

# Unifying Design "Work in Process" to Production

Designing an efficient, functional, and useful product requires the careful investment of valuable resources. The same is true of producing that same product. Successful businesses recognize the attention and commitment required for both processes.

A significant issue exists at the nexus of design and manufacturing, one so common and accepted that it can be difficult to fully recognize or name the problem. Most current methods for bringing a product design into production are functional but far from ideal. They tend to be repetitive and labor-intensive while lacking scalability and effective methods for collaboration.

This issue, which we have defined as the Design Collaboration Gap can negatively affect many parts of an organization. Product management, engineering, supply chain, and manufacturing teams rely on getting products to market faster and managing parts inventories by employing new manufacturing processes. When the transition from design to production is slow, costly, and complicated, it's easy to see why these crucial parts of a business suffer.

# A purposefully designed and broadly effective solution

ZVerse offers a much more efficient solution for bringing designs into production. It has the power to streamline the process of bringing a design into production by emphasizing real-time collaboration while leveraging the power of automation and AI.

Real-time, 3D model-based collaboration is a vital element of this improved workflow, with AI helping make faster decisions and facilitate collaboration across multiple parties working on a part design. One powerful example is the use of an interactive, real-time 3D Viewer for multi-enterprise collaboration and design reviews, ultimately reducing design revisions, thus reducing time to market. Importantly, the 3D Viewer must support all major CAD packages providing flexibility for multi-enterprise collaboration.



# All-too-common pain points caused by the design information gap

The design information gap creates a range of issues that drag down the efficiency of manufacturing businesses. These problems include:

- The prevalence of engineering change requests and change orders, leading to a high number of design iterations. These requests and orders are a frequent pain point for digital manufacturing, adding work for staff and increasing the time needed for a design to be completed and ready for manufacturing.
- High counts and a lack of transparency in design for manufacturing (DFM) loops. DFM is intended to make designs easier and less expensive to manufacture, but high counts and complicated cycles can easily and quickly drag down the process.
- The lack of a method for consistently measuring requirements. Stating requirements, measuring them, and assessing manufacturing files based on them puts all stakeholders on the same page to move the design into production. The absence of the planning and tools needed to do so can only complicate and prolong the transition from design to manufacturing.
- An absence of visibility. Transparency allows everyone involved in moving a design into production, as well as key third parties like partners and suppliers, to understand critical needs and adhere to critical requirements. From the design itself to surface finish and many other variables, visibility is a central need.



# **Driven by Too Many Iterations**

#### PROCESS GAPS

Engineering change and quote requests Disconnected design workspace Missing context data of design intent Constrained search and reuse of digital design assets

#### **AUTOMATION GAPS**

Manual 2D to 3D file conversions Lack of instant costing Manual DFM cycles Assignment of design to process, material, and machine

# How ZVerse Collaborative Design technology accelerates design to production

With many bottlenecks caused by the design information gap, a solution addressing the underlying issues associated with manual and disparate processes is especially valuable. ZVerse developed a Collaborative Platform that leverages two key factors to boost efficiency, real-time communication with AI-assisted decision support.

These features are:

- Automation: Automation can be an effective contributing force for collaboration and filling design information gaps. Automating especially labor-intensive, time-consuming parts of the process, such as converting 2D CAD files to 3D manufacturable models at speed, scale, and quality, freeing up valuable resources for your business.
- 2. Real-time collaborative workflow: Bringing all stakeholders together in a single CAD agnostic platform means everyone has transparency and access when it comes to critical information. This common base of shared knowledge allows staff to communicate effectively and in real-time, reducing the potential for errors and work together to efficiently bring a design to production.

The ZVerse solution enables shared assessment, measurement, and communication of all related part information critical to manufacturing. With the ZVerse Platform, you can expect a variety of benefits:

- General process improvements in terms of ease, speed, and quality of the manufactured part..
- Increased speed in prototyping, manufacturing, and product sample creation, reaching downstream customers faster.
- Accelerating the product development to manufacturing path, ensuring less downstream bottlenecks in PLM solutions.
- Reducing the number of engineering change orders and requests, which lowers costs.
- Aligning design requirements to specific materials and processes.
- Lowering the cost of non-value-added activities, including manual 2D to 3D conversion, costing, DFM loops, and part search.
  - Increase quality assurance and onshore work that has traditionally been done overseas, such as 2D to 3D conversions.
- Leverage engineers' core skills on high-value projects vs. redundant activities

## What ZVerse is ... and isn't

ZVerse sits upstream of prototyping and manufacturing, where product development and manufacturing meet. The Platform provides a real-time collaborative process solution for designers, product managers, engineers, and third-party partners to work together on a design in real-time.

# Adding the ZVerse Platform to your operations

Incorporating our Platform into your business's current workflow is far from complicated. CAD, PLM, and physical manufacturing processes can remain as they are currently. APIs and connection services take all CAD files and feed them back out to PLM, ERP, and MES systems there's no intrusion or manual rekeying of data required.



## Conclusion

The design information gap between initial concept design and manufacturing is so common that many companies have accepted it as a cost of doing business. The ZVerse Platform is developed expressly to close the gap between design and manufacturing.

Our solution provides benefits ranging from the automation of time-consuming, manual work — such as converting large-scale numbers of 2D CAD drawings to 3D, manufacturable models - to true collaboration in real-time. By taking all stakeholders into account and building process improvements, ZVerse crafted a clear path to more efficient operations.

To learn more about ZVerse get in touch with their team today.