

Real-time Prototype Development with 3D Printing and VR

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It is very important to create a prototype in the design industry. The design begins as a concept, and then should be made in some form to meet the requirements of the design concerns. Before make production-ready parts, but it should represent a physical version of the idea. That physical version may use as a functional prototype, developing a visual model, creating one to capture user experience or a proof of concept ideas. The traditional way of prototype creations is often used hand formed variety of materials, such as cardboards, clay, paper, Styrofoam, etc. Therefore, traditional prototype creation can take long time to get a model built to specifications. The problem is that the design process has to slow down to accommodate the prototype creation process, and hard to keep more time or money for redesigns and modifications. Another issue of that traditional way is limiting the number of prototypes that can be created.

After introducing 3D printing into the design and engineering industries, the prototyping process has been changed dramatically. It has enhanced the process and reduces the time it takes to get a part from the idea stage to the production stage. Time consuming prototype creation process reduced to hours or days. Not only is the time reduced, but also costs significantly reduced. The reduced time and cost allows designers to work in near real-time, with the design and prototyping functions happening at nearly the same time. Real-time prototyping, with only a few hours separating the design from the prototype, is radically changed the designer's role and work. 3D printers are able to build parts using an ever-increasing number of materials. Those materials range from basic PLA or ABS plastic to carbon fiber and a host of high-strength metals. It powers to create a dozen of prototypes. This speech is focused on real-time prototype development process and its future perspectives. Especially, not only concerning 3D printing is an alternative to traditional manufacturing, the printers themselves have been steadily getting faster and more capable. And the last part of the speech concerns about the role of virtual reality (VR) in the process of prototype developments, assembly guiding and presentations of prototypes.

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