

## SITUATION

Hargovind Bajaj R&D Centre is the research and development wing of Lohia Starlinger Limited (LSL), a flagship company of the Rs 100 crores (\$24M U.S.) Lohia Group. Located in Kanpur, India, LSL is India's largest manufacturer of industrial machinery for the woven sack industry. LSL had been using 2D-based software for more than five years, doing mainly 2D drafting. Due to increasing competition and to meet customer demands, LSL needed to launch higher quality, new products much faster. To accomplish this, LSL wanted to migrate to a fully integrated, 3D-based software package that would support its needs from design through manufacturing.

## OBJECTIVES

- ✓ Implement integrated 3D CAD/CAM/CAE software that would:
  - Reduce the design process time by 40%.
  - Eliminate assembly interference and tolerance-related problems.
  - Analyze the machine tool components for field failures, and then optimize the designs.
  - Reduce the number of prototypes per design from three to one.
- ✓ Migrate from 2D to 3D design thereby standardizing the company's family of parts.



## PROCESS VISION

Use the same integrated 3D software for design, analysis, drafting and manufacturing in a concurrent engineering environment.

## ACTIONS

- ✓ After evaluating different software products, LSL chose I-DEAS® for several reasons, including:
  - ease-of-use
  - capabilities for handling large assemblies and advanced assembly analysis
  - tolerance analysis functionality
  - standalone drafting
- ✓ Using DXF and 2D IGES translation capabilities, and with training and support from SDRC, LSL transferred all existing 2D drawings into

**Lohia  
Starlinger  
Forges Ahead  
With I-DEAS®**

*"The pilot project that we undertook was completed in a timeframe which was so short it was way beyond our expectations. And, the experience gained by our people in handling I-DEAS was excellent."*

- Avinash Arora  
General Manager  
Systems & Manufacturing  
Lohia Starlinger Limited



**Get  
There  
Faster®**

## Lohia Starlinger Forges Ahead With I-DEAS

I-DEAS. All drawings are now in I-DEAS and when changes are required, they are made directly in I-DEAS Drafting™.

- ✓ LSL modeled two of the main assemblies (reed ring and shuttle) as a pilot project. They modeled the nine components in the reed ring and 20 components in the shuttle using I-DEAS. All the details of each component were incorporated and assembled into an I-DEAS assembly model.
- ✓ The team performed interference and tolerance analyses, modifying the individual components in I-DEAS to quickly overcome any assembly problems. Because all components are linked through a master model in I-DEAS, other parts and assemblies affected by the modifications were automatically updated by the software.
- ✓ All components were classified into a standard family of components to enable reuse in future designs. Further analysis was performed to identify any failing components and the designs were updated accordingly.
- ✓ The digital model was shown to production and vendor development teams for comments and approval. Once the overall designs were approved, 2D drawings for all the individual components and the assembly were made along with the mass properties, Bill of Materials, etc. No prototypes were required.

### RESULTS

- ✓ Product development time for the assemblies was reduced from the seven days it previously took to three days with I-DEAS. This represents a 60% productivity improvement.
- ✓ By using digital prototypes, physical prototyping was totally eliminated, resulting in a cost savings of 10%.
- ✓ By performing thorough assembly and product analyses, rework was also totally eliminated, bringing an additional 25% savings in time and cost.
- ✓ A standardization of designs enabled the creation of a family of part components, which will reduce the design time on future projects by at least 20%.

### PLANS

Based on the success of this pilot project, LSL plans to expand the usage of I-DEAS in its R&D facility, as well as in all other manufacturing units.

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