

Why Invest in the Digital Thread?

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Can you operate without the Digital Thread, is half a Digital Thread enough?

Manufacturing companies are under more pressure than ever. Whether it's driving down costs, meeting stringent traceability and compliance standards, reducing carbon emissions, or optimizing performance parameters like weight and center of gravity — the expectations are growing in complexity and urgency.

One of the most strategic enablers in tackling these multidimensional business challenges is the **digital thread**.



What Is the Digital Thread?

The Digital Thread is a connected data framework that integrates information across the entire product lifecycle — from design and engineering to manufacturing, logistics, and service. The Digital Thread is spread over traditional enterprise systems (PLM, ERP, MES, CAD, etc.) into a seamless, traceable flow of data. The result is a real-time, end-to-end view of the product and process — not just in theory, but in daily operational reality. The Digital Thread is available as a single source of truth-lookup and does not require investigation activities.

What Can the Digital Thread Deliver?

Cost Control through Informed Decisions

Decisions made early in the design phase lock in up to 80% of a product's lifecycle cost. Yet too often, these decisions are based on fragmented or outdated data. The Digital Thread brings cost data, engineering changes, supplier input, and production constraints into one view, enabling faster, more informed trade-offs — whether you're designing a component or retooling a line.

Full Traceability, by Design

Traceability is no longer optional. Regulatory bodies, quality standards, and customers all demand granular insight into what was built, when, how, and with what. The Digital Thread enables backward and forward traceability by default, automatically capturing the relationships between part definitions, revisions, process plans, quality checks, and actuals on the shop floor. No more blind spots in root cause analysis or audits.

Real CO₂ Transparency and Reduction

A true sustainability strategy begins with accurate carbon footprint data — not estimates or assumptions. By connecting material data, supplier emissions, manufacturing energy use, and logistics parameters into a unified model, the Digital Thread allows you to simulate, optimize, and report on carbon impact at every stage. It becomes possible to answer hard questions like: *What's the CO₂ footprint of this component variant?* or *How can we reduce emissions through design choices or sourcing changes?*

Control of Weight and Center of Gravity

For sectors like aerospace, automotive, and energy, product performance is tightly linked to mass distribution. The Digital Thread enables continuous management of key physical properties like weight and center of gravity — not just at the CAD level, but all the way through manufacturing and maintenance. This capability is especially critical when dealing with late-stage changes or complex systems integration, where downstream effects can be costly if not properly understood.

The Strategic Value

The Digital Thread is not just a tool — it's an infrastructure for competitiveness. It enables your teams to move from reactive firefighting to proactive decision-making. It turns disconnected data into a strategic asset. And it supports the agility needed to respond to global disruptions, evolving customer demands, and sustainability commitments.

Now, can you operate without the Digital Thread or is half the Digital Thread enough?

If you face challenges with cost control, traceability, CO₂ footprint, weight and center of gravity in your enterprise manufacturing company, then the Digital Thread is most likely not present in your company. If you invest heavily in the Digital Thread and still face the challenges, then you most likely only have half a Digital Thread.

You can definitely operate without or with half a Digital Thread, but the business challenges will still be present this way. But do you accept the business challenges due to no or half a Digital Thread? What does extra cost, low traceability, low CO₂ transparency, inaccurate weight and center of gravity mean to trust, safety, company value and to company flexibility for your manufacturing company?

So, what to do then?

Start asking for single-source-of-truth-lookup capabilities you can do by yourselves directly in the enterprise systems when you need information about your products and the portfolio. Do not accept offline and formatted reports based on investigations in systems, emails and documents. This is here the journey begins!