MN Consulting

A GUIDE FOR MINERS, REFINERS, BATTERY MANUFACTURERS, BESS INTEGRATORS AND EV OEMS

Pilot to scale-up: why traceability rollouts stall

Seven steps from pilot to scale-up, three checkpoints and the templates to run them.



TRACEABILITY / AUTOMATION / SALES AND BUSINESS DEVELOPMENT

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START HERE

The platform is bought. The pilot ran. But it is not live across your sites and suppliers.

This is where a lot of traceability programmes sit. The technology is usually not the reason. The reasons are people, incentives and preparation, and most of them are visible before you start.

This guide is for the operating companies rolling out traceability: miners, refiners, battery manufacturers, BESS integrators and EV OEMs. It is written for the project sponsor and the internal teams who have to make it work, including traceability, sustainability, procurement, supply-chain, data and IT leads.

BY THE END YOU WILL HAVE

1. A named sponsor and budget holder for the scale-up
2. Traceability on the scorecards of the teams that must deliver it
3. An engagement plan for internal stakeholders and suppliers
4. A data blueprint
5. Explicit written requests for each site and supplier
6. A decision on where to start
7. A 90-day plan

HOW TO USE THIS GUIDE

Work through the steps in order. Each step is one page: a goal, what to do, the output you should have, and how to know you are done.

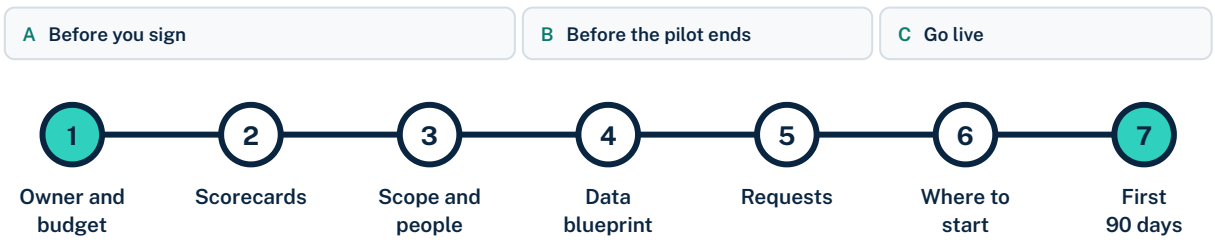
Each phase ends with a checkpoint. Do not move to the next phase until you can tick every box.

Each step names the template that holds its output. The templates are at the back.

Your project may be internal, a global supply chain, or both. Step 3 helps you choose. Each step is tagged with its workstream: strategic alignment, change management or data.

Time. Illustrative: set aside a half-day with your core team to work through Steps 1 to 5. Allow longer for supplier conversations.

THE ROADMAP



PHASE A: BEFORE YOU SIGN

01

STRATEGIC ALIGNMENT

Name the business owner and the budget holder



> **Make sure the scale-up has an owner with budget, not only a pilot requester.**

The pilot requester is not the business owner. The most common reason rollouts stall is that not enough people are involved. The project rests on one person or one team.

The person who asks for the pilot is often not the business owner with budget influence for the scale-up. For example, IT wants to pilot some "cool tech", but IT is not the business owner.

DO THIS

1. Ask early: who will hold the budget for a scale-up to full implementation?
2. Name that person and bring them into the project now.
3. Name a senior sponsor with authority across the in-scope sites.
4. Write down who is accountable for what.

OUTPUT

A one-page sponsor brief naming the sponsor, the budget holder and the pilot requester.

Template A

DONE WHEN

- [ ] You can name the budget holder.
- [ ] They have agreed to be involved.

COMMON TRAP

If you cannot name the budget holder, and they are not involved, the pilot has nowhere to go.

02

STRATEGIC ALIGNMENT

Put traceability on the scorecards



> **Give every team that must deliver a personal reason to make the scale-up work.**

> **If you are a sponsor signing for a traceability platform tomorrow, do this step first.** Align your teams' incentives to deliver the project before you sign.

If no one is accountable for the scale-up and it is not on anyone's KPI list, it is very hard to move past the pilot. No one is incentivised to make it work.

Many companies use a balanced scorecard for annual performance assessment. It needs something explicit about traceability.

DO THIS

1. List the teams that must deliver, for example procurement, sites, data and IT, and sustainability.
2. Add an explicit traceability measure to each team's annual scorecard.
3. Make each measure specific to the team. In procurement, where you need buy-in, that might be a target for supplier engagement on the traceability project.
4. The sponsor may need to influence peers in other functions to add traceability to their scorecards where their support is needed to drive the results. Top-down cascaded KPIs can help with this alignment.
5. Name at least one person who has the scale-up on their KPIs.

OUTPUT

A scorecard measure for each delivery team.

Template B

DONE WHEN

- [ ] At least one named person has the scale-up on their KPIs.
- [ ] Every delivery team has a measure.

COMMON TRAP

A scorecard line with no owner. If nobody is measured on it, nobody will make time for it.

03

CHANGE MANAGEMENT

Choose your scope and plan the people

Decide what you are tracing, and engage everyone affected before go-live.

What to look for depends on your scope. If the pre-engagement work below is missing, it will not work, and you will be fighting all the way.

Internal project

For example, a multinational miner tracing material within its own operations. This is change management and incentive alignment. All the relevant people should be informed or engaged.

Global supply chain

For example, an OEM tracing material back to source. You need the same engagement, but with your suppliers. Do not assume "we are the customer, so our suppliers will do it." Building the relationship takes time, especially with tier 1s and any further-upstream suppliers you have a relationship with.

DO THIS

1. Agree the scope: internal operations, supply chain, or both.
2. **Internal sites:** write a change management plan. List who is affected, what changes for them, and who needs to be informed or engaged.
3. **External suppliers:** tell each supplier the commercial implications for them. For example, are they paying for everything, or is the customer paying for this project?
4. **External suppliers:** align incentives. From a supplier relationship management perspective, create contractual incentives and KPIs around traceability.
5. **External suppliers:** get each in-scope supplier's acknowledgement and approval to take part, starting with tier 1s.

OUTPUT

An engagement plan for internal stakeholders and, if in scope, suppliers.

Template C

DONE WHEN

- [ ] There is a change management plan for internal stakeholders.
- [ ] Each in-scope supplier has acknowledged and approved taking part.

COMMON TRAP

No change plan and no supplier engagement. Do the pre-engagement work first, with the supply chain, with internal stakeholders, or both, depending on your scope. That is what sets the project up for success.

CHECKPOINT 1

Before you sign

Covers Steps 1 to 3. Do not move on until you can tick every box.

Sponsor and incentives

- [ ] We know who will hold the budget for the full scale-up, and they are involved now.
- [ ] More than one stakeholder is engaged, not just the pilot requester (for example, not only IT).
- [ ] At least one named person has the scale-up on their KPIs.
- [ ] Traceability is explicit in the annual balanced scorecards of the teams that need to deliver it.
- [ ] Team-specific targets are set where buy-in matters (for example, supplier-engagement targets for procurement).

Stakeholders and change

- [ ] We have agreed the scope: internal operations, supply chain, or both.
- [ ] There is a change management plan for internal stakeholders.
- [ ] Everyone affected knows the project is happening and what it means for them.
- [ ] Pre-engagement work is done before go-live, not during it.
- [ ] Suppliers know the commercial implications for them (for example, are they paying for everything, or is the customer paying for this project?).

Suppliers

- [ ] We are not assuming suppliers will comply because we are the customer.
- [ ] Supplier relationships are being built early, with time allowed for tier 1s and further-upstream suppliers.
- [ ] Each in-scope supplier has acknowledged and approved taking part.
- [ ] Incentives are aligned when engaging suppliers (for example, from a supplier relationship management perspective, contractual incentives and KPIs around traceability).

PHASE B: BEFORE THE PILOT ENDS

04 Build the data blueprint

DATA



Know what data you need, where it sits and how it will move, before any site or supplier goes live.

Before a site or supplier can go live, you need a clear picture of the data. Build it the same way you build the change plan: the core team does the initial planning, together with the key data owners in the business. These are not necessarily IT.

DO THIS

1. List what data is needed.
2. For each data point, note which system it sits in.
3. Note how it will be extracted.
4. Check whether it can be pulled into a central data lake, and how it will flow from your core systems into the traceability system if they are different.
5. Write down the gaps.
6. Record which products are created at which site or supplier, as best as possible, and agree the chain of custody model.

OUTPUT

A data blueprint with one row per data point.

Template D

DONE WHEN

- [ ] Every data point has a system, an extraction route and an owner.
- [ ] Gaps are written down.
- [ ] The chain of custody model is agreed.

COMMON TRAP

Not engaging the end business users on the data attributes they need to make better decisions. For example, procurement teams should have input into the supply chain data they would like or need from their supply chain.

05 DATA

Make explicit requests of sites and suppliers



> **Ask for exactly the data you need, in terms they already use.**

Internal sites. You can make an explicit request of the sites in scope, if needed. This can be the company that owns and operates the sites, or a downstream customer requesting information about a particular site. Communication channels and data sources vary by organisation (for example, central data lakes that marketing and sales can access, IT, sustainability and so on), so you do not necessarily need to engage operations.

External suppliers. Be explicit about the exact data points you need and why. That leaves no room for ambiguity or pushback. It also shows you are being transparent about the ask.

DO THIS

1. Decide which internal sites you need to engage at all, and check for formatting issues.
2. For each internal site or external supplier, write the exact data points you need and why.
3. Where you are asking an upstream organisation, such as a miner or refiner, use the terms it already reports in (see the Appendix).
4. Create a common objection handling document, so the procurement or project lead can engage with confidence where objections arise with internal stakeholders or suppliers.
5. Send each request through the right channel for that organisation.

OUTPUT

A written request list for each internal site and external supplier in scope.

Template E

DONE WHEN

- [ ] Any ask of internal sites is explicit.
- [ ] Each external supplier has a written list of the exact data points we need, and why.
- [ ] A common objection handling document is created.

COMMON TRAP

Generic requests for "data". They get generic answers, or pushback.

CHECKPOINT 2

Before the pilot ends

Covers Steps 4 and 5. Do not move on until you can tick every box.

Data blueprint

- [ ] The core team includes the key data owners in the business (not only IT).
- [ ] We have listed the data needed.
- [ ] We know which systems each data point sits in.
- [ ] We know how the data will be extracted.
- [ ] We know whether it can be pulled into a central data lake.
- [ ] Data gaps are identified and written down (with a remediation plan where applicable).
- [ ] We know how data will flow from core systems into the traceability system (if they are different).
- [ ] We understand which products are created at which site or supplier, as best as possible.
- [ ] We have agreed on the chain of custody model.

Requests

- [ ] We have decided whether internal sites need to be engaged at all (for example, if the ERP holds the data centrally), and checked for formatting issues.
- [ ] Any ask of internal sites is explicit.
- [ ] Each external supplier has a written list of the exact data points we need, and why.
- [ ] A common objection handling document is created, so the procurement or project lead can engage with confidence with internal stakeholders or suppliers where objections arise.

PHASE C: GO LIVE

06

CHANGE MANAGEMENT

Choose where to start



Decide which sites or suppliers go first.

In the first 90 days, much of what tells you it is working comes back to the change management plan. How early were the in-scope sites engaged? How much preparation has been done to find where the data sits, and how it will flow from your core systems into the traceability system?

Option A: friendly sites first

Engage the top-performing, more engaged sites or facilities first, internally or among suppliers. Pick the friendly ones to build momentum.

Option B: one hard site first

Depending on your scope, take on one harder site up front. You learn the roadblocks before you replicate to other sites. The trade-off is more friction early and a slower time to value. This is a decision for your situation.

DO THIS

1. List the in-scope sites or suppliers and mark which are engaged and ready.
2. Choose Option A or Option B, and write down why.
3. If you choose B, tell stakeholders to expect more friction early and a slower time to value.
4. Confirm the first sites or suppliers, and who owns each.
5. Confirm the signed terms and conditions of your chosen platform provider are in place (where applicable).

OUTPUT

A starting decision and the list of first sites or suppliers.

Template F

DONE WHEN

- [ ] You have chosen an approach and written down why.
- [ ] If you chose a hard site, stakeholders have accepted the extra early friction.

COMMON TRAP

Engaging sites late. The earlier the in-scope sites are engaged, the smoother the first 90 days.

07 Run the first 90 days

CHANGE MANAGEMENT



> **Show momentum early and let it compound.**

In the first 90 days, find which sites are willing to engage and show momentum internally. That builds confidence with stakeholders across the business. It also creates some healthy competition across sites or suppliers, which keeps the momentum compounding.

DO THIS

1. **Weeks 1 to 4:** start with your chosen sites or suppliers and confirm data is flowing from the core systems.
2. **Weeks 5 to 8:** fix the gaps you wrote down in Step 4, and share early progress internally.
3. **Weeks 9 to 13:** bring in the next wave of sites or suppliers, and show progress side by side.
4. Note which sites and suppliers are willing to engage as you go.
5. Raise roadblocks with the sponsor early, whether you identify them internally or a supplier raises them, to find the best approach internally or with the supplier through the correct channels.

Illustrative timeline. Adjust it to your scope.

OUTPUT

A 90-day plan.

Template F

DONE WHEN

- [ ] You know which sites and suppliers are willing to engage.
- [ ] Early progress has been shared internally.

COMMON TRAP

Keeping progress private. Visible progress builds confidence and keeps the momentum going.

CHECKPOINT 3

Before each new site or supplier goes live

Covers Steps 6 and 7. Do not move on until you can tick every box.

First 90 days

- [ ] In-scope sites and suppliers were engaged early.
- [ ] We have the signed terms and conditions of our chosen platform provider (where applicable).
- [ ] We have chosen our starting approach: friendly, engaged sites first for momentum, or one hard site first to learn the roadblocks.
- [ ] If starting with a hard site, stakeholders accept the extra early friction and slower time to value.
- [ ] We know which sites and suppliers are willing to engage.
- [ ] Early progress is shared internally to build confidence and healthy competition across sites and suppliers.
- [ ] Roadblocks identified internally, or raised by suppliers, are raised with the sponsor early, to find the best approach internally or with the supplier through the correct channels.

TEMPLATES

Fill these in as you go

Template A Sponsor brief

Step 1. One row per role. Fill in a name and what they are accountable for.

Role	Name	Accountable for	Involved now?
Senior sponsor			
Budget holder for the scale-up			
Pilot requester			
Other stakeholder			

Template B Scorecard measures

Step 2. One row per team that must deliver.

Team	What they deliver	Scorecard measure	Owner
Procurement	*Supplier engagement*	*Number of in-scope suppliers engaged by a set date*	*Head of procurement*

The shaded row is an illustrative example.

Template C Engagement plan

Step 3. One row per stakeholder group or supplier.

Who	What changes for them	Commercial implication	Incentive or contract term	Status
Tier 1 supplier	*Provides lot data each month*	*Who pays for set-up*	*Traceability KPI in the supply agreement*	*Acknowledged*

The shaded row is an illustrative example.

Template D Data blueprint

Step 4. One row per data point.

Data point	System it sits in	How it is extracted	In the data lake?	Gap	Owner
Lot ID	*ERP*	*Direct weekly feed into data lake*	*Yes*	*None*	*Data lead*

The shaded row is an illustrative example.

Template E Request list

Step 5. One row per site or supplier.

Internal site or external supplier	Exact data points	Why we need them	Format and date	Channel	Status
Site 1	*Tonnes shipped, grade, assay*	*Mass balance and customer claims*	*Monthly, from the ERP*	*Site data owner*	*Sent*

The shaded row is an illustrative example. Note: communicating with your supplier could be through email or even through a solution provider's platform workflow.

Template F Starting decision and 90-day plan

Steps 6 and 7. Decide where to start, then plan the 13 weeks.

Approach (Option A or B) and why

First sites or suppliers and owners

Weeks	What happens	Who	Sign that it is working
Weeks 1 to 4			
Weeks 5 to 8			
Weeks 9 to 13			

Putting these sites and timelines into swimlanes will help visualise the planned work.

APPENDIX

Language of upstream organisations

Upstream organisations such as miners and refiners already measure and report in these terms. They are most useful when, for example, a procurement team at an EV OEM engages an upstream refiner or miner. Use them to keep requests specific, and tailor the list to your scope.

Contained metal	The quantity of metal inside a given amount of ore, concentrate or product. Roughly tonnes multiplied by grade.
Payable metal	The share of contained metal a buyer pays for under the sales contract, after payability terms, treatment and refining charges (TC/RCs) and any impurity penalties. It is what the producer gets paid on.
Assays	Laboratory analyses of samples that measure grade and impurities. They underpin contained metal figures and, at sale, payable metal and penalties.
Mass balance	Accounting for material into and out of a site or process (tonnes and contained metal), so inputs, outputs and stocks reconcile. In traceability it is also the name of a chain of custody model where certified and non-certified material can be mixed but tracked by quantity.
Chain of custody	The documented record of who held the material as it moved from mine to processor to manufacturer, and the model used to link claims to it (for example identity preserved, segregated or mass balance).
Concentrate versus refined product	Concentrate is the upgraded mineral product from a mine's processing plant. Refined product is the high-purity output of a smelter or refinery. Each has different data, specifications and paperwork.
Cost per tonne	The unit cost of the operation (per tonne mined, moved or processed). It is how sites manage their cost base.
Incoterms (FOB, CFR, CIF, DAP)	The ICC's Incoterms® 2020 rules named in the sales contract. They set where delivery happens and where costs and risk pass from seller to buyer. Under FOB, CFR and CIF, risk passes once the goods are on board the vessel at the port of shipment (under CFR and CIF the seller still pays freight, and under CIF insurance, to the destination port). Under DAP, the seller carries risk until the goods arrive at the named destination. For chain of custody, the Incoterm shows where each handover happens, and so who has to supply the data and documents at that point. Incoterms do not cover ownership: when title passes is set by the sales contract, and it can be a different point (for example on payment).

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TALK TO US

Where does your rollout stand?

If you are a miner, refiner, battery manufacturer, BESS integrator or EV OEM planning or rescuing a traceability rollout in your operations or supply chain, we are happy to talk it through. Find MN Consulting at mnconsulting.io.

Book a 30-minute call

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