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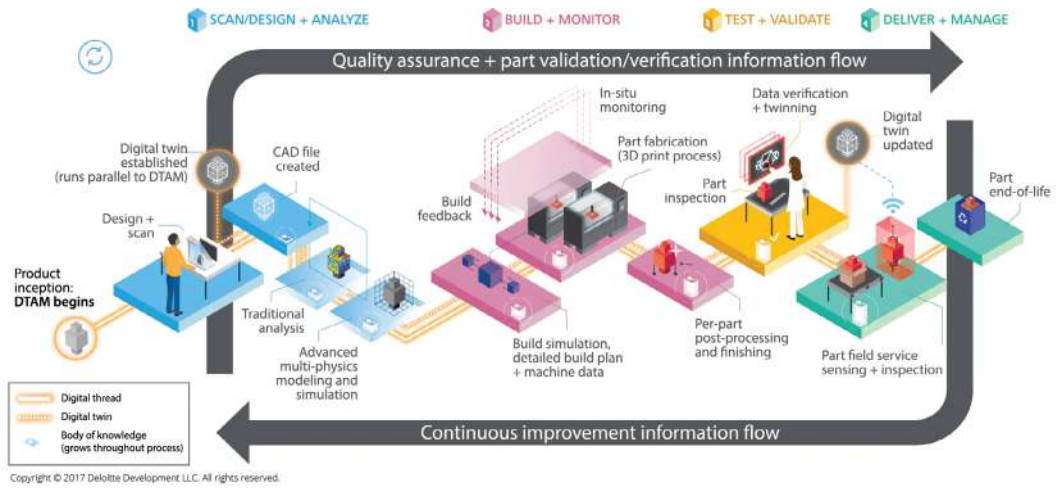
4 Ways to Help PLM Projects Succeed

(and the pitfalls to avoid)

Is The Digital Thread broken?

Product Lifecycle Management (PLM) systems are the heart of any innovative manufacturing organization. All manufacturing organizations rely on some level of PLM – whether through dedicated software or in-house solutions – for successful product creation, but in world-class organizations, PLM software can be so much more. In exemplary processes it provides information, accessibility, and product consistency to the teams in charge of monitoring process efficiency and the cost of quality as they shepherd a manufactured project from inception to delivery.



The best of the best can deftly weave this digital thread from the beginning of their design process to the crucial moments beyond final delivery all without dropping the ball, but for the vast majority of manufacturing companies the advantages and benefits of PLM – if they're felt at all – tend to be limited to one or two teams.

Before organizations can fully take advantage of the PLM approach's benefits, they need help to shake the dirt off their valuable, buried data, and make it work for them as an organizational asset.

PLM projects can become a nightmare

With all the value that a PLM system can offer, why do so many manufacturers still struggle with missed deadlines, continuous rework, and lost threads? It's because PLM systems are great, but they aren't perfect.

On their own, PLM systems:

- Are rigid by nature and made with internal teams in mind – what about the myriad of suppliers, service technicians, that are required for super large projects?
- May not always have the quality data needed for a 360° view of the product - whether you're engineers, suppliers, or even procurement and support teams.

- Often lack integration with external product-related data sources and formats like CAD.
- Leave important legacy systems and 'old' data in the dustbin, an especially big problem for companies with decades-long presence in the industry.
- Are complex to use, even for engineering teams.

Without an enterprise search system to help you discover the valuable research, design, build, and distribution data buried inside, you're constantly stuck re-inventing the wheel to find answers for problems you've already solved and questions you've already addressed.

Four Pitfalls to avoid for successful PLM projects

Product Lifecycle Management is a complicated beast, and though its value is well- publicized, PLM projects underperform – or outright FAIL – regularly. Often the reasons why are not well-understood by the companies on the receiving end of the underwhelming initiatives since, like many organizations, the people in charge of the system also have other jobs, responsibilities, or functions to fulfill inside the organization. In a tale as old as industry itself, there never seems to be enough time or bandwidth to analyze the gaps and enact a solution when there are orders to fulfill and deadlines to meet.

As a company that works with some of the biggest names in manufacturing and aerospace, Sinequa has seen where the gaps are often found.

Information Buried in Legacy Systems

There is valuable information buried in the legacy data and previous investments of virtually every organization on Earth, but the sad fact is that most will never know. This goes double for the manufacturing and design industries, where having quick, reliable access to information on former projects is not just a matter of increasing productivity or reducing rework... It's a matter of compliance, care, and responsibility.

By surfacing this content to your PLM stakeholders, gaps in knowledge, progress, or opportunity can be better understood and acted on over time.

Lack of Complementary Data

No decision is made in a vacuum, and manufacturing PLM is about more than just the design process. Successful manufacturing organizations use all the knowledge available

to them. This means having a searchable knowledge management solution that collects and accesses information from a variety of sources to help leaders create an accurate picture of a product's development and how it fits in the market.

A few examples of complementary data sources to consider include:

- **Web searches** - Keeping tabs on relevant articles, blogs, videos and other content related to manufacturing industry can insight into what people think about your products, who they're targeting, and where you can use new data or technologies to improve.
- **Industry forums** - While security concerns can limit the level of outward engagement some manufacturing workers can have in these online communities, the knowledge being shared by others there can provide insights or ideas that would benefit any organization.
- **News outlets** - News outlets cover everything from breaking news stories about new products or companies entering markets and high-profile RFPs, to mergers and acquisitions in the manufacturing space.

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Disconnected Teams Across The Product Lifecycle

There's a story from the ancient Indian subcontinent that goes something like this:

A group of blind men heard that a strange animal called an 'elephant' had been brought to their town. None had ever seen or felt one before, so they decided to go and investigate. When they found the elephant they gathered around it and each put a hand on it. The first one touched the trunk and said, *"Oh! An elephant is like a thick snake"*. The next touched its ear and remarked *"No, it's a kind of fan."* The third put his hand on its leg and exclaimed *"No, an elephant is like a tree-trunk."* The blind man with his hand its side said *"the elephant is like a wall"*, and another who felt its tail argued that *"an elephant is like a rope."* The last felt its tusk and proclaimed loudly that *"an elephant is clearly like a spear."*

Different teams have different needs, and those groups often choose their tools, processes, and data storage options for a reason. By having the team members who know their own needs and pains search out the solutions that fit their workflow, you are often left with two things: happier individual teams (which is good), and a hopeless clutter of disconnected data silos (which is bad).

Like the blind men, without access to data from across the product lifecycle, everyone is left to make assessments about their part of the whole and hope that their work is helpful in the wider context of the production process.

An intelligent enterprise search solution connects the people and data silos in manufacturing teams across the product life cycle: from ideation to creation, from manufacturing to part/inventory management, from launch to support and ongoing maintenance.

Not Documenting (and Respecting) Institutional Knowledge

Manufacturers are facing a crisis. Deloitte predicts that the manufacturing industry is on track to reach 2.1 million unfilled jobs by 2030, and The Great Resignation and The Great Retirement are massive contributors. Driven by the pandemic and the workforce exit of many Baby Boomers, these trends have caused a significant and unexpected brain-drain in the manufacturing sector, taking a great deal of expertise and institutional knowledge with them.

It's clear that knowledge from current and retiring workers needs to be captured, utilized, and shared with the wider manufacturing organization before it walks out the door. They need an intelligent search platform that has been integrated with their PLM system.

The benefits of this proven solution are two-fold: Operationally, this system can help organizations capture knowledge as it's being created and utilize it effectively so that new employees can immediately benefit from it. Organizationally, it reveals insights about how individual processes fit into larger programs of work. What are all the steps involved in creating a new product? How often do they repeat themselves? Where are the common pitfalls? Knowing what goes into each step will help teams identify areas where improvement could occur, whether that be via additional resources, workers, or training to build better processes.

In the end, understanding the daily activities happening in your product lifecycle is as important to an organization's culture as it is to its final deliverables.

Sinequa helps NASA put their PTC Windchill data to work

With a smart, automated, and searchable digital thread, the content everyone needs is at their fingertips. If an engineer needs the proprietary intellectual property, like CAD information from a part that was designed five years ago, they can easily search and find it. If a customer support specialist needs to find a trade secret, like a factory reset code, to install 10-year-old refurbished equipment, they can get it quickly. The digital thread should not only put all this data within a "system of record," but also present it in an advanced "system of engagement".

The employees and engineers of **NASA's Marshall Space Flight Center** knew that their historical data was a gold mine, but the challenges of sifting through over six decades of mission-critical information across its internal and external applications was proving to be a herculean task. Information on missions, parts, logistics, and more was locked inside a variety of file formats including documents, spreadsheets, CAD files, and others, and a significant amount of the data was in Microsoft SharePoint and their chosen PLM system, PTC Windchill.

As one of few enterprise search providers with a robust connector for PTC Windchill, Sinequa was chosen to help the rocket scientists and employees at NASA turn their complicated mass of ad-hoc file systems into a single, searchable source of truth. By virtue of **Sinequa's ease of implementation and non-disruptive deployment model**, all data was quickly indexed and sorted via advanced NLP techniques, then made accessible to workers **with the appropriate permissions baked in**. Not only were NASA employees able to find the information they needed for their day-to-day work, project **designers actually rediscovered historical rocket engine data that is informing present-day operations**.

Teams at NASA are now able to:

- **Search inside and outside the PLM system** with total respect to their existing security permissions
- **Gain real-time access** to mission-critical data
- **Reuse content**, designs, and solutions
- **Regain hours of time** that was being lost to searching data stores
- **Improve innovation** by making information available to those who should have it

World-class organizations know Sinequa's Intelligent search by the many roles it fulfills: it's a teacher, an archiver, a historian, a reporter, and a storyteller.

But it's also known by another title where analysts like **Gartner** and **Forrester** are concerned: **Leader**.

Sinequa helps manufacturing and aerospace organizations put their wealth of data to work by unlocking the potential of their buried information. With its availability either on- premise or as a SaaS offering, and its library of over 200 native data connectors, Sinequa's machine learning allows these organizations to get highly relevant results that help solve complicated problems like:

- **Engineering and Design:** From design to execution, Sinequa connects the Digital Thread to give teams a fast, accurate, and unified view into every aspect of projects, products, and parts so they can easily find, use, and build on the data that came before.
- **Maintenance and Support:** Whether it's responsive self-service or skilled support technicians, provide best-in-class maintenance and support with cutting-edge generative AI and pinpoint accurate search for issues and resolutions.

... and much more

Ready to see how Sinequa can make your PLM data work for you?

Visit bit.ly/Search-and-PLM-guide to start your Manufacturing organization's journey towards Being Information Driven.

About Sinequa

Sinequa delivers advanced search solutions to organizations of all sizes, including the world's largest, most innovative companies. Customers can deploy Sinequa in their private cloud environment or use Sinequa's SaaS solution, which maintains the highest industry standards for security and compliance.

Industry analysts have recognized Sinequa as a search leader year after year, most recently in the **Gartner Magic Quadrant for Insight Engines** and the **Forrester Wave: Cognitive Search**.

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