing this, looked up from his notebook and said, "Write the ones that people buy on credit and still pay for." Then he went back to his order. He was on line nineteen, the phenyl.

Fifteen things India eats from a packet

Food is where most first-time founders want to start, and I understand why. Everybody eats, the machines are small, and your mother's recipe feels like a competitive advantage. It is not. What separates a food unit that earns from one that sells at cost is the licence on its label, and I put that before the entries because it changes how you should read them.

The Food Safety and Standards Authority of India, FSSAI, gives a small maker one of three permissions. Below ₹12 lakh of annual turnover you need only a basic registration, which costs ₹100 a year. Between ₹12 lakh and ₹20 crore you need a state licence, with an inspection, a water test and a named person responsible for food safety. Above that, a central licence. Those

were the thresholds in 2025; check them before you file, because fees and limits have moved twice since I started paying attention.

Here is why it decides your margin. With basic registration and a printed label you can sell to kirana shops like Dattatray's, who pay ₹42 for a 200-gram packet of namkeen that retails at ₹50. With a state licence, a shelf-life report from an accredited laboratory (about ₹6,000 a product) and proper batch coding, you can supply a supermarket chain or a hotel kitchen, where the same packet fetches more and the orders arrive weekly. Without them, the purchase manager will not take your sample out of its bag.

1. **Papad.** ₹3–10 lakh. White. Key machine: the papad-pressing and drying line. Main risk: monsoon humidity, which turns a week's stock soft if you have no dryer.
2. **Namkeen and farsan.** ₹10–40 lakh. Green. Key machine: the continuous fryer. Main risk: oil cost, which is half your raw material bill and moves monthly. **Crowded.**
3. **Cold-pressed oil.** ₹6–20 lakh. Green. Key machine: the wooden or steel kachi ghani (cold expeller). Main risk: buyers who will not pay the premium once they see the price beside refined oil.
4. **Spice grinding and packing.** ₹5–25 lakh. White. Key machine: the pulveriser. Main risk: adulteration in bought chilli and turmeric, which becomes your failed lab report.
5. **Packaged atta and besan.** ₹8–30 lakh. White. Key machine: the stone or roller mill. Main risk: thin margins against national brands. **Crowded in cities, open in district towns.**
6. **Pickles.** ₹3–12 lakh. White. Key machine: the cutting and mixing vessel. Main risk: fungus and leaking jars returned in the first summer.
7. **Rusk and toast.** ₹12–35 lakh. Green. Key machine: the rotary rack oven. Main risk: bakery workers who leave in the wed-

ding season.

8. **Vermicelli and macaroni.** ₹10–30 lakh. Green. Key machine: the extruder. Main risk: running one shape when shops want five.
9. **Poha and murmura (puffed rice).** ₹8–25 lakh. Green. Key machine: the roaster and flaker. Main risk: paddy prices after a bad monsoon. **Open** outside Madhya Pradesh.
10. **Ginger-garlic paste.** ₹6–18 lakh. Green. Key machine: the colloid mill. Main risk: shelf life, which most newcomers claim without testing.
11. **Peanut chikki.** ₹4–12 lakh. White. Key machine: the jaggery cooking kettle. Main risk: a product sold mainly from October to February.
12. **Ready-mix batters and instant flours.** ₹5–15 lakh. White. Key machine: the ribbon blender. Main risk: getting into shops at all, because shelf space is the real price.
13. **Packaged drinking water.** ₹25–60 lakh. Green. Key machine: the RO and filling line. Main risk: BIS certification, which is compulsory and slow. **Very crowded.**
14. **Soya chunks.** ₹30–80 lakh. Green. Key machine: the extruder-dryer. Main risk: a buyer who has never heard of you.
15. **Jaggery powder.** ₹8–25 lakh. Green. Key machine: the evaporating pan. Main risk: sugarcane arrives for five months, so cash goes out in a lump. **Room left.**

On the Floor: Indore

A woman I will call Sapna (not her real name) ran a namkeen unit in Sanwer Road, Indore, on basic registration for three years, selling sev and mixture to about sixty shops at ₹180 a kilo. In 2022 she spent ₹2.4 lakh on a state licence, lab reports and a nitrogen-flushing pack machine. A hotel caterer in Ujjain now takes 400 kilos a month at ₹235. Same recipe, same fryer. When I

asked what had changed, she said, "They read the back of the packet."

Thirteen things every other factory wraps itself in

Every packet in the list above leaves its factory inside something else. Sapna's 400 kilos for Ujjain travel in corrugated cartons, sealed with tape, labelled by someone who owns a flexo press. Packaging is the business behind every other business, and its demand rises and falls with everyone else's output rather than with any single taste or fashion. When biscuit sales dip three per cent, box orders dip three per cent. They do not vanish.

I should declare an interest. I make boxes, so I am biased about entry sixteen, and I have tried to correct for it by being harder on it than on the others.

One warning applies to the whole family. Packaging buyers are factories, and factories pay late. A namkeen shop pays Dattatray in cash on Saturday. A pharma company pays a carton maker on day sixty if the accounts clerk is in a good mood. I was that clerk once, in Chinchwad, and I know how long a supplier's invoice can sit in a tray.

16. **Corrugated boxes.** ₹25–150 lakh. Green (white in some states if you run no boiler). Key machine: the single-facer corrugator. Main risk: kraft paper prices, which can move eleven per cent in six weeks while your customer holds you to last quarter's rate. **Crowded around Pune and Chakan, open in district towns.**
17. **Paper cups and plates.** ₹8–25 lakh. White. Key machine: the cup-forming machine. Main risk: a cheap machine that wastes one cup in eight and a market full of people who bought the same machine. **Very crowded.**
18. **PET preforms.** ₹40–150 lakh. Green. Key machine: the injection moulder with a multi-cavity mould. Main risk: two or

three bottlers taking all your output and setting your price.

19. **HDPE and PP woven sacks.** ₹60–200 lakh. Green. Key machine: the circular loom. Main risk: cement and fertiliser companies that buy by tender, to the paisa.
20. **Kraft paper bags.** ₹5–15 lakh. White. Key machine: the automatic bag-making machine. Main risk: shopkeepers go straight back to plastic the month enforcement of the ban slackens.
21. **Printed labels and stickers.** ₹10–40 lakh. Green. Key machine: the narrow-web flexo press. Main risk: one artwork error on 50,000 labels, and the bill is yours.
22. **BOPP adhesive tape.** ₹15–50 lakh. Green. Key machine: the slitter-rewinder. Main risk: you are cutting someone else's jumbo rolls, so your margin is whatever they leave you. **Crowded.**
23. **Stretch and shrink film.** ₹30–90 lakh. Green. Key machine: the blown-film extruder. Main risk: polymer prices that change every fortnight.
24. **Moulded pulp egg trays.** ₹20–60 lakh. Orange. Key machine: the pulp-moulding and drying line. Main risk: drying fuel, which can eat a third of your cost if you guess it wrong. **Room left**, especially near poultry belts in Namakkal and Hyderabad.
25. **Printed mono cartons.** ₹30–100 lakh. Green. Key machine: the die-punching machine (the offset press can come later; outsource printing first). Main risk: pharma buyers who reject a whole lot for a colour shift you can barely see.
26. **Aluminium foil containers.** ₹10–30 lakh. White. Key machine: the power press with container dies. Main risk: aluminium prices, and dies that cost more than the press. **Growing with food delivery.**
27. **Air-bubble film.** ₹20–50 lakh. Green. Key machine: the bubble-film extruder. Main risk: bulky, light stock that fills your

shed long before it fills your bank account.

28. **Wooden pallets.** ₹8–25 lakh. White. Key machine: the nailing table and a cross-cut saw. Main risk: wet timber, and export buyers who need heat treatment to the ISPM-15 standard, which you will not have. **Open, and nobody clever wants it.**

On the Floor: the box I almost refused

In 2006 a man came up my stairs with a sample of his poha packet and asked for 2,000 small cartons a month. It was a fiddly size and a tiny order, and Ganesh, then still a helper, was the only one free to set the slotter for it. I nearly sent the poha man to someone else.

He now takes 31,000 cartons a month from us. He has paid within thirty days for nineteen years, and the only argument we have ever had was about the shade of yellow on his logo.

Last Tuesday his truck was at my gate at seven in the morning, before my own supervisor had arrived.

Twenty-two things that get used up at home and in hospitals

The last family on this half of the list is the one machine sellers love most, because the products look simple and the demand is obvious. Everyone buys soap. That is exactly the trouble.

29. **Detergent powder.** ₹5–20 lakh. Green for dry mixing (spray-drying is a different factory). Key machine: the ribbon blender. Main risk: national brands that give the shopkeeper a scheme you cannot match. **Very crowded.**
30. **Washing soap cakes.** ₹10–30 lakh. Green. Key machine: the plodder. Main risk: palm oil prices. **Crowded.**
31. **Dishwash bar and liquid.** ₹4–15 lakh. Green. Key machine: the mixing tank and bar press. Main risk: margins of a rupee or two per unit, which only work at volume.

32. **Phenyl and floor cleaner.** ₹3–10 lakh. Orange in most states. Key machine: stirrer tanks and a bottle filler. Main risk: institutional buyers who choose by price alone. **Crowded in shops, room in hospitals and housing societies.**
33. **Acid toilet cleaner.** ₹5–15 lakh. Orange. Key machine: lined mixing tanks. Main risk: one acid burn on your floor, and your insurance and your conscience.
34. **Liquid hand wash.** ₹5–15 lakh. Green. Key machine: the filling and capping line. Main risk: it needs a cosmetic licence from the state drug controller, which newcomers forget.
35. **Agarbatti.** ₹3–15 lakh. White. Key machine: the automatic stick machine. Main risk: sellers who promise to buy back everything you make. They will not. **Very crowded at raw batti, room in scenting and packing.**
36. **Dhoop and sambrani cups.** ₹3–10 lakh. White. Key machine: the cone press. Main risk: half your year's sales fall between Ganesh Chaturthi and Diwali.
37. **Camphor tablets.** ₹5–20 lakh. Green. Key machine: the tablet press. Main risk: competitors who cut their camphor with wax and undercut you by twenty per cent.
38. **Candles.** ₹2–8 lakh. White. Key machine: moulds. Main risk: wax prices and a single festival.
39. **Tissue and napkin converting.** ₹15–50 lakh. White. Key machine: the rewinder and napkin folder. Main risk: the mill sets your parent-roll price. **Growing.**
40. **Sanitary napkins.** ₹10–40 lakh, semi-automatic. White. Key machine: the core-forming unit. Main risk: free government distribution in some states. **Room left in small towns.**
41. **Baby and adult diapers.** ₹1–3 crore. Green. Key machine: the full converting line. Main risk: you are fighting multinationals for shelf space with no advertising budget.
42. **Wet wipes.** ₹20–60 lakh. Green. Key machine: the folding and packing machine. Main risk: cheap imported wipes.

43. **Garbage bags.** ₹15–40 lakh. Green. Key machine: the blown-film extruder with a bag sealer. Main risk: thickness rules under the plastic waste regulations, which change.
44. **Cotton buds.** ₹5–15 lakh. White. Key machine: the automatic bud machine. Main risk: plastic sticks are banned, so budget for paper ones.
45. **Absorbent cotton.** ₹30–80 lakh. Orange, because of bleaching. Key machine: the bleaching kier. Main risk: effluent treatment.
46. **Surgical gauze and bandages.** ₹10–40 lakh. White if you buy bleached cloth, orange if you bleach. Key machine: the gauze folding and cutting machine. Main risk: medical device registration with CDSCO, the central drugs regulator, now applies to small makers too.
47. **Crepe bandages.** ₹15–40 lakh. White. Key machine: the narrow-fabric loom. Main risk: an established Tamil Nadu cluster that already supplies the distributors.
48. **Disposable face masks.** ₹10–30 lakh. White. Key machine: the mask-making line. Main risk: the 2020 buyers have gone and their machines are still for sale. **Stay away.**
49. **Disposable underpads and bed sheets.** ₹8–25 lakh. White. Key machine: ultrasonic non-woven cutting. Main risk: hospital tenders decided on price.
50. **Surgical caps, gowns and shoe covers.** ₹10–30 lakh. White. Key machine: the ultrasonic sealer. Main risk: thin margins that only survive on repeat hospital contracts.

On the Floor: Coimbatore

A man I will call Senthil (not his real name) bought a gauze folding machine in 2019 and set up near Kurichi. Before he signed for it, he asked the seller for the names of the last ten buyers in the district. The seller gave him seven. Senthil visited four of them, found two struggling, and changed his plan: he sold

folded gauze to those two instead of competing with them, then added CDSCO registration in 2023 and went to the hospitals himself. He said, "The machine man told me how many he sold. Nobody told me that before."

The crowding problem

Count the bold words. Nine of these fifty entries are very crowded, and I would guess most first-time founders reading this list will circle at least two of them. The reason is plain. You can see detergent and agarbatti and paper cups. You have never once in your life thought about who makes the rubber gasket inside your pressure cooker lid.

A crowded product is not forbidden. It means the machine is cheap, the recipe is known and the seller has a waiting list of buyers in your district. Before you choose one, ring the raw material dealer within fifty kilometres and ask how many units buy from him. He will tell you. Dealers love to talk about their customers.

The poha man's truck that waits at my gate carries cartons to a factory. That factory buys sacks, film, labels, pallets, nut-and-bolt fixings for its packing machine and a drum of adhesive every month. None of those suppliers has a brand anyone outside the purchase office would recognise.

That is where the second fifty begin.

CHAPTER 3

The Hundred, Part Two: Things Factories, Farms and Builders Buy

Forty thousand fly-ash bricks sat under blue tarpaulin in a yard at Shikrapur in July 2017, and the man who made them, I'll call him Nitin, asked me whether my company needed a compound wall. It did not. He knew that. He was asking everyone who drove past, because the builder who had ordered those bricks had stopped site work when the rain came and then, quietly, stopped answering his phone. The bricks were perfectly good. They would still be perfectly good in October. Nitin's electricity bill, his loan instalment and his eleven workers would not wait until October.

That is the building-materials trade in one yard. The demand is real and it repeats: India puts up houses, godowns, schools and boundary walls every single year, and none of that can be imported, because a truck of bricks loses its margin within about 80 kilometres of the kiln. But the demand comes in waves. It drops every monsoon. It dropped after demonetisation in November 2016, and it stopped dead in April 2020. A builder's credit terms of 120 days are normal in this trade, and a factory that lives on one or two builders lives on their luck.

The units I have seen survive did three things. They sold to many small buyers (the man building a two-storey house in a village, the local contractor doing a gram panchayat road) as

well as the big ones. They kept enough cash to carry three slow months. And they never let cement or fly-ash stock pile up beyond a fortnight, because cement goes hard in a damp shed and fly ash prices move with whatever the nearest thermal plant decides.

Entries 51 to 63

Pollution colours follow the CPCB list as most state boards apply it in 2025. Check yours; some states classify cement products more strictly.

51. Fly-ash bricks. ₹15–35 lakh, white. Key machine: hydraulic brick press with pan mixer. Main risk: depending on one thermal plant for ash, then losing your allocation. **Crowded** near Nagpur and Chandrapur.

52. Paver blocks. ₹12–30 lakh, green. Key machine: vibro-press with rubber moulds. Main risk: municipal orders paid nine months late, so balance them with housing societies and petrol pumps.

53. Solid and hollow concrete blocks. ₹15–40 lakh, green. Key machine: egg-laying or stationary block machine. Main risk: weak curing; blocks that crack on site end your name with every mason in the taluka.

54. AAC blocks. ₹3–5 crore, orange in most states. Key machine: autoclave. Main risk: the capital. Large brands have pushed prices down since 2021, and a half-used autoclave eats interest every day.

55. RCC hume pipes. ₹40–90 lakh, green. Key machine: spinning pipe machine. Main risk: tender-dependent sales and BIS certification you must hold before bidding.

56. Precast compound walls and fencing posts. ₹25–60 lakh, green. Key machine: moulds and a small crane. Main risk: transport breakage and an installation crew you must also manage.

57. Cover blocks for reinforcement bars. ₹3–8 lakh, green. Key machine: table vibrator and plastic moulds. Main risk: al-

most none except tiny ticket sizes; this one still has room.

58. Chequered and terrazzo tiles. ₹10–25 lakh, green. Key machine: hydraulic tile press. Main risk: vitrified tiles from Morbi undercutting you on anything decorative. Sell for godown floors and footpaths.

59. Dry-mix mortar and ready plaster. ₹60–150 lakh, green. Key machine: ribbon blender with sand dryer. Main risk: convincing masons to change habits learned from their fathers.

60. Chain-link fencing and barbed wire. ₹8–20 lakh, green. Key machine: automatic chain-link machine. Main risk: wire-rod prices that can move 15 per cent in a quarter.

61. Pressed steel door frames. ₹15–35 lakh, green. Key machine: press brake. Main risk: builders who ask for custom sizes and then cancel.

62. FRP and concrete manhole covers. ₹20–45 lakh, orange for FRP. Key machine: compression moulding press. Main risk: resin smell complaints from neighbours, so site this one carefully.

63. Rolling shutters. ₹10–25 lakh, green. Key machine: roll-forming machine. Main risk: fitting work done by others that fails and gets blamed on you.

Nitin sold his forty thousand bricks in the end. A school trust in Shirur took them in November at ₹1.20 below his price, and paid cash.

Entries 64 to 73

Hitesh (not his real name) makes drip irrigation laterals in a shed off the Gondal Road in Rajkot, and in February 2023 he showed me his order book for the year. Between April and July it was full. Between September and January there were four pages with almost nothing written on them. "The farmer buys when the borewell report is good and the kharif loan comes through," he said. "After that he buys nothing from me. He buys tractor diesel."

Farm inputs are about as non-discretionary as anything in this book. A farmer who skips fertiliser or lets his drip lines crack loses the crop, and in a drought year he spends more on irrigation, not less. What he does not do is spend evenly. Kharif sowing pulls money in June and July; rabi pulls it in October and November. In between, the dealers in the mandi towns (the market towns where farmers buy and sell) sit on last season's stock and ask you for credit until harvest. Harvest can mean February.

So the question for anyone choosing from this family is not whether demand repeats. It does. The question is how you pay eleven workers in the months when it has not yet repeated.

The units I trust do some version of the following:

- **Book the season early.** Hitesh takes dealer orders in January with a 20 per cent advance, and uses that advance to buy granules before polymer prices rise in spring.
- **Carry a second customer who does not farm.** His extruder runs garden hose and conduit for electricians from August to December. It barely pays, but it keeps the operators and covers the power bill.
- **Count the off months honestly.** If your sales arrive in five months, your cash plan has to cover seven without them. I tell people to write the rent, salaries and EMI for those seven months on one line and look at the total before they buy a machine.

Several of these products also need registration under the Fertiliser Control Order or with the Central Insecticides Board. Those approvals take months, sometimes a year. I don't know how fast any particular state is processing them now; ask two existing manufacturers before you trust a consultant's date.

64. Drip irrigation laterals. ₹40–80 lakh, green. Key machine: extrusion line with inline emitter insertion. Main risk: sales tied

to state subsidy schemes whose payments to dealers run a year late. **Crowded** in Rajkot and Jalgaon.

65. HDPE sprinkler pipes and fittings. ₹30–60 lakh, green. Key machine: HDPE pipe extruder and an injection moulder for fittings. Main risk: fittings that leak at the joint, which a farmer remembers for ten years.

66. Bio-fertiliser (Rhizobium, PSB, Azotobacter). ₹15–40 lakh, green in most states. Key machine: fermenter and carrier mixer. Main risk: short shelf life; a cartoned batch left in a hot godown through May is dead before anyone sows it.

67. Vermicompost and enriched organic manure. ₹5–15 lakh, white or green. Key machine: rotary screen and bagging scale. Main risk: moisture variation that makes every bag a different weight by the time it reaches the shop.

68. Seed and nursery trays. ₹10–25 lakh, green. Key machine: vacuum-forming machine. Main risk: nurseries buy for one sowing window; sell to vegetable seedling growers near cities, who plant all year. This one still has room.

69. Cattle feed pellets. ₹40–100 lakh, green. Key machine: pellet mill with hammer mill. Main risk: maize and de-oiled cake prices. The upside is that cows eat every day, so this is the steadiest earner in the family.

70. Micronutrient mixtures. ₹20–50 lakh, orange in several states. Key machine: ribbon blender. Main risk: agriculture department samples that fail on zinc or boron content, after which dealers drop you quickly.

71. Neem and botanical biopesticides. ₹15–35 lakh, orange or red depending on state. Key machine: emulsifier and filling line. Main risk: the registration itself, which can outlast your savings.

72. Mulch and greenhouse film. ₹1–2.5 crore, green. Key machine: blown film line. Main risk: thin margins against large polymer processors who buy granules cheaper than you can.

73. Farm hand tools (sickles, khurpis, hoes). ₹8–20 lakh, green. Key machine: power hammer and grinding wheel. Main

risk: steel that is too soft. Farmers test an edge on the first day and tell the whole village by the second.

Hitesh's four empty pages were not empty when I visited again that October. They were full of garden hose, in green and yellow, at a margin he described as "enough for tea."

Entries 74 to 90

In August 2019 I sat for three hours and forty minutes in the visitors' room of an auto plant outside Hosur with Karthik (not his real name), who turns brass inserts in a shed in the SIPCOT estate there. His appointment was at eleven. The purchase engineer arrived at 2.40, turned the sample over twice under the tube light and said, "Bring PPAP next month." Then he left.

Karthik was delighted. PPAP is the production part approval file: dimensional reports on a set number of pieces, material test certificates, a control plan, proof that your gauges are calibrated. It runs to sixty or eighty pages for a part that sells for nine rupees. He had been chasing that sentence for fourteen months.

Most plants buy each part from three vendors. Vendor one might carry 60 per cent of the volume, vendor two 25 per cent, vendor three the rest. Being number three sounds like being picked last at cricket. It is worth more than any brand I know, for two reasons. When vendor one has a fire, a strike or a bad rejection, the volume moves within a week, and it moves to whoever already holds a vendor code. And approved vendors are usually paid on a fixed day, forty-five or sixty days, by bank transfer, without being asked. I have never had a famous retail brand of my own, but I have chased enough distributors for money to know which I would rather have.

The price of entry is patience and paperwork. Expect twelve to twenty-four months, two audits and a calibrated height gauge before your first purchase order. My plain rule for this family:

do not buy a CNC machine until a buyer has handed you a drawing.

74. PVC electrical conduit and fittings. ₹25–50 lakh, green. Key machine: twin-screw extruder. Main risk: price wars in wholesale electrical markets, where buyers compare by the bundle and nobody checks wall thickness. **Crowded.**

75. Rubber gaskets and O-rings. ₹15–40 lakh, green, orange if you mix compound yourself. Key machine: compression moulding press with a two-roll mill. Main risk: compound recipes that drift batch to batch until a pump maker rejects a whole lot.

76. Moulded rubber auto parts (bushes, grommets). ₹30–70 lakh, orange. Key machine: transfer moulding press. Main risk: the approval wait described above, which you must fund from somewhere.

77. Injection-moulded industrial components. ₹30–80 lakh, green. Key machine: 150–250 tonne injection moulder. Main risk: moulds. Agree in writing who owns each one before it is cut.

78. Plastic crates and pallets. ₹60 lakh–1.5 crore, green. Key machine: 500-tonne-plus moulder. Main risk: a single crate mould can cost ₹25 lakh, so one wrong design is a year's profit.

79. Nylon cable ties and clips. ₹15–30 lakh, green. Key machine: moulder with a multi-cavity mould. Main risk: imports in the wholesale bazaar; sell direct to panel builders instead.

80. Reclaimed rubber and crumb. ₹40–90 lakh, orange or red. Key machine: cracker mill. Main risk: consent, and neighbours who object to the smoke.

81. CNC-turned components. ₹25–70 lakh, green. Key machine: CNC lathe with bar feeder. Main risk: idle spindles, because the machine came before the customer.

82. Special fasteners. ₹30–80 lakh, green, red if you plate in-house. Key machine: cold header and thread roller. Main risk: drifting into standard sizes, which the big mills sell cheaper than your steel costs.

83. Sheet-metal pressings and brackets. ₹20–60 lakh, green. Key machine: power press. Main risk: one cracked die stops a customer's line, and he remembers.

84. Gears and sprockets. ₹30–70 lakh, green. Key machine: hobbing machine. Main risk: outsourced heat treatment that comes back distorted. This one still has room.

85. Heat-treatment job shop. ₹40 lakh–1 crore, orange. Key machine: sealed quench furnace. Main risk: power bills, and the batch that comes out soft.

86. Zinc electroplating job work. ₹20–50 lakh, red. Key machine: plating line with effluent treatment. Main risk: many estates will not allow it at all; check before you look at sheds.

87. Wire harnesses. ₹15–40 lakh, green. Key machine: crimping presses and test boards. Main risk: labour-heavy work and operators who leave for ₹500 more.

88. Aluminium die-cast parts. ₹50 lakh–1.2 crore, orange. Key machine: cold-chamber die-casting machine. Main risk: porosity rejections found only after machining.

89. Conveyor rollers and idlers. ₹20–45 lakh, green. Key machine: tube cutting and welding fixtures. Main risk: cheap bearings that seize in a cement plant's first monsoon.

90. Compression and tension springs. ₹15–40 lakh, green. Key machine: CNC spring coiler. Main risk: fatigue failures traced back to wire bought from the cheaper dealer.

Karthik got his vendor code in January 2020. The first purchase order was for 4,000 inserts. His PPAP file weighed more than the parts.

Entries 91 to 100

The last ten come from two families I know mostly as a customer. I buy cotton waste by the bale to wipe down the corrugator's glue rollers, and in 2023 I paid ₹61 a kilo for it. My operators wear uniforms stitched by a woman in Akurdi who has had my order every March since 2011. Every new owner

thinks of these things as small. They are small. They are also bought every month by every factory in this book.

91. Cotton yarn waste processing. ₹15–35 lakh, green. Key machine: waste opener and baling press. Main risk: buying mixed waste with polyester in it, which no wiping-cloth buyer will take back.

92. Industrial and school uniforms. ₹10–30 lakh, white. Key machine: single-needle lockstitch machines, ten to twenty of them. Main risk: the school order that arrives in May and is paid for in October.

93. Knitted safety gloves. ₹20–45 lakh, white. Key machine: automatic glove knitting machine. Main risk: Chinese imports at bazaar prices; sell to steel and auto plants that audit their PPE suppliers.

94. Narrow woven tapes and webbing. ₹15–40 lakh, white. Key machine: needle loom. Main risk: dyeing, which you should job out rather than learn on your own money.

95. Wiping cloths and industrial rags. ₹5–12 lakh, white. Key machine: cutting table and bundling press. Main risk: margins of two or three rupees a kilo, so volume is everything. **Still has room** outside the big clusters.

96. Wall putty. ₹25–60 lakh, green. Key machine: ribbon blender with a packing machine. Main risk: dealers who expect sixty days and a scheme every Diwali. **Crowded.**

97. Industrial adhesives (PVA, hot-melt). ₹20–50 lakh, orange. Key machine: jacketed reactor or hot-melt kettle. Main risk: one bad batch that delaminates a buyer's whole shipment. I know, because it was my shipment.

98. Degreasers and industrial cleaning chemicals. ₹8–20 lakh, orange. Key machine: stainless mixing tanks. Main risk: the buyer's maintenance manager changes and the new one brings his own supplier.

99. Cutting oils and coolants. ₹15–35 lakh, orange. Key machine: blending tank with a homogeniser. Main risk: base oil

prices, which follow crude and do not ask you first.

100. Primers and industrial enamels. ₹40 lakh–1 crore, red. Key machine: bead mill and high-speed disperser. Main risk: solvent storage, fire NOC and a consent process that can run past a year.

Four I would hesitate over

I put all hundred in because each one passes the Repeat-Purchase Test. Passing the test is not the same as my recommending it to a stranger with savings.

I would hesitate over **zinc electroplating (86)** because the red category, the effluent plant and the estates that refuse it will eat your first year before you plate a single bolt. I would hesitate over **reclaimed rubber (80)** for the same reason, plus neighbours. I would hesitate over **plastic crates (78)**, where one ₹25 lakh mould decides whether you have a business. And I would hesitate over **enamel paints (100)**, which belong to people who already understand solvents, not to people learning them.

These four are the units I have watched sell good product and still close. Raj (not his real name) ran a small plating line in Bhosari for nineteen months. The board inspector came on a Tuesday in 2017. By the Friday the line was dry, with orders on the clipboard and four workers sitting on upturned drums outside the shed.

That leaves ninety-six. Nobody can run ninety-six, and most readers can run perhaps three.

Last year a woman from Nashik rang me after reading an early draft of these two chapters. She had ₹12 lakh, eleven years of keeping school accounts, and a list of nine businesses written in green ink.

"Which one should I do?" she said.

"Tell me who you can sell to by December," I said.

She was quiet for a long time. Then she asked if she could send me the list.

CHAPTER 4

Choosing Yours

Nine Lines in Green Ink

Her list came by WhatsApp at 11.40 one night, a photograph of a ruled page from a school register, slightly out of focus. Nine businesses, numbered in green ink, with a capital figure pencilled beside each. Masala grinding. Paper cups. Phenyl and floor cleaner. Agarbatti. Fly-ash bricks. Cotton buds. Detergent powder. Papad. Corrugated boxes, which I suspect was a courtesy to me.

I'll call her Meena. She had taught accounts at a girls' school in Nashik Road for eleven years and had ₹12 lakh, part savings and part a gold loan she had not yet told her brother about. She had read every entry twice. What she did not have was any way of crossing eight of them off.

I sent her back a blank grid. Four rows, one column for each business, and a box at the bottom for the total. I have used that grid for about fifteen years with people who come up the stairs to my office, and I call it the Four Constraints sheet because I could never think of a cleverer name.

Four Rows, Scored One to Five

Each row asks a single question, and each answer gets a score from 1 to 5. Five is always the good end.

- **Capital.** Can you set this up, and fund three months of raw material and wages, with the money you actually hold? Not the money a bank might lend you. 5 means comfortably, with a cushion. 1 means only if everything goes right.
- **Raw material within 200 km.** Is there a dealer or mill within a day's truck journey who will sell you your main input in the quantity you need? 5 means three or more suppliers you have phoned. 1 means it comes from another state or another country.
- **A named buyer reachable in 90 days.** Can you write down the name of a person, a shop or a purchase department that could place an order within three months of your first batch? 5 means you have spoken to them and they have asked for samples. 1 means "the market".
- **Licence and pollution difficulty.** How hard is the paperwork for this product in your state? 5 means a white or green category and a simple registration. 1 means red, an effluent plant and estates that will not have you.

Add the four. The highest possible score is 20. **Anything below 12 means choose again.** Not "try harder". Choose again.

Scoring as a Stranger Would

The sheet only works if you are dishonest in the opposite direction from the one you want to be. Everyone inflates the buyer row. I did.

If I had filled in this grid in March 2004, I would have given myself a 4 for buyers, because I had a cousin in a Pimpri pharma distribution firm who said he could "definitely put me in touch". The honest score was a 2. My cousin put me in touch with one storekeeper, who took a sample carton, put his tea on it and never rang back. My first real order came eleven weeks later from a man I found myself, standing outside a Bhosari gate at 8 a.m.

So I give people three rules for scoring.

First, a score needs a name or a number behind it. A 4 on raw material means you can tell me the dealer's name and today's price per kilogram. A 4 on buyers means a person and a phone number, not a sector.

Second, capital includes working capital. A detergent unit with ₹7 lakh of machines and no money for soda ash scores a 1, however cheap the mixer was.

Third, ask someone who does not love you to check it. Your spouse will score you high out of loyalty or low out of fear. A raw-material dealer, a bank officer or a man who already runs the business will score you closer to the truth, usually lower.

Meena sent her first filled-in sheet two days later. Seven of the nine businesses scored between 13 and 16. She was delighted.

I looked at the buyer row. Every box said 4. Not one of them had a name written beside it.

Meena Crosses Out Six

I rang her that evening. "Put a name next to every 4," I said. "If you can't, make it a 2."

"Even if I know the shops exist?"

"Everyone knows the shops exist," I said. "That's why it's a 2."

The second sheet arrived on a Sunday, and it looked like a battlefield. Papad fell to 10. Agarbatti fell to 9, because the only buyer she could name was the temple near her mother's house, which already bought from a man in Sinnar. Fly-ash bricks never had a chance; she had no thermal plant contact and no idea who builds in Nashik. Six businesses dropped below 12 in an afternoon.

Three survived:

Business	Capital	Raw material	Buyer	Licence	Total
Phenyl and floor cleaner	5	4	4	3	16

Business	Capital	Raw material	Buyer	Licence	Total
Masala grinding	4	5	2	4	15
Cotton buds	3	2	2	4	11

The phenyl 4 now had names beside it. Eleven years of school accounts meant she knew the bursars of three schools on the Nashik Road side, the warden of a working women's hostel and the man who held the housekeeping contract for two of those schools. She had signed their invoices. She knew what they paid for a 5-litre can of black phenyl (₹180, from a supplier in Ambad, delivered late about one month in four).

Masala looked better on paper because spices are everywhere in Nashik. But "everywhere" is a raw-material score. She still could not name a single shop that would stock an unknown brand. Phenyl it was.

Harpreet Has the Lathes Already

Harpreet's sheet came from Ludhiana with fewer businesses and more confidence. His father had run a lathe shop off Gill Road since 1991, six conventional lathes, mostly turning jobs for whoever walked in. Harpreet, 29, wanted to put in two CNC machines and make turned components properly.

He scored it 18. I made him justify each box. Capital was genuine: the shed was family-owned, the lathes were paid for, and he had ₹15 lakh plus his father's goodwill with a machine dealer. Raw material within 200 km in Ludhiana is barely a question; the city is made of steel bar. Licence was a 4.

The buyer row said 5, and here, for once, I believed it. A tractor-parts assembler in Focal Point had given him an actual drawing for a hydraulic pin, 4,000 pieces a month, with a tolerance his father's manual lathes could hold only on a good day. He had the purchase officer's mobile number. He had already sent fifty samples, turned by hand.

"So I can order the CNC?" he said.

"You can order one," I said. "When the second drawing comes, order the other."

Arun Wanted the Big Numbers

Arun was the hard one, and I liked him a great deal. Fourteen years in software in Bengaluru, ₹40 lakh saved, a wife who was quietly worried, and no day of his life spent inside a factory. His first choice was PET preforms, the test-tube-shaped blanks that get blown into water bottles. He had read that bottled water was growing and had built a spreadsheet with forty tabs.

His own sheet scored it 15. Mine scored it 11.

Capital came down to a 3 once I asked him to price the moulds as well as the injection machine, and to hold three months of resin at prices that had moved by close to 20 per cent within a single year. His buyer row said "bottling plants, Karnataka". No name. When he did call two bottlers near Hoskote, both already had preform suppliers delivering daily and asked whether he could beat them by a rupee per thousand.

"So I just drop it?" he said.

"You score it again in three years, when you know what a mould costs to repair," I said.

His second sheet was humbler and better. For eight years he had sat through meetings with the facilities team at a Whitefield tech park, and he knew the canteen operator who served four of its buildings, about 9,000 paper cups a day. He had the man's number and had once helped his son with a college application.

Paper cups. Crowded, thin margins, and I told him so. Capital 5, raw material 4, buyer 4, licence 4.

Seventeen. He sent it with a single line underneath: "Less exciting. Is that the point?"

Raw Material or Buyer: Which Should Be Closer

Arun's next question was where to rent. He had found a shed near Nelamangala, on the far side of Bengaluru from Whitefield, for ₹9 a square foot less than anything east of the city. Cheaper rent is the first thing every founder sees and the last thing that matters.

The answer depends on one physical fact: **does your product get heavier and bulkier on the way through the factory, or lighter?** Whichever end of the process is harder to move is the end you sit next to.

My own trade makes the point better than any diagram. Kraft paper arrives in reels, dense and tightly wound, and a truck carries close to its legal weight. The boxes that leave are mostly air. Even flat-packed and strapped in bundles, they fill a truck long before they get heavy. Here is roughly what one 32-foot truck carried for us last year:

Load	Approx. value per truck	Freight, 40 km
Kraft reels in	₹6.5 lakh	₹5,200
Finished 5-ply boxes out	₹1.6 lakh	₹5,200

Same truck, same diesel, same driver. Freight on the outbound side costs about four times as much per rupee of goods. That is why box makers cluster around their buyers in Chakan, Ranjangaon and Bhosari, and why I have never minded that the paper mills are 150 km away in Kolhapur district. Paper travels well. Boxes do not, and they hate rain.

Meena's phenyl works the same way, more extremely. Black phenyl is mostly water, and the water comes out of her own tap. The concentrate and pine oil she buys from Ambad would fit in a tempo; the finished cans for three schools and a hostel need several trips a month. She should be within a short drive of the schools on the Nashik Road side, which is where she already lives. That rarely happens so neatly.

Now reverse it. Take dehydrated onion, which a Nashik founder might reasonably consider, since Lasalgaon is the largest onion market in the country. Fresh onion loses something like 85 to 90 per cent of its weight in the drier. Ten tonnes in, a little over one tonne out. You would be mad to truck wet onions 300 km to a shed near your buyers in Mumbai. You put the drier near the mandi and send the light, dry flakes wherever they need to go. Cold-pressed groundnut oil is similar, though less dramatic: the oil is roughly a third of the seed's weight, and the cake left behind sells locally as cattle feed.

Harpreet's case shows the third possibility. Steel bar is heavy and his hydraulic pins are heavy, so freight hardly decides anything. What decides it is the buyer's habits. A tractor assembler wants parts delivered in small lots, often twice a week, and when a batch is rejected he wants someone at his gate within the hour with the gauge and an explanation. Gill Road to Focal Point is under half an hour. For engineering components that closeness to the customer is worth more than any saving on bar. Karthik in Hosur told me that his vendor code was partly decided by the fact that he could be on the assembly line in twenty minutes.

So the rule of thumb runs like this:

- **Product gets bulkier or heavier** (boxes, cups, phenyl, bricks, foam): sit near the buyer.
- **Product gets much lighter** (dried vegetables, oil, rice milling, stone crushing): sit near the raw material.
- **Both dense, buyer demanding** (turned parts, fasteners, gaskets): sit near the buyer for service, not freight.

I am less certain about products sold through distributors across a whole state, where the "buyer" is a godown that can move. There I would sit wherever the labour and the power are reliable and accept the freight.

Arun's cups fall plainly in the first group. Paperboard reels come in tight; nested cups go out in cartons that are nine-tenths air, and the canteen wanted deliveries every three days. Nelamangala to Whitefield is 50 km through the worst traffic in the country. I asked him to price the extra freight over a year against the ₹9 he would save on rent.

He rang back the next morning. "The rent saving is ₹1.6 lakh," he said. "The freight is ₹2.3 lakh. And that's if the driver turns up."

By Thursday he was looking at sheds in Hoskote.

Sell Someone Else's Product for Thirty Days

Before any of the three signed a lease, I asked them to do something that sounds backwards: **sell the product for a month without making it.** Find a working unit, buy its finished goods at whatever price it charges, put them in front of the buyer named on your sheet, and see what happens. Buyer before machine. If the buyer will not take a product you bought in, he will not take one you made yourself at three times the investment.

I did not do this. I bought Vilas's machines first and found my customers afterwards, which is the order in which most people lose their savings. I was lucky, and I have watched luckier men than me run out of it.

Arun went to a cup maker in Peenya, a two-machine unit run by a man called Ravi, and bought 2,70,000 single-wall cups, a month's supply for the canteen, at ₹0.48 each. He sold them to the canteen operator at ₹0.55. On paper that was ₹18,900 for thirty days of driving, phoning and loading cartons into a hired tempo. In practice he learned four things that no spreadsheet had told him:

- The canteen paid on day forty-one, not day thirty, and only after Arun went in person.

- One batch of about 6,000 cups leaked at the side seam when filled with hot sambar. The operator deducted the whole carton and a little more for his trouble.
- The operator wanted 150 ml cups for coffee and 210 ml for tea, which meant two sizes and two sets of dies.
- A second canteen in the same tech park asked for a quote after seeing the cartons arrive.

The leaking seam was the most useful ₹2,880 he has ever lost. He now knew which defect his customers would notice first, and he asked Ravi exactly how it happened. Ravi said, "Paperboard was damp. Monsoon." Arun wrote that down.

Meena's month was simpler and more surprising. She bought 400 litres of black phenyl from a small unit in Ambad at ₹19 a litre, in 20-litre cans, and supplied her three schools and the hostel at ₹26. Two schools paid within a week. The hostel warden paid in cash on delivery. The third school's bursar, a careful woman named Mrs Joshi, refused the 20-litre cans because the ayahs, the cleaning staff, could not lift them onto the shelf, and asked for 5-litre cans instead. That changed Meena's packaging cost by nearly ₹2 a litre and told her exactly what her filling line should look like.

Harpreet's version was shorter, since he could already turn the pins. What he could not do was harden them, so for the first trial order of 800 pins he paid a heat-treatment shop on Industrial Area A ₹14 a kilo and stood beside the furnace for half a day. The tractor assembler rejected 31 pins for a hardness reading at the low edge of the drawing. Harpreet learned which number the quality inspector actually checks, and which furnace operator in Ludhiana he would trust with his name.

Keep a notebook for the thirty days. One line a day: what you delivered, what you were paid, what was rejected and why, and anything the buyer said he wanted that you had not offered. At the end, count three things. Did the buyer reorder without be-

ing chased? Did he pay within the terms he promised? Did your margin survive the rejections? Two yeses and you have a business worth scoring again with real numbers. One, and you have saved yourself ₹12 lakh, or ₹40.

There is a practical catch, and it arrived for all three in the same week. Schools want a proper invoice. Tech-park canteens want a GST number on it. Tractor assemblers want both, plus a vendor registration form with a PAN, a bank letter and a cancelled cheque. You cannot sell someone else's product for long without becoming, in the eyes of the law and the bank, a business.

Meena rang me on day twenty-two. Mrs Joshi had placed a standing order for 60 litres a month in 5-litre cans, and the school's accountant had asked for her GSTIN before he would release the payment.

"I don't have one," she said. "Where do I even start?"

I told her to bring a photocopy of her PAN card, her Aadhaar, her electricity bill and a blue file. The file was important. It was about to get very thick.

CHAPTER 5

Papers, Permissions and the Bank

Meena and the nephew's advice

Meena took the 7.10 Shivneri bus from Nashik and was in my office above the floor by half past eleven, blue file on her knees. She had already been told what to do. Her nephew in Thane, who works in a bank's credit card department, had said she must register a private limited company, because "Pvt Ltd sounds serious and nobody takes a proprietor seriously."

I have heard this sentence perhaps forty times. It is half right, which is the dangerous kind of right.

"How much phenyl will you sell in the first year?" I said.

"If Mrs Joshi stays and I get four more schools, maybe ₹9 lakh."

"Then you are a proprietor," I said. "Your nephew can be serious on his own time."

What each form actually costs you

A **sole proprietorship** is not really registered as such. You are the business. It comes into existence the moment your GSTIN, your Udyam certificate and a current account in your trade name say so, which for Meena meant a few hundred rupees and a week. Profits are added to your personal income and taxed at your slab rate. The catch is plain: if the business owes money it

cannot pay, the creditor can come for your flat, your fixed deposits and your gold. Unlimited liability. Most first-generation owners do not read that phrase until it is too late to matter.

A **private limited company** is a separate legal person. Incorporating one through the government's SPICe+ form cost my clients between ₹8,000 and ₹15,000 in 2024, including a chartered accountant's fee. The running cost is what nobody mentions. A company must have its accounts audited every year, file returns with the Registrar of Companies, hold board meetings and keep minutes. Budget ₹30,000 to ₹50,000 a year for this, more if your accountant is good, and he should be. Corporate tax under the new regime is a flat 22 per cent plus surcharge and cess, about 25.17 per cent in all, which only beats a proprietor's slab once profits are healthy.

A **partnership firm** or an **LLP** (limited liability partnership, a hybrid that limits each partner's exposure) suits two people who genuinely bring different things: one the money, one the machines and the customers. I have watched more partnerships between school friends end in silence than in profit. If you do one, write down on day one what happens when somebody wants to leave. Nobody does.

One caution. Limited liability protects you less than people think. For any loan above a few lakh, the bank will ask for your personal guarantee anyway, and then the company's debt is your debt again.

When to change

I ran my unit as a proprietorship from March 2004 until April 2011. I converted for three reasons, and none of them was prestige:

- A multinational food company wanted to put me on its vendor list, and its procurement policy did not register proprietors above a certain annual value.

- My bank limits had grown past ₹60 lakh, and my wife, reasonably, asked what happened to our house if a big customer went under.
- Profits had reached the point where the tax difference paid for the auditor several times over.

Any one of those is a good reason to change. Feeling small is not. Conversion is real work: every machine and debtor has to be transferred to the new company, GST and Udyam registrations are done afresh, and every loan document is signed again. My CA, Deshpande, took eleven weeks over mine, and the bank spent four of those deciding whether my sanction letter still applied.

Meena wrote "proprietor" on the first page of her file, underlined it twice, and asked me to repeat the bit about the house.

The order on her first page

Meena wanted a list. I gave her one on the back of a delivery challan, because the order matters more than the paperwork itself. Do these out of sequence and you spend rent on a shed you cannot legally run.

- Udyam registration
- Current account and GST
- Shop or trade licence from the municipality or gram panchayat
- Pollution-board Consent to Establish
- Fire NOC, if your shed and process call for one
- Factory licence, if your headcount crosses the line
- Consent to Operate, and only then production

Udyam and GST

Udyam is the government's registration for micro, small and medium enterprises. It is free, online and done with your Aadhaar and PAN in about twenty minutes. Under the limits revised in April 2025, a micro unit is one with up to ₹2.5 crore in plant and machinery and up to ₹10 crore in turnover. Meena would be micro for a very long time. The certificate costs nothing and opens the door to priority-sector lending, CGTMSE cover and the rule that buyers must pay an MSME within forty-five days. Several websites will charge you ₹2,000 to ₹5,000 for this. Do not pay them. I said this twice. She wrote it down once.

GST comes next. For goods, registration is compulsory above ₹40 lakh of turnover in most states, ₹20 lakh in a few. Meena's ₹9 lakh would not oblige her. Register anyway. Schools and companies want a tax invoice so they can claim input credit, and an unregistered supplier is quietly dropped. Hers took nine working days, and a GST officer visited the rented shed in Satpur to check that it existed. Keep the rent agreement and an electricity bill in your trade name ready for that visit.

The **trade licence** or shop licence is local and varies wildly. In Pune's PCMC area I paid a few hundred rupees in 2004. A gram panchayat outside Nashik may simply want a no-objection letter and a receipt.

Consent to Establish, before the machines arrive

This is the one people get wrong. The state pollution control board grants two consents. **Consent to Establish** (CTE) permits you to set up. **Consent to Operate** (CTO) permits you to produce. You apply for CTE before you install machinery, not after.

How hard it is depends on your colour. A **white** unit needs no consent at all, only an intimation. **Green** units get a simpler application and long validity; in Maharashtra, green CTO can run for many years. **Orange** units face inspection and conditions on

effluent and emissions. **Red** units need a proper application, often an environmental consultant, and land in a notified industrial area. Fees scale with capital investment.

Meena's phenyl is cold-blended: pine oil, emulsifier and water stirred in a tank. When we checked the MPCB list that week it fell in a category requiring consent but not the heavy end. I would not swear to the colour for your state. Lists are revised, and a small change in process, adding heating, say, can move you up a band. Read the current list yourself before you sign a lease.

My own mistake was in 2004. I ran a starch gum kitchen with a small boiler for three months before anyone told me the boiler changed my position. An MPCB field officer named Pawar walked in one Saturday, looked at the chimney and said, "Who gave you permission for this?" Nobody had. The fine was modest. The fright was not.

Fire, factory licence, then the last door

A **fire NOC** depends on your shed's built-up area, height and what you store. Paper, solvents and plastics attract attention. Budget for extinguishers, sand buckets and a fire officer's inspection.

The **factory licence** under the Factories Act applies once you cross a worker threshold. Nationally it is ten workers with power, twenty without; Maharashtra raised its own limits to twenty and forty in 2015. Meena planned on three people. Not yet.

Then comes **Consent to Operate**. The board checks that what you built matches what you promised in the CTE. In Maharashtra the MAITRI single-window portal handles most of these applications now, which helps, though "single window" still meant four separate fee receipts in Meena's file.

She stapled them in date order, oldest at the back, and drew a box on the inside cover for the CTO number. It stayed empty for

seven weeks.

Money that actually exists

Meena's phenyl plan needed about ₹7 lakh, so on paper she did not need a bank at all. I told her to borrow part of it anyway. Savings spent on a mixing tank cannot pay the rent in month five, when a school purchase office has decided that forty-five days is a suggestion. Use the bank's money for the machines and keep your own for the bad month.

Here is what is real and turns up on time, as of 2025.

MUDRA loans come through ordinary banks under the Pradhan Mantri Mudra Yojana. They are not a separate lender, just a label on a bank loan with a government guarantee behind it. There are four tiers:

- **Shishu**, up to ₹50,000
- **Kishore**, ₹50,000 to ₹5 lakh
- **Tarun**, ₹5 lakh to ₹10 lakh
- **Tarun Plus**, ₹10 lakh to ₹20 lakh, added in October 2024 for borrowers who have repaid an earlier Tarun loan

No collateral is asked for at these sizes. That does not mean the bank will lend to anyone who asks. The branch still wants a project report, a GST number and some sign that you have sold something. Meena's thirty days of reselling bought-in phenyl to two schools and a hostel gave her exactly that.

CGTMSE, the Credit Guarantee Fund Trust for Micro and Small Enterprises, covers larger loans. If the bank lends to you without collateral, the trust guarantees most of the loan in return for an annual fee, roughly 0.37 to 1.35 per cent depending on size. The cap went to ₹5 crore in 2023, and the 2025 budget announced ₹10 crore. Check what your branch is actually applying. Your Udyam certificate is the ticket in. Some branch man-

agers still ask for your flat as security on top of the cover. You are entitled to ask, politely, why.

PMEGP, which arrives slowly but arrives

The **Prime Minister's Employment Generation Programme** is the one subsidy I have watched pay out reliably, with conditions. It is run through KVIC and the District Industries Centre. For a new manufacturing unit up to ₹50 lakh, the government pays part of the project cost as "margin money": 15 per cent in urban areas and 25 per cent in rural for general applicants, and 25 and 35 per cent for women, SC/ST and some other categories. You put in 10 per cent, or 5 per cent if you are in a special category.

Meena, a woman setting up in Satpur, would get 25 per cent. On ₹7 lakh, that is ₹1.75 lakh.

Two catches. You must finish a short entrepreneurship training course before the money is released. And the subsidy does not go into your hand. It sits in a fixed deposit at the bank for three years, and you pay no interest on that portion. It is adjusted against the loan only after an officer visits and confirms the unit is still running. Close in year two and it goes back.

"So I get it in 2028," Meena said.

"If you're still making phenyl in 2028," I said.

She thought that was fair. So do I.

The ones that mostly don't arrive

State capital subsidies are where I lose my patience. Maharashtra's Package Scheme of Incentives, and its cousins in Gujarat, Tamil Nadu and Madhya Pradesh, promise capital subsidies, interest subsidies, electricity duty waivers and a refund of state GST. Most of it is real on paper. The money is another matter. Budgets run out and zones get reclassified. Eligibility of-

ten hinges on a date your plant first ran, and a missing document can push that date back by a year.

My friend Anil (not his real name), who makes HDPE drums near Jejuri, was sanctioned an interest subsidy in 2016. He received his first instalment in 2019 and the last one in 2022, by which time he had repaid the loan it was meant to ease. He does not complain much now. He just tells people to write the subsidy into their project report as zero.

That is my advice too. Apply for everything you qualify for. Count none of it. If the state's money comes, put it towards a second machine. If it never comes, you will not have built a factory that depended on it.

Meena wrote "₹0 — state" in pencil at the bottom of her funding page. Mr Kulkarni would later circle a different number on that page, and he was right to.

Twenty-eight lakh, in red ink

The first project report I ever wrote that a bank took seriously was for ₹28 lakh, in the autumn of 2008. It covered a second-hand corrugator line, a printer-slotter, a deposit on the shed next door and three months of working capital. I typed it myself on the office computer over eleven evenings. I was proud of it. Mr Kulkarni, the branch manager at our Bhosari bank, read it in front of me with a red ball pen, and by page four I was no longer proud of anything.

I still have it. When people like Meena ask what a report should contain, I hand them a photocopy, red ink included. It runs in this order:

- **Promoter profile**: who you are, what you have done, what you are putting in
- **Product and market**: what you make, who buys it, at what price

- **Machinery and quotations**: each machine, its supplier and a dated quote
- **Cost of project and means of finance**: what you need and where every rupee comes from
- **Projected profit and loss** for five years
- **Cash flow and repayment**, with the debt-service coverage ratio (profit available to repay, divided by what you must repay each year)
- **Working capital assessment**

Mr Kulkarni circled three things.

The first was my market section. I had written "strong demand from pharma, FMCG and auto sectors in the Pune belt." He drew a ring round the whole sentence and wrote "WHO?" in the margin. I had eleven customers at the time. I had not named one of them.

The second was my debtor days. I had assumed thirty. He pulled my current account statement from his drawer, ran a finger down the credits and said, "Your money comes in after sixty-seven days. Why will it come in after thirty next year?" I had no answer. Sixty-seven days was the truth, and the truth meant my working capital line was short by roughly ₹4 lakh.

The third was a single figure in the cost sheet: scrap at 2 per cent. My own register showed 6.8. I had written down what I hoped for.

"The report is not for impressing me," he said. "It is for frightening you before you sign."

I rewrote it in a week. Named buyers with monthly volumes. Debtor days at sixty-five, with a plan to bring them down. Scrap at 6 per cent. The project grew to ₹31 lakh, the coverage ratio fell from 2.4 to 1.6, and he sanctioned it within a month. A worse-looking report got the loan, because he could believe it.

This is why I distrust the consultants who sit outside District Industries Centre offices offering to "get" your PMEGP or state

subsidy for 5 or 10 per cent of the sanctioned amount. Their reports are beautiful. Every machine runs at 85 per cent capacity from month one and every customer pays in thirty days. Bank officers have seen a thousand of them and can smell the template. Worse, you end up paying a percentage for something you could have filed yourself, and you sign a document whose numbers you never had to defend. Pay a chartered accountant a flat fee to check your arithmetic if you like. Write the thing yourself.

Mr Kulkarni retired in 2016. He still reads a report for me now and then, over tea, in exchange for a box of Chitale bakarwadi. In April I posted him Meena's.

He sent it back with one circle, on her funding page. She had shown sales of ₹1.1 lakh in month one, rising to ₹2.4 lakh by month six. Reasonable. But her own margin money, the ₹70,000 she was putting in, was marked as "available from savings" in the same month she planned to pay a shed deposit and the first raw material bill.

"She has spent this money twice," he wrote underneath. "Which time does she mean?"

Meena moved the deposit into the loan, kept her savings back for the bad month, and took the report to a branch on Trimbak Road in the second week of May. The sanction letter came on 19 June: ₹6.3 lakh under Tarun, with the PMEGP margin money parked in a fixed deposit she could not touch until 2028.

She sent me a photograph of it that evening. Behind the letter, on her dining table, I could see a hand-drawn floor plan of a shed she had not yet rented, with a mixing tank sketched in the wrong corner.

CHAPTER 6

Shed, Power and Machines

Six things to check before you sign

Water is how I learnt to read a shed. In late May 2004, about seven weeks after I signed for my first unit in Bhosari, a pre-monsoon storm came through at four in the afternoon and the floor near the back wall turned into a shallow pond. My kraft paper reels were stacked there. Paper drinks water from the bottom up, like a wick, and by the time I had moved the reels with Vilas's old helper and a borrowed trolley, nine of them had a wet band twenty centimetres high. I lost about ₹38,000 of paper that evening. The landlord said the drain outside had "always been fine". It had always been fine for the man before me, who stored cement bags on pallets.

So rent first. Buying a shed in an industrial estate ties up money you will need for raw material and debtors, and you do not yet know whether the building suits the work. Rent for two or three years, learn what you actually need, then decide. Before you sign, check six things, in person, with a tape measure and a torch.

Floor load. Ask what the floor was laid for, and look at it. Cracks running in straight lines, patches of fresh screed and sunken areas near the shutter all tell you something. A corrugator, a hydraulic press or a stack of filled drums puts weight on a small area. A residential-grade 100 mm slab will crack under a

3-tonne machine within a year, and the landlord will want you to pay for it. If the machine is heavy, budget for a separate foundation and get written permission to cut the floor.

Roof height. Measure it at the lowest point of the truss rather than the peak. Then add up what goes under it: the machine's height, the reach of a chain pulley block for lifting rolls or moulds, and the height you will stack finished goods. I need at least 6 metres clear. Meena, mixing phenyl, can manage with 4.5. A low roof also means a hot roof. In April a tin roof at 4 metres makes the floor about as pleasant as a bakery oven, and people slow down.

Drainage. Walk round the outside. Find where the roof water goes, where the floor washing goes, and how high the plinth stands above the road. If the road is higher than your floor, you are the drain. For a wet process like Meena's, the floor must slope towards a drain point, and that point decides where her mixing tank sits. Her drawing had the tank against the front wall and the only floor trap at the back.

Three-phase supply and sanctioned load. Look at the meter and the electricity bill, and note the sanctioned load in kilowatts. Many sheds show three-phase wires on the pole and a 5 kW connection inside. If your machines need 40 kW, you need an enhancement, and that takes weeks you will be paying rent through. I will come to how many weeks shortly.

Truck access. Stand at the shutter and imagine a 32-foot container backing in. Is the lane wide enough? Is there space to unload without blocking three neighbours? A shed you can only reach with a Tata Ace means every paper delivery gets broken up and handled twice, and you pay for that twice.

The lease itself. Read four clauses slowly: the lock-in period, the annual escalation (5 per cent is normal around Pune, 10 is greedy), who pays for roof and structural repairs, and whether the landlord will sign the consent forms the pollution board and the electricity board ask for. Some landlords refuse to sign any-

thing with "factory" on it. Find out before you hand over the deposit, which in most MIDC estates now runs to between six and ten months' rent.

I went with Meena to see the Satpur shed on a Saturday in late June. The landlord, a pleasant man named Joshi, kept tapping the wall and saying, "Solid construction, madam, RCC." Meena had stopped listening. She was standing at the back with her phone torch pointed at the floor trap, then looking at the front wall, then back at the trap.

"I'll need to redraw it," she said.

The electricity board's calendar

The sanctioned load on my first shed was 7.5 kW. I had worked out that the slotter, the rotary cutter, a stitching machine and the lights would need about 32 kW, and I had assumed, as a former accounts clerk who had never applied for anything bigger than a ration card, that an enhancement was a form and a fee. I applied to MSEDCL, the state distribution company everyone around Pune still calls "the board", in the second week of April 2004. The new load was released on the first of July. Eleven weeks. I paid ₹9,500 a month in rent for every one of them.

Nobody was being lazy. The process simply has more steps than the website suggests, and each step waits for a person. In Maharashtra it runs roughly like this, and most states follow a similar pattern:

1. Online application with the landlord's consent letter, ownership or lease papers, and a test report from a licensed electrical contractor.
2. Site inspection by the section engineer, who checks the wiring and whether the existing transformer can carry you.
3. A demand note: the security deposit and service connection charges, worked out on the new load.

4. Payment, then the work itself: a new meter, sometimes new cable from the pole, sometimes a new transformer.
5. Release of load and a revised bill.

The official timeline for a low-tension connection is a few weeks. The real one depends almost entirely on step two. If the transformer on your lane is already loaded by your neighbours, someone has to augment it or you have to pay for your own, and above a certain load your own transformer becomes compulsory anyway. Ask the section engineer about this before you sign the lease, not after. In my experience a simple enhancement on spare capacity takes four to six weeks. Anything involving a transformer takes three months and sometimes five. I don't know how your state's thresholds sit this year; they change, so ring the local sub-division office and ask a named person.

The contractor I used, Bhosale, put it more bluntly. "Saheb, the form is fast," he said. "The transformer is slow."

What a diesel set really costs

The obvious fix for a long wait is a generator, and I rented one in May 2004: a 62.5 kVA set on a trailer, ₹1,600 a day plus diesel. I ran production on it for three weeks to fill a first small order and then stopped, because I had finally done the arithmetic.

	Grid	Diesel set
Cost per unit (kWh), 2024–25, roughly	₹9 to ₹11	₹26 to ₹32
Cost for 25 kW over an 8-hour shift	about ₹2,000	about ₹5,800

A box sells on a margin of a few rupees. Triple the power cost and most of that margin disappears into the exhaust. Diesel is for running through a cut, never for running a business.

You will still want a set, because rural feeders around Chakan and Shikrapur trip often in the monsoon, and a corruga-

tor that stops halfway leaves you a line full of glued, ruined board. Size it for what must not stop, not for the whole shed. Buy one that meets the current CPCB IV+ emission norms with the acoustic enclosure already fitted, or the pollution officer will ask about it at your consent renewal. A new 30 kVA set costs somewhere between ₹4.5 and ₹6 lakh today. Second-hand ones without the right compliance papers are cheaper for a reason.

Two smaller points that cost owners money every month. Ask the contractor to fit a capacitor panel, because a poor power factor brings a penalty on the bill, and motors running half-loaded make it worse. And read your bill line by line once a quarter. In 2009 I found I had been paying for a demand charge on a load I no longer used. Fourteen months of it.

Meena's phenyl unit needed only about 10 kW: a stirrer motor, a transfer pump, a filling machine, lights. The Satpur shed already had 15. She rang me from outside it, sounding almost disappointed.

"So I don't have to wait for anything?"

"Not for power," I said. "Ask Joshi about the water connection."

Someone else's machine

Every second-hand machine has a story about why it is for sale, and the seller will tell you a nicer one than the truth. Vilas's slotter was honest enough: its owner had run out of cash, not out of luck with the machine. That is the best reason a machine can come to market. The worst is that it has been quietly ruining work for two years and the owner has finally found someone who does not know.

The three markets I know reasonably well sort themselves by trade. **Ludhiana** for lathes, presses, knitting and general workshop machines. **Rajkot** for CNC lathes, pumps, plastic moulding and anything to do with engines. **Coimbatore** for textile machinery, pumps, motors and foundry equipment. Corrugation

machinery turns up in all three, and in Delhi's Mayapuri and Pune's own scrap yards around Kasarwadi. Prices in these places are often 40 to 60 per cent of new. That gap is the whole temptation.

In September 2006 I found a single-facer corrugator in Ludhiana, at a unit on Focal Point Phase VIII that was moving to a bigger line. Asking price ₹6.5 lakh, settled at ₹6 lakh. A new one from a Pune maker was quoting about ₹14 lakh then. I was ready to pay over the phone.

Instead I paid ₹4,000, plus a train ticket, to Shinde, a fitter who had retired from a Bhosari machine builder after thirty-one years of assembling exactly these machines. He spent four hours on it. He brought a dial gauge, a torch, a magnet and a rag.

What Shinde checked

- **Run it under load, with your material.** A machine that runs empty proves only that the motor turns. Shinde made them feed our own kraft through it for twenty minutes.
- **Roll wear.** He put the dial gauge on the corrugating rolls. The flutes were worn unevenly, deeper at one end. Regrinding would cost about ₹70,000.
- **Gearbox oil.** He drained a little into a cup and held the magnet in it. Fine grey paste means teeth are wearing. Bright flakes mean something has already broken.
- **Bearings.** He put a screwdriver tip on each housing and his ear to the handle. Old fitters' stethoscope.
- **The frame.** He looked for weld lines under the paint. Cracked castings that have been welded rarely stay straight.
- **The motor nameplate.** A motor rewound by a local shop often loses efficiency. Ask for the rewinding bill; if nobody has one, assume the worst.

He found the roll wear and a steam joint that leaked. I went back to the seller and got the price down by ₹85,000, which paid for Shinde roughly twenty times over.

What to walk away from

Fresh paint. A machine painted last week is hiding something more often than not. **No maker's plate.** You will never find spares, and the bank's valuer will not like it either. **Makers who have shut down,** unless you can see the spare parts with your own eyes. **"Running condition" with no power connected.** If it cannot be switched on where it stands, it is scrap until proved otherwise.

Then the paperwork. Insist on a proper GST invoice, because your bank will want one, and so will your CA when he claims depreciation. Most banks financing used machinery also ask for a valuation from a chartered engineer, which costs ₹8,000 to ₹15,000 and takes a week. Budget for loading, transport and a crane at both ends. That Ludhiana corrugator cost me ₹38,000 to reach Bhosari by truck in 2006, and one wheel of the trailer nearly went into a ditch outside Panipat.

The machine ran for fourteen years. Shinde came to see it every year at Diwali, put the screwdriver to the bearings, and said nothing unless something was wrong.

Draw the paper first

The first floor I laid out was in a 2,400 square foot shed on a lane behind the Bhosari telephone exchange, in April 2004, and I did it the way most new owners do. I stood in the empty shed with Vilas's two machines on a truck outside and asked the driver where they would fit. The slotter went against the long wall because that was where the power point was. The rotary cutter went near the door because it was heavier and the crane could

not reach further in. The kraft reels went wherever there was floor left.

It worked, in the sense that boxes came out. It also meant that every reel travelled past the finished stock to reach the cutter, every cut sheet came back past the reels to reach the slotter, and the finished bundles then went the length of the shed a third time to reach the loading door, which was the same door the reels came in through. Raw paper and packed boxes met in the doorway every afternoon. My helper Ganesh, who joined in 2005, called that corner "chowk", the crossroads, and he was not being affectionate.

When the Ludhiana corrugator arrived in 2006 there was no sensible place left to put it, so I did the thing I should have done two years earlier. I took a sheet of graph paper, one square to a foot, and drew the path the material takes before drawing a single machine.

One direction, one door in, one door out

The rule is simple enough to fit on a matchbox. **Material should move in one direction and never cross its own path.** Reels come in at one end. They are corrugated, pasted, cut, printed, slotted, stitched or glued, counted, bundled and dispatched, and each step should sit next to the one after it. If your shed has two doors, raw material uses one and finished goods use the other. If it has one door, you plan a U-shape, in on the left and out on the right, with an aisle down the middle that nothing is allowed to stand in.

Before you draw, write down three things for each machine:

- its footprint, plus at least a metre of working space on the operator's side
- where its input arrives and where its output leaves
- what it needs from the walls: three-phase supply, water, a drain, an exhaust

Then measure the shed yourself. Landlords' drawings are aspirational.

I redrew the Bhosari floor in February 2007 and moved two machines over a Sunday. Before the move I asked the forklift operator, Suresh, to make a tally mark on a card each time he lifted something. He averaged 146 lifts a day across the shift. Three weeks after the move he was averaging 88. Call it forty per cent. Nobody worked harder. The material just stopped going for walks.

Leave space for the machine you will buy in three years. I did not, and the printer I bought in 2010 sits at an angle that still annoys me.

The tank in the corner

Meena sent me her Satpur floor plan again in the first week of July, this time drawn properly on graph paper by her son, with the shed's real measurements. The mixing tank had moved. In her first drawing it stood in the far corner from the door, which meant the empty drums would come in, cross the shed to be filled, and travel back full, roughly 200 kilograms each, past the filling machine and the labelling table. Her husband had pointed out that she would be rolling drums of phenyl past the place where people stood.

Now the raw chemicals came in at the door and went straight to a storage rack, then to the tank, the filling machine, labelling, cartons, and a stacking area by the shutter. Every arrow went one way. Joshi had agreed to put a drain under the tank. The water connection would be live by the twentieth.

"So when do I switch it on?" she said, when she rang.

"When you have written down what you will check before the first litre goes into a bottle," I said. "And bring a notebook for the scrap."

She laughed, because she thought I was joking. Her first batch was set for 28 July.

CHAPTER 7

The First Batch

Nine seconds

Two days before her first batch, Meena read me her process over the phone, and it took her nine seconds.

"Mix, fill, label, pack," she said. "Then stack by the shutter."

That is not a process. That is a memory of a process, and it lives in one head, which happens to be the head that will also be at the bank, at the GST office and at her daughter's parent-teacher meeting. The day she is not on the floor, the person mixing will do it the way it looks right to them. I know this because I let it happen to me.

In June 2004, in my third month, I had a helper called Bhimrao who had worked at another box unit in Bhosari and knew how to cook starch glue for the corrugator. I did not. So I let him make it by eye: a bucket of starch, some caustic, some borax, water until it "looked right". For two weeks it did. Then one Saturday he was at a wedding in Satara, a second boy made the glue by watching the bucket the way Bhimrao did, and on Monday a customer in Chakan sent back 640 boxes with the layers peeling apart at the flute. At ₹9.40 a box, that was a little over ₹6,000 of board, plus the reprint, plus a very cold phone call. Nobody had done anything wrong. There was simply nothing written down for anyone to do right.

So before a machine runs, write the process on one sheet of paper, in the words the person doing it actually uses. I give people five rules:

- **Every line starts with a verb.** Weigh, pour, stir, check, fill. Not "mixing stage".
- **Every line has a number.** Litres, kilograms, minutes, temperature. "Some" and "until ready" are banned.
- **Every line names a check.** What does the operator look at, smell, measure or weigh before moving on?
- **Every line names who.** One person, by role.
- **Every line says what happens if the check fails.** Stop and call whom? Set the batch aside where?

Meena and I went through it again that evening, line by line. Her first nine seconds became this, roughly:

1. Check drums of concentrate against the supplier's invoice and batch number. Storekeeper. If the batch number is missing, do not open the drum.
2. Fill the tank with 400 litres of water, using the marked dipstick.
3. Weigh the concentrate on the platform scale, to her supplier's ratio for that grade.
4. Pour it in slowly while the stirrer runs, for 20 minutes.
5. Take a 100 ml sample in a glass jar. Check that it is milky white with no oily layer on top after five minutes. If there is a layer, stir ten more minutes and test again. If it is still there, stop and phone Meena.
6. Fill one-litre bottles. Weigh every tenth bottle; it must read between 1,040 and 1,060 grams with the cap on.
7. Cap and label. Check the batch number on the label matches the tank.
8. Pack twelve to a carton and tape it.

9. Write the carton count and any rejected bottles in the register.

Nine lines, one page. Her son typed it in Marathi and English and had it laminated at a shop on Trimbak Road for ₹40.

The point is not neatness. A written process means a second person can run the batch on the day you are in a meeting. It also means that when scrap appears, and it will, you can put your finger on the line where it began instead of arguing about who was careless. Bhimrao, to his credit, was the one who later asked me to write the glue recipe on the wall above the cooker in red paint, so he could stop being phoned at weddings.

Meena rang back an hour after we finished.

"Line five," she said. "If the oily layer won't go and I'm not reachable. What then?"

I told her I didn't have an answer yet. That was the right question to be stuck on, two days before switch-on.

Trial batches and the scrap number nobody wants to see

My first month of running boxes, I did not measure scrap. I told myself it was low. I could see the offcuts going into a corner, and the corner did not look very full, and anyway the kabadiwala came every Saturday and took it all away for cash, which felt like income rather than loss.

In the fifth week Bhimrao asked me if I wanted the scrap weighed before the kabadiwala's boy loaded it. I said yes, mostly to look like a man who weighed things. It came to 612 kilograms for the week. I had bought a little under 4.5 tonnes of kraft paper in the same seven days. That is roughly fourteen per cent of my paper going out of the back gate at ₹7 a kilo, when I had paid nearly ₹19 a kilo for it to come in at the front. I had been costing my boxes on an assumption of four per cent. Nobody had lied to me. I had simply chosen not to know.

So the rule I give everyone now is short. **Weigh what goes in, count what comes out, and write down the difference from the first hour of the first batch.** The difference is scrap, whatever name you prefer to call it: wastage, process loss, spillage, rejection, "normal".

A trial batch exists to produce that number. It does not exist to produce stock. I tell people to plan three trial batches before they sell anything to a stranger, and to run them on full-size equipment but at a size they can afford to throw away. The first shows you what you forgot. The second shows you whether the fix worked. The third is the first one you are allowed to believe.

Meena ran her first batch on 28 July, a Monday. She had 400 litres of water in the tank and her concentrate weighed in to the supplier's ratio, which should have filled something close to 410 one-litre bottles. I asked her to ring me at five o'clock with one number and nothing else.

"Three hundred and seventy-one good bottles," she said. "But the first hour was just learning."

"How many in the first hour?"

"Forty-something were rejected. Underweight, mostly. One cap split. Some spilled when Sangeeta was getting the nozzle right." Sangeeta was her filler, a neighbour's daughter on her first paid job.

I worked it out while she waited. Thirty-nine bottles short of 410 is a loss of about nine and a half per cent. Her project report, the one Mr Kulkarni had gone through with his red pen, assumed two.

"The first hour counts," I said. "The customer's bottle doesn't know it was filled in the first hour."

She did not like that, and I understood why. Every new owner wants to treat the opening hours as rehearsal and start the real count once things settle down. The trouble is that things settle down at whatever level you accept. If you begin counting only once the scrap looks respectable, it will always look respectable,

and the real figure will turn up months later in your bank balance with no explanation attached.

What I asked her to do that night is what I ask everyone to do after a trial:

- Split the loss by cause, even roughly. Underweight fills, spillage at the nozzle, damaged caps, mislabels.
- Find the single biggest cause and change one thing only.
- Run the next batch and compare it against the same headings.

Her biggest cause was underweight fills, twenty-two bottles, because Sangeeta was closing the tap by sight. On Wednesday Meena drew a marker line on a sample bottle at exactly 1,050 grams and stood it beside the filling point as a reference. The second batch lost seventeen bottles. The third lost nine.

Nine bottles in roughly 410 is a little over two per cent. That is close to what her report had promised the bank, and it took her three days and about ₹2,600 worth of phenyl that went down the drain at the back of the shed to get there.

On Thursday she sent me a photograph of the register. Under the third batch, in her teacher's handwriting, was the figure 9, and beside it, underlined twice, the 39 from Monday.

The sheet I fill in before tea

The 612 kilograms frightened me into weighing scrap every day. Within a fortnight I had a different problem. I was now writing numbers on the backs of delivery challans, in a diary, on the wall beside the slotter and once, I am embarrassed to say, on my own forearm. I knew more than before and could find none of it when I needed it.

At the auto-parts supplier in Chinchwad, the plant manager had received a daily production report every morning. It ran to four pages and nobody read past the first. I had typed it for

three years. What I took from that job was the opposite lesson: a report that takes longer to read than to fill in is decoration. So I drew a grid on one sheet of foolscap, photocopied fifty of them at a shop near Bhosari bus stand for ₹25, and promised myself I would complete one before nine every morning, covering the day before.

This is the one for Monday, 14 June 2004. I kept it because it was the first one I filled in honestly.

	Sunday 13 June
Output	3,240 boxes (3-ply, 2 sizes)
Paper issued / scrap	2,180 kg / 196 kg = **9.0%**
Machine downtime	Slotter 1 hr 50 min (belt snapped, no spare)
Cash received	₹18,600 (cheque, Pimpri medical distributor)
Cash due, over 30 days	₹1,74,000 (₹1,12,000 from one buyer)
One quality complaint	Flaps cracking on 200 boxes, Hadapsar sweet shop

Six lines. That is the whole thing, and every line earns its place.

- **Output** tells you whether the day happened at all.
- **Scrap percentage** catches the problem I had ignored for five weeks. Write the percentage, never just the kilograms. Kilograms rise when output rises and lull you.
- **Downtime** is written against the machine, with the reason. That belt cost me nearly two hours and ₹140 to replace. I bought two spares that afternoon.
- **Cash received** is money in the bank or in hand. Invoices raised do not count.
- **Cash due** is the line that would have saved Vilas. Look at mine: ₹1.12 lakh of ₹1.74 lakh owed by one buyer, three

months after I had watched a man go under for exactly that reason.

- **One quality complaint**, even on a good day. If nobody complained, write the worst defect you found yourself. Forcing one entry stops you pretending the column is optional.

It took me about eleven minutes. Most of that went on finding the weighbridge slip.

The flaps, for what it is worth, were cracking because the paper had been stored near the shutter after the May flood and had dried brittle. I would not have connected the two if the complaint and the scrap figure had not sat four inches apart on the same page.

I told Meena to start hers the morning after her third batch, not after her first sale. She asked whether she could do it in the evening instead, when the shed was quiet and she had more time.

"No," I said. "In the evening you'll still be tired and hopeful. At eight in the morning you'll be honest."

"And if a line is zero?"

"Write zero. Zero cash received is the most useful number on the sheet."

People resist this for longer than you would expect. One owner in Chakan told me he did not need a sheet because he "had it all in his head". I asked him what his scrap had been the previous Tuesday. He told me it was a Tuesday. I have heard every version of that answer, and I gave a few myself in April 2004.

The first month is irritating. You will find the slip missing, the supervisor late with the downtime, the bank statement not yet updated. Fill in what you can and leave a gap where you cannot. Gaps are information too: three blank downtime lines in a week tell you nobody is watching the machines.

Meena's first sheet came through on WhatsApp on 1 August, at 8.47. Every line was filled except one. Under "Cash due" she

had written "nobody owes me yet" and drawn a small, careful line through the box.

Quality without a quality department

For my first nine years in Bhosari there was no quality department. There was a steel ruler, a ₹2,900 moisture meter, and whoever happened to be standing at the machine. That is enough, provided you are clear about one thing: a defect is born at a particular step, and that is the step where someone has to look for it. Inspecting finished boxes at the dispatch door only tells you how much you have already wasted.

So the rule on my floor is one check at each step where something can go wrong, done by the person running that step, at fixed times, and written down. For Meena that came to three checks:

- Weigh every twenty-fifth bottle against the marker line.
- Twist every tenth cap by hand. If it turns, the whole tray is rechecked.
- Keep one sealed bottle from every batch, labelled with the date and batch number, on a shelf for sixty days.

That last one she thought was a waste of stock. It is the cheapest insurance in the shed. When a customer says the phenyl has gone cloudy, you take down the retained bottle from the same batch and look. Either yours has gone cloudy too, or his storeroom is the problem.

Beside the checks sits a **defect log**, a ruled notebook with six columns: date, batch, defect, quantity, likely cause, what was changed. It is duller than it sounds and more useful than any software I have bought since. The Morning Sheet asks for one complaint. The log is where you find out whether it is the same complaint for the fourth week running.

The supplier nobody wrote down

Jignesh (I have changed his name) ran a detergent powder unit in Aji GIDC, Rajkot, with about eighteen people and distributors in Jamnagar and Morbi. In the monsoon of 2019 his purchase man found a new trader offering soda ash at ₹1.40 a kilogram less, and switched. It was a sensible saving. He told nobody, and nothing on paper recorded which supplier's material went into which batch.

The powder caked inside its packets within three weeks of leaving the factory. Distributors sent back cartons by the truckload. By the time Jignesh traced the problem to the new soda ash, which held more moisture, he had taken a little over ₹3 lakh in returns, reprocessing and freight. Finding the cause took nineteen days, most of them spent arguing about the mixer.

His fix cost nothing. One extra column in the incoming register, giving supplier and lot number, copied onto the batch card. He told me later that he now insists on knowing when anyone changes a supplier, "even for the tape."

Certificates on the wall

There are two kinds of certification, and they deserve different answers.

BIS marking is compulsory for a growing list of products under Quality Control Orders, and if yours is on it, you cannot legally sell without a licence. Check the current list on the BIS website before you buy a machine, not after. I do not know which products will be added next year, and neither does the consultant who says he does.

ISO 9001 is voluntary, and it pays only when a buyer asks for it in writing. Auto vendors in Hosur and Chakan ask. So do some exporters and some tenders. I got mine in 2013 because a pharmaceutical customer made it a condition of a contract, and it cost me about ₹1.1 lakh in the first year, audits included. Before

that request it would have been decoration. I once sat in the reception of a Talawade unit with three framed certificates behind the owner's chair. It closed in 2016 with ₹40 lakh stuck in debtors. The certificates were still on the wall when the bank came.

Meena called on the evening of 2 August. Her Morning Sheet was going in on time, her scrap was holding near two per cent, and a cleaning contractor in Ambad wanted 300 bottles a month.

"The dealer in Panchavati sells at ₹85," she said. "I'll quote ₹70."

"What does one bottle cost you to make?"

There was a pause long enough for me to hear the Satpur traffic behind her.

"Roughly sixty," she said.

Roughly. It was the word Vilas had used.

CHAPTER 8

What It Really Costs

Seventeen lines on a single sheet

A box is mostly paper, and paper is where most box makers lie to themselves. I told Meena that on the phone, then promised to send her the cost sheet I use for one carton, because a phenyl bottle and a corrugated box fail in exactly the same way when you cost them by feel. She asked why a box. "Because I've got it wrong more times than you have," I said.

My first cost sheet, written in September 2004 on the back of a Bajaj Auto calendar, had four lines: paper, gum, labour, profit. Profit was a guess I wrote down as though it were a fact. It took me until early 2005 to notice that I was paying for power, rent and the tempo driver out of what I had called profit, and that the profit line was really a hole I was filling each month with my wife's fixed deposit.

The sheet I use now has seventeen lines. Here are the ones that matter for a single box.

The box

Take a regular slotted carton, 400 × 300 × 300 mm, 5-ply, the sort a pump maker in Bhosari uses to ship monoblock motors. Five-ply means three flat liners and two fluted layers between them. The flutes are the wavy middle, and because they are corrugated

they use about one and a half times their flat length in paper. Everybody forgets this. I forgot it for eleven months.

Step one: board area. The blank, opened flat, is two lengths plus two widths plus a 40 mm glue flap: 1,440 mm. Its height is the box height plus the flaps, 600 mm, plus 20 mm for trimming. That gives 1.44 × 0.62 = **0.893 square metres** of board.

Step two: paper weight. Top liner 150 gsm, middle and inner liners 120 each, two flutes at 100 gsm each but taken up by 1.5 to 150 each. Total: 690 grams per square metre. Multiply by 0.893 and one box carries **0.616 kg of kraft paper**.

Step three: everything else.

Line	Per box (₹)
Kraft paper, 0.616 kg at ₹36 blended	22.18
Starch adhesive	0.85
Ink and printing plate, spread over the order	0.45
Stitching wire	0.30
Power for corrugator, slotter, stitcher	0.75
Direct labour	1.55
Process scrap, 3% of paper	0.67
Variable cost	**26.75**
Freight to customer	1.10
Overheads: rent, staff salaries, repairs, depreciation	3.20
Interest on 45 days' credit	0.45
Full cost	**31.50**

The three lines people skip

The paper line is honest because the paper dealer sends a bill. The danger sits lower down.

Scrap is real paper bought and thrown away. If your Morning Sheet says four per cent and you cost at three, every box carries

a twenty-two paise lie, and on 30,000 boxes a month that comes to ₹6,600 you think you have and don't.

Overheads are the line Vilas never had. My factory spends about ₹9.6 lakh a month on things that do not change with output: rent, the supervisors, the accountant, insurance, loan instalments on machines, a share of repairs. Divide that by roughly 3 lakh boxes a month and each box owes ₹3.20 before it has earned anything. Sell more boxes and that figure falls. Lose a customer and it rises, which is a fact nobody enjoys learning in a slow month.

Interest on credit is the one I am proudest of adding, because nobody taught it to me. If the pump maker pays in 45 days, I have funded that box out of my overdraft at around 11 per cent a year for a month and a half. Forty-five paise sounds like nothing. On ninety days it is ninety paise, and that's before the overdraft limit runs out.

Paper prices will not stay at ₹36. They were near ₹48 for some grades in late 2021 and I cannot tell you where they will be when you read this. So the sheet sits in a spreadsheet with the kraft rate in one cell, and every quote starts by changing that cell to today's number from the dealer, not last week's.

I quoted the pump maker ₹34.20. He said ₹33. We settled at ₹33.60, and I knew, to the paise, that I was making ₹2.10 a box rather than the ₹6.85 my calendar method would have shown me.

Meena's photograph came back two days later. A sheet of her own, in blue ink, sixteen lines, with the bottle cap she had forgotten the first time written in red at the bottom: ₹2.40.

The machine that sets the pace

A margin per box tells you very little until you know how long the box keeps a machine busy. I learned this from buddha, Vilas's old slotter, which in 2008 was the slowest machine in my shed and therefore the one deciding how much money the

whole factory could make in a day. The corrugator could run board faster than I could sell it. The stitchers sat idle half the afternoon. Everything queued at buddha, the way traffic queues at the Nashik Phata flyover, and no amount of speed elsewhere changed that.

The slowest machine that every job must pass through is the bottleneck. One hour lost there is an hour lost for the factory. One hour lost on a machine that sits idle half the shift costs you almost nothing.

So the number I care about is **contribution per machine hour**: the selling price minus the variable cost, multiplied by how many pieces the bottleneck finishes in an hour, including the time spent setting it up. Overheads stay out of it, because rent is due whether buddha runs or not. The question is simply which job pays the most for each hour the bottleneck is busy.

Two orders, one slotter

In the spring of 2008 I had two enquiries on my desk in the same week. One was the plain monoblock carton described earlier. The other was a printed, die-cut display box for a cosmetics distributor in Kondhwa, whom I'll call Rakesh (not his name). His box carried a much fatter margin, and I very nearly cleared the slotter for him.

Here is the arithmetic I did that weekend, adjusted to today's paper price so it matches the sheet above.

	Pump carton	Display box
Selling price (₹)	33.60	24.00
Variable cost plus freight (₹)	27.85	13.00
Contribution per box (₹)	5.75	11.00
Order size	6,000	2,000
Set-up time on the bottleneck	20 min	2 hr 10 min
Running speed (boxes per hour)	900	350

	Pump carton	Display box
Total bottleneck hours	7.0	7.9
Contribution per bottleneck hour (₹)	**4,930**	**2,780**

Rakesh's box earned nearly twice as much per piece and a little over half as much per hour. The four-colour plate changes, the die alignment and the trial pulls ate more than two hours before the first saleable box came out. On a day when the slotter was full, every hour I gave him cost me ₹2,150 of pump-carton contribution I could have earned instead.

That is how an order can look profitable while losing money. On paper it covers its own variable cost with plenty to spare. It also pushes out better work, and the loss never shows up on any invoice.

What I did with the number

I did not refuse Rakesh. I quoted him ₹27.50 and asked for 5,000 boxes per order, which spread the set-up over more pieces. He took 4,000 at ₹26.80. That brought him up to about ₹4,100 an hour, close enough to the pump carton to be worth having for a second, unconnected customer, and well inside my 25 per cent rule.

Three habits came out of that week, and I still keep them.

- **Find the bottleneck by looking, not by guessing.** Stand on the floor at 3 p.m. and see where work in progress is piling up. It may not be the machine you expect, and it moves when you buy new equipment.
- **Record set-up time on the Morning Sheet** for any job over thirty minutes. Most owners know running speeds by heart and set-up times not at all.
- **Price short runs as short runs.** A minimum order quantity, or a set-up charge printed on the quotation, is not rudeness.

> My customers grumble at it about as much as they grumble at GST.

I am less certain how this applies to a unit with no clear bottleneck, such as a small food unit where labour sets the pace rather than a machine. In that case I use contribution per labour hour instead, and I treat the result as rough.

When I explained this to Meena, she went quiet on the phone for a while, then asked whether her one semi-automatic filling machine counted. It did. It filled 600 bottles of one-litre phenyl an hour and needed forty minutes of flushing whenever she changed fragrance. She had promised a Satpur hotel three fragrances in batches of 200.

"So the lavender is costing me the pine," she said.

Days, not rupees

The question that finally made sense of Vilas for me was not how much money he made. It was how many days his money spent away from him.

Every rupee in a factory goes on a round trip. It leaves your account as kraft paper or caustic soda, sits on the floor as raw material, turns into work in progress, waits in the godown as finished cartons, rides out on a tempo, and then sits in a customer's ledger until he decides to pay. Only the days your supplier waits for you come off the total. That is the **working capital cycle**:

- raw material days
- plus production days
- plus finished goods days
- plus debtor days (how long customers take to pay)
- minus creditor days (how long you take to pay suppliers)

The answer is the number of days of running costs you must fund out of your own pocket, or the bank's. Multiply it by what the factory spends in cash each day and you have the money that is permanently out on the road.

One unit, two credit terms

Take a modest box unit of the kind I advise every year. Its shed deposit, machines, wiring and first repairs come to ₹25 lakh. It spends about ₹25,000 a day in cash on paper, starch, wages, power and freight. Its kraft dealer in Chakan gives thirty days.

	Thirty-day customers	**Ninety-day customers**
Raw material days	12	12
Production days	3	3
Finished goods days	5	5
Debtor days	30	90
Creditor days	(30)	(30)
Cycle	**20 days**	**80 days**
Working capital at ₹25,000 a day	₹5 lakh	₹20 lakh
Fixed investment	₹25 lakh	₹25 lakh
Total cash needed	**₹30 lakh**	**₹45 lakh**

Same machines. Same customers, same boxes, same margin on the cost sheet. One clause on a purchase order adds ₹15 lakh to the cash the owner has to find. If that unit earns ₹1.4 lakh a month after expenses, which is a fair month, the extra ₹15 lakh is close to eleven months of its profit, locked inside someone else's accounts department. Borrow it on a cash-credit limit at 11 per cent and you pay roughly ₹1.65 lakh a year in interest for the privilege of being a patient supplier.

And the bank will not lend you all of it. Mr Kulkarni explained this to me in 2008 with his red pen hovering: the bank finances a share of your debtors, usually up to ninety days old, and expects you to bring a margin of 20 or 25 per cent yourself. Debtors older than that drop out of the calculation altogether. The day your biggest customer slips from ninety to a hundred and ten, your limit shrinks at the same moment your need grows.

Why it waits until year three

In the first year nobody gives a new unit ninety days of anything, so the owner buys on cash, sells to small buyers on short terms, and feels poor but survives. By the second year a large customer arrives. He wants ninety days, and he is a famous name, so the owner agrees. Sales double. The profit and loss account looks better than it ever has. Then, some time in the third year, the owner discovers that doubling his sales on ninety-day terms has roughly quadrupled the cash he needs, and the extra cash does not exist. He delays the kraft dealer. The kraft dealer stops supply. Orders are full and the machines are silent.

That was Vilas, almost to the month. His Talegaon buyer never refused to pay. He simply paid later, then later again, and each extra week cost Vilas about ₹70,000 he did not have.

My own cycle, as I write this, is thirty-four days. It was ninety-one in October 2005, which I know because the number is pencilled on the inside cover of my first Morning Sheet file, underlined twice, next to the words "this is why."

Pricing, and the order I'm glad I lost

There are only three ways to set a price, and most small owners use the wrong one first.

Cost-plus is where everyone starts. You take the cost sheet, add a margin, usually 12 to 18 per cent in boxes, and quote. It is

honest and it keeps you alive, but it has a flaw: it assumes the buyer cares what your costs are. He does not. If your scrap is high or your shed rent is foolish, cost-plus simply hands him the bill for your inefficiency, and he will find someone cheaper within a month.

Market price is what the buyer is already paying somebody else. In corrugated boxes this is easy to learn, because purchase officers tell you, often before you ask. The discipline is to hold your cost sheet up against that number and look at the gap without flinching. If the market pays ₹2 a box less than your cost, the market is not being unfair. Somebody nearby makes that box better than you do, or is lying to himself about his costs and will close in eighteen months. Either way you need to know which.

The third method is the one nobody teaches. **Price the terms, not the box.** A quotation is a rupee figure, a payment period, a minimum quantity and a delivery promise. Change any one and the price has changed. A carton at ₹31 on thirty days and the same carton at ₹31 on ninety days are two different prices, and the table above shows by how much.

And sometimes the right price is no price at all.

In August 2009 a purchase manager from a large appliance assembler near Ranjangaon called me in. I will call the company Shree Electricals, which is not its name. They wanted 1.2 lakh cartons a month, more than my whole output then, at a price about 6 per cent under my cost-plus figure, on 120-day terms. The manager, a polite man named Bhagwat, slid the purchase order across the desk with my company name already typed on it.

"Everyone in Bhosari wants this," he said.

I took it back to the office and ran it the way you have just seen. Contribution per corrugator hour came out at less than half of what my poha and pharma customers gave me. The order would have made Shree roughly 60 per cent of my sales, against my own rule of 25. And the working capital cycle went

from about fifty days to well over a hundred. I needed something like ₹38 lakh I did not have, and my bank limit at the time was ₹22 lakh.

I wrote back that I could supply 25,000 cartons a month on sixty days at my price. Bhagwat never replied.

A box maker in Chakan took the whole order. I will call him Mahesh. He bought a second-hand corrugator from Rajkot to cope, hired a second shift, and for a year his tempos went past my gate twice a day. I will admit I felt stupid every time.

In late 2011 Shree's payments went to 150 days, then 180. In April 2012 Mahesh's kraft dealer stopped supply. He sold the Rajkot corrugator in July for less than he had paid, and I know the price because the broker offered it to me first. Shree, I should be fair, did pay him in the end, almost every rupee. It arrived about seven months after his unit shut.

I did not refuse that order because I was wise. I refused it because I had watched Vilas, and because the numbers were in front of me in pencil. Without them I would have signed, and you would be reading somebody else's book.

When I told Meena this story she asked the obvious question. Her hotel in Satpur had already said it paid suppliers "around forty-five days, sometimes sixty." Her cost sheet worked. Her filling machine had capacity. What she did not have was any idea how to sell to the next five customers, or how to make the first one pay on time.

"How do you even ask a hotel for money?" she said.

I told her I would send her Sunita's script.

CHAPTER 9

Getting Paid by Strangers

Ten names and a Kinetic Honda

Seven of my first ten customers were found by walking, and the walking was done in one pair of Bata shoes that I wore through at the left heel by October 2004. I kept the list. It is in the same drawer as the Bajaj calendar cost sheet, written in the back of a receipt book, ten names with the date of each first order beside them.

Two came with the machines. When Vilas shut, he still had small buyers who had never been the problem: a pickle maker in Moshi who took 800 cartons a month, and a man assembling switchboards behind Nehru Nagar. Vilas gave me their numbers the day I paid him. He did not have to. I think he wanted somebody to look after them, the way a man selling a cow tells you which one kicks.

One came from my old job. I had spent nine years as an accounts clerk at the auto-parts supplier in Chinchwad, which meant I knew Mr Gadgil in purchase by his first name and his tea order. He gave me a trial of 1,500 boxes for brake shoes in May, mostly, I suspect, out of pity. The boxes were fine. The pity ran out after two orders, and the business stayed for six years.

The other seven I found on a Kinetic Honda with a sample carton tied to the back seat with a bicycle tube. I had the printed directory of the Bhosari industries association, ₹350 from their

office, and I worked through J-block and then T-block, unit by unit. The method was not clever. I went in, asked the watchman who bought packaging, and waited. At one pump assembler near the Telco road I waited two hours and ten minutes in reception, and the purchase officer, a young man called Sachin, gave me four minutes.

"What is your rate for 5-ply?" he said.

"Depends on the size and the paper," I said.

"Then come back with a rate."

I came back the next morning with a rate. That was the order, a small one, and it taught me more than any of the friendly ones did. A purchase officer is not judging your box on the first visit. He is judging whether you come back.

Out of roughly sixty doors in those first five months, ten became customers, and three of the ten had stopped ordering by 2006. I tell new owners to expect something like those numbers and to be pleasantly surprised if they do better.

Where buyers already gather

What I did not understand in 2004 was why my best leads kept coming from within three kilometres. Buyers cluster. A box maker sits near pump makers and pharma packers because they need him weekly; a phenyl maker should look first where floors are mopped by the hundred square metres.

When Meena and I sat down with her list, we split it into four sources:

- **Walk-ins within ten kilometres**: hotels, hospitals and nursing homes, school trusts, housing societies with a paid housekeeping contractor, and the facility managers of the larger units in Satpur and Ambad MIDC.
- **The association directory**: in Nashik, the industries association publishes members by estate, which is a map of who has a canteen floor and a toilet block to clean.

- **IndiaMART**: useful for being found rather than for finding. The cheapest paid package she was quoted in July 2025 was a little over ₹30,000 a year. Most enquiries, in my experience, are traders asking for a price to quote somebody else. Some are real. Check the package and the city filter before paying.
- **People who already buy**: her hotel's housekeeping head knew three others in the same trade.

That last one surprised her. Housekeeping heads change jobs between hotels the way my operators change jobs between box units, and they carry their suppliers with them.

Meena's first week of walking produced eleven visits and one order: 60 litres to a nursing home on Gangapur Road, paid in cash on delivery because the owner's wife did the accounts and did not like owing anybody.

"That one I want ten of," Meena said.

The man with a godown

Ten of the nursing home did not come. What came instead, in the third week of August, was a stockist.

His name was Kishore (I have changed it), and he had a godown, a warehouse, behind the vegetable market in Panchavati, from which he supplied cleaning goods to around 140 small shops and a few hostels. He had seen Meena's bottles on the nursing-home counter. He offered to take 400 litres a month on one condition: the whole of Nashik district, exclusively, and forty-five days' credit.

Meena rang me that evening, delighted. I asked her what she was charging the nursing home. ₹38 a litre. And what would Kishore pay? He wanted 12 per cent off for himself, and his shops expected another 18 per cent off the retail price. Worked backwards from a shelf price of ₹45, his buying price came to about ₹32.50.

Her full cost, from the sheet she had sent me the month before, was ₹27.80. So nearly ₹5 a litre of margin remained, on volume she could not get by walking. That part was sound. It was the rest of his offer I did not like.

Distributors are worth their margin when they do three things you cannot: hold stock, deliver small quantities to many doors, and collect from those doors. Kishore did all three. But a stockist who asks for a district before he has sold a single case is buying an option on your business with your money. I told Meena to give him something smaller:

- **Territory by name, not by district.** Panchavati, Nashik Road and Deolali to begin with. Satpur and Ambad stayed hers, because her hotel and factory buyers were there.
- **A ninety-day review.** If he had not lifted 1,000 litres in three months, the territory reopened.
- **Credit with a ceiling.** Thirty days, not forty-five, and a limit of ₹15,000 outstanding. Above that, the next delivery waits.
- **A security deposit.** ₹10,000, refundable, which most serious stockists will pay and most unserious ones will argue about for a week.

Kishore argued for four days and then paid. He has lifted between 350 and 520 litres every month since, and he once held back a delivery to a hostel that owed him money for longer than it owed her. That told me he understood credit control better than I had at his age.

Selling to the government without knowing anyone

Meena then asked about GeM, the Government e-Marketplace, because a cousin had told her the government buys phenyl by the tanker.

It does buy a great deal of it. Registration is free and done online: PAN, Aadhaar, GSTIN, Udyam certificate and a bank ac-

count, all of which she already had. Small enterprises are exempt from paying earnest money on most bids, and central departments are supposed to source a quarter of their purchases from MSEs. Those are real advantages. Read the current rules on the portal yourself, because they are revised often and I will not pretend to track every change.

My own experience is narrower. I registered in 2019 and bid on corrugated cartons for a central government stores depot in Pune. I lost the first three bids. I was second lowest each time, once by eleven paise a box, to sellers whose prices I still cannot make work on paper. The fourth I won: 6,000 cartons. Payment is meant to follow within ten days of the buyer issuing the CRAC, the receipt-and-acceptance certificate. Mine took thirty-four days, because the officer who had to click a button was on leave.

So my advice to Meena was modest. List her product in the catalogue, where small direct orders can come without a bid. Watch the bids for a month before entering one. Never bid below the full cost on her sheet, however good the department's name looks on a reference list.

She listed in September. The first enquiry came from a railway training institute near Igatpuri, for 200 litres.

"Do I trust it?" she said.

"Deliver it," I said. "Then we will know."

Vendor code, eleven months

A factory buys differently from a nursing home. The owner's wife pays cash because she dislikes debt; a purchase department pays nobody until you exist in its system, and existing in its system takes longer than most new owners can bear.

My own lesson came from the pump maker whose carton I costed in the last chapter. I first walked into their Bhosari purchase office in February 2005 with a sample box under my arm, and the officer, Mr Gokhale, turned it over, pressed a thumb into

the flute and handed me a form. Fourteen pages. Company details, machine list, bank reference, last year's turnover, names of three existing customers, and a section headed "Quality System" which I filled in with more confidence than I had a quality system.

Then nothing happened for seven weeks.

When something did happen, it was an audit. Two people from their stores and quality departments came to my shed on a Tuesday morning and spent ninety minutes there. They did not look at my slotter much. They looked at:

- **Where the raw material sat**, and whether reels were off the floor (after the May flood, they were, on pallets I had bought in a panic).
- **Whether I could show a test result** for burst strength on paper I had received, which I could not.
- **A fire extinguisher**, which I had, expired.
- **What happened to rejected boxes**, which was that they leaned against a wall near the good ones.

They left a list of six "observations". I closed four within a fortnight, the extinguisher for ₹1,800 and the burst tester by borrowing time on one at a paper dealer's in Pimpri. The other two took longer, because one of them was really "write down how you work", and I did not yet know how.

After that came samples. Not one sample: three trial lots, of 200, 500 and then 1,000 cartons, each checked at their goods inward on a drop test from a fixed height with a pump inside. The second lot failed. Two cartons out of the twenty they tested split at a corner joint. I went to see the failure myself rather than accept a phone call about it, and that visit, I think, did more for me than the boxes. Gokhale watched me measure the glue line on the split cartons and said, "Most people send a new lot and a new excuse."

The vendor code came in January 2006. Eleven months from first walk-in to first purchase order. My first regular order was 2,500 cartons a month, perhaps a fifth of what they used, because I was the third approved supplier and the third supplier gets what the first two cannot deliver on time. Within two years I was getting more than either of them, for the dull reason that my lorry arrived when the schedule said it would.

That is the trade you are making. Approval is slow, the first share is small, and it is very hard to lose once you have it, because the buyer has invested as much paperwork in you as you have in him. Nobody in a purchase department wants to requalify a supplier who has given no trouble.

Meena's version arrived in October. The facility manager at an engineering plant in Ambad, which employed about 600 people across three shifts, said he could not buy from her on a cash bill as the nursing home had. He gave her a vendor registration form, asked for a material safety data sheet and wanted a test report showing her phenyl met the BIS standard for disinfectant fluids. A lab in Nashik charged her ₹4,500 and took twelve days. She sent him the report, the form and a 20-litre trial can.

Three weeks later she rang me, unsettled. The plant's housekeeping contractor had been using the can and said it was fine. But nobody had written back.

"Should I go and ask?" she said.

"Go every fortnight," I said. "Take nothing. Ask one question about the trial and leave."

She went on a Thursday. The facility manager was on leave, and his deputy had never heard of her.

She left a second copy of the test report with him, wrote the date in her diary and caught the bus home. A plant that size either comes in a year or does not come at all. In the meantime there was a smaller customer who already had her phenyl and had not paid for it.

Day thirty-one

The hotel was on Gangapur Road. In August it had taken 120 litres on thirty days' credit, a bill of ₹9,840, and the manager had been warm about it, which in my experience is a poor predictor of anything. Thirty days came and went. Meena waited a week, then rang and asked, in her schoolteacher's voice, whether everything had been satisfactory. He said it was excellent. He did not mention money and neither did she.

That is the most common collections mistake I see, and I made it for three years. The new owner is grateful for the order, a little afraid of the customer, and asks about quality when he means payment. The customer hears a supplier who is not in a hurry.

The cure starts before the sale. Every quotation that leaves my office has a short block of terms printed at the bottom, and every new customer signs a copy of it with the first order:

- **Credit period in days**, counted from the invoice date, never "from receipt of goods".
- **Interest on late payment**, stated even though I almost never charge it.
- **Supply stops** when any invoice is fifteen days past due.
- **One named person** at the customer's end who approves our payments.

Micro and small suppliers also have the MSMED Act behind them, which caps agreed credit at forty-five days and allows a complaint through the government's Samadhaan portal. I have filed exactly once, in 2016, and received the money eight months later. It is a backstop. It is not a method.

The method is Sunita, my accountant. She rings on day thirty-one, without fail, and she reads very nearly the same words every time. I asked her to write them out for Meena:

"Namaste, this is Sunita from the box unit in Bhosari. I am calling about invoice 412, dated 3 August, for ₹48,200. It was due yesterday. On what date will it be paid?"

Then she stops talking. Sometimes the silence runs ten seconds. She lets it.

If they give a date: "Thank you. I am writing down the ninth. If it has not arrived I will call you on the tenth." And she does, on the tenth, before eleven.

If the person who signs cheques is away: "Who approves it in his absence? I can hold."

If they raise a complaint about the goods for the first time: "Then I want to hear about it today. Can our supervisor come tomorrow at ten?" A real complaint deserves a visit. An invented one usually disappears once a visit is offered.

What Sunita never says is "sorry to disturb you", or "whenever convenient". She asks for a date because "when" invites a mood, and a date can be written in a register. Her register is a ruled notebook, one line per promise, and when I check it at month end about four promises in five have been kept. The fifth customer gets a second call, then a visit from me, and then no more boxes until the account is clear.

Meena copied the script on to an index card and rang the hotel on a Monday morning. The manager said the owner was in Mumbai. She asked who approved payments in his absence. There was a pause long enough that she nearly filled it.

"The accounts lady," he said. "She sits upstairs."

The accounts lady said the twelfth. The money came on the fourteenth, and Meena told me about it as though she had won the GeM bid all over again.

Then she said something else. Her helper, Pooja, nineteen, who mixed and filled every can in the Satpur shed, had not come in since Thursday. Someone had told her a pharma unit in Sinnar was paying ₹700 more a month.

"I can sell it now," Meena said. "I cannot make it alone."

CHAPTER 10

The People on the Floor

Hiring: ITIs, references and the half-day trial

Nobody leaves a job for seven hundred rupees. That is what I told Meena, and she did not believe me, and I understand why, because the story everyone tells in an industrial estate is that operators hop for ₹500 and owners can do nothing about it. In twenty-one years I have lost perhaps thirty people. When I sat down once and went through why, money was the stated reason for most of them and the real reason for about a third. The rest left because a wage came four days late, or a supervisor shouted in front of others, or nobody had told them what the job was. Pooja had been in the Satpur shed eleven weeks. She worked alone, mixed by eye, and never knew whether Meena thought she was doing well. Sinnar simply offered her a reason.

So the first hire after a loss is a chance to do it properly, and properly starts with where you look.

Where the steady ones come from

For any job that touches a machine, I go first to the nearest government ITI, the Industrial Training Institute where boys and, increasingly, girls spend one or two years learning a trade such as fitter, electrician or machinist. Every ITI has a placement officer, and most of them are pleased to hear from a small unit, be-

cause the big plants take the top ten per cent and leave the rest. In Bhosari I have used the same institute since 2006. I ring in March, before final exams, and ask for two names in fitter or electrician, not the toppers, but the ones the instructor says turn up every day.

Meena's work needed no trade certificate. Mixing pine oil, emulsifier and water, filling and capping, does not need a fitter. But I told her to ring the ITI on Trimbak Road anyway and ask the placement officer one question: did any students have a sister, cousin or neighbour looking for factory work close to home? Instructors know families. A girl who lives fifteen minutes from Satpur by cycle is worth more to a five-person unit than one in Sinnar who needs two buses.

References come second, and most owners waste them. "Is he good?" gets you "Yes, very good." I ask three things instead:

- How many days did he miss in his last three months?
- Was there ever money or material short when he was around?
- Would you take him back tomorrow?

The third answer is the only one that matters, and you learn it from the pause before it.

Half a day, paid

Then comes the trial. I have never hired anyone for the floor on a conversation alone, not since 2005, and I pay for the trial in cash at the end of it: ₹400 today, which is more than half a day's minimum wage for unskilled work in Pune. Paying matters. It tells the person this is real work, and it means I owe them honesty about the outcome.

Meena called hers in on a Saturday morning. A woman named Rekha, thirty-four, two children, previously packing at a

spice unit in Ambad. Meena gave her the batch card and watched without helping.

What I look for in a trial is mostly not skill:

- Does she ask before touching something she does not know?
- When the first can overflows, does she wipe it, hide it or call you?
- Does she notice that the floor is wet before someone slips?
- At the end, does she clean up without being told?

Rekha filled 140 cans in three and a half hours, which is slower than Pooja managed in her eighth week. She also stopped at can thirty-one and said the emulsifier smelled different from the last drum. It did. The drum was from a new lot, and Meena had not checked it against the incoming sample, which was the very lesson she had copied out in July and then let slip.

"She is slow," Meena said on the phone that evening.

"She found your mistake in her first hour," I said. "Speed I can teach."

Rekha started on Monday at ₹11,200 a month. Meena asked me what to do about the shortfall in output, and the true answer was that she now needed a second person, someone who would one day stand in for her when she was out selling. That person has a name in most factories, and it is the hardest hire I know.

Your first supervisor is your most important purchase

I spent more time choosing my corrugator in 2006 than I spent choosing the man who would run it. That was backwards. The corrugator cost ₹6 lakh and has never once taken a day off, lied about a count or walked out at Diwali. A supervisor can do all three, and he touches every rupee that passes through the floor. If I had to rank what I have bought in twenty-one years by how much it changed the business, the supervisor comes first and the machines come after.

My first one was Baban (not his real name), whom I had hired in 2005 as a helper on the slotter. By the spring of 2006 I noticed something odd. When the glue pot jammed or a reel came in damp, the other three men did not come up the stairs to me. They went to Baban. He was not the fastest operator and he was certainly not the most educated; he had left school after the eighth standard in a village near Junnar. But he was the one people trusted to tell them the truth about their own mistakes without making a show of it.

That, it turns out, is the job.

I look for three things in a first supervisor, and experience is not one of them:

- **He counts honestly when the count is bad.** If yesterday's scrap was 9 per cent, he writes 9, not 6.
- **Workers bring him problems before they bring them to you.** Watch who people walk towards when something goes wrong.
- **He can say no to the owner.** If he cannot tell you a rush order will wreck the next morning's schedule, he is only a messenger.

Meena's instinct, when I said she needed a second person, was to look outside. She had heard of a man with eleven years at a chemical plant in Ambad who wanted ₹22,000 a month.

"He knows everything already," she said.

"He knows how a plant with a quality department and a purchase officer runs," I said. "You have neither. You have Rekha and a mixing tank."

I did not tell her never to hire from outside. Sometimes you must, and a bigger unit's man can teach you things. But a person who has only worked inside large systems often stands about waiting for the system to appear. In a five-person shed, the supervisor is the system.

Training one, slowly

I paid Baban ₹1,500 a month above the best operator, which in 2006 meant ₹6,300 against ₹4,800, and I wrote down on a single sheet what he could decide without me. He could stop a machine for a quality fault. He could send a worker home for being drunk. He could reject an incoming reel if the moisture reading was above 9 per cent. He could not give credit, change a price or promise a delivery date to a customer. I pinned the sheet beside the time-card rack so the workers could read it too, because authority nobody can see is not authority.

For the first ninety days, he filled in the Owner's Morning Sheet and I filled in my own copy beside it, from my own counts, without looking at his. Every morning at 9 we compared. In the first fortnight we disagreed on output on eleven days out of fourteen, usually by a few hundred boxes, usually because he counted bundles and I counted sheets. By the third month we disagreed twice. After that I stopped keeping my copy, and I have not kept one since.

Meena asked how long she should wait before deciding whether Rekha could become that person.

"Give her the batch card for one full week," I said. "Do not stand next to her. Read the sheet at nine. See what she writes when the numbers are bad."

On the Monday after, Meena sent me a photograph of the first sheet Rekha had filled in alone. Output 410 cans. Scrap 14 cans. And in the complaint line, in careful Marathi, a note that the new drum still smelled wrong.

The wage register is not paperwork

Before Rekha's first payday I made Meena do something she found faintly insulting. I asked her to look up the minimum wage for her zone and her category of work, print the notification and keep it in the blue file. She had taught accounts for

nineteen years. She did not think she needed reminding to pay people.

"I am paying her more than the minimum," she said.

"Today you are," I said. "Maharashtra revises the dearness allowance twice a year. Do you know which months?"

She did not. Most owners don't. The basic rate is notified for each scheduled employment and zone, and a variable allowance is added on top at intervals. A wage that cleared the line comfortably in January can sit under it by July without anyone touching it. Rekha's ₹11,200 cleared the figure Meena found, by less than she had assumed. She wrote the next revision date on the inside cover of the file in red.

Keep a wage register from the first worker, even if the law in your state lets a unit your size get away without one. Name, days present, overtime hours, gross, deductions, net, the date paid and a signature or thumbprint. It takes ten minutes a month. When a worker leaves angry and complains to the labour office, which happens to almost every owner eventually, that register is the only thing that speaks for you.

PF and ESI arrive earlier than you think

Two contributions catch first-generation owners out. They are not hard. They are just easy to put off until the day they cannot be put off.

- **Provident Fund (PF)** becomes compulsory once you have twenty employees. The usual contribution is 12 per cent of basic wages from the worker and 12 per cent from you, with the statutory wage ceiling currently at ₹15,000 of basic.
- **Employees' State Insurance (ESI)** covers medical care and sick pay. In Maharashtra it applies to factories with ten or more people, for workers earning up to ₹21,000 a month gross. The employer pays 3.25 per cent and the worker 0.75 per cent.

The four labour codes passed by Parliament in 2019 and 2020 may move some of these thresholds and definitions once states finish notifying their rules. I do not know exactly how that will land for a ten-person shed in Satpur. Check with your CA each April rather than trusting a book, including this one.

My own advice goes further than the law. When you reach seven or eight people, register for ESI anyway. A worker who cuts a hand on a slitter blade is then treated at an ESI dispensary, not paid for out of your cash drawer at a private hospital in Bhosari, which is what I did twice in 2005, for about ₹14,000 in all.

The contractor who saves you money

Contract labour looks like the cleanest answer to a small owner's worries. A contractor supplies the men, pays them, handles their PF and ESI and sends you one bill. You never see a muster roll. That last part should frighten you.

In 2009 I took eight loaders and helpers from a contractor I will call Mohite (not his real name). His rate was ₹900 a head a month cheaper than employing them myself, and I congratulated myself on the saving for about a year. Then an inspector from the PF office climbed my stairs with a list of the eight names. Mohite had been deducting 12 per cent from their wages every month and depositing none of it. Under the law, the factory where people actually work is the principal employer, and the principal employer pays when the contractor doesn't. I paid ₹1.9 lakh in arrears, interest and damages. Mohite's phone was switched off by the following week.

Since then my rule has been fixed. Before Sunita releases any contractor's monthly bill, she must see the PF and ESI challans for that month, with every worker's name on them, and match the names against the faces at the gate. No challan, no cheque.

The loaders, incidentally, did not blame Mohite. They blamed me. Three of them asked if they could come on to my rolls di-

rectly, at my rates, with their contributions where they could check them online.

I said yes. One of them is still here.

Why Ganesh stayed twenty years, and the two I lost

Ganesh came to the gate in August 2005, nineteen years old, from a village outside Junnar, with one spare shirt in a plastic bag. I took him on as a helper at ₹2,100 a month. He stacked sheets off the corrugator, swept the trim and carried tea. Tonight, as on most nights, he will run my second shift: nineteen people, the corrugator, both slotters including buddha, and the printer, from 8 p.m. until the day supervisor takes the keys at six.

He has had better offers. In 2011 a unit in Chakan offered him ₹1,500 a month more than I was paying, which in those days was a serious sum. Last Diwali I finally asked him why he had never gone.

"Pagaar saat tarkhela yeto," he said. The salary comes on the seventh.

That was his whole answer, and I have thought about it more than anything a consultant ever told me. In twenty years I have paid wages late once. That was November 2008, when two customers sat on ₹6 lakh between them, and even then I borrowed from my brother-in-law and paid on the eighth, at eleven in the morning, and walked the floor apologising to each person by name. Ganesh remembers that day better than I do.

The second thing was the ladder. Since 2006 there have been four grades on my floor: helper, assistant operator, operator and machine in-charge. Each step has a written test on the machine itself and a fixed rise attached to it, currently ₹1,400 a month per grade. The sheet hangs on the canteen wall. Nobody has to come upstairs and ask me for a raise, and nobody has to wonder whether the man who flatters me gets one first. Ganesh climbed

all four by 2009 and then asked what came after. I had no answer, so I invented supervisor training for him.

The rest is unglamorous. Lata cooks lunch in the canteen and a full plate costs a worker ₹30; I pay the difference. The toilet is cleaned twice a shift, and I use the same one my helpers use, which is the only inspection system that has ever worked.

The two I lost taught me as much.

In 2007 I hired an operator I will call Sanjay (not his real name), the best corrugator hand in Bhosari. Glue lines perfect, changeovers in half the time. He also shouted at helpers and took credit for their work, and in four months three of my best young boys left. I kept seeing Sanjay's output figure. I did not see the empty places beside him until there were three of them.

In 2014 I made the opposite mistake. I hired a supervisor from a large Pune company, a polished man I will call Deepak, at ₹45,000 a month. His reports were typed and his English was better than mine. He almost never came down to the floor after dark, and his Morning Sheets showed scrap at 2.1 per cent for five weeks running, which I now know is a number nobody honest reports five weeks in a row. Ganesh, by then an in-charge, wrote me a resignation letter. I asked Deepak to leave instead, eight months after he joined.

Both times I hired for what a man knew and never checked how he behaved when I was out of the building.

Meena listened to all of this on the phone with Rekha's third week behind her. Then she asked the question I had been waiting for. Her sister was getting married in Pune in October. Four days. Could she leave Rekha alone with the unit?

"Not yet," I said.

"You trust her. You said so."

"I trusted Ganesh in 2012," I said. "I took my first fortnight off that May, to Kerala, with my wife and daughter. The phone rang at 6.40 on the second morning."

CHAPTER 11

Running the Place Without Living In It

Seven sheets on one table

It was Ganesh, calling from the dispatch desk at the end of the night shift. I was standing on the veranda of a homestay in Alappuzha in my vest, and my wife was giving me the look she gives me when I check the phone at weddings.

"Sir, Gokhale company has sent back eighteen hundred cartons," he said. "Their QC says burst strength is low."

Eighteen hundred pump cartons was about ₹61,000 of board, ink and labour, and it was the customer who had taken me eleven months to win. I asked Ganesh whether anything had gone wrong on the floor that week. He said no. He said the Morning Sheet had been filled every day, on time, and Sunita had emailed me a photo of each one. Both statements were true. I had looked at every photo with my first cup of tea and gone back to watching the boats.

That afternoon I put the five sheets side by side on the phone screen, scrolling with one thumb. Corrugator scrap read 2.8 per cent on Monday, then 3.1, 3.3, 3.6 and 4.0 by Friday. I had told Ganesh to ring me if scrap crossed five. It never did. Each day, taken alone, looked like an ordinary day. Together they looked like a ramp. The flute roll on the corrugator was wearing, the

flutes were coming out shallower, the board was getting weaker by the shift, and the sheet I was so proud of had recorded every step of it without anyone noticing the direction.

A Morning Sheet tells you about yesterday. It cannot tell you about a slope. For that you need the week.

The Monday forty minutes

Since June 2012 we have held a weekly review every Monday at ten, in the office above the floor, and it has never once been cancelled for a customer visit. Sunita brings the seven sheets from the previous week, Monday to Sunday, in a plastic sleeve. Ganesh comes up from the floor and the day-shift in-charge joins him. I make the tea, which I mention because it means I am not holding a pen and cannot start rewriting anyone's numbers before they have explained them.

Sunita copies four lines from the daily sheets on to one page. A recent week looked like this:

	Mon	Tue	Wed	Thu	Fri	Sat
Output (tonnes board)	11.2	11.6	10.9	11.4	9.8	11.1
Corrugator scrap %	3.0	2.9	3.1	3.0	3.2	3.0
Downtime (minutes)	25	0	40	15	110	20
Cash received (₹ lakh)	2.1	0.4	3.8	0	1.6	0.9

Sunday is blank because we do not run.

We ask three questions, always in the same order:

- **What has moved the same way three days running?** Three is my threshold. Two is noise. Five is a returned consignment.
- **Which machine's downtime adds up to more than an hour?** Friday's 110 minutes in that week was the printer-slotter, a feed belt that had been patched twice before. One bad day is a breakdown. The same machine twice in a month is a maintenance plan nobody is following.

- **Who owes us more this Monday than last Monday?** The daily sheet shows cash in. The weekly page shows which customer has quietly slid from forty days to fifty-five.

Each answer gets a name and a date beside it on the page. Nobody leaves until every line has one. Most Mondays take thirty-five minutes. The Monday after the flute roll took two hours, and I deserved every one of them.

When I told Meena all this, she was quiet for a moment. Then she said she had six weeks of Morning Sheets in a green folder on the shelf above Rekha's mixing tank, every one filled in, and she had never opened the folder once she had put a sheet inside.

"Go and get it," I said. "I'll wait."

I heard the plastic chair scrape on the Satpur floor, and her footsteps going away.

Caps, reels and a piece of chalk

She came back with the folder and read me the six weeks down the phone, one column at a time, the way Sunita does on Mondays. Output was steady. Scrap had settled near two per cent once Rekha stopped eyeballing the pine oil. Then, in the downtime column for a Wednesday in week four, she found a note in her own handwriting: "Caps over. Stopped 2 p.m."

"I remember that day," she said. "Rekha filled bottles and lined them up on the floor without caps. We capped them on Friday."

Two days of filled, open phenyl bottles on a shed floor is a small thing, and also exactly how a factory runs out of money. Nothing was wrong with her supplier. She simply had no number that told her when to reorder. She bought caps when she saw the carton was nearly empty, and on that Wednesday nobody had looked.

The reorder line

Every bought-in item on your floor needs one written figure: the stock level at which you place the next order. Mine is worked out the same way for kraft reels as for staple wire.

Minimum level = daily use × supplier lead time in days + safety days × daily use

Meena's numbers for caps came to this:

Bottles filled per day (average)	60
Lead time from her cap supplier in Ahmedabad	8 days
Safety days	4
Minimum level	60 × (8 + 4) = 720 caps

At ₹2.40 a cap, holding 720 costs her about ₹1,730 of cash sitting on a shelf. I told her to count out 720, put them in a separate carton, write "OPEN THIS = PHONE AHMEDABAD" on the lid in marker, and keep the working stock in front of it. Crude. It works in my factory for gum powder, stitching wire and printing ink, and nobody has to remember anything.

Safety days are a judgement. I keep four for suppliers who have never let me down, and ten for the paper mill in Kolhapur district that once took nineteen days during a cane-season truck shortage. Do not set every item at ten because it feels safe. That is how you end up with ₹4 lakh of ink nobody needs.

Oldest out first

In the winter of 2005 a customer sent back a lot of biscuit cartons that were cracking at the score lines. The board had been made from a reel that had sat at the back of my store since the previous March, behind thirty newer reels, absorbing every monsoon morning through its outer wraps. Nobody had chosen to use an old reel. We had simply always unloaded the truck in front and picked from the front. The oldest paper in the build-

ing was the paper we never reached until it was too late to be any good.

First in, first out is the rule, and the method matters more than the rule. Our reels now come in from the east side of the rack and go to the corrugator from the west side, so the floor itself forces the order. Each reel gets the month of arrival chalked on its end in large figures. If a helper pulls a reel marked "8" while a "6" is still on the rack, any supervisor walking past can see it from twenty feet.

Meena has no racks. She put a strip of yellow tape across her raw-material corner and told Rekha that new drums go on the left of the tape and the mixing tank is fed from the right.

The last Saturday

Once a month, on the last Saturday after the day shift, we count everything. Two people do it together, and one of them must not be the person who runs the store. The count goes on a printed list against what the books say we should have.

The first time I insisted on this, in 2008, the books said 212 reels and the rack held 197. Fifteen reels at that year's prices was a little over ₹1.6 lakh. Some had been consumed without being entered, which was carelessness. Two had gone out of the gate in a tempo on a Sunday, which was not.

We now accept a difference of half a per cent and investigate anything above it. Meena did her first count on the last Saturday of September. She rang me afterwards, sounding puzzled.

"The books say eleven drums of pine oil," she said. "I have nine. And one of the nine is empty."

"Find the empty one before you find the missing two," I said. It turned out Rekha had used the last of a drum for a trial batch in August and pushed the empty back into the row so the corner looked tidy. The other two were a delivery entered twice. Nothing stolen. The count found it anyway, which is the point of a count.

Grease before it squeals

In April 2006 buddha stopped in the middle of a 9,000-carton order. A main shaft bearing had run dry, seized, and scored the shaft. The bearing cost ₹1,450. The shaft had to go to a turner in Bhosari, and the slotter stood still for four days while I phoned the customer twice a day to apologise. Shinde, the retired fitter who had inspected my corrugator, came to look at it and asked when it had last been greased. Nobody knew. He did not say anything. He did not need to.

Since then every machine on my floor carries a laminated card hung on a hook at eye level. It has three sections:

- **Daily**, done by the operator before the first job: oil points, belt tension by thumb, a listen for new noises.
- **Weekly**, done on Saturday by the shift supervisor: grease nipples, blade condition, loose bolts on the frame.
- **Monthly**, done by our maintenance man, Anand, on the last Sunday: bearings, gearbox oil level, electrical panel cleaning.

Each line has a box for initials and a date. A card with blank boxes on a Monday is a question I ask in the weekly review, by name.

Planned maintenance tells you what to do. The **breakdown log** tells you what you got wrong. Ours is a ruled register kept beside the corrugator, with seven columns: date, machine, what failed, time stopped, time restarted, cause as best we know it, and cost. In 2009 Sunita added up the log for the year and found that the glue-pump drive belt on the corrugator had snapped five times, roughly every seven weeks, and each time it stopped the line for close to three hours in the middle of a shift. A belt costs ₹620. We now change it every six weeks on a Sunday whether it looks worn or not. It has not snapped during a shift since.

Meena has one mixing motor and a filling machine. I told her the cards still apply, only shorter. Her first card has four lines.

One weekend, ₹18,000

By 2010 my factory had a problem I could not put a number on. Things were hard to find. A supervisor would spend twenty minutes looking for the slotting knife spanner, then borrow one from the corrugator and leave the corrugator without it. Offcuts lived under the machines. A pallet of printed sheets for a customer who had left in 2008 still sat against the back wall, gathering pigeon droppings.

A consultant had offered me a three-month 5S programme for ₹2.4 lakh. 5S is a Japanese method whose five words come down to: throw out what you do not need, give everything else a fixed place, clean it, write down the standard, and keep checking. I decided to do it over one weekend with my own people instead.

We stopped at 2 p.m. on a Saturday in October. Everyone stayed, paid for the extra hours, with lunch from the canteen. The money went like this:

Steel slotted-angle shelving, four bays	₹11,200
Floor paint, yellow and grey	₹4,600
Marking tape, labels, tool-board pegs	₹2,200
Total	**₹18,000**

The first job was a red tag on anything nobody could name a use for. By Saturday night the pile in the yard held the 2008 pallet, two broken stitching heads, eleven empty ink drums, a bicycle with no front wheel that nobody admitted owning, and a box of 2006 delivery challans. The kabadiwala paid ₹7,300 for the lot on Monday, so the weekend cost me less than eleven thousand.

On Sunday we painted walkways yellow and machine zones grey, and Ganesh, then a senior operator, made the tool board for the slotter himself. He drew the outline of every spanner on the plywood in black marker, so an empty peg showed its own shape.

On Monday morning the slotting knife spanner was on its outline. On Tuesday afternoon the outline was empty again.

Someone had taken it to the corrugator, because the corrugator's spanner had walked off to the slotter in 2009 and never come back. Ganesh bought a second spanner with his own ₹240 and hung it on the corrugator's board. The fifth S, the checking, turned out to be the only one that cost nothing and the only one that was hard.

Two weeks away

In May 2012 my wife finally got the Kerala trip she had been asking for since 2004. Fourteen days. I left the morning sheet with Sunita, the cheque book in the safe and my phone switched on, which she later said was the real mistake.

The first call came on day three, at 7.40 in the morning on a backwater boat near Alleppey. It was Ganesh, by then supervising the day shift. Our kraft supplier had run short of 150 GSM paper and was offering 140 GSM at ₹1.80 a kilo less. A customer's lorry was due at four.

"Do I take it?" he said.

He knew the cartons better than I did by then. He knew 140 would pass for one customer and fail the compression test for another. What he did not know was whether he was allowed to say yes. Nobody had ever told him.

The second call came on day six. A pharma customer wanted 6,000 cartons pulled forward by three days, which meant pushing back Rakesh's display boxes. Ganesh and the night man had already argued about it. Each had a customer on the phone, and each customer had been promised.

The third came on day nine, from Sunita. The corrugator's preheater thermostat had failed. Anand had found one in Pimpri for ₹14,500, the supplier wanted cash or a cheque before he would release it, and the only person who could sign a cheque was standing on a hillside in Munnar. The line stood still for most of a shift while Sunita paid from her own savings and I transferred it back from a hotel computer that charged ₹60 an hour.

None of these was a disaster. Each was a gap in a system I thought I had. When I got back, I sat with Ganesh, Sunita and Anand for one long afternoon and wrote down who decides what. It fitted on one side of a page, and with small changes it is still pinned above my desk:

- **The supervisor decides:** shift allocation, overtime up to four hours a person a week, order sequence within the week's agreed plan, and accepting or rejecting incoming material against the written spec.
- **The supervisor decides, then tells me the same day:** any paper substitution the spec sheet allows for that customer, and any rush order that moves another by less than one day.
- **Anand decides:** spare parts up to ₹20,000 on any single breakdown, paid from a petty-cash float Sunita holds.
- **Sunita decides:** payment reminders, and the day-thirty-one call. A second bank signatory for cheques up to ₹50,000.
- **I decide:** new customers, prices, credit terms, anything that changes a customer's spec, hiring, and any purchase above those limits.

The spec sheet mattered more than the list. Ganesh could not approve 140 GSM because the acceptable grades for each customer lived only in my head. Now they live on a card in the purchase file.

I gave Meena the same exercise, scaled down. Her list has three lines and Rekha's name on two of them. In November she

went to her sister's wedding in Aurangabad for four days and received one call, which was to ask where the spare filling nozzle was. It was on its outline.

Something else turned up on that 2012 trip, though I only saw it later. Sitting on a hotel balcony in Munnar reading the morning sheets Sunita sent each day, I noticed a pattern I had looked at for years without seeing. Buddha was booked eleven hours a day. The corrugator ran nine and a half, then stood silent from 7.30 at night until morning, while two orders sat in the dispatch file with dates I was going to miss.

I had been pricing land in Chakan.

CHAPTER 12

Growing Big Without Breaking

Second shift before second shed

The broker in Chakan, a cheerful man called Londhe who wore two mobile phones on his belt, had found me half an acre off the Talegaon road for ₹96 lakh. A builder I trusted had quoted ₹58 lakh more for a shed with a 9-metre roof. I had already spoken to the bank. In my head the new factory existed, down to the colour of the gate.

What I had not done was count the hours my existing machines stood still.

That night on the balcony I took a hotel notepad and wrote down the corrugator's day as it actually was. It started at 8 a.m. after warm-up, stopped for lunch, ran until about 7.30 p.m. and then did nothing for twelve and a half hours. Nine and a half hours of running in a twenty-four-hour day. I was about to borrow more than ₹1.5 crore to buy a second building because the first one was full. It was full of a machine that slept for half its life.

I came home and did the sum properly, with Sunita checking my figures because she did not trust holiday arithmetic.

	Second shed (Chakan)	Second shift (Bhosari)
Land and building	₹1.54 crore	Nil

	Second shed (Chakan)	Second shift (Bhosari)
New machines	₹38 lakh	Nil
Extra monthly cost	EMI about ₹2.9 lakh, plus staff and power	About ₹2.4 lakh: 9 people, power, one supervisor
Extra corrugator hours	Depends on orders	6.5 hours a day
Time to start	14 to 18 months	6 weeks

The extra six and a half hours were about 68 per cent more capacity on my bottleneck machine. That number was the whole argument. I knew that capacity was not the same as orders, and I said so to myself several times. But the two dispatch dates I was about to miss told me the orders were already there.

The rule I now give everyone is simple to say: run your existing machines sixteen hours a day before you spend money on land or walls. Sixteen, not twenty-four. You need the remaining hours for maintenance, cleaning and the changeover mistakes a tired night crew will make.

The second shift is harder than it looks, and I underestimated three things.

- **Supervision.** A night shift without someone who can decide is a day shift's scrap pile. Ganesh asked for the job. He had run dispatch for four years and knew every customer's grade card. I paid him ₹4,000 a month more and gave him the who-decides list with his name on more lines.
- **Safety and transport.** Workers finishing at 1 a.m. in Bhosari need a way home. I hired a tempo traveller at ₹19,000 a month. The insurance and the first-aid box had to be rechecked for night hours.
- **Power.** MSEDCL bills differ by time of day, and the night rate in 2012 actually helped me. Check your own tariff, because I

do not know how the time-of-day structure will move in your state.

The first month's night scrap was 6.1 per cent against 2.9 in the day. It took until the third month to get under 4. The Morning Sheet grew a second column, one for each shift, and the Monday review started with whichever column looked worse.

I rang Londhe in July to say I was not buying. He told me the plot would be gone within a week. He rang again in December, and in 2014, to say it was still available.

Next door, not next town

Once the night shift settled, the question changed. The machines had hours to sell, so what else could they make?

My first answer was wrong, and it cost me about ₹7 lakh. In 2013 several box customers asked whether I could also supply BOPP tape and stretch film, since my tempo was coming to their gate anyway. It sounded sensible. Same buyers, same delivery, one more line on the invoice. But I made neither product. I bought them from a dealer in Bhiwandi, added 9 per cent, and gave the same sixty-day terms my boxes carried. Within eight months I had ₹7 lakh tied up in tape rolls and receivables for a product that earned me less per rupee than a single sheet of kraft. Sunita called it "the shop," and she did not mean it kindly. I closed it in 2014.

The test I use now has two parts, and a new product should pass at least one of them before I give it a second look:

- **Same machine.** It runs on equipment I already own, in hours that are currently idle.
- **Same buyer.** It goes to customers who already pay me on time, through a purchase officer who already knows my name.

When a product passes both, I move fast. In 2014 the Gokhale company asked about die-cut partitions to keep impellers apart inside the pump carton. The corrugator was already making the board. The offcuts we had been selling to the kabadiwala at ₹11 a kilo were the right size for small partitions. Partitions now bring in about 8 per cent of our sales, and part of that comes from what used to be scrap.

Meena found her own version within a month. Her mixing tank was idle every afternoon, and the nursing home taking her phenyl also bought toilet cleaner from someone in Malegaon. She added it in October without spending a rupee on equipment.

The loan and the ratio

Some growth really does need a machine. By 2016 both shifts were full and printed boxes were being sent out for flexo printing at ₹1.10 a box. A printer-slotter cost ₹42 lakh. This time I worked out the debt-service coverage ratio before I went to the bank. Bankers call it DSCR. It means the cash the business earns in a year, divided by the loan repayments due in that year.

	Expected year	**Bad year**
Net profit	₹14.0 lakh	₹7.0 lakh
Add depreciation	₹6.0 lakh	₹6.0 lakh
Add interest	₹4.2 lakh	₹4.2 lakh
Cash available	**₹24.2 lakh**	**₹17.2 lakh**
Principal (5 years) plus interest	₹12.6 lakh	₹12.6 lakh
DSCR	**1.92**	**1.37**

Most banks want at least 1.25 to 1.5. The officer at our branch, Mrs Rao, looked at the first column and nodded. I asked her to look at the second. That is where my own rule comes in: **the bad year must stay above 1.25.** I build the bad-year column from the

worst thing that has actually happened to me. The kraft jump in 2021 took 11 per cent off my margin in six weeks, and I would not have survived that on a loan whose numbers only worked in a good year.

If your bad-year figure comes out under 1.25, keep running the second shift and wait another year.

The printer-slotter arrived in March 2017. It still prints the Gokhale logo in a blue that their quality engineer once rejected as "slightly hopeful."

Whose name goes on the box

I have never built a brand, and for a long time I was faintly embarrassed about it. Every carton that leaves Bhosari carries someone else's logo. Biscuits, pumps, poha, ceiling fans. Nobody in a kirana shop has heard of me, and nobody needs to.

A brand is worth paying for only when the person who chooses the product is not a purchase officer reading a specification. Meena's phenyl went to nursing homes and hotels for its first year. Their housekeeping heads bought on price and smell, and a printed name would not have changed a single order. Then Kishore's shops in Sinnar and Igatpuri began selling one-litre bottles to households. A woman picking between three bottles on a shelf does notice a name. Meena called it *Aai*, which means mother in Marathi. She spent ₹38,000 on a label design and a trademark filing, and nothing at all on advertising.

My rule is that a brand comes after repeat sales through shops, never before. If the shopkeeper is not reordering an unbranded product, a logo will not rescue it.

The first container

Most small units should not export directly. You need an Import Export Code, a freight forwarder, a buyer abroad who will pay against documents, and the patience to wait while a container

sits at Nhava Sheva. A merchant exporter takes all of that off you. He buys from you in India, in rupees, and ships under his own name.

Harpreet did his first export this way in 2023. A Delhi merchant exporter supplying a hydraulics distributor in Sharjah wanted 6,000 pins to Harpreet's existing drawing. Harpreet invoiced at 0.1 per cent GST under the concessional rate for supplies to merchant exporters. The exporter then had ninety days to ship, or Harpreet would be liable for the full rate. Check the current notification before you rely on it, because I have seen these schemes change with very little warning. He accepted a price about 7 per cent below his domestic rate. I told him that was the cost of not learning letters of credit at twenty-nine, and I thought it was cheap.

Two things matter more than the price:

- **Payment terms in writing.** Harpreet asked for thirty days. The exporter wanted sixty. They settled on forty-five, with half paid on dispatch.
- **Packing to the exporter's standard.** The pins went in VCI bags, an anti-rust film, inside 7-ply cartons. I made the cartons.

Paid for turning up

In April 2022, with kraft still high, I asked every customer for a 6 per cent increase. Most agreed after some grumbling. The Gokhale company's purchase head, Mr Phadke, agreed within a day. Another box supplier on their list had asked for 4 per cent, and he got 2.

I asked Phadke why. He turned his monitor towards me and showed me the vendor rating screen. My on-time delivery over the previous twelve months was 98.4 per cent and my rejection rate was 0.3 per cent. The other supplier's on-time figure was 81.

"You are not the cheapest," he said. "You are the one I don't have to ring."

Since 2012 the Morning Sheet has carried a line I added after the Kerala trip: dispatches due yesterday, dispatches made yesterday. Most mornings the two numbers match. On the mornings they don't, the reason goes in the margin in Ganesh's handwriting, and that is usually where the Monday review starts. That line is how I came to be the supplier Phadke doesn't have to ring.

Phadke printed the screen for me. It is pinned beside the dispatch board, and it has begun to curl at the corners.

Worth something after you

The first factory I ever bought was worth exactly what its machines would fetch. Vilas sold me a slotter and a rotary cutter for ₹3.8 lakh, and that was the whole sale. His customers, his know-how and eleven years of work went for nothing, because none of it could be separated from him and none of it was written down.

I thought about him a great deal in 2022, when a friend I will call Deepak (not his real name) tried to sell his injection-moulding unit in Chakan. He had nine machines, thirty-one workers and a profit of about ₹40 lakh a year. A Gujarat packaging group sent a chartered accountant and an operations man to look it over. They stayed four days.

The accountant asked for three things on the first morning: audited accounts for three years, GST returns for the same period, and bank statements. Then he laid them side by side. Deepak had been taking part of his scrap sales and some small cash orders outside the books for years, as many owners do, and the GST turnover did not match the bank credits. The gap was about ₹18 lakh a year.

"Then your profit is what the papers say," the accountant said. "Not what you say."

The operations man spent his days on the floor. He asked the shift supervisor how a mould was changed on the 250-tonne machine. The supervisor said Deepak usually came down for that. He asked for the customer list. One appliance maker in Ranjangaon took 47 per cent of sales. He asked where the maintenance records were. They were in Deepak's head, which cannot be included in a sale.

The offer came in at a little under two and a half times the declared profit, plus the written-down value of the machines. Deepak had been expecting four. He did not sell. I do not know what the right multiple for a unit like his is, and I distrust anyone who tells you there is a standard one. But I know what pulled his number down, and none of it was the machines.

What a buyer pays for, as far as I can tell from Deepak and from two other sales I have watched closely, comes down to this:

- **Books that agree with each other.** Turnover in the accounts, the GST returns and the bank statements should match without anyone having to explain.
- **No customer above 25 per cent.** That rule from Chapter One protects your cash flow while you run the place. It also protects your price when you leave.
- **Processes on paper.** A buyer is not purchasing your skill. He needs to see that the skill already lives somewhere else.
- **A floor that runs without the owner.** The who-decides list, the maintenance cards and the Morning Sheet are more than habits. They are evidence.

After Deepak's four days I walked my own floor with a notebook and pretended to be the Gujarat operations man. Ganesh had written changeover instructions for the corrugator in 2014, in Marathi and in his own block capitals, and they were laminated and hanging on a hook by the control panel. The printer-slotter had nothing. The glue kitchen had nothing. The process for

qualifying a new kraft mill existed only as a conversation between me and Sunita.

It took us until the following March to write the rest. Sunita keeps the folders in a steel almirah behind her desk, forty-three of them, each with a coloured spine. Last year my daughter took one down, the one marked *Gokhale — specifications and complaints, 2009 onwards*, and read it at Sunita's desk for most of an afternoon without saying a word to me.

Monday, 3 March 2025

The dispatch board hangs on the wall at the bottom of the stairs, so I pass it on the way to my office and again on the way down. It is a whiteboard, 1.2 metres by 2.4, bought in 2012 for ₹3,100 after the Kerala trip, with columns drawn in permanent marker: customer, carton code, quantity, vehicle, due time, done. Ganesh fills it in at 6.30 every morning before the day shift arrives. He uses a blue pen for the board and red for anything late.

That Monday it had fourteen lines and no red.

The Gokhale company was at the top, 2,400 pump cartons on a Tata 407 due at 11 a.m., which is the order this book has followed more than any other. Below it was the poha maker who nearly lost me in 2006, now taking his 31,000 cartons a month in four drops, this one 7,800. Rakesh's display boxes, 3,000. Two lines for customers I took on in 2023 and cannot yet promise you will last. Near the bottom, in Ganesh's capitals, was *NASHIK — MEENA — 5L PHENYL CTN — 1,200*. She had sent her own vehicle. She does not take credit from me and I do not give it to her, and we are both quite pleased about that.

My daughter came down at about 9.40 with two cups of tea and stood reading the board as if it were a newspaper. She had been home for a week. On the Saturday she had asked me why the Gokhale folder had three complaints in 2009 and none after 2011, and I had talked for an hour, which I am told is a habit of mine.

"Who decides the order of the trucks?" she said.

"Ganesh."

"Not you?"

"Not since 2012."

She nodded at that and drank her tea. I waited for the next question, the one about whether I wanted her to take this on, or whether she wanted it, and I had a sentence ready that I had been rehearsing since roughly Diwali. She did not ask it. She asked what VCI meant, because she had seen the word on Harpreet's packing note pinned beside the board, and I told her.

I do not know what she will choose. I have decided not to ask her before she asks me, which may be wisdom or may be cowardice; Sunita has opinions on which. If she says no, the folders are written, the books agree with each other, and nobody takes more than 22 per cent of what we make. The place will be worth something to someone. I would rather it were her.

At 10.52 the 407 for the Gokhale company backed up to the dock. Buddha was running on the far side of the floor, the slotter I bought from Vilas twenty-one years ago almost to the week, feeding sheets for an order that would go out on Thursday. It still knocks slightly on the return stroke. Ganesh says it always has.

At 11.04 he walked over to the board, uncapped the blue pen and put a tick in the last column. Then he looked at the clock, wrote *4 min* in small letters beside it, and went back to the dock to count the next pallet.

About the Author

S. Choudhary bought his first second-hand slotting machine in Bhosari, Pune, in 2004 and built it into a corrugated packaging company that now runs two shifts. Over more than two decades on the factory floor, he has learned costing, collections, hiring and growth the hard way, often through mistakes he now helps others avoid. Alongside running his own unit, he has spent many years helping first-generation manufacturers choose a product, secure funding and set up their factories. The Hundred Factories gathers that practical advice into one book.