# LG Cable & Machinery Pulls into the Lead With I-DEAS™

## SITUATION

LG Cable & Machinery (LGCM), located in Kyounggi-Do, Korea, manufactures air conditioning systems, injection molding systems, agricultural machinery, air compressors, paper machinery, and energy/environment systems. With a large engineering department and well over 100 2D PC CAD seats, LGCM was beginning to experience the limitations of a 2D drawing-based serial engineering process. These limitations occurred when handling large complicated design projects that involved numerous parts, when managing data across teams of engineers, and when utilizing analysis within the design cycle. LGCM felt they had outgrown their existing system (a popular and widely used 2D CAD system) and needed to incorporate solid modeling into their engineering process.

## OBJECTIVES

LGCM needed to:

- ✔ Improve product reliability.
- ✔ Reduce prototyping costs.
- ✔ Cut time-to-market.

## PROCESS VISION

- ✔ Use 3D solids for design.
- ✔ Use CAE analysis and simulation in order to improve product reliability.
- ✔ Perform all product development under a concurrent engineering environment.

## ACTIONS

- ✔ Using a 2D serial engineering process limited LGCM in developing products. Frequent trial and error increased both cost and time of product development.
- ✔ After benchmarking the leading solid modeling products, LGCM selected I-DEAS™ as the standard tool for 3D CAD in 1995. I-DEAS offered LGCM an environment that supported concurrent engineering and real-time analysis prior to prototyping.
- ✔ By focusing initially on two specific new engineering projects for agricultural machinery, LGCM was able to introduce solid modeling in a phased manner into their engineering process. One of these new projects was a new tractor for the Korean marketplace.
- ✔ Using the integrated CAD and CAE tools provided by I-DEAS Master Series™, LGCM was able to perform CAE simulation on solids during the design process and to utilize the CAE results to further refine and improve the overall design of various parts within the new tractor.

*"I-DEAS Master Series and its concurrent engineering environment helped our company achieve Number 1 share of the tractor market in 1997."*

- Phil-Joong Chung
Senior Research Engineer

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## RESULTS

✔ On the new tractor project, LGCM was able to successfully transition their engineers from their existing, drawing-centric, serial engineering process to a solids-based concurrent engineering process with I-DEAS Master Series.

✔ LGCM validated the benefits of using a solids-based CAD tool for their product development environment.

✔ Using I-DEAS, LGCM has dramatically reduced product development time for the new tractor over previous product development times.

✔ I-DEAS simulation software improved product quality such that less trials and less prototypes were required, substantially reducing development cost.

## PLANS

Based on the success of their initial engineering project with solids, LGCM is aggressively moving forward on their 3- to 4-year plan to transition their remaining 2D CAD seats to I-DEAS Master Series. LGCM also plans on strengthening the competitiveness of all their products in the global market through more innovation within their product development process. They have started building an engineering database in order to realize an ERP environment that will make them a leading company in the Environment/Ventilation/Industrial Machine sector.



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