

MEGAHOUSE CORPORATION, TOKYO, JAPAN

Company: MegaHouse
URL: www.MegaHouse.co.jp
Location: Tokyo, Japan
Industry: Developer and manufacturer of high precision figures and toy foods

Challenges

Due to short product life cycles, with many products requiring a high number of parts and detailed surfaces, MegaHouse needed to cut product development time and cost.

Solution

In-house prototyping using the Eden260™ 3-Dimensional Printing System

Results

- Significant reduction in development time
- More accurate die fabrication, reducing post-processing modifications
- Dramatic cut in prototyping cost due to in-house fabrication

The Eden speeds our development cycle because we can move immediately from drafting to model-building and on to verification, with no time-lag

Haruo Oishi
 General Manager
 Development Design
 Department

Realizing efficiency in the design and development process and considerable cutback in the development cost according to the installation of an Eden machine

MegaHouse Boosts Design & Development Efficiency with Eden260™

Tokyo-based MegaHouse develops and manufactures high-precision figures and toy foods targeted to both adults and children. Because the company serves a wide range of customers and its products often comprise many finely detailed parts and usually have short life cycles, MegaHouse works hard to streamline development. To reduce costs and speed time to market, MegaHouse has focused on improving the efficiency of its design process. It installed 3-D CAD tools and attempted to cut development costs by enhancing its die fabrication process. MegaHouse subcontracted prototyping and created just one prototype for each product. Consequently, preliminary examination according to prototyping was insufficient and design defects were often found after the die was fabricated. The post-process design changes, die modifications and other steps needed to correct the problems extended development time and added extra costs – just the opposite of what MegaHouse needed.

Ease of use and high precision makes Eden260™ a winner

MegaHouse considered its rapid prototyping options and decided that installing an RP system onsite was the best way to reduce prototyping costs, increase access to prototypes, improve design quality and reduce development time. It selected Objet's Eden260™ because the 3-dimensional printing system enabled molding with a high level of precision, supporting their need to verify mechanisms, and because it was easy to use, enabling MegaHouse to create molds with non-expert staff. The strength of Objet's FullCure® materials was another advantage of the Eden260™ as it allowed MegaHouse designers to test the models without fear of damaging them.



Benefits exceed expectations

The Eden260™ proved its value within a very short time, bringing benefits that went far beyond what MegaHouse had expected.

The Eden260™ makes it possible to easily obtain a high-precision prototype in the early stages of conceptual design. This means that design work can now proceed without the delays MegaHouse used to incur while waiting for the service bureau, thus considerably reducing design time. Also, the Eden260™ enables design defects to be found before the die is fabricated, avoiding the post-processing changes that had previously cost MegaHouse so much time and expense. The ability to handle virtually all prototyping in-house has created significant cost savings for MegaHouse. Also, due to the weakness of the material used for the prototypes that were subcontracted, the strength could not be verified until a molded product made with the die was available. Now, with the Eden260™-produced models, product strength and parts fit can be verified during development.

Because it is so easy and cost effective to make models using the Eden260™, the models can be repeatedly and even somewhat roughly handled. This allows

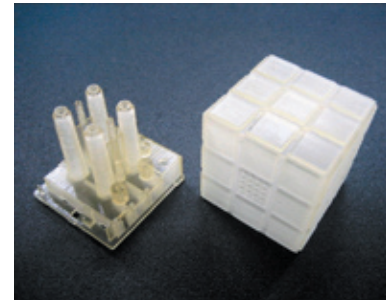
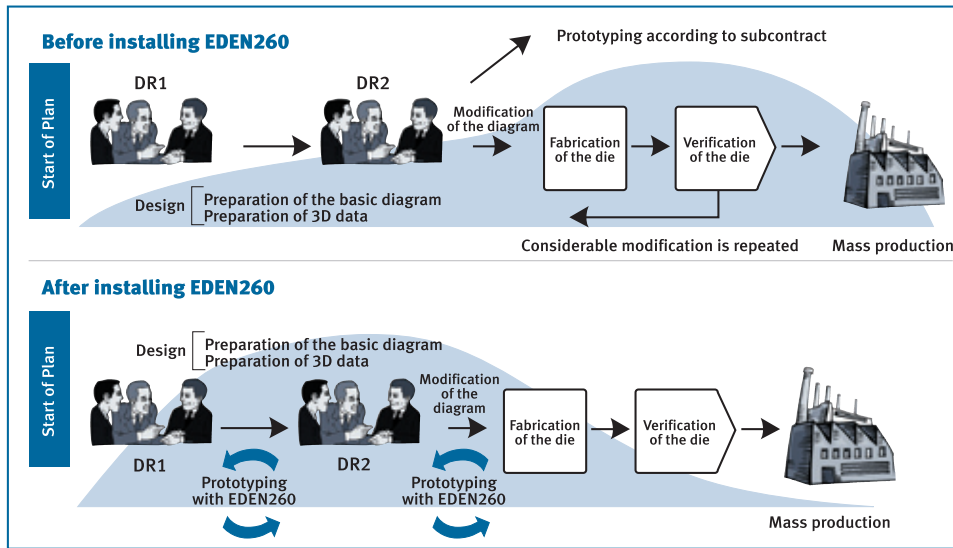


Figure 1: Prototype of an illuminated cube created on the Eden260™

Stylish Rubik's-Cube-shaped plug-in speaker flashes lights to music in your private space!



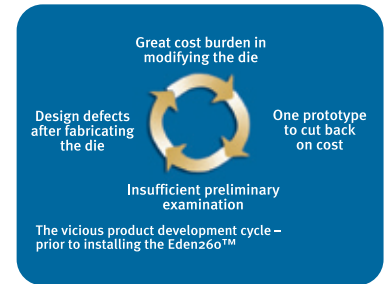
DR1 (Confirmation of the specification) [Plan Design + Customer Production technology Quality assurance] DR2 Examination of the design [Plan Design + Plant Production technology Quality assurance] Image of the resources for design and development

Figure 2: Significant changes in the product development process from before to after installing Eden260™

Sufficient examination was enabled at the upstream of the product development process and big changes in the design at the downstream decreased with the installation of the Eden260™. Reduction in the development period can be achieved

everyone in the design and development team to examine and “play” with them, improving understanding and enabling more effective product verification and quality assurance. This has been particularly noticeable when verifying the constitutional parts.

Even the sales department has benefited from the installation of the Eden260™, as presentation models are now used in sales activities right from the early stages – an important competitive advantage for MegaHouse.



The vicious product development cycle – prior to installing the Eden260™

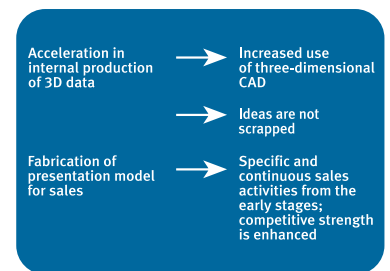


Figure 3: Installation effect + α

Effect of installing Eden260™ was manifested in a manner much greater than what was imagined at the time installation was being studied.

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