

# Unprecedented Change: How to Protect and Expand Margins

Presented by



This webinar will begin momentarily



While you wait, visit *Automotive News* online:



[@Automotive\\_News](#)  
for breaking news



[LinkedIn](#)  
for company news



[/autonews](#)  
for photo galleries



[+automotivenews](#)  
for daily newscasts

# WELCOME



Mary Beth Vander Schaaf  
Managing Editor  
*Automotive News*

# NAVIGATION TIPS

- For a better webinar experience, we recommend closing email and other open programs/browsers, as these applications may cause glitches in the streaming audio.

**Submit a  
Question**

**Download  
Slides**

**Provide  
Feedback**



**aPriori | accenture | Automotive News**

# Unprecedented Change: How to Protect and Expand Margins

**Scott Ellsworth, Accenture**

**Craig J. McLeod, aPriori**

**Bill Grieves, aPriori**

May 12, 2020



# Agenda

**01**

## **Disruption & Design To Margin**

Scott Ellsworth, Accenture

**02**

## **Protecting & Expanding Margins**

Craig McLeod, aPriori

**03**

## **Strategies & Solution Review**

Bill Grieves, aPriori

**04**

## **Wrap Up**

Craig McLeod, aPriori

**05**

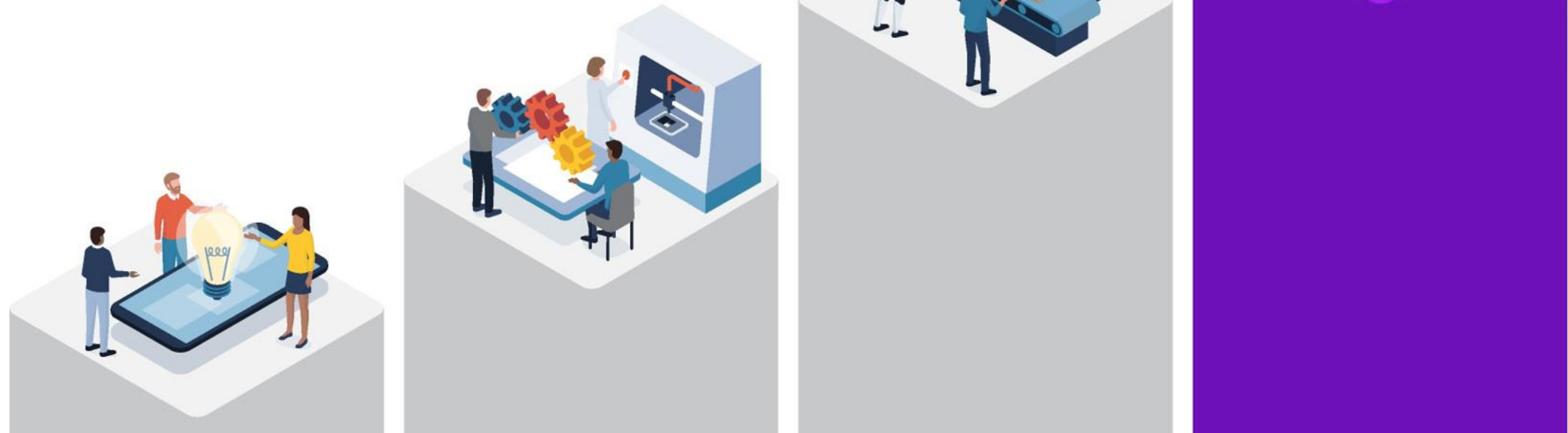
## **Q&A**

Automotive News Moderator

# DISRUPTION AND DESIGN TO MARGIN

March 2020

accenture



# Significant disruption across the automotive ecosystem

## A challenging current state...

**Pre-2020 pressure as new entrants and innovators accelerate ACES** (Autonomous, Connected, Electrified and Shared) business and product models

Rapidly changing consumer demand driving **need for efficiencies in time to market**

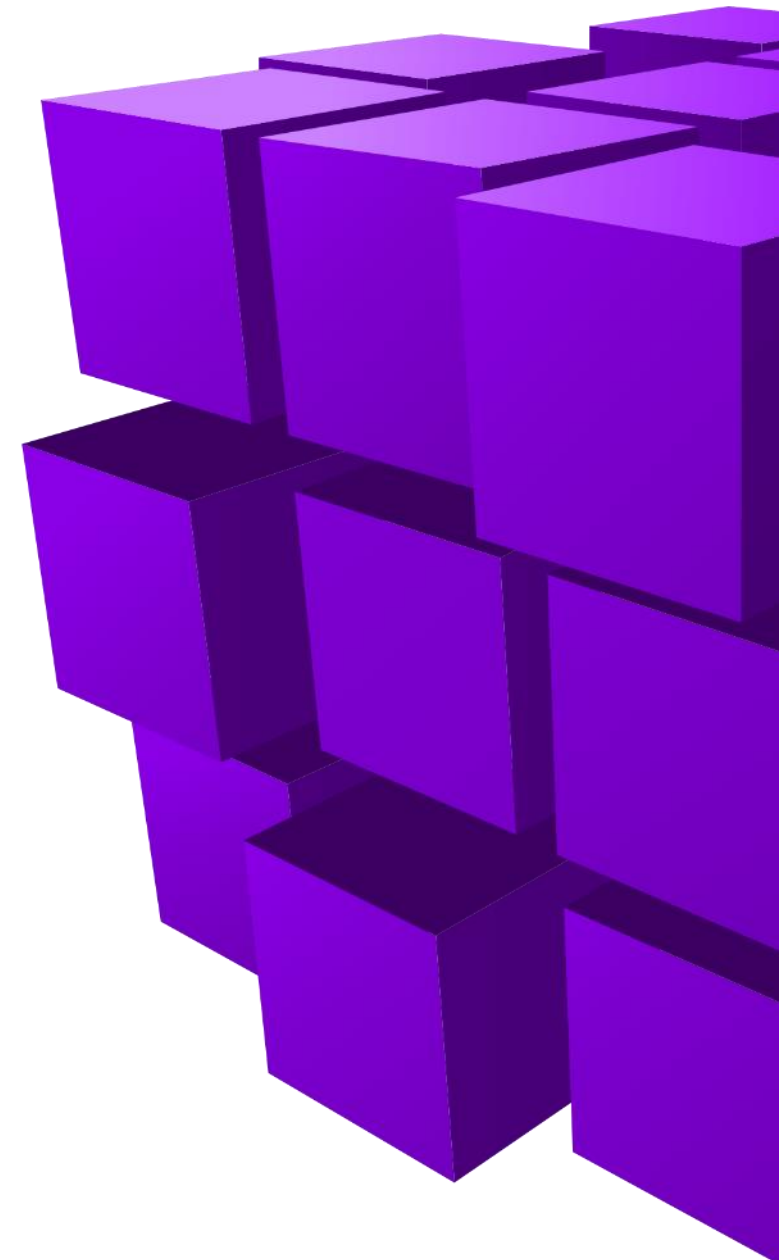
Significant and **unforeseen changes in global production and sales volumes** on the back of COVID

## ...requires new culture and digital approaches

**Coordinated enterprise design-to-margin practices** and agile culture


**Single source of truth for product cost decision-making**

**Integrated approach to data use** across the product lifecycle



# ACES: real pressure on the industry to find new competitiveness in a changing market

Handelsblatt  
TODAY

 POLITICS | COMPANIES FINANCE OPINION ABOUT US

AUTOMOTIVE CRISIS

## Germany's car industry faces a perfect storm

American tariffs, a Chinese slowdown and a hard Brexit could hammer an industry vital to the country's economy just as tens of billions are needed for electric and self-driving cars.

## Poor Financial Results Will Make Automotive Industry Vulnerable To Predators

The automotive industry is braced for a round of poor financial results that will spook shareholders and probably spur the long-postponed shakeout, where no-hopers finally succumb to reality under pressure from digital world interlopers.

The New York Times

## The Car Industry Is Under Siege

With so much bearing down on them simultaneously, it's little wonder that companies like Fiat Chrysler and Renault were considering joining forces to survive. Fiat Chrysler's decision Wednesday night to withdraw its offer to merge with Renault, citing government demands in France, was another reminder that change is complicated for traditional carmakers.

New technology has unraveled industries like entertainment, media, telecommunications and retailing, weakening the job security of millions of workers and helping to fuel populism. Carmakers, clearly, are next.

## Tech and Legal Challenges the Autonomous Car Industry is Facing

Although several leading brands have test-driven self-driving cars, to date, none of them have managed to launch a product. The industry is facing several technical as well as legal challenges, including radar interference, driving in extreme weather conditions, and the current lack of necessary laws and regulations.

## The Future On Four Wheels – Change In The Automotive Business

The future of the automotive industry is open. As new technology enters the market, like sensor technology, mixed reality and 3D printing, contenders from all manner of industries are bringing different thinking to the boardroom as well as the R&D department. Ride-sharing schemes, electric vehicles and autonomous vehicles may be [grabbing the headlines](#), but new, consumer-focused business models brought in by fresh minds are causing chaos for automotive titans behind closed doors.

[Artificial Intelligence / Robots](#)

## The three challenges keeping cars from being fully autonomous


Technical, regulatory, and business obstacles are still in the way of safe, useful, and affordable self-driving vehicles.




# Time to Market: Technology development cycles will never be as slow as they are today


The pace of components innovation is amplifying the **capabilities** and **value** of smart, connected products

## Smaller Components



 **-90% SIZE OF MICROCHIPS**

## Less Expensive

 **-80% COST OF STORAGE**

 **-70% COST OF SENSORS**

## More Powerful

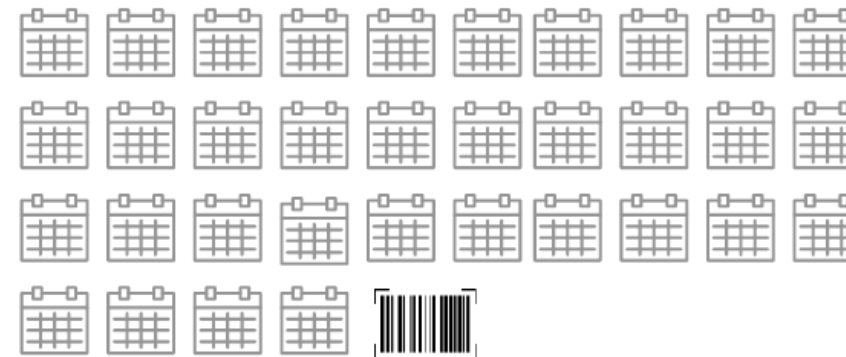
 **+50% BATTERY LIFE** 

Digital twin and digital thread strategies have accelerated **time to value**

## Months

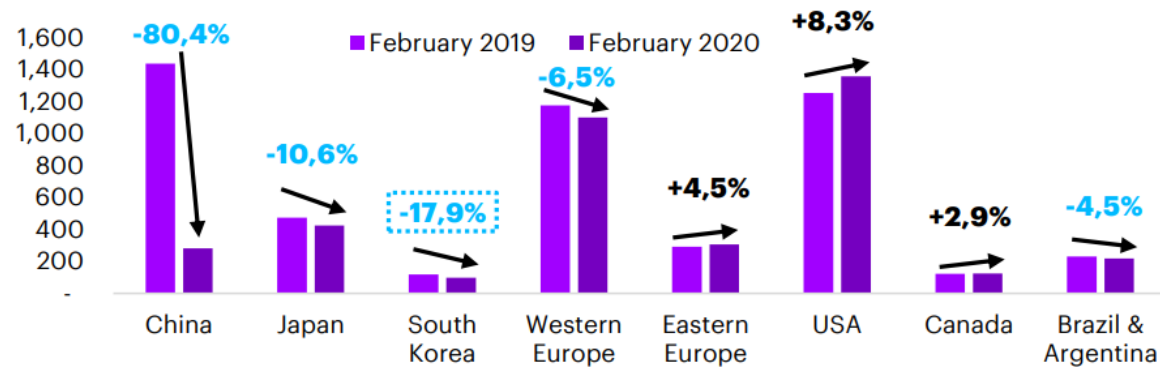


## Years

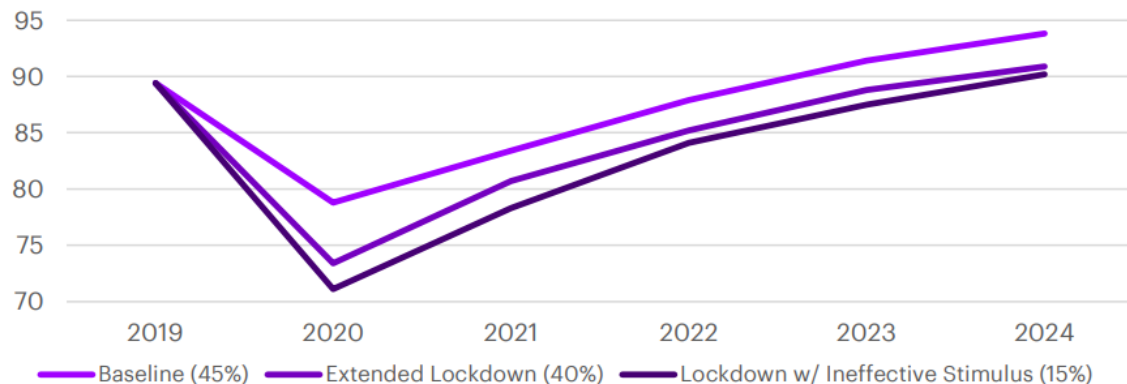


# Volatile Volumes: COVID's impact on vehicle sales suggest at least 2 years to recover 2019 sales levels

Light Vehicle Sales Feb 2019 vs. Feb 2020 [in k units]<sup>1</sup>



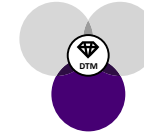
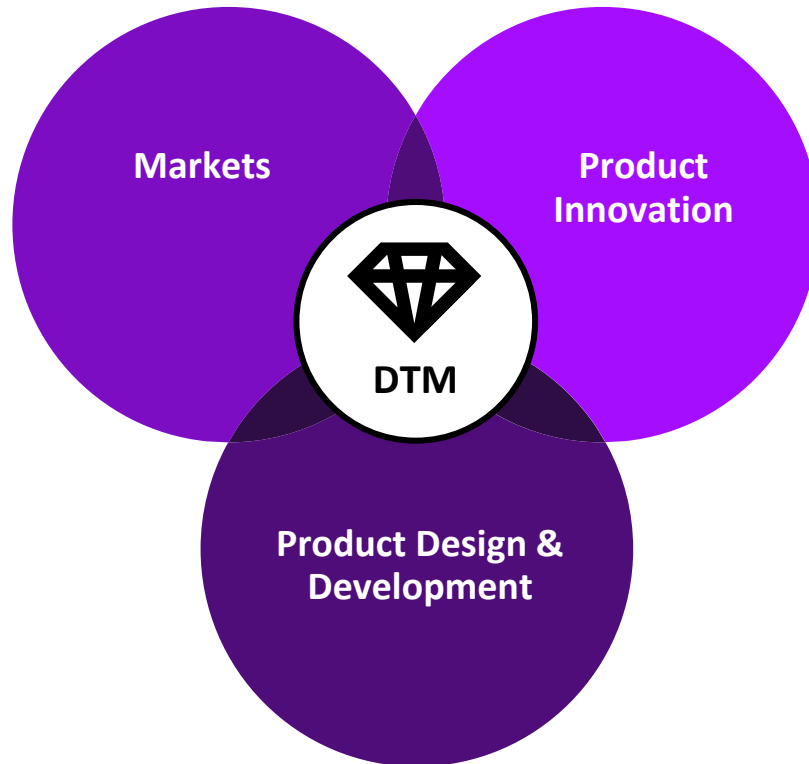
Light Vehicle Sales Forecast 2020-2024 [in million units]<sup>3</sup>



## What is Happening & What is Next

- Overall, global automotive **light vehicle (LV) sales have dropped** by **~20%** (YoY) from 6.335K in February 2019 to 5.077k in February 2020.
- China**, the first country hit by the virus, **experienced** an enormous **drop** in sales with **>80%** in February [followed by South Korea, Japan & Western Europe with sales dropped in all four major markets: Germany, France, Italy & Spain].
- Car sales in the **USA & Canada**, as well as **Eastern Europe**, were resilient until February due to the positive market outlook before the outbreak.
- With **rising COVID-19 cases** and an increasing number of **quarantine measures**, demand is expected to (further) **decline in March & April** in all parts of **Europe and North America**.
- In many European countries, dealers have already **stopped vehicle sales**. **Service** is still open but also facing **declining demand**.
- In **China >90%** of franchised new-car **dealerships have reopened**, but showroom traffic remains at 53% of normal levels<sup>2</sup>
- Current **developments are unlikely to change** in the near future:
  - **Sales in China** are likely to drop by **more than 10%** in 2020<sup>3</sup>
  - **Sales in the USA** are estimated to **decline** by **15%** in 2020<sup>3</sup>
  - **Sales in Western Europe** are expected to **decline** by **14%** in 2020<sup>3</sup>

# How to Address? Deliberate approach to innovative product design with Design to Margin (DTM) at center



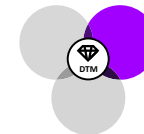
## Product Design & Development

Product should-cost simulation, analysis and management

Product portfolio rationalization

Components/parts rationalization

Design for sourcing, engineering, manufacturing, sustainability, packaging, quality, launch & serviceability – cost optimization



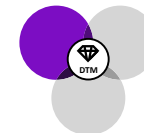
## Product Innovation

Applied intelligence strategies to accelerate innovation

Business model innovation enabled by smart, connected products

Strategic portfolio optimization

**Ecosystem strategy, development, integration and optimization**



## Markets

Market driven product features/functions/attributes

Customer experience lifecycle analysis

Competitor insights

Innovative pricing/commercial structures, price sensitivity analytics

Marketing strategies to influence customer demand

# Communicating across the enterprise: With a single source of truth for product cost decisions

	IDEA GENERATION	COST REDUCTION IDEA VALIDATION	IMPLEMENTATION PLANNING	DESIGN CHANGE APPROVAL	DESIGN CHANGE IMPLEMENTATION	PROGRESS TRACKING
	Competitive Teardowns	Expert Engineering Review	Project Team & Charter	Revised Business Case	Updates to Product Data: Designs, CAD Models, BOMs	Monitoring & Reporting of Impacted PNL Items
	Make Vs Buy	Initial Feasibility Check	Roles & Responsibilities	Prototype / Sample Testing	Procurement Contracts	Tracking of Results of Individual DTV Initiatives
	Sourcing	Virtual Testing	Feasible Timeline	Cross-functional Buy-in	Logistics & Supply Chain Integration	Tracking of Consolidated Results from DTV Program
	Price Benchmarks	Quality Impact	Additional Inputs to Cost and Benefit calculations		Aftersales Support & Services Sync	Periodic Readouts To Leadership
	VA/VE	Risk Analysis	Expected Impact on PNL		Savings Targets	
<b>Eng</b>	✓✓✓✓✓	✓✓✓	✓✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓	✓
<b>Mfg</b>	✓✓✓	✓✓✓	✓✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓	✓
<b>Qual</b>	✓	✓✓✓	✓✓✓✓✓	✓✓✓✓✓	✓	✓
<b>Mkt</b>	✓	✓✓✓	✓✓	✓✓	✓	✓
<b>Proc</b>	✓✓✓✓	✓✓✓	✓✓✓✓✓	✓✓	✓✓✓	✓✓✓
<b>Fin</b>	✓	✓✓✓	✓✓	✓✓✓✓✓	✓✓	✓✓✓✓✓

# The Digital Thread: Leveraging a connected ecosystem of tools throughout the entire lifecycle

The Digital Twin: Single Source of Truth for Cost



# aPriori

## Protecting & Expanding Margins

**Craig J. McLeod**

Senior Sales Director, Global Automotive Business, aPriori

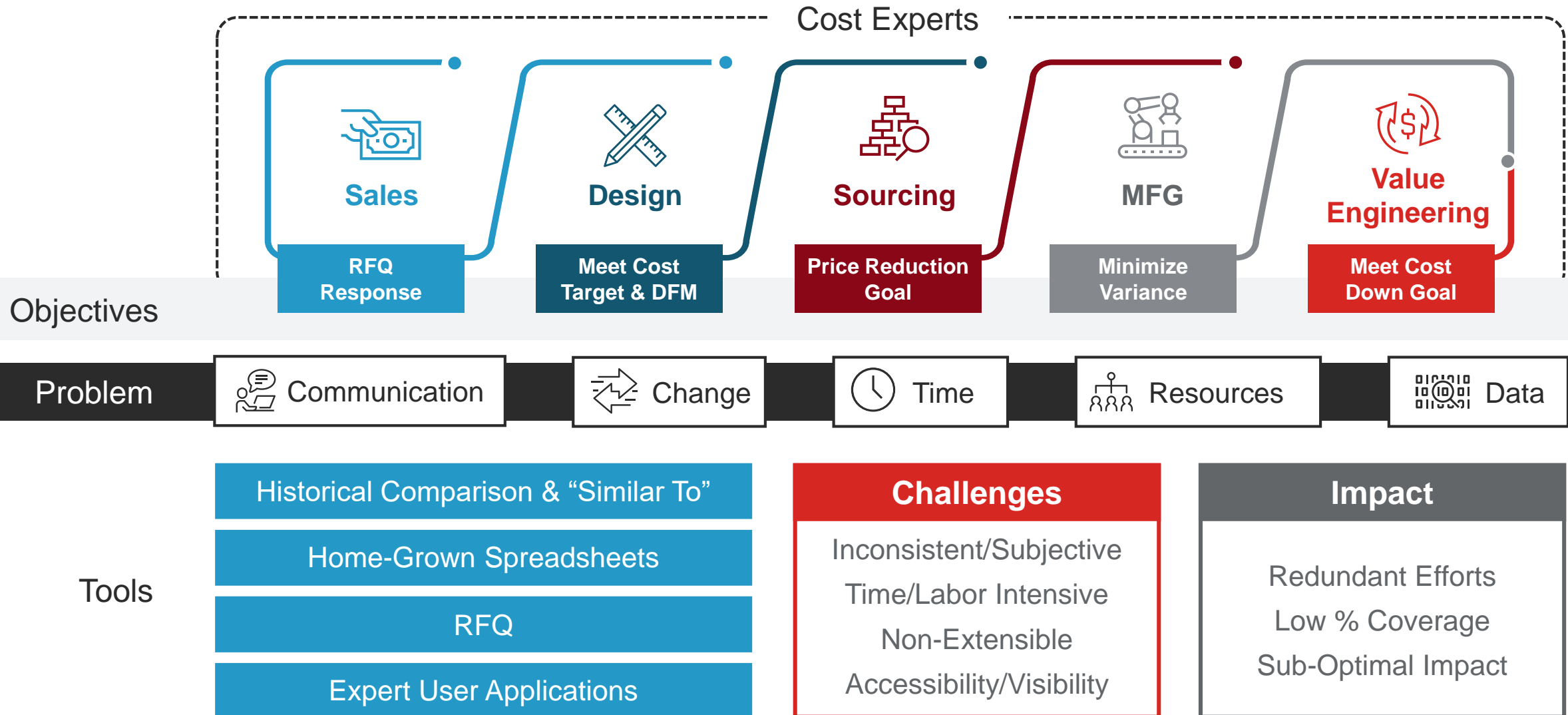


# Unprecedented Change in Automotive

- ACES – Autonomous, Connected, Electrified, and Shared
- New consumers and new employees
  - Demand technology and rapid results
- No diesels in Europe and more diesels in the US
  - New CO2 Standards – “Automobile” Jan 4, 2020”
- Supply Chains – some are broken and gone
- Co-Opetition
- Global Pandemics - New and Unpredictable Changes
  - “Similar to the mortgage collapse of 2008-9” – Forbes – April 2020

***Unprecedented Change is the only constant!!***

# Today's Challenges with Managing Change and Margin



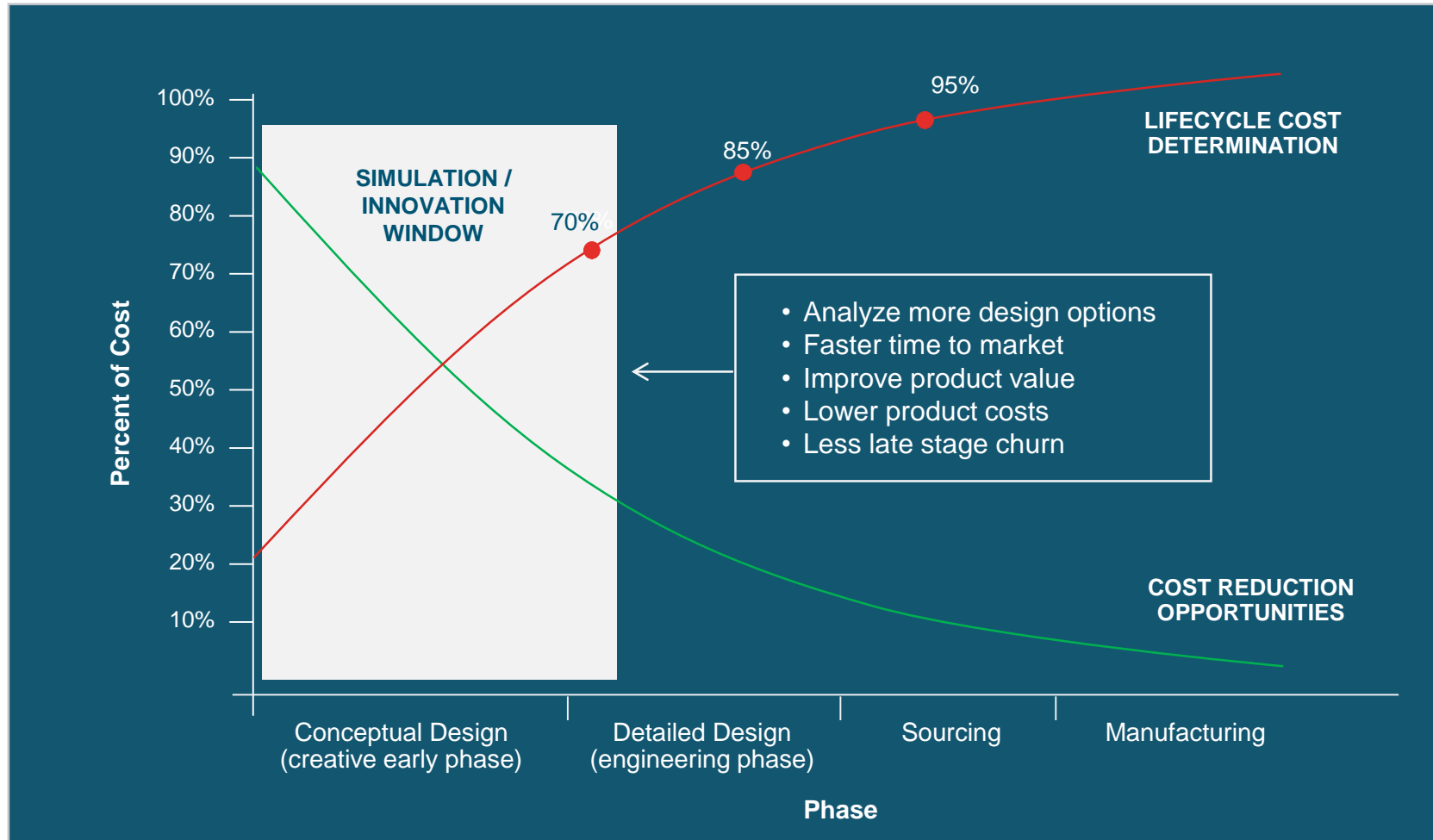


# The Key to Understanding Change and Managing Margins is the Ability to Simulate...



# Simulating Manufacturing is Key to Managing Change and Margin

## “Simulation Driven Costing”



Integration of aPriori with NVH, FEA, and CFD tools to simultaneously optimize on cost, weight and performance.

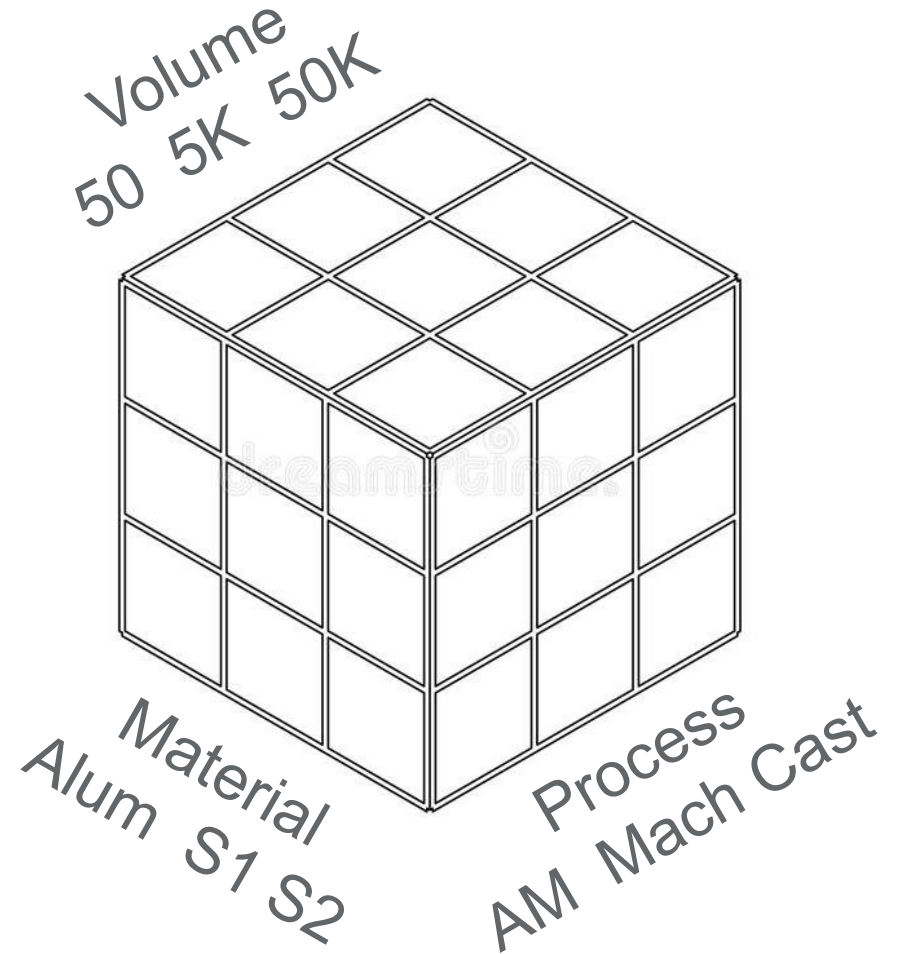


# Simulating Manufacturing is Essential to Understanding Change and Managing Margin

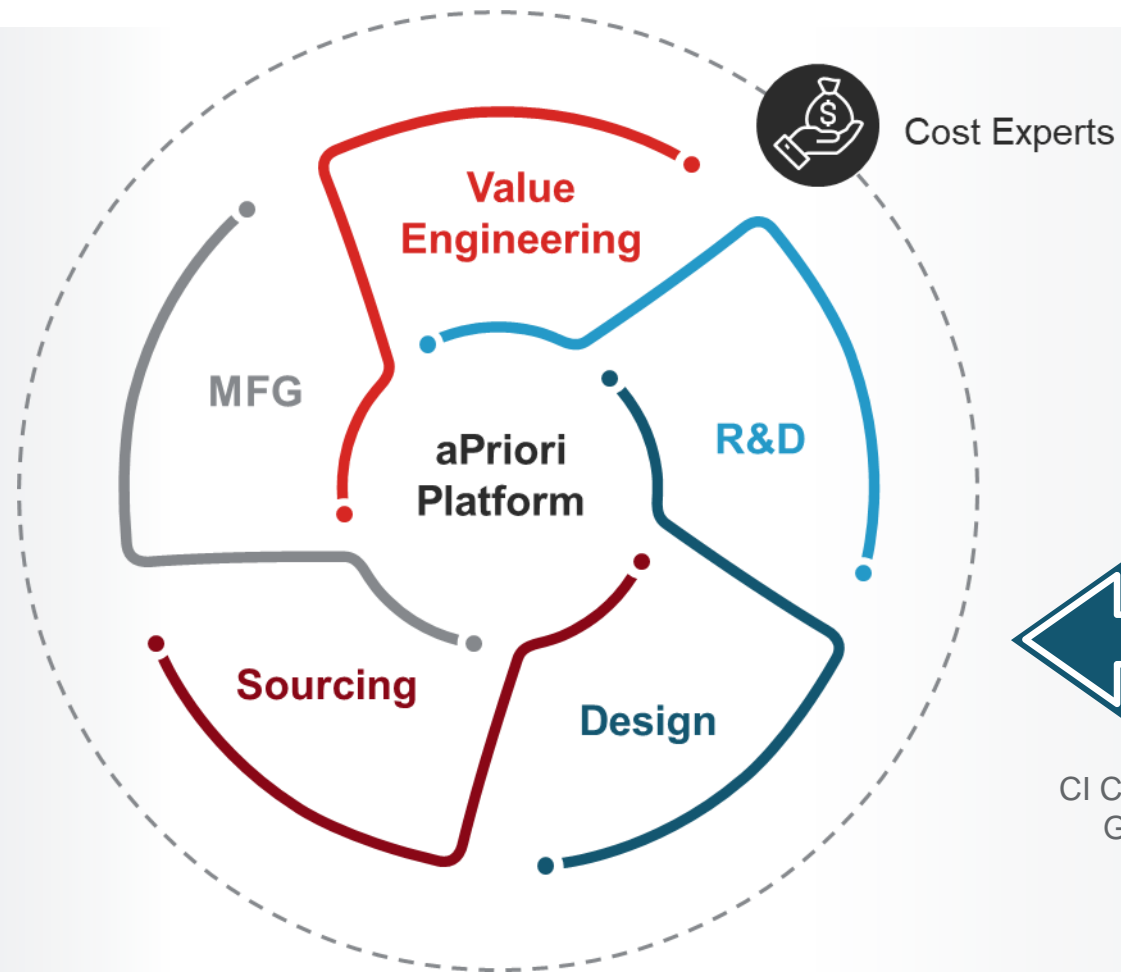
Simulation is the BEST method to:

- Understand cost of changes
- Consider manufacturability issues
- Understand margin impact

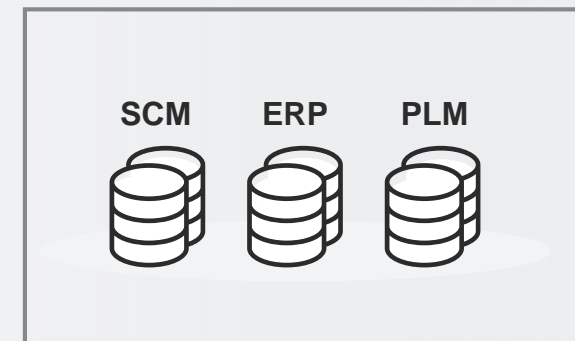
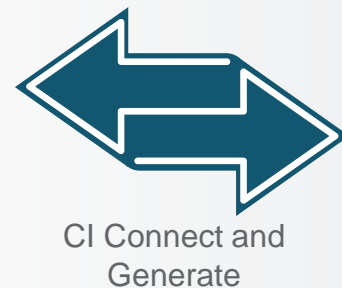
For sourcing, this matrix could be supplier, location, and process.



# aPriori: Platform for Collaboration and Simulation



- Centralized Platform for Simulation of Cost and Manufacturability
- Supports users across the globe
- Supports application of learnings from previous models
- Supports collaboration from R&D to MFG



# Design Cost Analysis to Drive Margin

“What if you could...?”



**Highlight the most expensive manufacturing features on your CAD model**, then re-evaluate the cost of tradeoff decisions to reduce cost in real-time?



**Explore 3-5X more cost saving design alternatives** in the same amount of time or less?



**Reduce late stage design churn** by getting it right the first time?

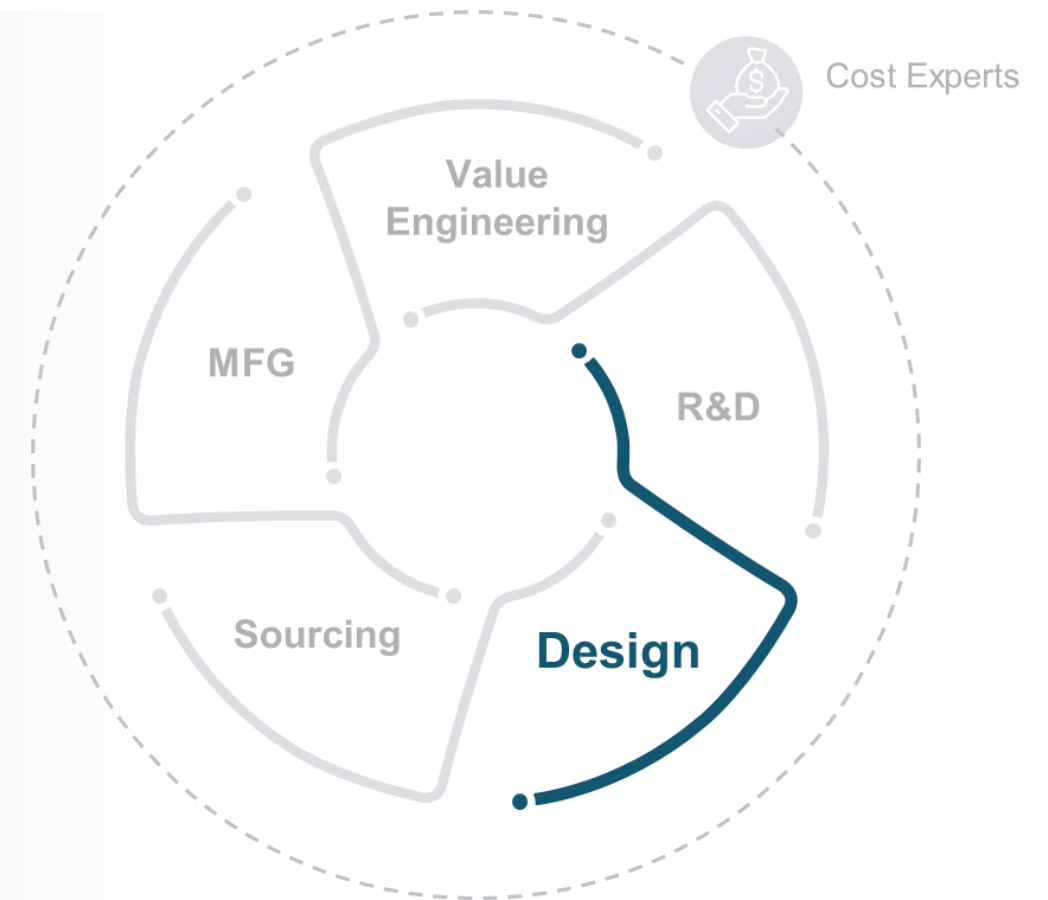


**Eliminate time spent waiting for quotes** to come back from purchasing or your suppliers

# Design Cost Analysis Results

Reduce product cost by 5 - 10% during the design stage alone.

- Enable fact-based discussions that fosters culture of cost-conscious behavior between Engineering and Sourcing
- Identify Manufacturability issues Early
- Reduce churn of ECO's
- Achieve Design to Cost Targets
- Forecast New Product Cost
- Reduce Time to Market



# Should Cost Analysis to Drive Margin

“What if you could...?”



**Identify where you are being overcharged by your suppliers**, potentially savings hundreds of thousands, even millions of dollars?



**Equip your sourcing team with highly detailed should cost estimates** that illustrate the most cost-efficient way to manufacture a product?

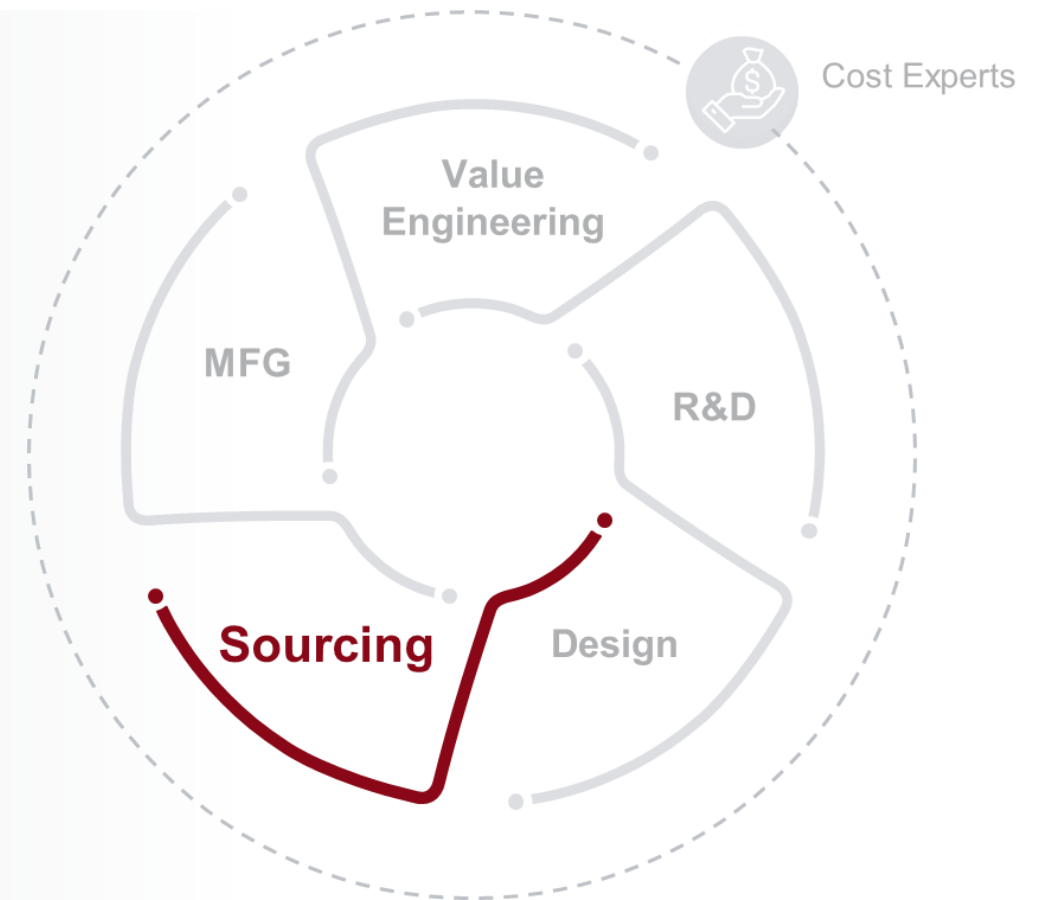


**Dramatically simplify sourcing tradeoff analysis**, enabling comparison of cost to manufacture a product in one region versus another, one supplier vs another, a higher volume vs a lower volume?

# Sourcing Strategies & Benefits

Achieve a 3 - 5% reduction in annual spend.

- Perform Should Cost Analysis
- Execute Outlier Analysis
- Drive More Informed Negotiation
- Analyze Greater Percent of Buy





# Leading Global Manufacturers using EPCM



# Design / Engineering Case Study

*T1 Infotainment and ADAS Supplier*



**Goals:** Build a Design-to-Cost focus & culture. Integrate cost control into the development process – must include a view into manufacturing processes.

## Results Achieved:

- Utilizing a CAD-to-cost flow to generate first results – cost engineers then apply their expertise to refine results.
- Design alternative studies; codification of design best practices; cost rigor in design reviews.
- Tie together of design choices & mfg/cost impacts, e.g., plastic part wall thickness drive cycle time which drives cost!.

# Sourcing Case Study

*T1 Powertrain Supplier*



**Goals:** Improve time and effort to cost changes on sourced parts.  
Replacing manual Excel based system that was slow and not repeatable.

## Results Achieved:

- While running over \$400M in spend through aPriori, resulted in over \$30M in savings through more fact-based negotiations with suppliers - 7.5% margin improvement.
- Uncovered real savings when suppliers were asking for price increases from changes in materials.
- Expanded team and solution to cost more parts and standardize on one tool.

# aPriori

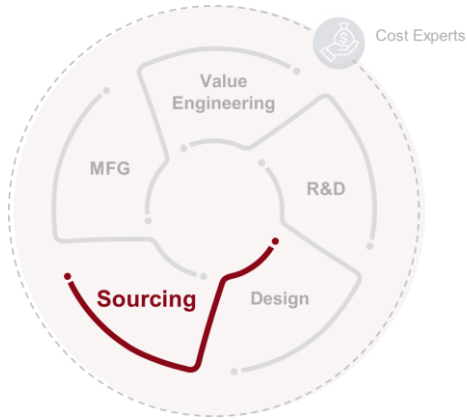
## Strategies & Solution Review

**Bill Grieves**

Application Engineer, aPriori

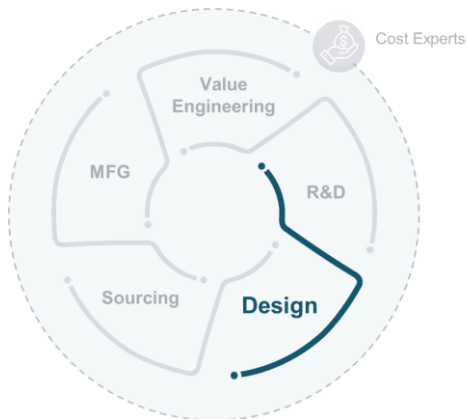


# Short Demo | Key Strategies & Solutions



## Process for Sourcing

- View visibility of cycle time and detail of should costs
- See change to costs based on supplier inputs
- Address onshoring – *currently a very relevant topic*
- Access CI Reporting for Sourcing

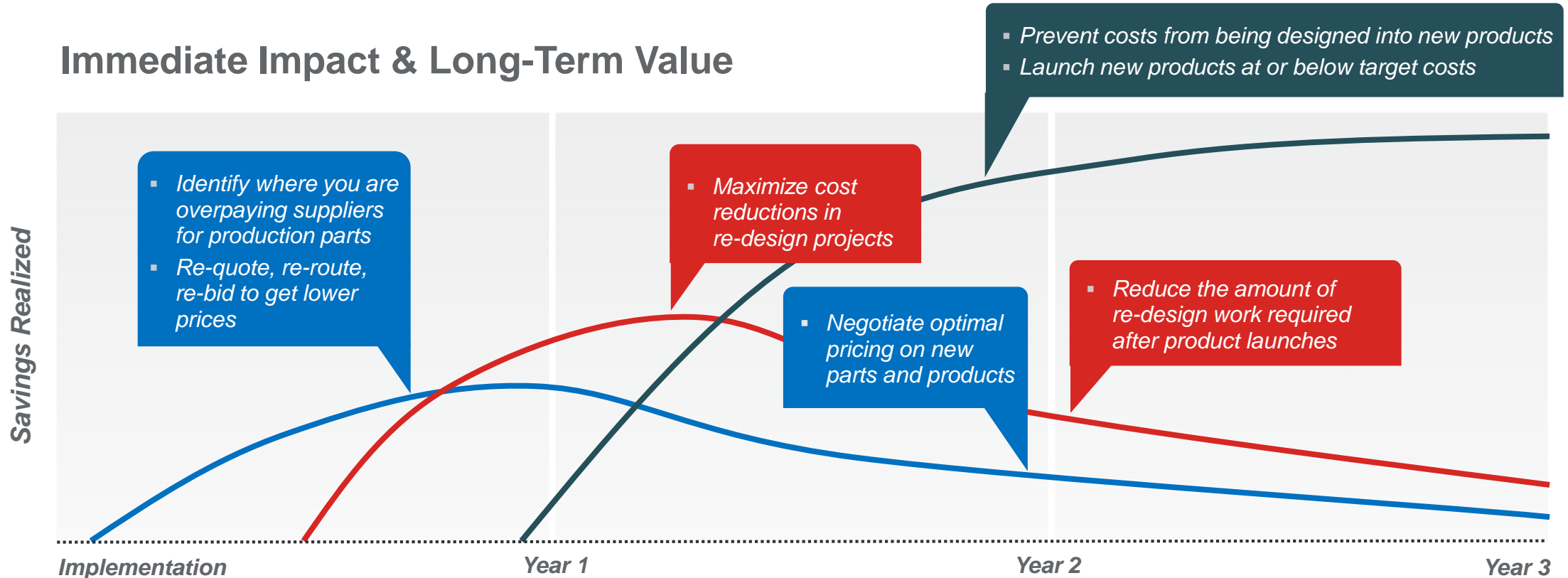


## Process for Design / Engineering

- View connection to CAD and change costs
- See how to eliminate need to re-quote
- Consider engineering alternatives
- Access CI Reporting for Engineering

# Industry Leaders Find Value in Three Main Areas

## Immediate Impact & Long-Term Value



- Identify where you are overpaying suppliers for production parts
- Re-quote, re-route, re-bid to get lower prices

- Maximize cost reductions in re-design projects

- Negotiate optimal pricing on new parts and products

- Prevent costs from being designed into new products
- Launch new products at or below target costs

- Reduce the amount of re-design work required after product launches

■ Sourcing / Supply Chain: 3-5% Typical Savings Realized

■ Re-Design: 3-5% Typical Savings Realized

■ NPI: 5-10% Typical Savings Realized

# The Key to Understanding Change and Managing Margins is the Ability to Simulate...



# Wrap Up | The Time is Now

- Unprecedented Change is the only constant!!
- We understand these are VERY challenging times, but industry leaders are telling us that protecting and expanding margins are more important than ever.
- NOW is a great time to consider these types of technologies.
- Simulation and collaboration are critical to protecting and expanding margins, now more than ever.



**aPriori | accenture | Automotive News**

***Thank you!***

**Scott Ellsworth, Accenture**

[scott.ellsworth@accenture.com](mailto:scott.ellsworth@accenture.com) | 734-272-9508

**Craig J. McLeod, aPriori**

[cmcleod@apriori.com](mailto:cmcleod@apriori.com) | 248-613-2347



# THANK YOU

The recorded webinar will be available for 12 months at [www.autonews.com/powertraining](http://www.autonews.com/powertraining).

You will receive an e-mail when it is available.

Email additional comments/questions to [powertraining@autonews.com](mailto:powertraining@autonews.com).