

INCREASE PROFITS WITH DATA-DRIVEN COLLABORATIVE SOURCING

AVOID CLOSING WINDOWS OF OPPORTUNITY

OPTIMIZE DESIGN DECISIONS FOR DOWNSTREAM IMPACTS

ENABLE EARLY SOURCING INPUT AND ACTION

LEVERAGE DATA TO OPTIMIZE SOURCING STRATEGIES

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LOCK IN PROFITS BY DIGITALLY TRANSFORMING SOURCE TO CONTRACT

Cost Management and Speed are Critical to Profitability

Rising product complexity, supply chain disruptions, increasing component and material costs, complex regulations, and heightened sustainability expectations are eroding profitability in the manufacturing industry. In a landscape ruled by tight profit margins and fierce global competition, companies must pull all possible cost reduction levers and decrease new product development cycle time to maintain profitability. According to a McKinsey & Company report, 87% of businesses identify end-to-end margin management as a top priority to "protect their profits in turbulent times."¹

Act Early in Design to Lock in Profitability

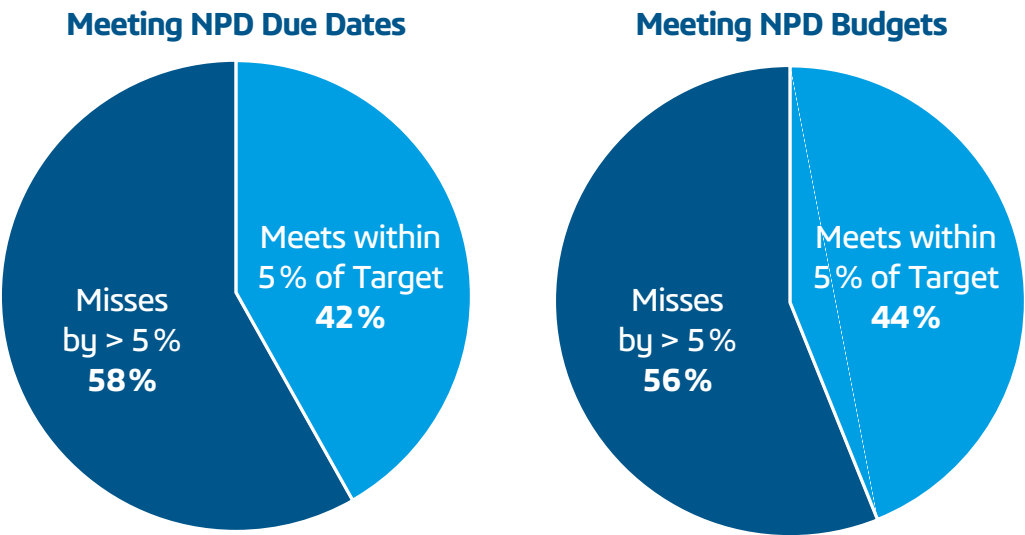
Independent research firm Tech-Clarity has shown that manufacturers miss product development deadlines and budgets over one-half of the time.²

One important time-to-market and cost reduction lever is sourcing decisions. Dassault Systèmes' customer insights show that decisions made during the design phase determine **70 to 80% of a product's lifecycle costs**. It is essential to optimize cost at this stage because design flexibility quickly diminishes later in the product lifecycle.

Sourcing Must Transform to Maintain Margins

Although sourcing decisions play a crucial role in profitability from the early design phase, current processes often hinder effective decision-making and collaboration among sourcing stakeholders. A McKinsey study, "Digital Makes the Difference," offers a solution. The study reveals that 77% of procurement leaders believe technology and analytics can enhance profitability in procurement.

How can engineering and sourcing collaborate more closely and leverage data, analytics, and artificial intelligence (AI) in the source to contract process to lock in profitability throughout the product lifecycle? As the McKinsey study suggests, digital transformation is the key.



Ability to Meet New Product Development Targets, Tech-Clarity²

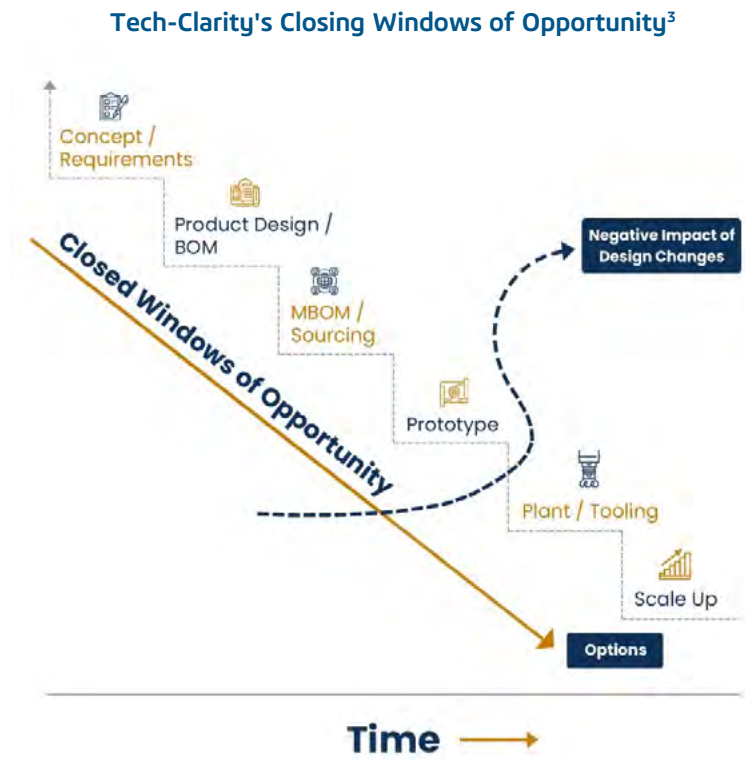
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Optimize Profitability Early in Design

Design-phase decisions significantly determine a product's lifecycle cost, but also influence time-to-market, sustainability, quality, compliance, and supply chain resilience. According to Tech-Clarity's Closing Windows of Opportunity³ (see graphic), the flexibility to modify designs decreases over the product lifecycle, causing early design decisions to "lock in" costs and other critical parameters as the negative impact of design changes grows. To capitalize on opportunities, **engineering and sourcing teams must collaborate early in development**, utilizing data-driven approaches for optimized, holistic design and sourcing decisions.



Today's Status Quo Must Evolve

Today's status quo does not support data-driven decision-making and effective collaboration. In many companies, the sourcing process follows the engineering phase, delaying decision-making until designs are nearly finalized. This approach restricts sourcing specialists from utilizing their expertise to **influence design choices and develop strategies to improve margins, quality, compliance, sustainability, and supply chain resilience**. Additionally, it prolongs development timelines, which is especially problematic in today's fast-paced environment where quick adaptation is essential for long-term success.

Change Processes to Avoid Closing Windows of Opportunity

Manufacturers need to digitally transform their source to contract processes to secure lifecycle profitability early in the design phase. Dassault Systèmes helps manufacturers:

- Optimize design decisions for downstream impacts,
- Enable early sourcing input and action,
- Leverage data to optimize sourcing strategies, and
- Drive better decisions through collaboration.

In the following sections, we will explain these transformations and demonstrate how manufacturers can digitally transform to be more **data-driven** by leveraging the data science, AI, and collaborative capabilities of the Dassault Systèmes **3DEXPERIENCE** platform. This approach will help optimize profits early in the product lifecycle.

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Engineers Don't Have Visibility into Sourcing Impacts

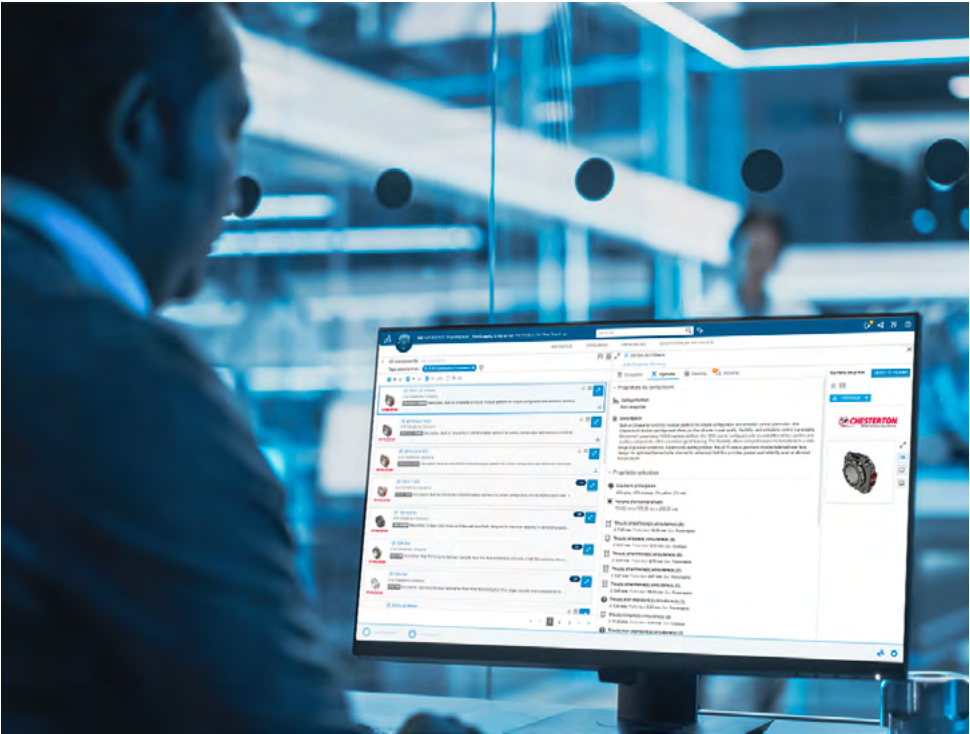
The first transformation is designing for cost. This principle also applies to factors such as quality, sustainability, and supply risk. As mentioned earlier, many companies finalize designs before starting the sourcing process. By that point, teams often lose the chance to optimize costs, as changes can disrupt other design elements.

Engineers need to assess these implications during the design phase, but they often lack visibility into the downstream impacts of their decisions.

Improve Design Decisions with Contextual Sourcing Data

To address these challenges, companies must transform their design processes. Engineers require timely access to detailed sourcing data such as cost estimates, supplier availability and location, and supply chain risks for purchased components. This information, along with potential alternatives, should be visible alongside their designs to facilitate **informed, data-driven decision-making**. This data is crucial for optimizing product lifecycle costs. To achieve this, sourcing data needs to be centralized and integrated from various systems, ensuring it is current and managed through robust enterprise-class technologies that surpass the access and integration capabilities of spreadsheets and documents. By making this data readily available during the design process and in relevant contexts, design engineers can make early decisions that help optimize and secure costs.

The Dassault Systèmes **3DEXPERIENCE** platform is designed to enable informed design decisions. The platform serves as a **single source of truth by integrating engineering and procurement data** and making crucial sourcing information accessible during design. By centrally storing this data, the platform provides stakeholders with a comprehensive view of engineering parts, including essential details such as costs and carbon footprint. Sourcing data is seamlessly displayed on the product's virtual twin, directly overlaid on 3D models, which offers engineers a **clear and contextual** perspective of the product they are designing.



Deliver Sourcing Intelligence Across Data Sources

The platform works seamlessly with internal and external data to generate sourcing intelligence. For instance, it retrieves and contextualizes information from different enterprise systems, such as ERP, CRM, QMS, and strategic sourcing solutions, which are crucial for informed product development decisions that help optimize and secure costs.

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Sourcing Gets Involved Too Late in Product Development

The second process change aims to improve data sharing between the engineering and sourcing teams. Currently, sourcing professionals operate in isolation and often commence their tasks sequentially after the designs are relatively mature. This delay hinders their ability to provide timely feedback, slowing down the overall new product development process. Additionally, sourcing professionals do not have access to the specialized software the design team uses for creating and managing designs and bills of material (BOMs). This lack of access makes it challenging for them to interpret product design data and make informed decisions independently.



Provide Sourcing with Direct Access to Engineering Data

To overcome these difficulties, manufacturers must establish a systematic product development process that ensures sourcing teams receive timely and easily understood design information early on. This process should prevent engineers from taking time away from engineering to create design extracts and prevent data-sharing through static spreadsheets, screenshots, and PDFs that quickly become outdated. Manufacturers must provide sourcing with near **real-time access to engineering data** without requiring them to master CAD or PLM solutions. Additionally, sourcing should be able to engage suppliers, issue RFQs, and begin negotiations while the design continues to develop, confident that they are working with **accurate information** and will be updated about any design changes.

Ensure Early Access to Design Data

The Dassault Systèmes **3DEXPERIENCE** platform supports this second transformation by enabling companies to develop sourcing strategies early in the design phase while keeping open windows of opportunity for design modifications to optimize sourcing impacts. The platform gives sourcing access to engineering data, such as requirements, 3D models, BOMs, and complex design-related information incorporating multiple revisions, configurations, and variants. In addition, the platform provides a digital mockup of the designs by sharing a detailed virtual twin to allow sourcing to visualize designs and design changes on their own without interrupting design engineers. Because engineers and sourcing professionals work on the same platform, sourcing can efficiently get started on critical tasks such as creating RFQs. The platform alerts sourcing of design changes, allowing the team to incorporate them into their in-process sourcing documents.

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Stakeholders Lack Tools to Develop Insights from Information

The third process change focuses on enabling stakeholders to develop actionable insights from their sourcing and engineering data. Many sourcing and engineering teams lack the tools they need to extract intelligence from their information. For instance, companies with multiple programs find it hard to recognize identical parts or materials listed under different names, hindering standardization and complicating sourcing efforts. Although manufacturers have vast amounts of data, they struggle to interpret it and derive actionable insights. They also typically lack consolidated visibility into historical data such as costs and supplier quality.

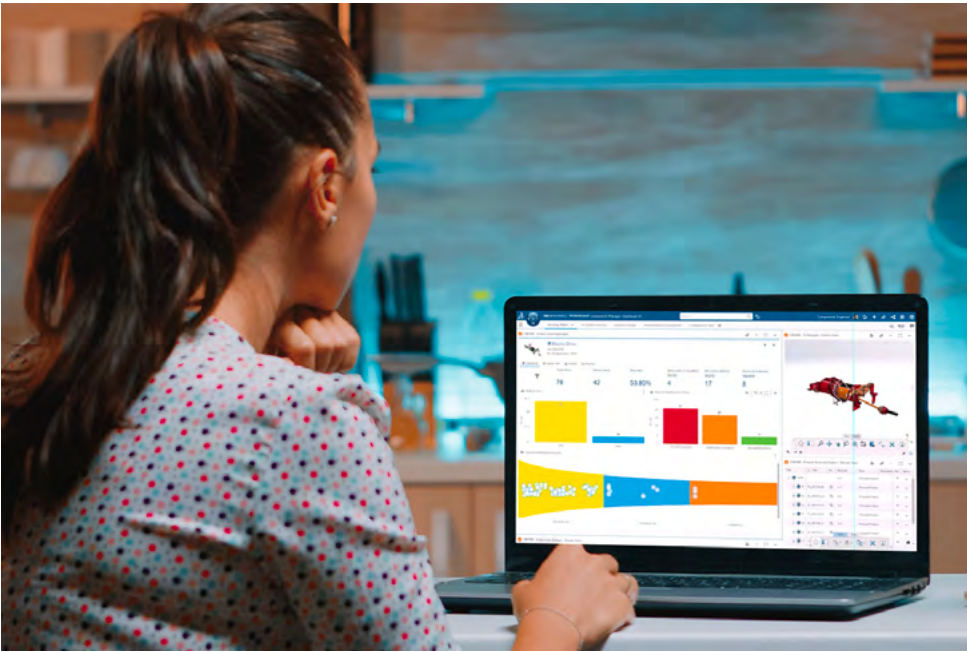
The lack of insights prevents sourcing teams from negotiating fair prices and making informed decisions regarding reference prices, quality, supplier health, compliance, and supply chain risks. These challenges are amplified by fragmented data systems, where product and business data are spread across various enterprise solutions. Stakeholders typically don't have access to data science tools with the ability to automatically analyze 3D models, limiting their capacity to utilize design and project status data effectively.

Leverage Data to Inform Sourcing Decisions

To overcome this, program managers and sourcing specialists should leverage analytics, including AI, to enhance insights. They must establish a program's "should cost" through historical cost analysis of similar parts, facilitating meaningful financial discussions to set realistic target costs. Sourcing should also be able to perform **comprehensive analytics on costing data** to rationalize parts and prevent sourcing similar components from different vendors at different prices. Designers and sourcing specialists must be able to assess supplier risks using historical data and market intelligence while utilizing past costs for negotiations. Additionally, analytics should drive the exploration of new materials and manufacturing methods to reduce costs. Lastly, program managers must have the data and reporting they need to identify gaps in component costs and assess their cumulative impact on the program.

Drive Sourcing Decisions with Analytics and AI

The Dassault Systèmes **3DEXPERIENCE** platform supports this third transformation with scalable analytics and AI capabilities to analyze product and sourcing data. As a product development platform, it understands the intelligence embedded in product data, including 3D models. Its clustering algorithms help sourcing professionals and design engineers search through millions of 3D models to identify similar components based on their shape, size, and manufacturing process to understand their **target sourcing cost**. Natural language processing algorithms help standardize materials and



components across programs denoted using different names or spellings by various individuals, internal teams, divisions, or suppliers. This categorization **simplifies the sourcing process and allows for part and supplier consolidation**. The platform also enables sourcing to build supply chain resilience and mitigate sourcing risk by drawing insights from historical data, including market trends, regulations, supplier performance, and compliance with contractual obligations.

Empower Stakeholders with Contextualized Insights

The **3DEXPERIENCE** platform provides stakeholders with pertinent dynamic data in context, aiding them in making timely, informed decisions. It also helps track progress by visually indicating components lacking cost information or exceeding budget limits. The platform lets stakeholders compare target versus actual prices for all sourced components in a single visual display by graphically presenting the information on a virtual twin. This feature allows for easy, **real-time monitoring of any discrepancies**.

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Design and Sourcing Operate in Silos

The final process change improves the interaction between internal departments and suppliers, emphasizing the need for effective communication and collaboration to facilitate product development decision-making and problem-solving. Unfortunately, many sourcing organizations still rely on outdated communication methods, such as email, phone calls, and messaging, or utilize inadequate office productivity tools, leading to fragmented and incomplete communication. Consequently, stakeholders may lack adequate visibility into sourcing communications, thus making decisions based on partial information. Additionally, the absence of a centralized platform for tracking conversations, for example in the RFQ process, hampers the ability to efficiently resolve issues. Standalone collaboration tools lead to disconnected conversation threads and a lack of a unified reference point, complicating traceability and accountability. More critically, essential design context is usually missing from these communications, and participants frequently share outdated data extracts like spreadsheets and PDFs that do not link to the original design information, risking the use of faulty data and exposing valuable intellectual property.

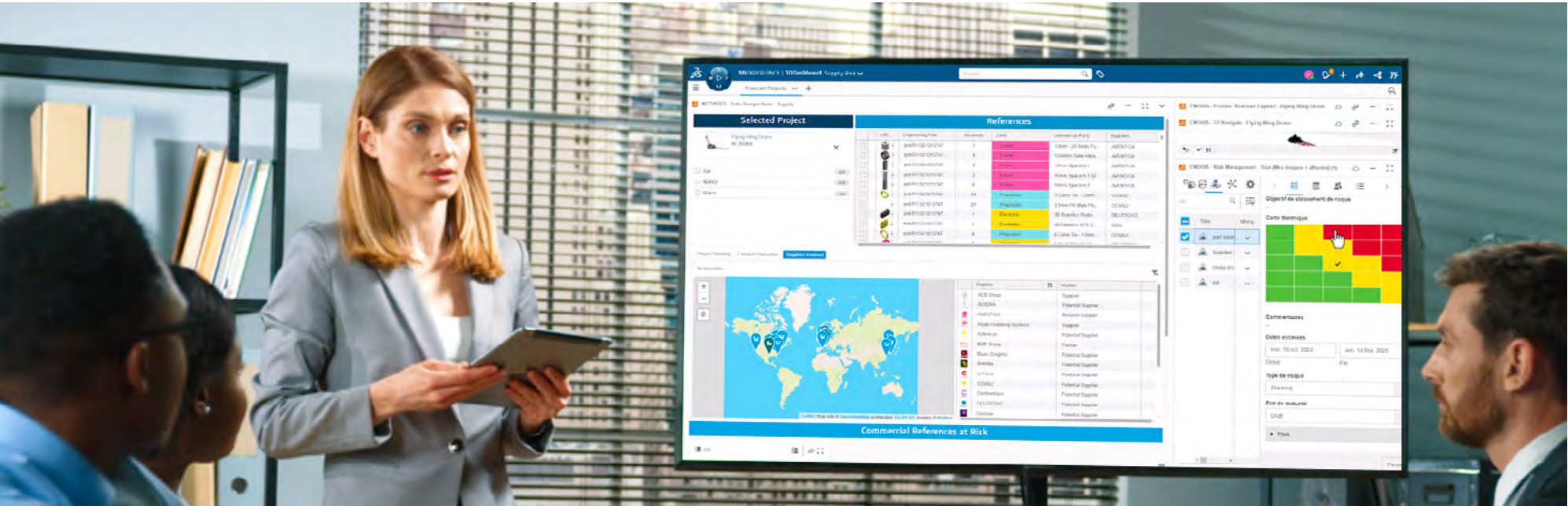
Make Better, More Holistic Decisions Through Collaboration

To enhance decision-making through data-driven collaboration, companies should establish a single source of truth that facilitates interaction with internal and external stakeholders. Sourcing must be able to securely access and share the most recent

engineering data during the RFQ process and engage suppliers in trade-off discussions, ensuring all parties have essential information. In addition, companies should manage collaboration and conversations centrally to capture critical decisions within the product's context, creating a valuable repository of information for AI to draw from in future projects and enriching the organization's knowledge and expertise.

Create a Single, Contextual Source of Truth for all Communications

The Dassault Systèmes **3DEXPERIENCE** platform supports this final transformation by offering a scalable, cloud-based solution that seamlessly connects internal and external stakeholders. The platform fosters collaboration in the context of holistic business and 3D data, enabling engineers and sourcing professionals to visualize essential information through a 3D virtual twin. This clarity enhances their understanding of sourced components, functions, and criticality, empowering teams to work together more effectively and ensuring **stakeholder alignment** with the most up-to-date information. With advanced collaboration capabilities, stakeholders can jointly **optimize designs**, issues, and **sourcing strategies** using the virtual twin in real time. Moreover, the platform eliminates the need to send data as attachments, incorporating industrial-grade cybersecurity features that **protect intellectual property** and maintain the confidentiality of sensitive information. Lastly, AI capabilities help users gain learning insights from the collaboration data to teach newcomers in the sourcing department, facilitating on-the-job training using real-world sourcing data.



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Ensure Profitability and Time-to-market Using the 3DEXPERIENCE Platform

The **3DEXPERIENCE** platform's data science, AI, and collaborative capabilities are a catalyst for manufacturers to digitally transform source to contract, avoiding the closing windows of opportunity, driving product lifecycle profitability, and expediting product time-to-market.

Implement the Four Source to Contract Transformations

To transform their sourcing function to be more collaborative and data-driven, companies can adopt the four process changes discussed in this eBook:

- 1. **Optimize Design Decisions for Downstream Impacts:** Arm design and engineering teams with costing, procurement, and sustainability data to make better design decisions to improve cost and sustainability.
- 2. **Enable Early Sourcing Input and Action:** Transform design and sourcing so they are not sequential. Empower sourcing with early access to design data to start the source to contract process early, explore cost savings, and drive better sourcing strategies.
- 3. **Improve Sourcing Strategies Using Data Analytics and AI:** Leverage data analytics and AI capabilities so stakeholders can gain insights that lead to cost savings, better quality, compliance, and supply chain resiliency.
- 4. **Drive Better Results Through Collaboration:** Improve cross-departmental and supply chain communication and collaboration to bring all source to contract stakeholders together and make better, more timely sourcing decisions that boost profits and shorten time-to-market.

Foster a Culture of Continuous Improvement

In conclusion, leveraging the **3DEXPERIENCE** platform is not just a step forward. It's a transformative journey that brings engineering and sourcing together in a collaborative, data-driven product development environment from the beginning of the product lifecycle. By implementing the process transformations outlined in this eBook, companies can dramatically improve profitability and time-to-market. This initial success should be a foundation for ongoing digital transformation and product innovation, inspiring a culture of continuous improvement that shapes future projects and helps create a competitive advantage in the market.



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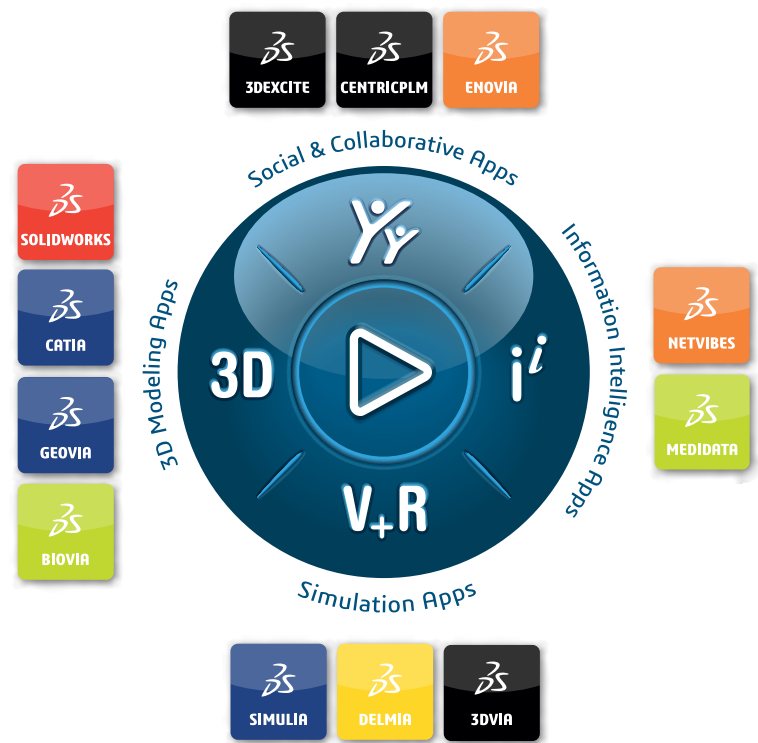
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For more information, [click here](#)

Our 3DEXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating virtual twin experiences of the real world with our 3DEXPERIENCE platform and applications, our customers can redefine the creation, production and life-cycle-management processes of their offer and thus have a meaningful impact to make the world more sustainable. The beauty of the Experience Economy is that it is a human-centered economy for the benefit of all – consumers, patients and citizens.

Dassault Systèmes brings value to more than 300,000 customers of all sizes, in all industries, in more than 150 countries. For more information, visit www.3ds.com.



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