

# Rapid Design Generation

**A Singapore-developed software allows the creation of thousands of designs within minutes based on a generic design.**



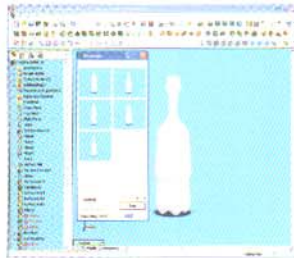
*Bottle designs generated by Genometri's Genoform.*

**G**lobalisation is bringing about the convergence of technologies and manufacturing capabilities. The highly competitive market demands extremely tight and rapid product development cycles. Design is increasingly becoming the main differentiator that determines the success or failure of many products. To make the design process more efficient, a Singapore start-up has created a solution – currently the only design-generation software available – that promises to help companies launch a greater variety of designs within a short time.

Genometri Pte Ltd, a spin-off company from the National University of Singapore (NUS) was established in 2005 by Sivam Krish, an adjunct assistant professor at the Department of Civil Engineering. No stranger to entrepreneurship, he founded Cambridge Gemonics Ltd when he was with the University of Cambridge in England. Genometri received \$300,000 seed funding from NUS Venture Support Fund, \$300,000 from the Singapore Economic Development Board, as well as \$150,000 from private investor B P DeSilva. The start-up is currently being incubated at the NUS Business Incubator.

While teaching at NUS's Department of Architecture, Sivam observed the enormous amount of time students spend exploring design variations – some of which he felt could be automated. He developed and filed a patent for software relating to design generation, one of ten patents he has applied to date. The technology allows the generation of thousands of designs based on a generic design within a few minutes. These designs can be seen in photorealistic quality, allowing companies to conduct market surveys as they can assess the desirability of the designs accurately.

Generative design technology will drastically reduce design development time and allow companies to present a wide range




*A screenshot of Genometri's programme.*

of product possibilities to their customers. Intelligent modelling techniques, on which Genometri's technology is built, will facilitate rapid customisations, allowing the user to modify the design directly. Rapid prototyping technologies are beginning to be used to print these customised designs, speeding up the design cycle. Besides industrial design, the technology can be applied in architecture, two-dimensional (2D) design, colour selection, and animation.

Genometri's generative software Genoform operates on top of computer-aided design (CAD) packages such as SolidWorks, allowing designers and engineers to modify the designs manually at any stage of the design process. This gives an edge to companies exploiting design as a competitive tool in a crowded market. Mero Asia Pacific, a company specialising in architectural glazing, is using Genometri's software to generate thousands of designs of metal fitting for architectural glazing. The firm is using this solution to rapidly customise design online according to the architect's wishes. What before took weeks, now takes less than a few hours. In addition, the architect is able to view the proposed design in an interactive 3D format before approving it.

Future Factories, a British design company, is using this software to generate lamp designs manufactured by rapid prototyping technology. RISIS, a Singapore jewellery and giftware company, is planning to use Genometri's technology in combination with rapid prototyping to design and manufacture jewellery. This technology opens up possibilities for every customer to have a unique piece of jewellery.

Genometri has attracted the interest of major design and manufacturing companies that wish to use its technology to change the way they design. 

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