



## COMPLIANT MECHANISM DESIGN & ENGINEERING

Imagine a 20-60% drop in your manufacturing costs. The science of Compliant Mechanism can achieve a big reduction in your manufacturing and production costs. It is also the most ergonomic form or process engineering pathway AI can mathematically design.



## Stuck with the limitations in traditional Mechanical Engineering designs? Let us welcome you to the world of COMPLIANT MECHANISM Designs

WHAT IS IT?

Compliant mechanisms use **elastic body deformation** to transfer an input force or displacement to another point. Essentially, it is the use of part flexibility instead of rigid parts connected with pins.

**Example :** Vice Grip plier - reducing parts and simplifying design



Traditional Rigid body  
Vice Grip Plier



Compliant Mechanism  
Vice Grip Plier

WHY CHANGE?

### For your Existing Designs:

Reduce Production and  
Manufacturing Costs



Simpler  
Production Process



Lower  
Manufacturing Cost



Improved  
Durability

Compliant Designs provide many  
ways to reduce Manufacturing  
Costs



Reduced Maintenance  
Costs



Increased  
Portability

And... **Design  
change Flexibility -  
adapt to market  
changes**

**And when your design team is stuck  
due to new challenges:**

Compliant Methods may provide the  
**ONLY** way to the design where no  
one has designed before

**Increase Revenue with new...**



Where Precise Motion  
is a Design  
Requirement



Where Space is  
Limited - Miniaturize



Where Component  
Weight is a Liability



Where Mechanism  
Noise is a Constraint



Uninterrupted &  
Improved Performance

COST REDUCTION

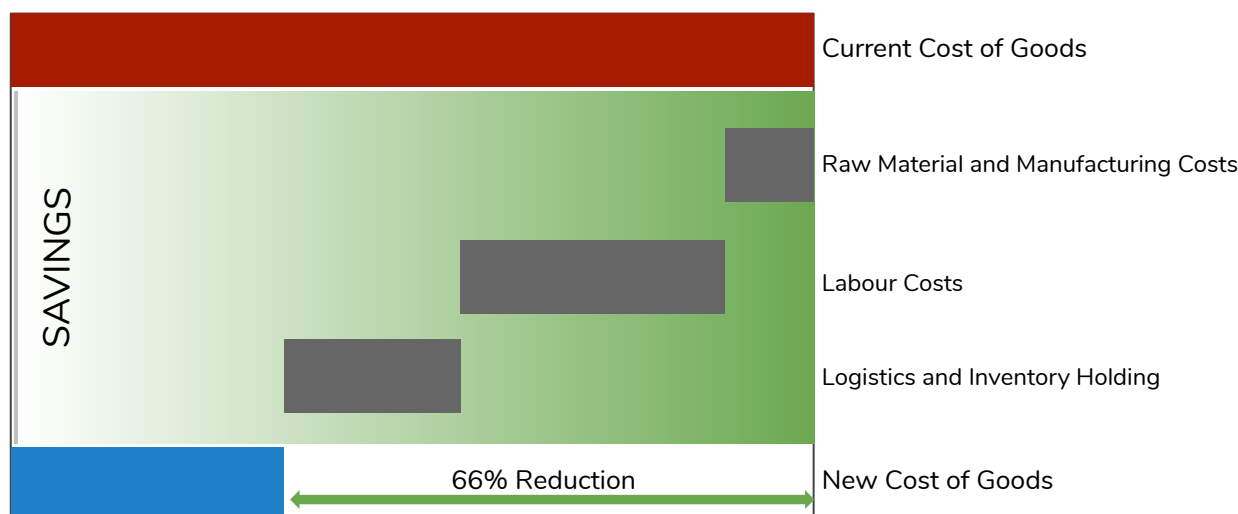
INCREASED REVENUE

# Discover the ROI and the risk profile when your production process gets ergonomic perfection.

Compliant Mechanism is changing production engineering in the same way that Artificial Intelligence changed Computer Science. Those who adopt Compliant Mechanism as their production strategy will have the least-cost manufacturing process and rule the market.

Write to us at [consult@cmdelabs.com](mailto:consult@cmdelabs.com).

## The True Cost of Status Quo in Mechanical Design & Manufacturing



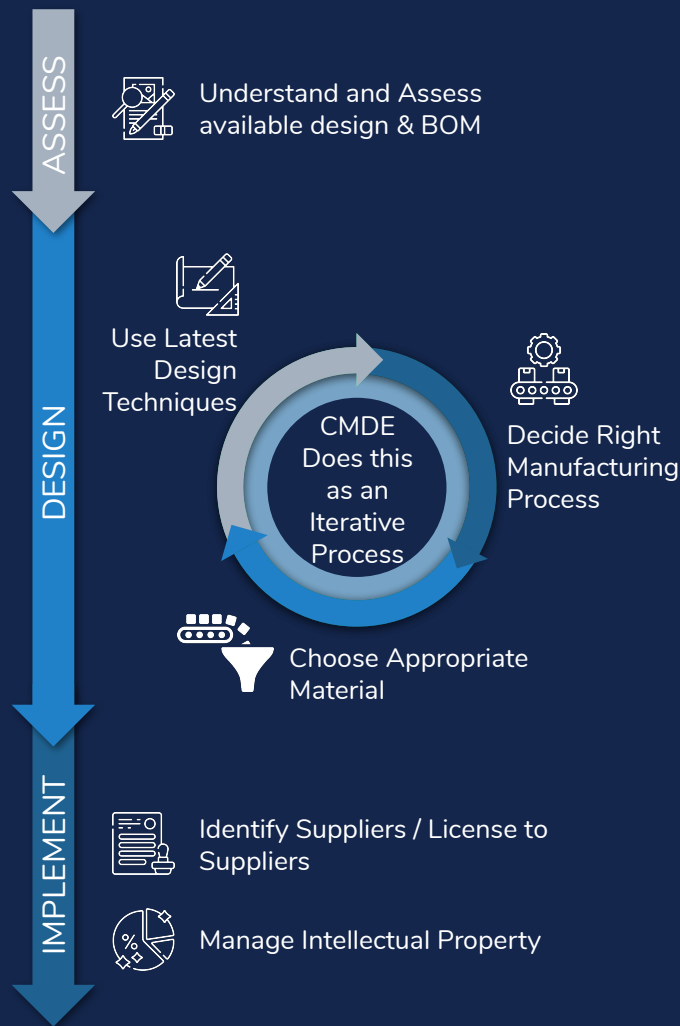
*\*From a published example of windshield wipers. Total market size 8.5B\$ in 2019. For more details on this and how your company can benefit contact [www.cmdelabs.com](http://www.cmdelabs.com)*

## Companies are rapidly adopting the transformation and changing the status quo.

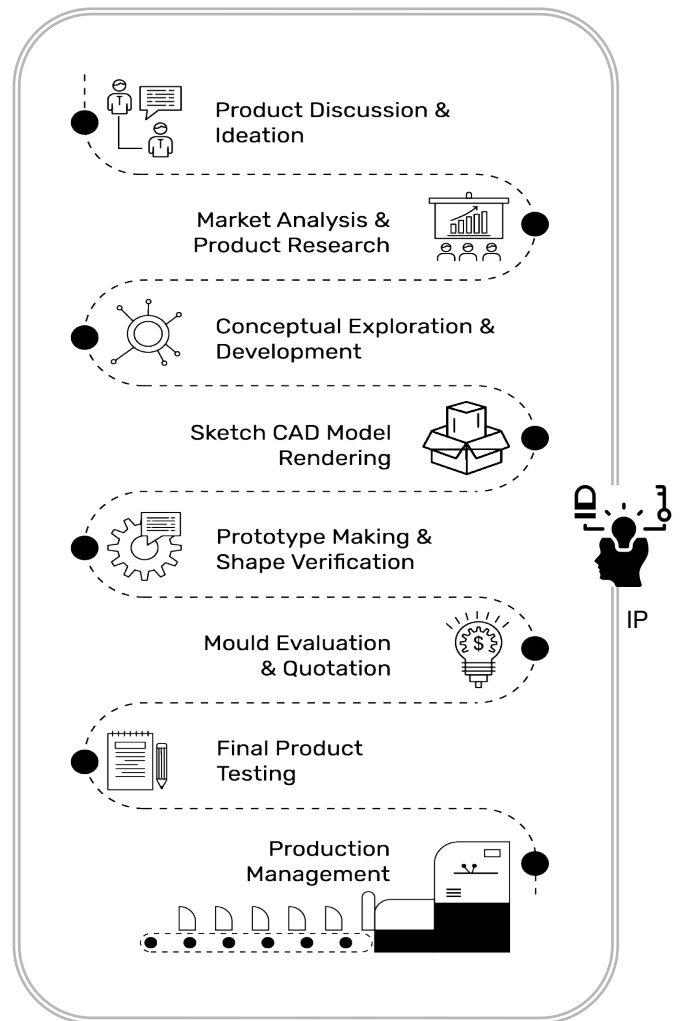
Many leading companies can now afford Compliant Design because of the optimum cost model offered by CMDE Labs. Find out how you can easily fit non-disruptive analysis within your budget. Industry experts who have managed some of the most complex supply chains and manufacturing units shall help your team.

Contact us to schedule a call with an expert.

## Our end-to-end Design and Support Process



## Complete Project Management, Planning and Strategy



Ability to affect choice of Design, Material, Suppliers and Manufacturing methods is the only option for maximizing cost savings -

CMDE gives YOU the ability to do that!

**Shantonu Ray**

Managing Partner



**Mangesh Mahajan**

Managing Partner



# Examples of Compliant Mechanisms Designs in Automotive Industry

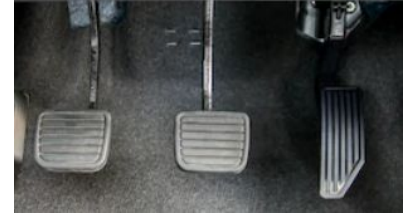
## PASSENGER ERGONOMICS



Seats



Steering Wheel



Pedals

## SUSPENSION SYSTEM



Tyres



Springs



Shock Absorbers



Arms



Linkages



Bushing and Joints

## DRIVING SAFETY



Wipers



Bumper



Mirrors

Contact us to schedule a call with an expert.