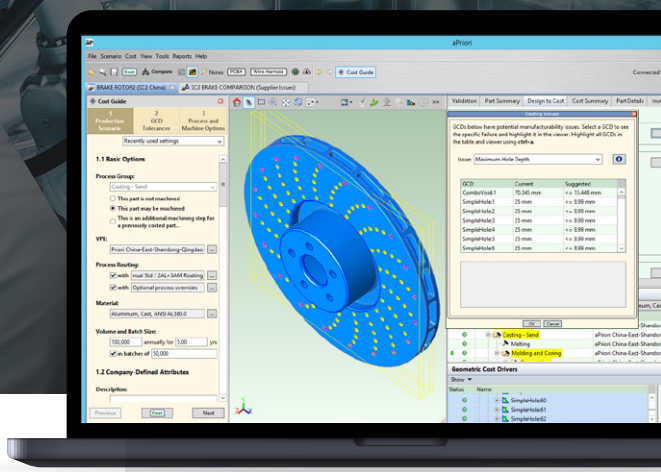
aPriori

aP Pro

Reduce product costs and carbon footprint faster with automated 3D CAD analysis



aP Pro Overview

aP Pro is an application within aPriori"s Manufacturing Insights Platform for cost, sustainability, or manufacturability experts. It is used to gain insights on how to reduce product costs, carbon footprint, and manufacturing risk. aP Pro utilizes a unique technology platform of digital factory data, manufacturing simulation engine, and product design analysis to provide insights that show how changes in simple parts or complex assemblies can impact product cost, manufacturability, and CO_2e emissions within a selected digital factory.

Platform Features

Digital Factories

Create a digital twin of your in-house or supplier factories to simulate a variety of machines, materials, processes, overhead rates, and more.

Manufacturing Simulation Engine

Using the geometry extracted from 3D CAD models and aPriori digital factories, aPriori evaluates manufacturing feasibility, calculates cycle times, determines material usage, and tooling needs. The result is real-world manufacturing and product analysis with actionable manufacturability guidance and seconds.

3D CAD Geometric Intelligence

Generate automatic geometric analysis from 3D CAD models rapidly for single parts and complex assemblies. aPriori plug-ins for all major 3D CAD applications simplify and accelerate our in-app guidance.

Expert Technology for:

- Cost Engineers
- Value Engineers
- Manufacturing Engineers
- Sustainability Engineers

- Design Engineers

aP Design

Learn more about aP Design

Unlock the value in your digital twins with automated manufacturing insights that include:

Product Cost Management

- Should cost
- Make vs. buy

Sustainability

- CO_2e footprint
- Design for Sustainability

Design Guidance

- Design for Manufacturability (DFM)
- Design to Cost (DTC)

Manufacturing Optimization

- Machine selection
- Process routing

aP Pro Use Cases

Product Cost Management

Maximize value with CAD-based analysis and custom Digital Factories

Transform Should Costing Process

aP Pro evaluates individual component and processes costs and assists users in conducting should cost analysis based on the 3D CAD files.

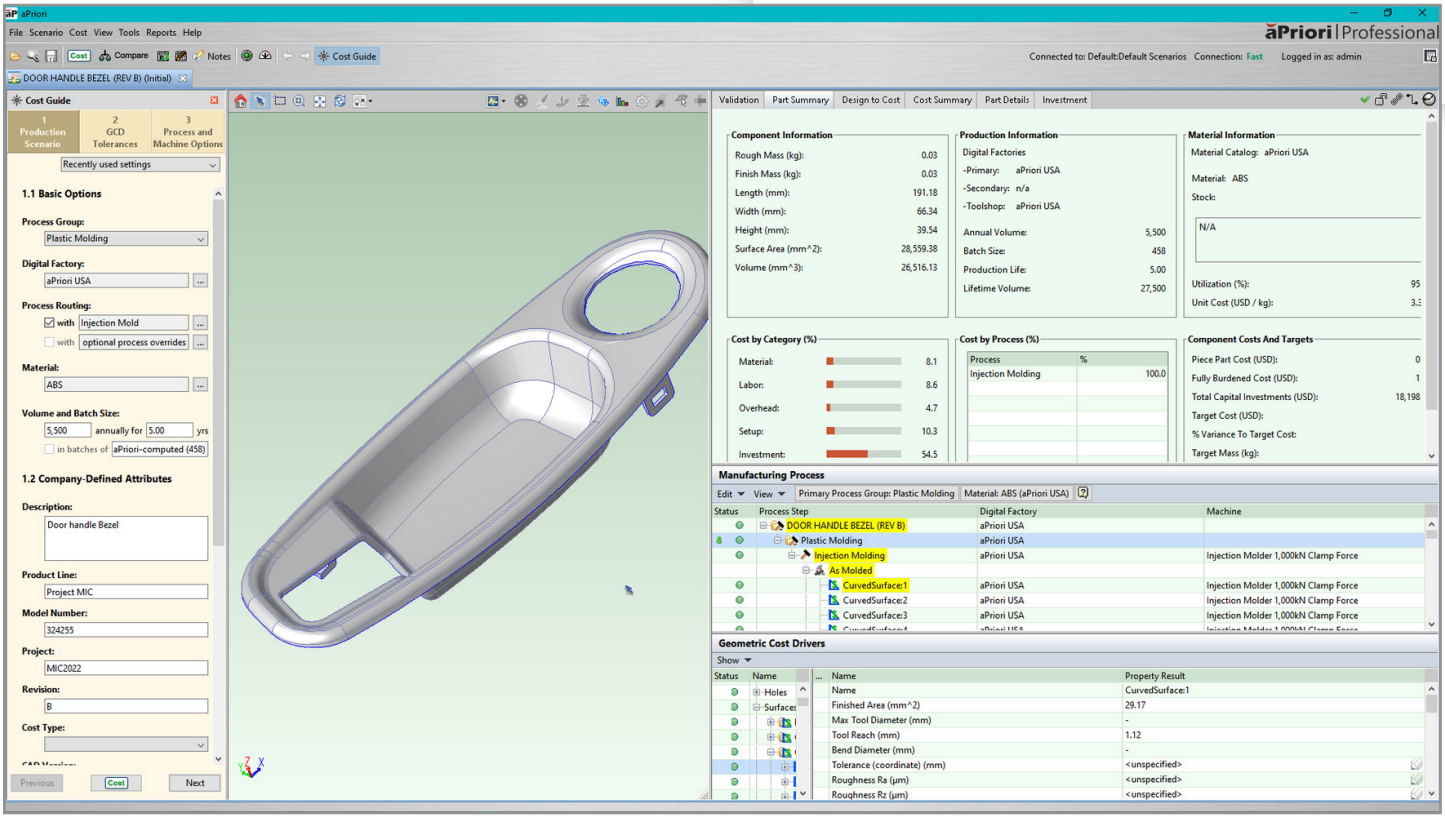
- **Product Procurement Costs:** Calculate costs for new designs without waiting for supplier quotes or review.
- **Automate Costing:** Set up automated costing and approval process to ensure domain experts approve designs, data, and costs before they move forward based on a manufacturing simulation of the component from the 3D CAD file.

Evaluate Make vs. Buy Decisions

Compare results in different simulated manufacturing scenarios in aP Pro, like your own factory or a general supplier factory, to make informed decisions about manufacturing a product internally or outsourcing it to a supplier.

BENEFITS:

- Reduce overall cost of goods sold and improve profitability.
- Lower prices and improve supplier relationships with fact-based negotiations with suppliers resulting in collaborative business operations.



Cost summary created based on GCDs derived from the 3D CAD model, and the cost of materials, manufacturing, and labor from custom Digital Factory

Sustainability

Make data-driven decisions to build sustainable products

Measure CO_2e Footprint Early in the Design Phase

aP Pro centralizes product, material data, and manufacturing process information to allow manufacturers to quickly gauge a product's CO_2e impact during early design phases.

- **Re-design for Sustainability:** Assess design alternatives in minutes to meet carbon emissions, cost, and performance targets.

Create "Should Carbon" Baselines

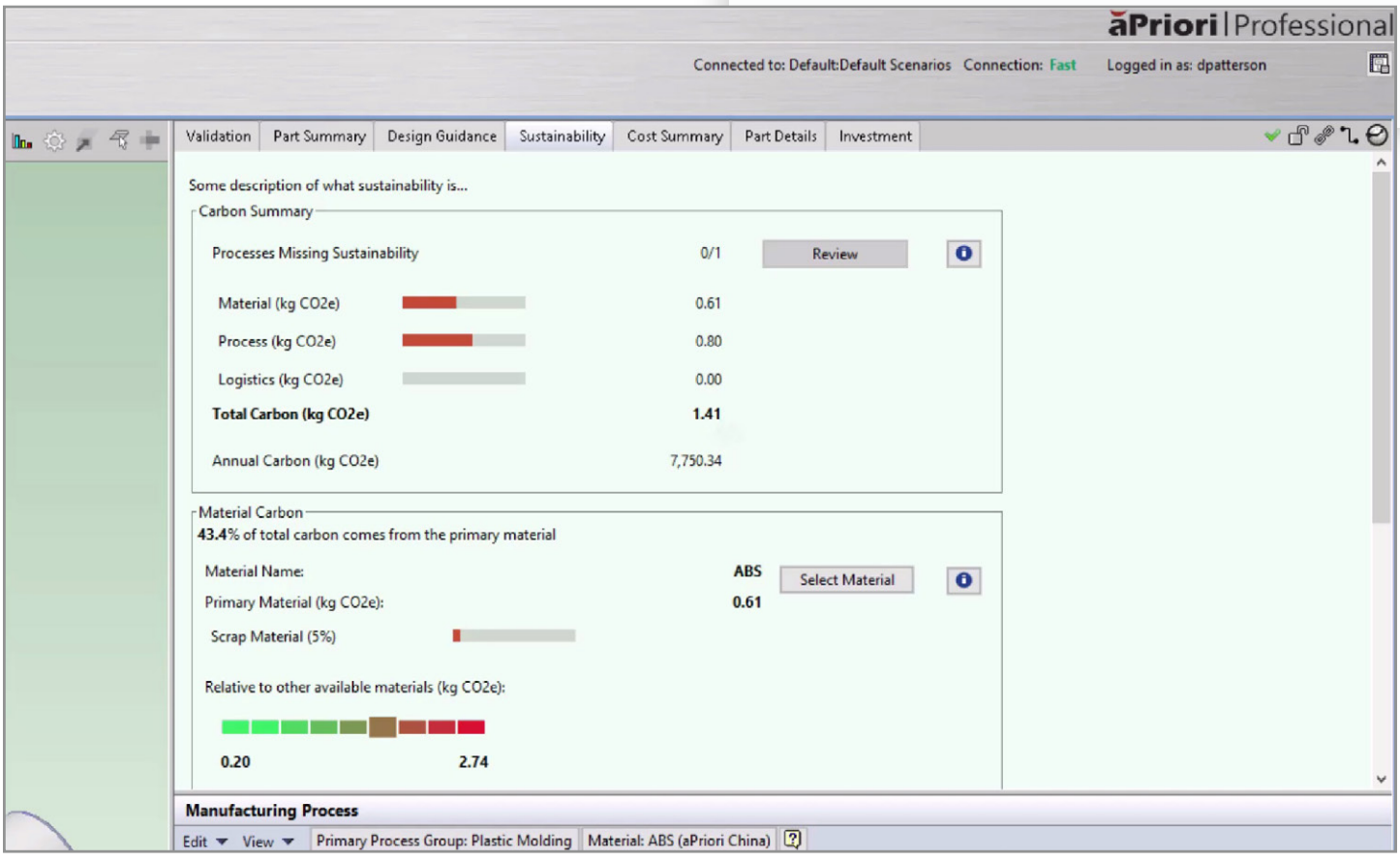
Calibrate and configure customized aPriori Digital Factories to gain an unparalleled understanding of carbon emissions during manufacturing.

aPriori factors in energy used during manufacturing, machine cycle time, material waste generated, and regrind or remelt impact to help make tough decisions.

- **Quantify the kg CO_2e:** Create a CO_2e baseline for existing products and gain actionable insight to meet net-zero goals.

BENEFITS:

- Leverage sustainability insights to evaluate design tradeoffs and ensure recyclability and serviceability.
- Gain a competitive edge with sustainable product differentiations and generate long-term value.



Sustainability summary of carbon emission of producing a part based on selected material and process

Design Guidance

Reduce Cost and Increase Production Quality

Design for Manufacturability

Incorporating Designing for Manufacturability early in the process helps identify production issues and reduces change orders. aP Pro simulates manufacturing processes and estimates manufacturability implications, highlighting difficult or impossible features and expensive alternatives (e.g. non-standard hole sizes).

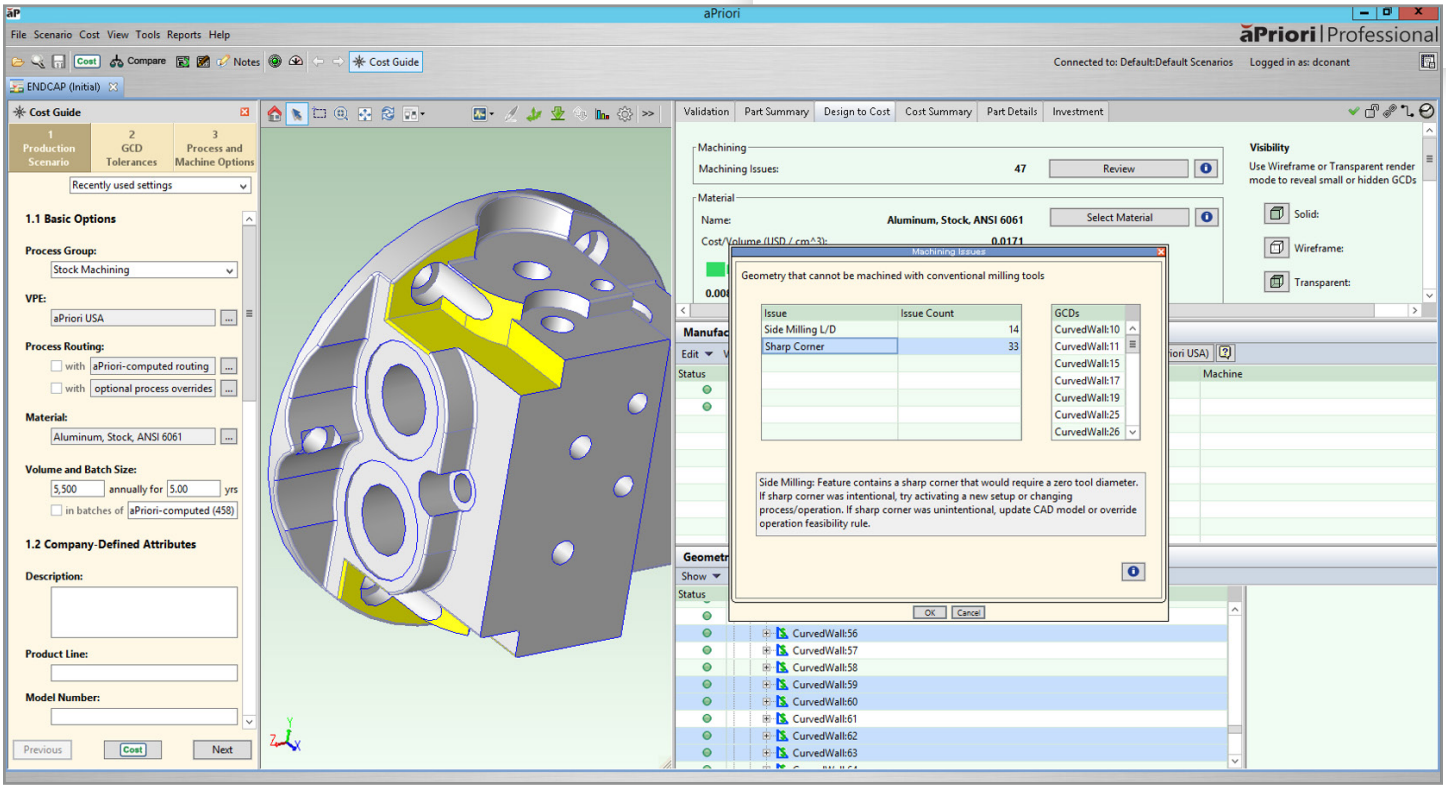
- **Optimize Manufacturing Process:** Reduce manufacturing risk and defects by understanding the impact of difficult or impossible-to-make features and then increasing manufacturing feasibility.

Design to Cost

aP Pro leverages advanced costing models to identify Geometry Cost Drivers in the highly dynamic context of the 3D CAD model and guide engineers in evaluating design iterations and processes.

BENEFITS:

Streamline prototype to the production process and improve product quality with reduced rework and scrap rates.



Identify machining issues by leveraging DFM insights generated based on 3D CAD models

Manufacturing Optimization

Unlock Profitability with Manufacturing Efficiency

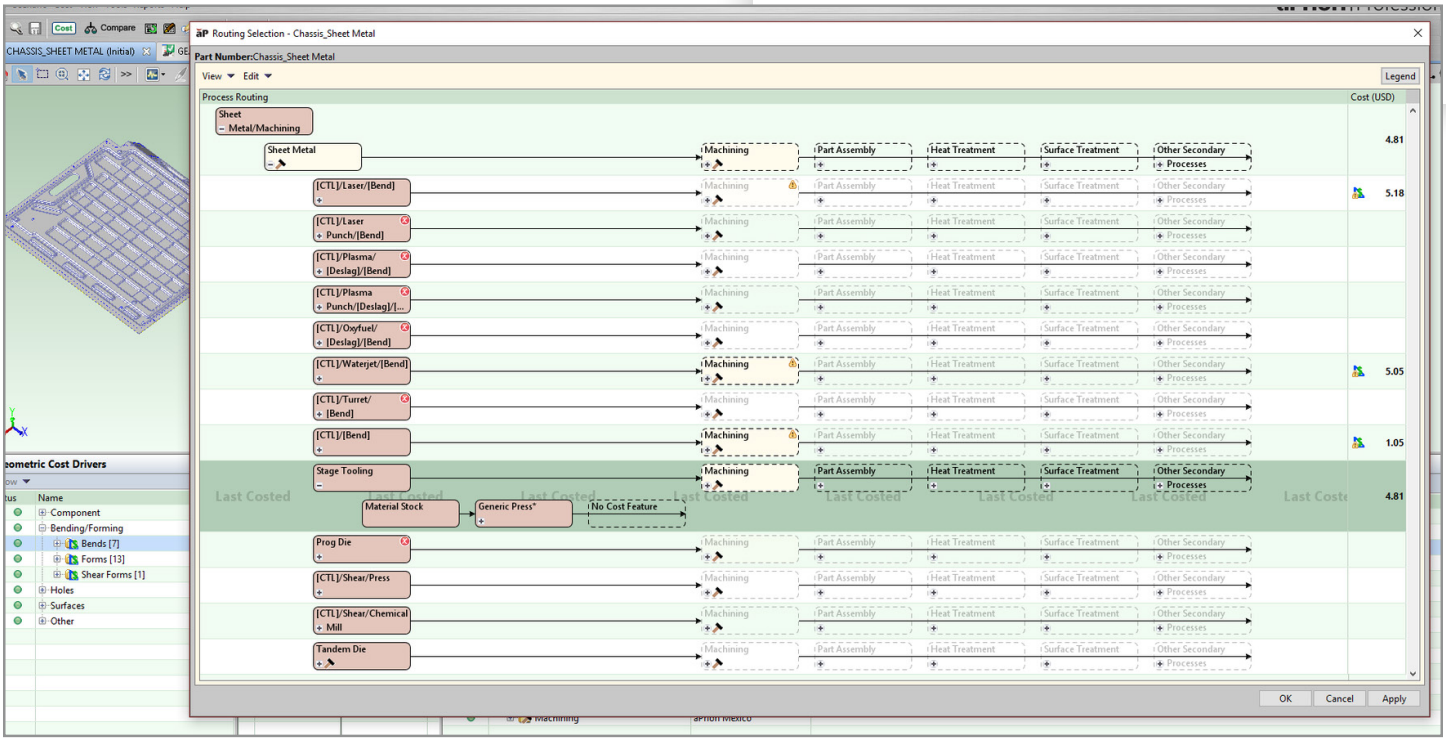
Smart Machine & Process Routing Selection

Smart machine and tool selection modules automatically choose feasible machines for a given process and desirable tools for a given operation with the lowest overhead rate. aP Pro automatically runs product designs through every feasible routing and calculates the cycle time and cost of each to find the most cost-efficient option.

- **Setup Time Reduction:** Reduce the number of setups or rotations required for workflow improvements.
- **Simulate Production Scenario:** Manufacturing scenario simulation ensures a smooth production run with high yield.

BENEFITS:

Increase manufacturing efficiency with full visibility and control over the manufacturing process.



Detailed routing selection for sheet metal process

Advanced aP Pro Features

Accelerate Product Cost Analysis

Bulk and Matrix Costing

Analyze multiple parts or assemblies concurrently and generate initial estimates with bulk costing. Matrix costing enables easy generation of alternative cost estimates by varying production volumes, batch sizes, and manufacturing locations for regional cost analysis and comparisons to support sourcing efforts.

Customize Digital Factories

Cost Model Workbench

Edit existing or create custom digital factories to support user-guided processes in a specific factory. Configure routings and operation sequences to support internal use cases. Maximize competitiveness and profitability with personalized manufacturability and cost insights.

Digital Factory Manager

Gain complete control over the customized digital factories by effortlessly adjusting material and machine specifications and fine-tuning manufacturing processes. Automatically update labor rate, overhead, and machine costs based on the selected region with the aPriori Regional Libraries.

WANT TO LEARN MORE?

CLICK HERE to schedule a demo of the aPriori Manufacturing Insights Platform.

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