3D Commerce: The art and business of using 3D models in retail at pervasive scale

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AR in E-Commerce Today!

- Technology is there!

Which of these is the “real one”? Source: Shopify
https://www.youtube.com/watch?v=ajF5Rasyq3o&t=428s

Images: OTTO, IKEA, Shopify
The “Offline / Real-Time Content Gap”

Offshore CGI  
Large Files  
Complex Materials

Millions of 3D Assets

Real-Time Rendering  
Compact Files  
Real-Time PBR Materials

3D assets for real-time apps:  
AR + Web technology

Images: IKEA
3D Commerce Asset Creation TSG

• Establishing 3D asset creation guidelines for e-commerce

Get involved on GitHub, or via Khronos:

Your insights and pain points will help us evolve and simplify the 3D asset creation and deployment process for the benefit of everyone in the industry!

https://www.khronos.org/3dcommerce/
Khronos 3D Commerce Goals

Guidelines for tools and product designers to create assets with consistent data to be used through the 3D Commerce pipeline

Reduce production, distribution and marketing costs
3D Commerce Workflow Example

- 3D Scanning
- CAD
- 3D Modeling
- Cleanups, Optimizing Geometry & Topology
- UV Unwrapping
- Texturing & PBR Material Setup
- Optimizing for Publishing Targets
- Publishing Platforms

Images: Wayfair
Three Sources of Content, Many Targets

3D Scanning → Cleanups, Optimizing Geometry & Topology → UV Unwrapping → Texturing & PBR Material Setup → Optimizing for Publishing Targets → Publishing Platforms

Images: Wayfair
Different Sources for 3D, Different Optimized Workflows

- **3D-Scanned Assets**
  - Simplification, Texture Baking, Compression

- **CAD Data**
  - Tessellation & geometry cleanup, rule-based automated materials assignment

- **Assets from 3D Modeling**
  - Simplification, Texture Baking, Compression

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[1] [https://twitter.com/nebulousflynn/status/1372589608165384201](https://twitter.com/nebulousflynn/status/1372589608165384201)


[3] [https://rapidcompact.com/case-study-otto/](https://rapidcompact.com/case-study-otto/)
Scalable 3D Today: Two Secret Ingredients

Automate 3D optimization tasks

- Use “recipes” for different archetypes of 3D assets
- Automate creation of variants for publishing targets, without the user having to know about it (“YouTube approach”)

Use scalable infrastructures & Web technology

- 3D & Web standards (gltF, USDZ, RESTful APIs, …)
- Cloud infrastructures (AWS, Azure, Alibaba Cloud, …)
- Dynamic processing, easy upstream modifications (automation first, easy to re-do where necessary)

3D model by theblueturtle_
https://github.com/KhronosGroup/glTF-Sample-Models/tree/master/2.0/DamagedHelmet
Takeaways

- There are a lot of 3D scans, CGI & CAD data sets to be made “real-time ready”

- **Automating** optimization is key!

- Relying on **3D standards** is key!