What Indian Companies Are Paying to Automate in Their CAD Workflows

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Topic	CAD automation business case and use cases in India

The real scope of CAD automation in India — from drawing generation to product configurators — and why engineers who can build these tools earn 5x more

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Most mechanical engineers in India know their CAD tool well. Very few know it has an API. That gap is where companies are losing time and money right now — and where the engineers who figure it out are building serious career leverage.

This guide covers two things. Why companies are desperate for automation inside their CAD workflows. And what they are actually paying to automate. Not theory. Specific use cases, specific tools, specific results.

The Real Cost of Manual CAD Work

For a manufacturer producing engineered-to-order products, the manual creation of 2D production drawings from 3D models consumes 30 to 50 percent of total engineering time. Every product variation means a fresh drawing. Every revision means starting again. For a team handling 20 to 30 custom orders a week, this is not a minor inefficiency. It is most of the job.

Each preventable drawing error costs between Rs 12,500 and Rs 42,000 to fix. Mislabeled dimensions, wrong title block data, incorrect BOM entries. In teams running manual processes these happen weekly.

> 💡 India's manufacturing sector added over USD 50 billion in new plant and facility announcements in 2024 to 2025. Every new facility means more design output required from the same size engineering team. The pressure on design departments is not going away.

That is why companies are not just buying more CAD licenses. They are looking for engineers who can make CAD do more. There is a difference between using a tool and being able to extend it. The second type of engineer is the one being hired right now.

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5 Things Companies Are Actually Automating Right Now

Across automotive, AEC, and industrial manufacturing in India, five automation types come up consistently. These are not experimental pilots. They are being built, bought, and used in production environments.

1. Automated Drawing Generation

A 3D model exists in SolidWorks or Inventor. The engineer needs 2D production drawings with the correct views, title block data, dimensions, and tolerances. Done manually, a complex part takes two to four hours per drawing. Automated, the same drawing generates in under two minutes.

The SolidWorks API and Inventor API both support this directly. AutoCAD handles it for 2D-native workflows through its ObjectARX and .NET API. This is the most common starting point for teams new to CAD automation because the time saving is immediate and easy to measure.

2. BOM Automation

A Bill of Materials built manually means someone reading a 3D assembly and typing part numbers, quantities, and material specs into a spreadsheet. Miss

one component and the production run is wrong. With BOM automation, the CAD model itself becomes the source of truth.

The script reads the assembly structure from SolidWorks or Revit and generates a structured output. That output connects directly to ERP or PLM. No manual entry. No missed parts. No version mismatch between the model and the document.

3. Parametric Design and Variant Generation

A manufacturer producing custom steel frames in 10 standard sizes needs 10 different drawing sets. Without automation, every time a standard changes that is 10 manual updates across every affected drawing. With parametric automation, an engineer enters the dimensions. The geometry updates. The drawings regenerate. The BOM updates. One change propagates to everything downstream.

> 💡 DriveWorks, which runs on top of SolidWorks, is specifically designed for this. DriveWorks appointed a dedicated Technical Territory Manager for India in 2024. Their resellers now operate in Chennai, Coimbatore, and Trichy. The India market for this category is formalising.

4. Product Configurators

A step up from parametric design. Here, the customer or sales team enters inputs through a web interface or internal tool. Those inputs drive the CAD model. The model generates the drawings. The drawings go to production. The BOM feeds the quote.

What used to take an engineering team two to three days now takes under thirty minutes. Companies in industrial equipment, custom fabrication, and specialty manufacturing are buying these systems. The engineers who build them are using the SolidWorks API, Revit API, and Autodesk Platform Services together. Indian firms including HitechDigital, Neilsoft, and EGS India already offer this as a service to manufacturers.

🔥 A product configurator is not just a productivity tool. It is a product. Engineering companies pay serious money for a system that connects CAD to their sales and production workflows. The engineer who can build one does not need to compete on hourly rates.

5. Drawing QA and Standards Enforcement

Every engineering company has drawing standards. Not every engineer follows them consistently. A Drawing QA checker is a script that audits every drawing before it leaves the engineering department. It checks title block completeness, view placement, dimension style, layer naming, and any company-specific rule.

Built on the AutoCAD API or SolidWorks API, this runs in seconds across an entire drawing package. For a team releasing 50 drawings a week, catching errors before they reach production removes a category of rework cost that compounds every month.

The Part Most Engineers Do Not See

The five types above look like internal productivity tools. They are. But they are also something bigger.

India now has over 2,100 Global Capability Centres as of 2025. Fifty new ones opened in just the first half of the year. Industry analysts describe Pune as a Centre of Excellence in design automation and Industry 4.0. Bangalore, Hyderabad, and Chennai are all growing engineering design centres doing CAD, PLM, and automation work for global clients.

These centres are not looking for engineers who can model parts. They need engineers who can build the tools that make modelling faster, more consistent, and more scalable. Addverb in Bangalore is actively hiring CAD Automation Developers requiring C#, .NET, and AutoCAD API skills. Roboclick Infotech in Hyderabad is hiring for the same skills from 2024 and 2025 graduates. Accenture is hiring mechanical design engineers with CAD automation skills in Chennai.

✅ The salary data confirms this. A standard CAD engineer in India averages Rs 3.6 LPA. A CAD automation engineer with API and C# skills averages Rs 19 LPA according to 6figr. That gap is not closing. It is widening as demand outpaces supply.

Where to Start

Most engineers start with drawing generation or BOM automation. These have the clearest return on time and require the least setup to demonstrate value. If you are using SolidWorks, the SolidWorks API is included in your existing license. If you are using AutoCAD, the AutoCAD .NET API is part of the standard install. Revit is the same.

The language for all three is C# with .NET. Not Python. Not LISP. C# is what connects directly to the SolidWorks API, AutoCAD ObjectARX, and Revit API. Learn it once and you can automate across all three platforms.

🎯 Pick one pain point your team has right now. A drawing that takes too long to create. A BOM that always has errors. A title block nobody fills in consistently. That is your first automation project. Build it. Show your team. That first tool is the career move.

🚀 Ready to build your first CAD automation tool? I teach C#, SolidWorks API, AutoCAD API, and Revit API from scratch — for engineers with no coding background. Start at scriptedcad.com