

nickleeder

playbook

Unlock the full value of PLM

Five plays to turn product lifecycle management into a cross-functional performance engine.

Written by Nick Leeder
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The home of this playbook, with a summary and related reading: nickleeder.com/resources/unlock-full-value-of-plm-playbook/

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Foreword



Over the past decades, I've worked with manufacturers large and small, across sectors as diverse as aerospace, electronics and consumer goods. The same theme keeps coming up: PLM has the potential to be so much more than it is today.

We've invested millions in digital transformation. We've built smart factories, rolled out data lakes and connected our machines. Yet for all that, one of the richest sources of value, product lifecycle management, often remains locked in the hands of engineering teams.

PLM systems already hold the DNA of your business: cost breakdowns, supplier dependencies, material impacts, carbon footprints and warranty flags. But when that information is invisible to finance, operations or sustainability leaders, the organisation runs blind.

This playbook is a practical guide for fixing that.

It's not about software features or implementation methodology. It's about making PLM work for the business, and helping your teams use it to make faster, better, more connected decisions.

Each play in this guide is grounded in real work with real manufacturers. It shows where to start, what to look for and how to scale once you've proven the value.

If you're reading this, chances are you already believe that better product data can unlock better business outcomes. You're right. The question is: what's your next move?

Let's find it.

Nick Leeder

Founder, Nick Leeder & Co Limited

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Executive summary

Manufacturing leaders are under increasing pressure to deliver speed, sustainability and smarter decision-making at scale.

Product lifecycle management (PLM)

PLM is the system that holds a product's data, from design and BOM to cost, suppliers, compliance and carbon. This playbook treats it as the business's digital backbone, not a CAD archive.

Yet for many, a key system with the power to accelerate transformation remains trapped in a narrow role: product lifecycle management (PLM).

PLM was designed for engineering, but its value has outgrown that remit. Today's PLM platforms contain live, critical insights across cost, compliance, risk, carbon and sourcing. When used to their full potential, they provide a single source of truth that empowers finance, operations, supply chain and ESG teams to act faster, reduce risk and improve outcomes.

This playbook outlines five high-impact plays that show how to make this transformation real.



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Five high-impact plays

- **From CAD vault to digital backbone:** shows how to reframe PLM as the core digital thread across functions. This unlocks visibility, speeds collaboration and creates a trusted single source of truth.
- **Follow the money:** highlights how finance teams can use PLM data to model true product cost, risk and margin. This enables faster, more accurate forecasting and better investment decisions.
- **Engineer agility:** demonstrates how linking PLM to MES and supply chain tools can reduce disruption and accelerate response to change.
- **Design out carbon:** makes the case for embedding sustainability into design decisions, using PLM to meet emissions targets before regulation forces the issue.
- **Scale talent with AI:** explores how AI copilots can make PLM data usable for non-specialists, reducing dependency on experts and capturing tribal knowledge.

Each play includes a clear problem statement, what good looks like, practical actions, real-world proof and tips for implementation. Whether you're a COO focused on agility, a CFO seeking cost control and visibility, or a VP of Sustainability facing new reporting demands, these plays provide a clear path to turning PLM into a connected, cross-functional capability.

Start small. Prove the impact. Scale what works.

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Introduction: unlocking PLM's true potential

Product lifecycle management in manufacturing has never been more essential, or more misunderstood.

PLM was originally adopted to help engineering teams manage CAD files and product changes. But today, the same systems contain a rich mine of cross-functional insight: cost structures, supplier risk, carbon impact, warranty exposure and more. Despite this, most manufacturers still treat PLM as a siloed engineering tool, separate from the decisions made by finance, operations and sustainability teams.

The result? Business-critical data is trapped in plain sight. Decisions are made with partial information. Teams duplicate effort, and opportunities for speed, savings and smarter collaboration are missed.

The good news: it doesn't take a full system overhaul to unlock this value. Many of the leading manufacturers we work with are using their existing PLM systems to power faster, more connected decision-making across the enterprise.



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This playbook outlines five practical, high-impact plays

01

Digital backbone

Turn PLM from a CAD archive into your company's digital backbone.

02

Follow the money

Help finance teams model risk and margin with live product data.

03

Engineer agility

Connect design decisions directly to factory execution.

04

Design out carbon

Build sustainability into your BOM before compliance forces it.

05

Scale talent with AI

Use AI to make PLM data accessible to non-engineers.

Each play is supported by real-world examples, clear actions and implementation tips, drawn from best practices in the world's most advanced manufacturers. Whether you're a COO, CFO or digital leader, these plays are designed to help you turn PLM into a competitive asset, not just an engineering utility.

The goal: to help you turn PLM from a design repository into a performance engine that supports better decisions, tighter collaboration and improved business outcomes.

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01

From CAD vault to digital backbone

PLM can become the backbone of your digital thread.

01

From CAD vault to digital backbone

PLM can become the backbone of your digital thread.

The problem

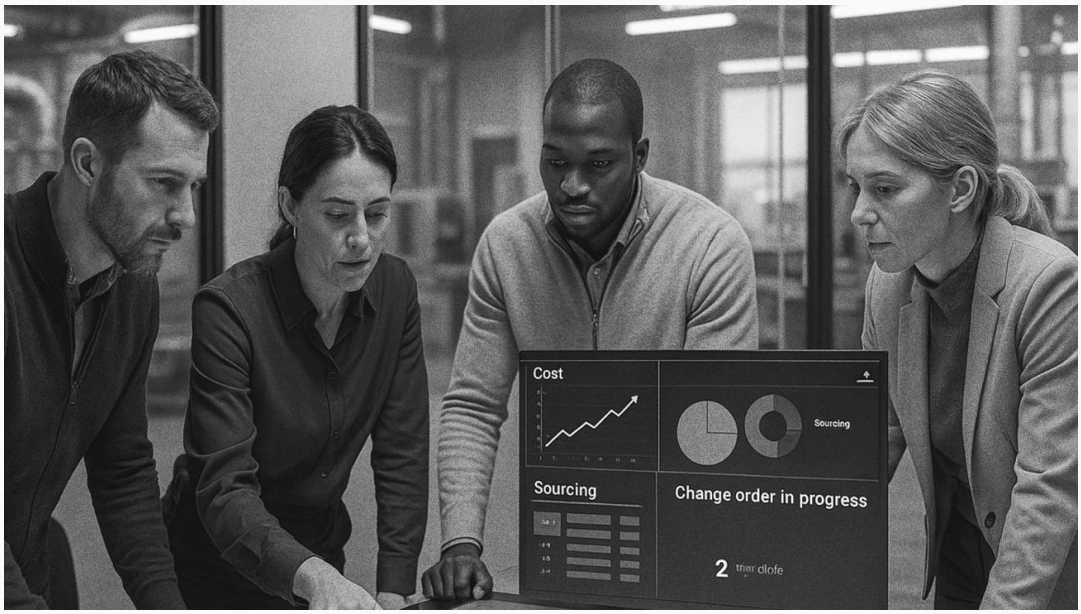
PLM is still treated as a tool for storing drawings and controlling revisions. Yet it already houses rich data that can serve the entire business. Most departments operate without access to this information, leading to duplicated effort, siloed insights and missed opportunities.

The opportunity

PLM can become the backbone of your digital thread, integrating product, supply chain, finance and sustainability data. A modern PLM system can be the central source of truth that underpins enterprise-wide decision-making and reduces reliance on disjointed manual processes.

What good looks like

- A single, trusted version of product truth accessible to all functions
- Live BOMs connected to sourcing risk, cost modelling and compliance requirements
- Cross-functional visibility that reduces silos and manual handoffs



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Real-world insight

> *40% of manufacturers now rank PLM as the most critical technology for delivering sustainability outcomes, more than CAD, MES or supply chain systems.*
>
> **CIMdata Foresight Research, The Sustainability Imperative, p. 10**

This reflects the growing recognition of PLM as a central data platform capable of linking product, operations and ESG decisions, not just engineering files.

Actions

- Map all critical product data attributes: cost, weight, supplier, carbon, compliance
- Define system ownership: where the source of truth resides and how it feeds other systems
- Expose PLM data to other teams through accessible interfaces, dashboards or APIs
- Pilot a process where PLM serves as the hub across engineering, supply chain and finance
- Create shared cross-functional KPIs that use PLM as the source of insight



Implementation tip

Track data duplication, rework requests and manual reconciliation tasks across teams before and after your pilot. Use this baseline to demonstrate tangible time savings and workflow improvements.



The pay off

A more connected business, faster engineering-to-execution cycles, fewer downstream surprises, improved data confidence and a scalable foundation for future transformation.

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The litmus test question for your team

Can every team in our business access and trust the same version of product data in real time?

If the answer involves workarounds (look for Excel files!), file copies or manual reconciliation between systems, this play is a strong opportunity.

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02

Follow the money

Make PLM work for finance.

02

Follow the money

Make PLM work for finance.

The problem

CFOs often make strategic decisions without real-time insight into product configurations, margin risks or carbon costs. Instead, they rely on aggregated reports and static spreadsheets. That disconnect limits the accuracy of planning, forecasting and investment decisions.

The opportunity

PLM already holds rich cost, compliance and configuration data that can be harnessed for smarter financial decision-making. When connected into financial workflows, PLM becomes a dynamic tool for strategic planning.

What good looks like

- Margin modelling at the variant level, informed by real-time BOM and sourcing data
- Finance and engineering work from the same set of product assumptions
- The ability to run fast what-if scenarios that include risk and sustainability inputs



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Real-world insight

> *Only 33% of manufacturers say they have strong data foundations to support integrated business decision-making, despite growing financial pressure on margins and material costs.*
>
> **Deloitte, 2025 Manufacturing Industry Outlook, p. 6**

This gap highlights the opportunity to use PLM as a live cost and configuration platform for real-time forecasting and risk-based financial modelling.

Actions

- Connect PLM attributes (cost drivers, sourcing locations, carbon metrics) into financial models
- Align product and finance teams around a shared view of product profitability
- Build feedback loops so that changes in cost, material availability or specs trigger reforecasting
- Use PLM data to inform procurement thresholds, hedging strategies and working capital metrics

Implementation tip

Start with a cross-functional review of five recent NPI launches. Compare finance's assumptions with what PLM knew at the time. Use this to identify gaps and opportunities for improved integration.

The pay off

More accurate forecasts, better pricing strategies, stronger business cases, enhanced working capital control and fewer surprises in cash flow or inventory turns.

The litmus test question for your team

Do our finance and product teams use the same data to model cost, risk and margin?

If finance builds forecasts in spreadsheets while engineering manages change elsewhere, you're missing out on major visibility and alignment gains.

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03

Engineer agility

Link PLM to execution.

03

Engineer agility

Link PLM to execution.

The problem

Design changes do not always translate into fast, accurate updates on the shop floor. Without integration, engineering, production and supply chain operate out of sync, leading to errors, missed deadlines and operational fire drills.

The opportunity

When PLM is directly integrated with execution systems like MES, APS and supplier portals, changes made upstream are reflected instantly downstream. This enables faster adaptation to change, with less disruption and rework.

What good looks like

- Change orders from PLM that automatically update manufacturing and sourcing plans
- Notifications that keep procurement and production aligned on the latest specs
- Fewer line stoppages due to spec mismatches or late supplier updates



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Real-world insight

> *44% of manufacturers say that slow information flow between design, production and procurement is a top barrier to agility.*
>
> **Rockwell Automation, 2025 State of Smart Manufacturing Report, p. 18**

PLM to MES integration directly addresses this by reducing the lag between change requests and execution on the factory floor.

Actions

- Identify high-frequency change workflows (for example, ECOs, supplier change requests)
- Define integration points between PLM, MES and APS
- Automate triggers and alerts to drive action without manual re-entry
- Create exception dashboards that highlight discrepancies between design intent and production execution



Implementation tip

Set up a post-mortem on your last major change event. Trace where the delay occurred. Use this as a starting point to re-engineer the process with PLM at the centre and build momentum with operational leaders.



The pay off

Faster reaction to change, reduced firefighting, better alignment between design and execution, improved customer confidence and a more resilient manufacturing network.



The litmus test question for your team

How quickly do design changes flow from engineering to the factory floor and our suppliers?

If it takes more than a few hours, or relies on emails and spreadsheets, this play could unlock serious speed and resilience.

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04

Design out carbon

Embed sustainability in PLM.

04

Design out carbon

Embed sustainability in PLM.

The problem

Sustainability metrics are often calculated after the fact, once design decisions are already locked in. That limits the company's ability to meet carbon targets, qualify for sustainable financing or respond to emissions-focused tenders.

The opportunity

When carbon data is embedded in the design process, engineers can make more sustainable choices from the start. PLM becomes the place where trade-offs between cost, performance and footprint are clearly visible.

What good looks like

- Carbon impact and recycled content tracked in parallel with cost and weight
- Design simulations that show emissions outcomes across product variants
- Improved visibility for ESG teams and regulatory reporting



Real-world insight

> *70% of a product's carbon footprint is determined at the design stage.*

The Sustainability Imperative, p. 11; supported by the Cummins case

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By embedding carbon factors and circularity principles into early design decisions within PLM, manufacturers can make a measurable impact on Scope 3 emissions.

Actions

- Embed carbon factors and circularity rules into your PLM material master
- Develop scorecards and dashboards to help engineers compare impact
- Integrate with ESG platforms to align product-level data with enterprise reporting
- Link design decisions to sustainability KPIs and procurement criteria



Implementation tip

Invite sustainability leads into design reviews. Use PLM tools to support those conversations with evidence and structured alternatives, making trade-offs visible and auditable.



The pay off

Lower Scope 3 emissions, better compliance alignment, increased bid win rates, stronger investor confidence and faster time to market with differentiated green-labelled products.



The litmus test question for your team

Can our engineers see carbon and compliance impact when making material and design choices?

If your ESG team is still calculating carbon after the fact, this play could help shift sustainability from reporting to design.

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05

Scale talent with AI and PLM

Make PLM data searchable, explorable and useful to more people.

05

Scale talent with AI and PLM

Make PLM data searchable, explorable and useful to more people.

The problem

Accessing insight from PLM requires technical skill. As experienced engineers retire, companies face knowledge loss and adoption barriers. Non-specialists are locked out of systems they depend on.

The opportunity

AI and natural language tools make PLM data searchable, explorable and useful to a broader set of users. This extends the value of PLM and reduces the burden on experts.

What good looks like

- Frontline users can query specs, routing or carbon data in simple language
- Repeat questions are answered automatically, freeing up engineers
- Institutional knowledge is captured and accessible when people move on



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Real-world insight

> *46% of manufacturers now say they are exploring or using GenAI in operations, but few have applied it to unlock engineering knowledge or reduce reliance on experts.*
>
> **Deloitte, 2025 Manufacturing Industry Outlook, p. 5**

Applying GenAI to PLM systems can bridge the skills gap and democratise access to critical product data.

Actions

- / Document common PLM data queries by role or department
- / Choose one high-impact use case and train a small language model
- / Build a feedback loop to continuously improve AI answers
- / Integrate AI copilots directly into team workflows, dashboards or messaging tools



Implementation tip

Make PLM data searchable through tools users already access, such as Teams or Slack. This accelerates adoption and drives daily usage. Partner with IT to ensure governance and access controls are well understood.



The pay off

Scalable expertise, higher PLM utilisation, improved productivity, lower training costs and a smoother transition between generations of talent.



The litmus test question for your team

How easily can a new team member get answers from PLM without asking an expert?

If your PLM depends on a handful of experienced users to interpret and extract data, this play will help you scale knowledge and reduce dependency.

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Conclusion: your PLM is ready. Is your business?

Product lifecycle management in manufacturing holds more potential than ever before.

It is no longer just a tool for engineering. It is the foundation for connected decision-making across the enterprise. But real transformation only happens when PLM is accessible, integrated and actionable.

The five plays in this guide show where to start. Each one can be implemented quickly, measured effectively and scaled with confidence.

> *Start with one. Align a team. Prove the value. Then keep building.*

Find your first PLM play

We help manufacturers turn the product data they already hold into better decisions across finance, operations and sustainability.

Book at meetings.nickleeder.com
hello@nickleeder.com / +44 (0)1275 772 422

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Questions this playbook answers

Why is PLM still treated as an engineering tool?

It was adopted to manage CAD files and product changes, so its data on cost, sourcing, compliance and carbon often stays invisible to finance, operations and sustainability teams.

How can finance teams use PLM data?

By connecting PLM attributes such as cost drivers, sourcing locations and carbon metrics into financial models, so margin is modelled at variant level and changes trigger reforecasting.

How does PLM help reduce carbon?

By embedding carbon factors and circularity rules in the PLM material master, engineers see the carbon and compliance impact of design choices while they make them, rather than after the fact.

How does AI make PLM more useful?

AI and natural language tools let non-specialists query specs, routings or carbon data in plain language, capture expert knowledge and reduce dependence on a few experienced users.

About the author



Nick Leeder is the founder of Nick Leeder & Co. An engineer by background, he has led, and been accountable for, transformation programmes in senior management roles at Dyson, SKF and Philips, across Europe, North America and Asia. He is certified in the Smart Industry Readiness Index (SIRI) and its CoSIRI framework, and is recognised by organisations including the World Economic Forum. Nick Leeder & Co is a multi-award-winning advisory and coaching business that helps manufacturing leaders turn enabling technology into measurable operational results.

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Sources

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Rockwell Automation (2025). State of Smart Manufacturing Report.

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Complexity delivers nothing.

At Nick Leeder & Co, we exist to restore clarity, confidence and control for manufacturing leaders navigating digital transformation.

Our mission is to help industrial businesses unlock the real value of enabling technologies, not through hype, but through practical action that improves productivity, profitability and sustainability.

We have seen too many businesses fall into the pilot trap. Too many strategies built on buzzwords instead of business outcomes. We believe manufacturers deserve better. So we help leaders cut through the noise, uncover what really matters and build a transformation path they can trust, so they get results that stick.

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