

The background of the page is a blue-tinted photograph of a car's body panels, showing the complex curves and lines of the chassis. The image is partially obscured by a large, dark blue, semi-transparent geometric shape that serves as a backdrop for the title.

# Reducing Current Product Costs

---

Cost data is being calculated by different people and stored in disparate, distributed systems, creating huge consistency and data access challenges.

## Challenges to Reducing Current Product Costs

Different manufacturing businesses face different business challenges depending on product sets, competitive dynamics, supply chains, and customer trends in a given market. But when it comes to reducing the costs of existing products, they share some very similar challenges. For example:

- **Complex global manufacturing and sourcing strategies** make it difficult for design and cost engineering teams to identify which product features are driving costs.
- **Shifting cost dynamics in low-cost countries** and the pressure to re-shore add to the difficulty manufacturers face when it comes to quickly understanding the cost impact of rising material or labor prices on current product programs.
- **Time spent on value engineering activities** can take away from time spent developing innovative new products. Manufacturers need to do both by balancing the short-term benefits of product cost engineering with the longer-term benefits of increased product innovation.
- **Sourcing teams lack visibility** into what a product “should-cost” or where the best opportunities for costs savings might be, making it difficult to conduct fact-based negotiations, identify over-priced parts, and compare supplier costs across different geographic regions.

Most manufacturers have dedicated individuals and teams of cost experts calculating and trying to manage product cost. It is a very difficult job exacerbated by internal processes and systems that cannot effectively overcome the cost management challenges mentioned above. In most cases, Finance or Cost Specialists are estimating the standard cost for a product after the key design decisions have been finalized, so it is difficult to significantly impact that cost. Furthermore, this cost data is being calculated by different people and stored in disparate, distributed systems, creating huge consistency and data access challenges.

## Examine Your Cost Reduction Opportunities

The best product cost management strategies begin attacking product cost before a product ever goes to market and continue across the entire product lifecycle — from design and engineering through sourcing and manufacturing. But unless you are brand new to the market, you have existing products where you have to find a way to take cost out after they

---

Identify the parts with the highest potential for cost savings, and investigate various design, manufacturing, or sourcing alternatives.

have been released to the market. Current products also provide the biggest, short-term opportunity for reducing product costs by:

- Identifying savings on outsourced parts
- Finding savings in redesign
- Optimizing costs on a higher volume of parts by consolidating similar parts
- Consolidating suppliers
- Improving engineering productivity in redesign projects

### **A PCM System Facilitates Collaboration**

To leverage these opportunities, you need to be able to identify the parts with the highest potential for cost savings, and investigate various design, manufacturing, or sourcing alternatives and the cost savings opportunities they can provide. Consider the following workflow:

1. A cost engineer or project manager creates a project Bill of Materials (BOM) using existing product and cost data (e.g., indented BOM structure, component attribute data, carry over part costs, cost and or weight targets, etc.)
2. They then define annual volumes and default production environment data depending on location, manufacturing process, dates, etc.
3. The design engineer then loads the project BOM and all associated data into their product cost management (PCM) system and provides other key inputs such as material, process group, surface treatments, tolerances, and manufacturing product assembly techniques. The PCM system then generates an extremely detailed cost estimate that can be analyzed at the product, subassembly, or component level.
4. The project manager, cost engineer, and design engineer can now quickly identify the most expensive areas of the product, which stimulates ideas for design changes and design alternatives. If they are not able to generate any ideas that materially lower the cost, they can flag in-house parts for manufacturing review or sourced parts to be requoted.

Through this type of cross-departmental collaboration and use of a PCM system, the team may be able to develop an innovative new design concept, sourcing strategy, or manufacturing strategy that could substantially lower the cost and improve profitability as the program ramps to volume production.



---

Cost engineering professionals focused on identifying cost savings in existing products can apply their expertise to a higher volume of products – driving bigger cost savings.

## Collaboration Benefits the Entire Team

This workflow empowers anyone who can impact the cost of a current product to do so. Let's take a closer look at the impact at a departmental level.

**Designers and engineers** — focused on simplifying complex, expensive parts; increasing reuse; and evaluating the most cost effective material or manufacturing options can:

- Understand the components in a product or subsystem that provide the greatest opportunity for cost savings.
- Explore many more cost savings design alternatives in the same amount of time or less.
- Highlight the most expensive manufacturing features on a CAD model, and then quickly re-evaluate the cost of tradeoff decisions as they update the design.
- Stop waiting for quotes to come back from suppliers and get the information they need when they need it.

**Cost engineering professionals** — focused on identifying cost savings in existing products can:

- Apply their expertise to a higher volume of products – driving bigger cost savings than ever before.
- Amplify their knowledge across the entire product development organization, effectively providing “at elbow” cost service for the design team.
- Quickly identify cost savings opportunities and generate ideas for cost reduction programs.
- Have more time to concentrate on the most complicated cost analysis projects.

**Manufacturing professionals** — focused on bringing high quality products to market on time and on budget can:

- Discover new, more efficient manufacturing routings within their own factories.
- Evaluate parts that may make sense to manufacture in-house (e.g., re-shoring initiatives).
- Prevent design mistakes that dramatically increase the cost to manufacture a product.
- Reduce time spent developing cost estimates and spend more time on critical manufacturing operations.

**Sourcing professionals** — focused on identifying cost outliers and driving changes through renegotiating and resourcing can:

- Run automated cost analysis on hundreds or even thousands of parts to identify where they are being overcharged by suppliers.
- Leverage highly detailed cost estimates to identify the most cost efficient way to manufacture a product and facilitate fact-base discussions about what a product or part should cost.
- Simplify sourcing tradeoff analysis by comparing the cost to manufacture a product in one region versus another or one supplier versus another.

**Program managers** — focused on achieving current product costs reduction goals can:

- Gain visibility into a project's progress and access up to date reports that illustrate cost savings potential for identified outliers, design alternatives, and different manufacturing or sourcing strategies.
- Rapidly access critical product cost information for your projects at any time including recommended actions, status, and results

## Critical Success Factors for Product Cost Management

The processes and practices outlined above can provide substantial benefits for any manufacturer, but they don't happen by themselves. Successful product cost management requires changes on both the people and the technology sides of the business:

### People Factors

- **Management support** — managers must be actively engaged in the cost management process and actively tracking project progress.
- **Cross-organization commitment** — related to the above, this can't be done in a silo. It requires the participation of multiple groups in the organizations to capture and provide the necessary data for analysis and take action on the findings.
- **Qualified resources** — cost specialist(s) are needed to review, refine and scrub outliers for an effective analysis.
- **Follow-through** — by all participants on tracking actions and savings on components identified for cost reduction.



---

Effective product cost management strategies provide substantial benefits, but they also require investment from your employees and in technology to realize the full ROI of your efforts.

### Technical Capabilities

- **User Interaction designed for the masses** — systems that can only be used by highly specialized cost engineers dramatically limit the potential of your product costing efforts to be used. Look for a system that is fast and easy to use by design, engineering, and sourcing professionals and by new employees that may have very little experience with cost evaluation.
- **Automated cost analysis** — the ability to automate costing, batch analyze thousands of components, and compare a calculated “should-cost” to current cost can potentially identify millions of dollars of savings opportunities. This cannot be done manually; users will need to leverage enterprise-class product cost management tools.
- **Ability to read geometric cost drivers from any 3D solid CAD model** — this significantly reduces the amount of manual data input to produce a cost estimate, minimizes potential for error from manual input, and dramatically accelerates time to produce a detailed cost estimate.
- **Rules-based routing** — is important to be able to identify the most cost efficient manufacturing routings based on design, volume, material, manufacturing process, and manufacturing location changes.
- **Centralized database** — standalone costing systems that do not aggregate information into a centralized database create islands of product cost data and limit the ability of team members to leverage the experience of others. Look for a product cost management platform that stores all information in a centralized repository that can easily be accessed by everyone on the product development team.
- **Integration** — the ability for a costing solution to integrate with other enterprise applications that contain cost information is critical. Any product cost management solution that you consider should provide the ability to interface with your ERP and PLM systems so that cost data can seamlessly be shared across your enterprise architecture.

The most effective product cost management strategies can provide substantial benefit to manufacturers that implement them, but they also require investment from your employees and in technology to realize the full ROI of your efforts. Consider your own level of readiness and the ability to put some of the best practices outlined above into action.





Visit [www.apriori.com](http://www.apriori.com) to learn more.

## **aPriori**

300 Baker Avenue  
Concord, MA 01742

Tel: 978.371.2006  
Fax: 978.371.2008

[www.aPriori.com](http://www.aPriori.com)  
[info@apriori.com](mailto:info@apriori.com)



aPriori software and services generate hard-dollar product cost savings for discrete manufacturing organizations. Using aPriori's real-time product cost assessments, employees in sourcing, manufacturing and design engineering make more-informed decisions that drive costs out of products pre- and post-production. With aPriori, manufacturers launch products at cost targets, maximize savings in re-work projects and avoid overpaying for sourced parts.