

Cost Insight | Generate

Design Guidance with a Difference



THE FREEDOM TO DO WHAT YOU DO BEST: INNOVATE

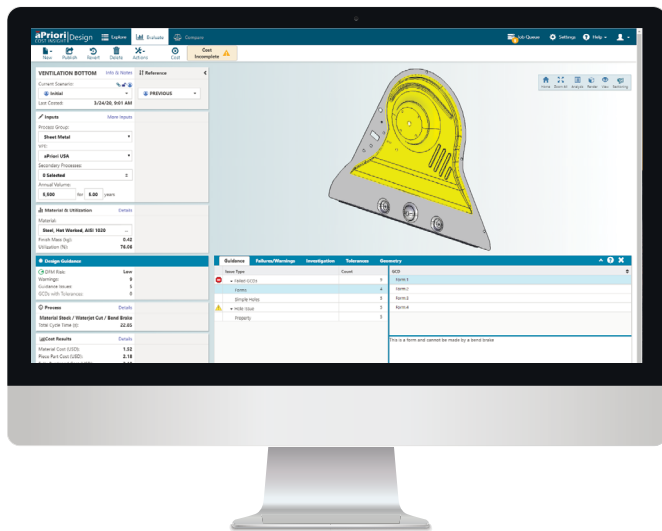


Figure 1: Design Guidance for a Sheet Metal Part After Automatic Manufacturability Analysis

The Challenge for Design Teams

Product design teams across a range of industries face the constant challenge of launching complex products that satisfy customer needs and meet profitability goals. Competitive pressure creates even shorter windows of opportunity, driving the need to rapidly validate product designs and create workflow efficiencies.

Innovation Meets Manufacturability

aPriori's Cost Insight Generate is an automated and collaborative cloud-based software solution that integrates with the organization's Product Lifecycle Management (PLM) system.

Unlike traditional solutions, Cost Insight Generate combines comprehensive design guidance with bottom-up cost estimations based on real-world factory data.

Gain the ability to rapidly validate product designs through automated workflows and alerts, helping identify and resolve manufacturability issues beginning early in the design phase, avoid costly product redesigns, meet product launch schedules and maximize profitability.

Simulation-Driven Design Guidance

aPriori goes beyond offering design guidance based solely on best practice. Stakeholders get robust Design to Cost (DTC) and Design for Manufacturability (DFM) insights from aPriori's physics-based manufacturing simulation & cost analysis. Users can conduct trade-off analysis of cost vs. design choices to optimize designs and achieve their goals based on real world factory data.

BENEFITS ACROSS YOUR ORGANIZATION



DESIGN LEADERSHIP

- Take steps early to mitigate project risk due to manufacturability issues.
- Reduce rework; shorten time to market and improve product profitability.
- No additional time or headcount resources required for design team to utilize CI Generate.
- Maximize ROI by adopting CI Generate across product lines.
- Produce credible manufacturing cost analysis to help sourcing find best fit suppliers.



DESIGN ENGINEERS

- Gain automated manufacturability guidance without spending valuable time manually assessing each part design.
- Rapidly prioritize parts requiring design improvements.
- Avoid rework that can delay product launch.
- Spend more time innovating and less time fixing issues downstream.



PRODUCT MANAGERS

- Assess forecasted profit margins early in the design phase, and if necessary, make feature vs. cost tradeoffs to meet profitability goals.
- Ensure timely product launches by identifying and flagging critical manufacturability issues early in the design phase.
- Use manufacturability assessments to better inform product roadmap planning.
- Set credible expectations early with senior leadership about product profitability and availability.

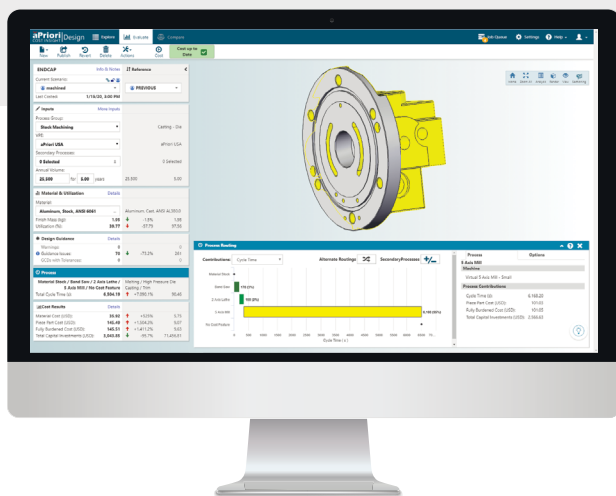


Figure 2: Engineers Utilize Cost and Design Guidance for this Stock Machined Part to Achieve DTC Cost Targets

Features

- High volume processing for automated manufacturability checks plus cost estimation.
- Automated reporting to stakeholders.
- Trade-off analysis of cost vs. design choices in the same application.
- Implement manufacturability checks for widely utilized processes.
- Support for native and imported CAD formats.
- Share design guidance and reports among stakeholders.
- Integrate with major PLM systems.

How It Works

Cost Insight Generate provides flexible integration, automated DTC & DFM analysis and proactive notifications and reports.

The design engineer saves the CAD design in PLM, and Cost Insight Generate automatically produces a full manufacturability analysis of the part. Analysis results such as cost, DTC Rating, and a report can be stored in the PLM. Cost Insight Generate also sends a report to the design engineer. Using a link in the report, the design engineer opens the part in the Cost Insight Design to review the design and cost guidance for the part.

With this guidance, the engineer makes design changes to satisfy DTC goals and improve manufacturability of the part. Workflows can be configured to share reports with other stakeholders such as design engineering leaders and product managers.

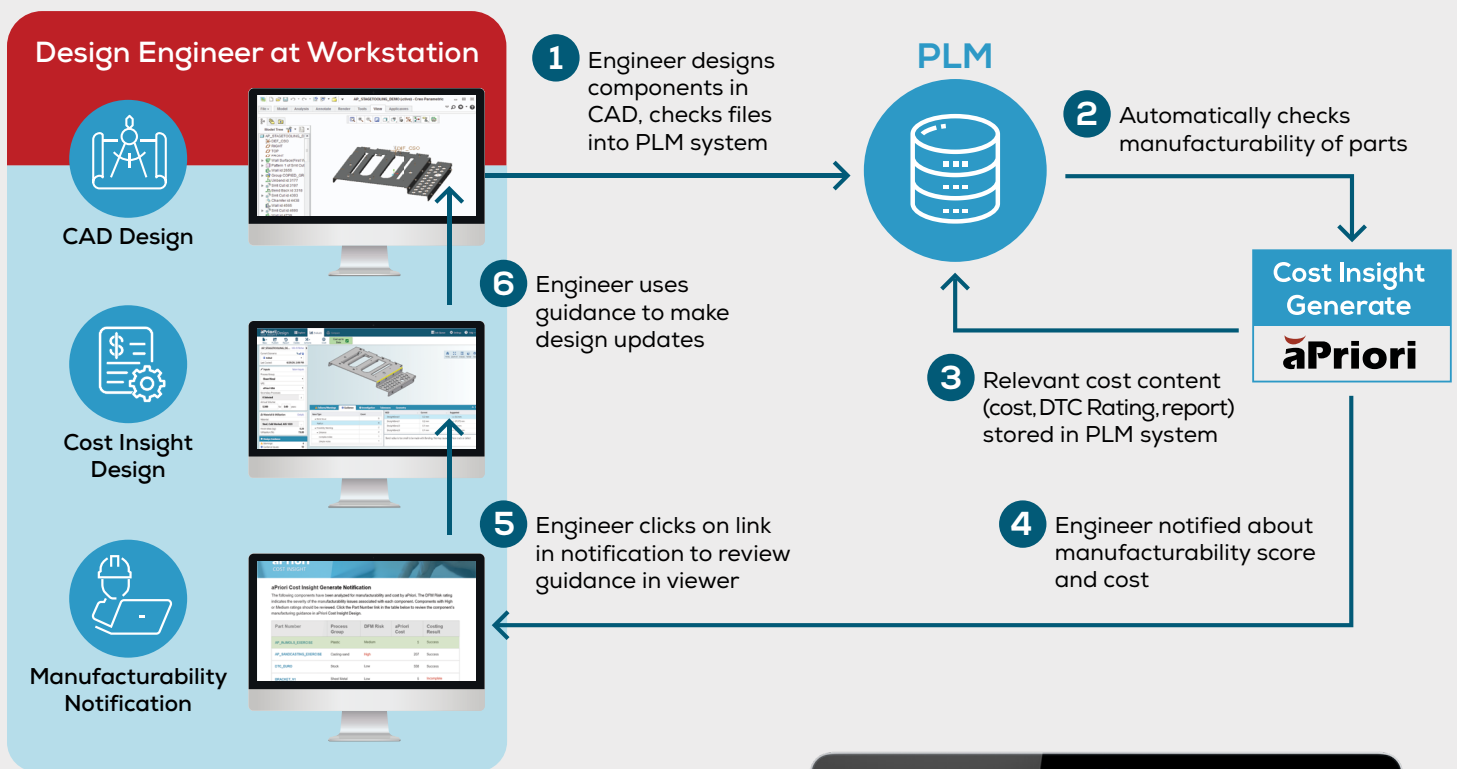


Figure 3: Workflow for Design Engineer Using Cost Insight Generate to Validate CAD Designs

Manufacturability Reports and Metrics

Cost Insight Generate directly emails manufacturability reports to approved stakeholders. Detailed reports for specific parts can also be downloaded. Metrics for each part including a DFM Risk rating enable the user to quickly prioritize parts that they should further analyze. The DFM Risk rating indicates the extent and impact of manufacturability issues for the part.

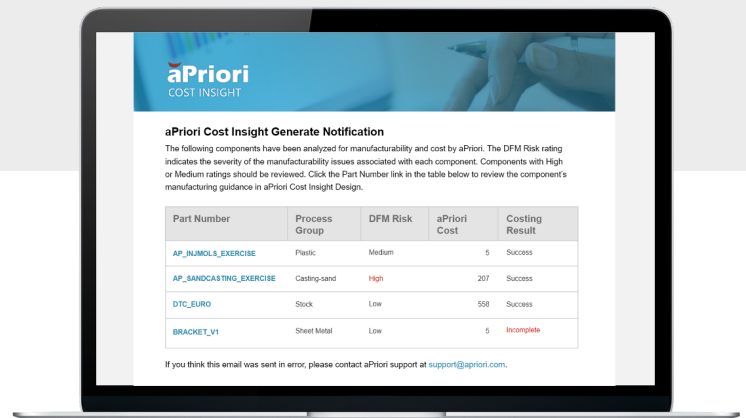


Figure 4: Manufacturability Reports are Automatically Generated and Sent to Approved Stakeholders

Design and Cost Guidance for Widely Used Manufacturing Processes

Cost Insight Generate supports designs produced with widely used manufacturing processes. The solution provides users with design guidance along with the cost estimate to manufacture these parts using the most feasible and economical routings and tools for these processes.

HERE ARE SOME EXAMPLES OF MANUFACTURABILITY GUIDANCE:

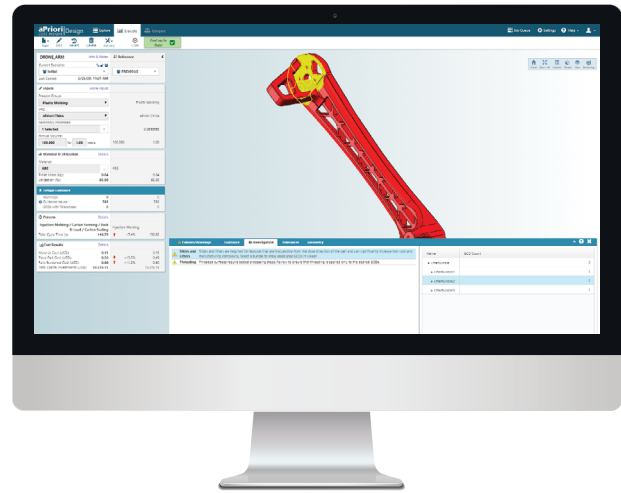


Figure 5: Design Recommendations for a Molded Plastic Part Using Cost Insight Generate

| MANUFACTURING PROCESS | DESIGN FOR MANUFACTURABILITY GUIDANCE |
|------------------------------|--|
| Sheet Metal | Component fabrication issues with forms, bends, proximities, and material; tolerances requiring specialized operations. |
| Die Casting and Sand Casting | Inadequate draft angles that make it difficult to remove the part from the mold; machining for GCDs that cannot be made with traditional casting methods; slides and cores that increase complexity, tooling costs, and part defects; tolerances that require specialized operations; non-standard holes and fillet radii that increase manufacturing complexity and cost. |
| Plastic Molding | Blind holes that slow manufacturing operations and increase mold service costs; slides and lifters that increase tooling costs; guidance to reduce threading mechanisms, ribs, and grills that increase hard tooling costs. |
| Stock Machining | Tolerances that require specialized operations; surface contouring requiring large cycle times; contoured milled corners requiring specialized milling tools; non-standard holes and fillet radii that increase manufacturing complexity and cost. |
| 2 Model Machining | Compare two models, one representing a part after initial processing, and the other representing the finished, machined model; identify machined features and amount of material removed; accurately determine machining operations and cycle time; determine cost to get from one model to the other without having to cost a model from raw material through to final product. |



CONTACT US TODAY!



300 Baker Avenue | Concord, MA 01742 | Tel: 978.371.2006 | Fax: 978.371.2008 | info@apriori.com | www.aPriori.com