

## Why Model Making is Important for Product Designers

Every product designer can imagine what their designs will look and feel like in the real world. However, no person's imagination can fully capture how the product will actually look, feel and even fit into people's world and surroundings. Therefore, in the design process, after an initial concept has been thought up and drawn up the product designer then goes on to create some form of physical scale model of their concept. These digital/physical scale models can then be given to users for testing, given to a client for feedback or even be looked at by the designer to find possible faults in the design to rectify. Advancements in technology over the years also allow more intricate and accurate models to be made meaning models can also be used as fully functioning working prototypes to test performance and functionality. There are some designers who don't believe model making to be a helpful and insightful tool within the design process. However, I strongly believe it to be just that.

Model making is a tool that should be used in every design process. It is a good and effective way for product designers to see almost exactly what their design will look like once it is finished. Prototyping, another word for model making, can also be used consistently throughout the initial stages of the design process before a final model is even produced because it gives the designer the opportunity to test all the smaller elements of the design concepts to see how well all the different working parts would perform and work together. This would also cut down the amount of time fixing problems in the further stages of the design process as most of the main issues with the actual design would be discovered and resolved in the much earlier initial stages of the products development. This means that once the designer gets into the later stages of the design process he or she will know almost exactly how their product would perform as they would have tested all of the working components to see whether they should be replaced with different systems and ideas or if they work perfectly well how they are. Plus, this would allow you to test different options to increase the innovativeness of the products design by trying out new, unique ideas and concepts.

An additional advantage to product designers making scale models of their designs is that it gives them perspective towards the actual aesthetics of the concept. It gives them an opportunity to test out different aesthetic designs in relation towards colour and shape. With model making the designer can make as many models as he or she desires so that they have the opportunity to try out different colour and shape designs to see how they actually look in the real world right in front of them. The designer can also change the aesthetics based on answers given to them from users who participated in questionnaires given to them. This allows them to tailor the aesthetics of the product solely around the needs and wants of the target market as they would have got direct feedback from examples of them.

User trials are an incredibly useful way to examine how members of the public or the target market interact with the actual ergonomics and functionality of the working prototype. It is another thing that shows the importance of model making as it is the best way to gather information on issues the product may have so they can be resolved in another prototype which would be given to a user trial in the later stages of the process. The prototype can also be used in situations to see how it would cope in daily ordeals in order to see how long it would work for in case the durability of the product was not up to the standard it should be. If tests and user trials gave evidence towards faults in the product or at least areas where it could be improved to possibly give it an edge over similar existing products, then these issues could be addressed in a final working prototype ready for further testing and user trials. This again gives the designer a more accurate idea of where their product needs to be improved as the user can give feedback based on an actual experience with the product, rather than the designer simply explaining what

the product is and does for the user to then give feedback on something they haven't actually seen in front of them and had a chance to use it and see how it works.

Advancements in technology have now really given designers an advantage when it comes to making models and working prototypes. What designers used to have to do was draw up all the sketches for their scale models with scales and dimensions so that they could then use different materials to make the models by hand. This was a process that took a lot of time to perform and if something were to ever go wrong in the process of making the prototype it would add even more time and sometimes result to the prototype simply being scrapped and made again from scratch. Nowadays designers have multiple opportunities to use different manufacturing methods to help make their prototypes. Technologies such as 3D printers or rapid prototyping as it is sometimes known are much more common in design studios and are a very useful tool for the manufacture of models and working prototypes. 3D printers allow the designer to make models to a much higher quality standard and accuracy than if they were to make the product by hand. It also allows them to have fully functioning mechanical parts to their model as most 3D printers have the ability to make the whole product with working parts all in one without the need for separate assembly, unless assembly is part of the product itself. Rapid prototyping also gives them the opportunity to experiment with different materials such as metals and plastics so that they can test how different materials effect to performance and durability of the product. Another advantage to the time saving part of using 3D printing for model making is that it is an almost automatic process, the designer does not have to watch the printer all time whilst it is printing. Once the 3D printer commences the manufacturing process the designer can leave to carry on with other projects without having to make sure the printer is working properly as they are to such a high standard nowadays that they very rarely go wrong.

I must admit that there are some circumstances where model making might not be an incredibly necessary stage for the designer during the design process. One example is that if the product is simply just a combination of various already existing parts and standard components it may not be completely worth making a working prototype as the designer would already have extensive and useful knowledge of how these components might work together. Although I have mentioned how model making and the manufacture of working products in the early stages of the design process can save the designer time and resources, there are ways it does the opposite. The start-up cost for an industrial grade 3D printer can cost thousands which is a lot for a new design company and it must be used almost every day in order for the buy to seem worth it. Also the main disadvantage is that making a model does actually take time which means the initial stages of the design process can become much longer if a lot of time is spent making working prototypes during the initial stages.

Although making models and manufacturing working prototypes has its disadvantages I must conclude that I believe the pros completely outweigh the cons. Model making gives product designers the opportunity to see what their product will look like in reality, how people will actually interact with it and how the product will fit into the real world. It is also a process that allows the designer to improve the standard of their product by testing. It really is an essential part of the design process.

## Bibliography

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