

A retailers way into 3D : IKEA

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1. Introduction

Technical leaders from IKEA Communications AB in Sweden will present the challenge for a retailer to take on photographic renderings of indoor homes for Catalog and Web. We will share the progress from the first stumbling steps of creating product images to large volumes of full room sets that is used alongside traditionally created studio photos for the catalog and on the web.

2. Exposition

At IKEA our vision is to create a better everyday life for the many people. Our business idea supports this vision by offering a wide range of well-designed, functional home furnishing products at prices so low that as many people as possible will be able to afford them. IKEA is a global retailer available in 40 countries all over the world. IKEA Communication AB is an IKEA company that creates global content to support the IKEA business idea and Vision. One of the biggest parts of the production at IKEA Communication has always been images. The need for more images was the spark that started 3D usage for image production at IKEA in 2006.

2.1 Elaboration

To be able to use photo and 3D methods to produce images and to the same quality output, we needed to solve some basic problems, and we will show and talk about all these in our presentation.

The material definition for our products needs to be a physically accurate as possible. The more accurate the material is, the faster and more secure the production will be. We have solved how to grab accurate textures, use them in a good way to create large volumes of materials and have now more than 5000 IKEA materials defined.

IKEA sells a lot of products and all these needs a stable 3D model standard that at least can work for 5-7 years without the need of remake of old models. We created our own definition, with LOD levels called PQPM and have created 22,000 models in 4 LOD levels according to that standard and now have the full IKEA range. All managed in our own production-tracking tool.

To create photographs and 3D renderings with the same quality you need to mix the two groups of 3D artists and photographers in a way that they contribute to each other's knowledge and development, and we did.

To be able to use and work with 3D in a large scale we needed to simplify tasks. We needed to create and interact with a large 3D asset bank and connect that to the tool. We created our own movement "mode" in the 3D tool in addition to move/rotate/scale called "pick and place". And we created our own extension to a physics engine and used it to do a lot of the time consuming tasks

that really needs gravity and collision to work, but with very limited need of settings.

And we needed away of utilizing all the compute power, both in a render farm but also in the office space to be able to render larger and larger volumes of images.



Figure 1. Examples of room set images created in 3D for IKEA Catalogue 2011 .

3. Results

Today 75% of the product images and 20% of the room set images are created from renderings in a 3D scene only. 3D is a proven production method that we rely on at IKEA Communication AB.

4. Conclusions

Even if a retailer like IKEA now can rely on 3D for large parts of its needs for images there are still areas that have potential for improvements. Where IKEA would like the industry to focus are among other things.

- A more generic definition of physically accurate material definition that could be portable/convertible between renderers.
- A more generic way of describing with physical accuracy how one 3D asset can connect to other 3D asset e.g. where a shelf can be placed in a cabinet. That then could be portable/convertible between interactive 3D tools.
- A way to easily and more accurately interact with soft 3D assets when building a set e.g. cushions, duvet, plaids and so on.
- Faster, Automated and more accurate ways of modeling/capturing a 3D assets and creating LOD levels
- ... and of course faster more interactive physically correct renderings.

At IKEA we are continuously evolving and finding new use of the 3D assets to support the overall vision and business idea of IKEA.