

HOW TO IDENTIFY AND FIX UNRELIABLE PROCESSES

YOUR STARTER GUIDE

to increase productivity and boost your revenue.

By Mathieu Phejar PhD, LSSBB (Lean Six Sigma Black Belt)

Hi, I'm Mathieu,

After achieving a PhD in Materials Science, I have spent over a decade working in high-pressure, safety-critical industries.

Over the years, I've learned how to turn complex challenges into clear, practical solutions—whether it's streamlining processes, using data to uncover hidden issues, or helping teams work better together.



I'll be your Lean Process Architect

I am here to help you choose and implement the right tools to:

- fix unreliable processes & rework,
- eliminate bottlenecks,
- improve productivity, and
- increase profit by 20% to 30%.

And the best part? We achieve this **without needing extra resources**—enabling your team to focus on what truly matters: **delivering value to your customers.**

I've done this successfully for large corporations—now, I'm focused on helping small and medium-sized manufacturing enterprises (SMEs) do the same.

I don't just fix problems—I work alongside your team to make improvements that actually last.

From system rollouts to process transformations, I combine technical expertise with a people-first approach.



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Short Short Short

Lean is a systematic approach originating from Toyota's manufacturing practices. It was developed to maximise value for the customer by minimising waste. It focuses on continuous improvement through waste elimination and value creation. The Lean methodology is now applied across multiple industries.

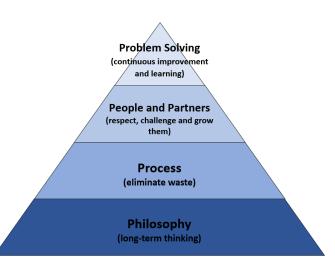
Core Principle of Lean:

"Deliver maximum value to the customer by reducing waste and optimising flow."

Examples of waste Lean targets include overproduction, waiting time, excess inventory, unnecessary motion, and defects.

The Toyota's 4P's model provides an understanding of the guiding philosophy of Lean:

- Long term philosophy: Base your decisions on the longterm vision or mission.
- The right process will bring the right results: Eliminate waste, standardise your process, then use the standard to find a better way.



- Add value to your organisation by developing your people and partners: Respect, challenge and grow them.
- Continuously apply problem solving methods to drive organisational learning: Drive continuous improvement and learning for everyone.

A Here are the eight types of waste targeted by Lean:

There are eight types of waste identified by Lean. They are non-value-added activities that don't improve the final product's quality and wouldn't be worth paying for from the customer's perspective. They only add cost and time!

Transportation	Moving supplies, materials, parts, documents, people excessively.		
Inventory	Any unnecessary material, information, documents that resides between two processes.		
Motion	Any unnecessary movement of people that does not add value.		
Waiting	The time spent waiting for material, information, people.		
Over-processing	Providing work or service that is not part of the customer requirement.		
Over-production	Producing more material, information, or a service than is needed or used.		
Defects	Redoing work that has been done previously.		
Skills Underutilised	Not using people's minds/ideas and getting them involved.		

For small and medium-sized manufacturing enterprises (SMEs), operational efficiency is critical for staying competitive. Waste in processes—whether time, materials, or inefficiencies—directly impacts profitability.

Lean manufacturing principles help businesses streamline workflows, reduce waste, and boost productivity without requiring additional resources.

Growing manufacturing businesses do not need a massive overhaul—they need a smart, structured approach to doing more with less.

Here are three practical Lean steps to help you spot inefficiencies, improve productivity, and develop a stronger team culture—without overcomplicating things.

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Step 1: Map the Process – "See the Flow, Spot the Gaps"

Before you can fix a process, you need to see it. Mapping your process helps you understand what's really going on, not just what you *think* is happening.

What to do:

- Create a visual map of your current process from start to finish. This includes every step—no matter how small.
- Use cross-functional input—involve shopfloor staff, engineers, and supervisors.
- Focus on actual flow of material and information, not just formal procedures.
- Walk the process (Gemba walk) to see what's happening in real-time.
- Include waiting times, rework, handoffs, and queues in your map.

Why it matters:

- Uncovers hidden inefficiencies and delays.
- Aligns everyone with a shared understanding of the process.
- Highlights complexity that's crept in over time.
- Builds engagement—people like to feel heard when their workflow is being reviewed.

Lean tool suggestion: Flowchart

A simple, step-by-step visual of a process or workflow. Helps you quickly map your process. Ideal to set the scene before deeper analysis.

Step 1 in action:

Keep it simple.

Start with a piece of paper or a whiteboard — something easy to adjust. Cross things out, erase, rewrite. Don't be afraid to go through several iterations until you and the team are satisfied.

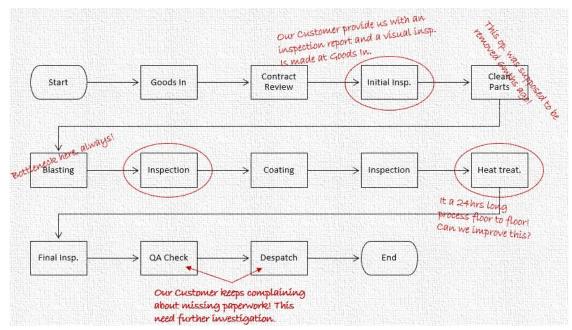
Yes, the team!

Don't do this alone. Bring in the right people from the start. What's better than one brain? A few sharp ones working together!

At a minimum, involve a supervisor, a process engineer, and a quality engineer.

Once your process map is drafted, compare it to what's written in the work instructions, what the customer has approved, and what they think they're paying for.

Then, brainstorm as a team. Review every step. Question everything. Capture your ideas and observations as you go. See below an example of a simple flowchart. It's easy to implement, yet very powerful as it will reveal to you the inconsistencies you would never have thought about.



Example of a simple flowchart with comments after a brainstorming session.

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Step 2: Identify Waste – "Cut the Fat, Keep the Muscle"

Once the process is mapped, it's time to identify the parts that don't add value. In Lean, as previously mentioned, there are 8 classic types of waste (TIMWOODS), but the key is knowing what matters *most* in your business.

What to do:

 Use your map to tag each step as Value-Added, Non-Value-Added, or Necessary Non-Value-Added (e.g. inspections).

Look for:

- Transport moving materials unnecessarily
- Inventory excess raw materials or WIP
- Motion inefficient operator movements
- Waiting bottlenecks, idle machines, or people
- Overproduction making too much, too soon
- Overprocessing doing more than what's required
- Defects rework or scrap
- Skills not using your team's full potential

Why it matters:

- Reduces costs and frees up time and space.
- Improves lead time and delivery performance.
- Boosts employee satisfaction by removing daily frustrations.
- Gets teams thinking in terms of *value*, not just output.

Lean tool suggestion: Waste Walk Checklist

Take your process map, walk the shopfloor, and check each type of waste with your team—it builds awareness and sparks quick wins.

Step 2 in action:

The fun starts now!

Take your finalised process map with all the team's comments and tag each step as one of the following:

Value-Added (VA): What the customer is actually paying for.

Non-Value-Added (NVA): Waste. These steps just add time, cost, and frustration.

Necessary Non-Value-Added (NNVA): Not ideal, but required (e.g. for compliance or safety).

Until you go through this exercise, most Non-Value-Added steps will stay hidden. Why? As a leader, you're not as close to the process as your operators and they're often too focused on getting parts out the door to stop and question every step. But that's where you come in.

As the leader, it's your job to challenge the process, promote continuous improvement, and help your team develop a growth mindset.

And once again, this is not a solo activity. Involve your team. You'll be surprised how many "wow" moments you uncover together. Check out the example below to see what this looks like in action:

		Please tick one per row			
No.	Process Step	Value added	Necessary Non- Value-Added	Waste	Improvement Idea
		(VA)	(NNVA)	(NVA)	
1	Goods In	~			
2	Contract review		~		
3	Initial insp			~	Our Customer provide us with an inspection report and a visual insp. Action: update the Goods In work instruction to include the visual inspection.
4	Clean parts			~	This op. was supposed to be removed 6mths ago! Action: update the work instruction.
5	Blasting	~			BOTTLENECK! We need a bigger blaster. Action: contact blaster supply for an alternative solution.
6	Inspection		~		
チ	Coating	~			
8	Inspection		~		
9	Heattreatment	~			24hrs long process floor to floor! The Client only pay for 12hrs. Action: How can we improve temp ramp up and cooling rate.
10	Final inspection	~			
11	QA check		~		Paper based. Action: Explore digital solutions
12	Despatch	~			

Example of a waste identification sheet.

Step 3: Root Cause Analysis – "Fix It for Good"

Now that you've identified wastes, it's time to understand why they're happening. Don't just treat symptoms—solve the real issue.

What to do:

- Start with the waste you can't explain—ask "Why?" at least five times to drill down to the root.
- Use a cause-and-effect (fishbone) diagram to explore all possible causes: machine, method, people, materials, environment, measurement.
- Involve the team who lives the process—they'll know what's actually going wrong.
- Look at data: scrap rates, downtime logs, rework tickets, customer complaints.
- Identify patterns over time, not just one-off mistakes.

Why it matters:

- Prevents recurring problems that drain time and money.
- Builds a culture of problem-solving and ownership.
- Helps allocate your improvement resources where they matter most.
- Avoids "fixing" something that isn't broken.

Lean tool suggestion: 5 Whys + Fishbone Diagram

Simple, effective tools to dig deeper into problems without needing a fullblown analytics system.

Step 3 in Action:

Dig Deeper with the 5 Whys!

In this step, you'll go beyond surface-level issues. Now it's time to understand the why behind some of the problems or waste you've identified.

The 5 Whys is a simple yet powerful brainstorming tool that helps uncover root causes by repeatedly asking "Why?" about a specific issue until the underlying cause becomes clear.

Let's take an example from the process we've been reviewing:

We discovered that Step 4 – Cleaning Operation is still being carried out, even though the customer had previously requested its removal.

Our investigation showed this step adds no value, and worse: operators are spending valuable time on it that could be redirected to truly value-added work.

The goal now is to understand why this step is still being performed, and more importantly, what systems or checks can we put in place to prevent similar issues in the future.

Here's what a 5 Whys activity looks like in action:

- 1. Why is the cleaning operation still being performed?
 - ightarrow Because the operators were not informed that this step was removed from the process.
- 2. Why were the operators not informed?
 - \rightarrow Because the updated customer requirement was not communicated clearly or documented in the latest work instructions.
- 3. Why were the work instructions not updated?
 - \rightarrow Because there is no standard process in place to review and update documentation when customer changes are received.
- 4. Why is there no standard process for handling customer-driven changes?
 - → Because change management procedures are informal or inconsistently followed.
- 5. Why are change management procedures inconsistent?
 - → Because there's no clear ownership or accountability for ensuring that process documentation is reviewed and updated during customer change reviews.

Example of 5 Whys.

But don't stop just there!

To fix the problem an action plan needs to be defined — and the Team must be involved in creating it.

Why?

Because if they help shape the solution, they're more likely to support and follow through with it.

Here's how we'll address the root cause identified in the previous step:

Action Plan:

1. Assign clear ownership for updating work instructions following any customer change.

Action owner: James.

Target date: in 2 days.

2. Implement a formal change control checklist or sign-off process. Action owner: Matthew.

Target date: in 2 weeks.

3. Schedule routine reviews of key process steps against customer requirements.

Action owner: Clara.

Target date: in 10 days.

4. Train supervisors and team leads on the importance of eliminating Non-Value-Added steps.

Action owner: Steve.
Target date: in 2 weeks.

Action plan example following the 5 Whys activity

Repeat this process for each identified problem or source of waste and you'll start to see your productivity improve right before your eyes.

A Here's what you can expect when you apply the steps from this guide:

If you're a manufacturing business leader looking to reduce waste without investing in extra resources, this 3-step Lean approach is a practical place to start and it can deliver real returns.

By mapping out your processes with your team, you'll often uncover delays and rework that go unnoticed day-to-day. On average, SMEs using this approach identify 10–25% of their daily activity as non-value-added. By tackling these inefficiencies, businesses typically see a 20–30% improvement in productivity, which can translate into £100K–£300K in annual savings for a £1M–£1.5M operation.

And because the method focuses on using your current resources better, not adding more, you start seeing results within weeks, not months. It's a straightforward way to boost margins, improve team morale, and get more value from every hour worked.

WANT TO ELIMINATE WASTE IN YOUR OPERATION AND IMPROVE YOUR REVENUE WITHOUT THE NEED OF EXTRA RESOURCES?

As Henry Ford said:

"If you always do what you always did, you'll always get what you've always got."

I will guide you in implementing Lean Six Sigma within your organisation and help your team identify and eliminate waste across your operations. You'll gain access to years of industry experience in troubleshooting and problem-solving. Together, we'll unlock your team's potential and ensure your business reaches operational excellence!



