SAMSUNG DIGS INTO NEW MARKET

SITUATION

Samsung Heavy Industries is a leading supplier of construction machines such as hydraulic excavators and wheeled loaders. Although it has had a manufacturing site in the United Kingdom since 1995, all design work was traditionally done in Korea. The design department, operating at such a distance, was having increasing difficulty understanding the needs of the European market. At the same time, research indicated that Samsung could grow its market share in Europe if it was able to adapt the performance, appearance, and safety requirements of its products to meet European demand. To address these issues, the company decided to establish a new design center at the UK manufacturing site. The first order of business in setting up the new design center was to select the CAD/CAM/CAE software that would allow Samsung to meet customer needs and speed time to market.

OBJECTIVES

✔ Select and implement an engineering solution that will enable the company to leverage legacy data and generate electronic prototypes early in the process to obtain feedback and direction from customers and managers and, equally important, enable analysis to proceed concurrently with design refinement.

✔ Prove the new system in the design of a range of excavators and wheeled loaders specifically for the European market.

✔ Enhance the design appeal and ensure ease of maintenance.

✔ Bring these products to market within six to 12 months, compared to the 24 months that it would normally take.

✔ Reduce the cost of production.

✔ Take advantage of market potential and double existing sales figures within one year.

PROCESS VISION

✔ Utilize legacy data from the design center in Korea to modify existing designs quickly.

✔ Create new designs easily.

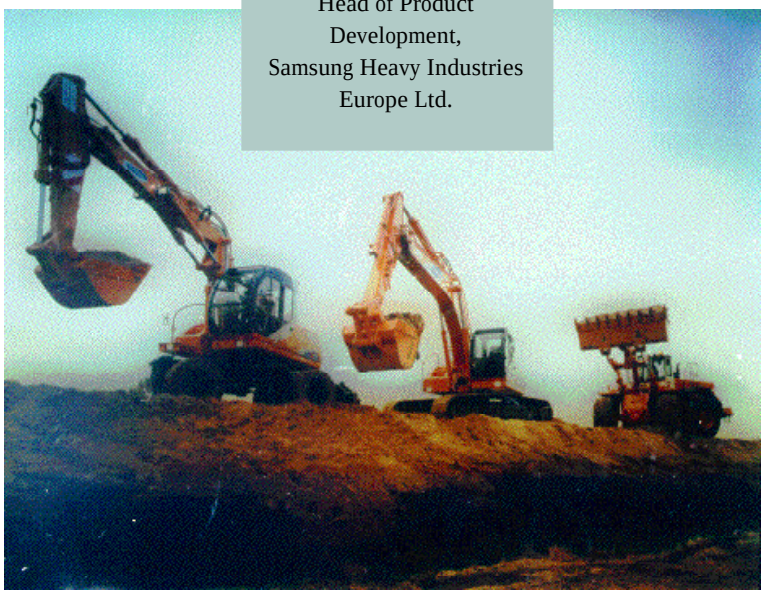
✔ Conduct analysis early in the development cycle, thereby reducing the number of prototypes and the amount of physical testing needed.

ACTIONS

✔ After reviewing a variety of CAD/CAM/CAE solutions, Samsung chose I-DEAS Master Series™ software for its integrated analysis and data sharing capabilities, and for its easy user interface which would facilitate quick learning and efficient operation. It then quickly put it to the test.

"SDRC I-DEAS® software has enabled Samsung Heavy Industries to quickly establish an effective product and development process in Europe with a strong design and analysis capability. On our first major project, we achieved a schedule saving of 75% compared to our previous timescales."

-Tom Graham,
Head of Product Development,
Samsung Heavy Industries Europe Ltd.



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✔ Samsung design engineers began by importing data received from Korea directly into Master Series™ software. They then explored ways of using standard components and simplifying other components to reduce the cost of production.

✔ Using the integrated analysis capabilities of Master Series, the development engineers began structural and kinematics testing on the 3D models at the same time as the design was being refined.

✔ Samsung communicated with toolmakers working on the project using the 3D model data directly, or generating 2D drawings from the model data, depending on the specific requirements of the toolmaker. 3D information was also supplied directly to the production department within Samsung, eliminating the need to convert 2D drawing information back to 3D for manufacturing.

RESULTS

✔ The first product in the range, the SE130W excavator, was completed (concept design to finished product) within the target six-month schedule, a 75% saving on the previous timescale of two years. The first fully working model was available after three months, with production beginning in the sixth month.

✔ Samsung engineers were able to specify, early in the process, exactly which standard components from previous designs were required, and these could be ordered in the third month of the project. Previously the design had to be completed and drawings produced before engineers could confirm what components would be required.

✔ Also, the redesigned components were kept as simple as possible to limit tooling costs and ensure ease of assembly. As a result manufacturing costs were cut by 5%.

✔ Master Series enabled the company to generate a working prototype early in the process. This was shown at a major industry exhibition in Paris and resulted in the placement of several orders for the new product before manufacturing even began. Within the first few weeks of production Samsung exceeded its target to double sales and reached 250% of former sales.

✔ As most of the tolerance and environmental testing could be performed using the Master Series electronic prototype, only one set of physical prototypes was needed, and physical testing was completed within one month, half the time it took previously.

PLANS

Samsung is consolidating its use of Master Series in the development of new products. It anticipates, that as the European design department grows, it will expand its application of the software.

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