It's not just cinema that has been revolutionized by 3D technology. From advertising to retail to design, the third dimension is changing the way we interact with the world forever.

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When James Cameron's blue-peopled behemoth, *Avatar*, broke box office records back in 2010, it was heralded as the dawn of a new technological era. The third dimension had arrived. Yet two years down the line, the coverage afforded 3D remains oddly guarded – much of the debate still centers on whether it is a short-lived fad; an opinion supported by countless gimmicky 3D post-production conversions, which have enhanced the cinematic experience only in terms of the ticket price.

But cinema only reveals part of the story – look further afield and the signs point not only to 3D sticking around, but to it having a huge impact on the way we engage with the world around us. Recent advances not only in entertainment but in industries like fashion, advertising, manufacturing, and technology suggest that 3D interactivity is moving from our screens into our hands.

That's why, in order to truly appreciate the scope of the 3D revolution, we need to look past the growing popularity of 3D TVs, or the launch of gadgets like the Nintendo 3DS and HTC Evo 3D smartphone, and consider the other ➡

industries beginning to realize the creative and commercial potential of the third dimension, often with fascinating results.

Fashion designer Norma Kamali has a reputation for being one of the most innovative in the industry. Rarely one to make a misstep, her most recent innovation is the use of 3D to digitally showcase her latest designs. The website for her spring collection contains an eight-minute video as well as a downloadable 'lookbook,' all in flawlessly executed 3D. The Stereoscopic photography shows off Kamali's designs in a way that is exciting and startlingly beautiful, bringing the catwalk experience straight into your living room.

The advantages of 3D are now being utilized in ad campaigns for all manner of products. Entire cities have recently been visited by building-sized 3D projections that have been used as viral marketing stunts by companies like Nokia who, in November, brought London's South Bank to a standstill with its grandstanding launch of the Lumia. Back in 2010, LG showcased its 3D Optimus One technology in Berlin's Kulturbrauerie complex, virtually transforming an entire building into a Google Android avatar.

"The purpose of the activity was to align LG's Optimus brand with something unique, innovative, and a bit edgy," explains Kenneth Hong, LG's Director of Global Communications. "We weren't sure how well the concept would go over since we'd never done anything like it before, but the 3D effect really worked and everyone enjoyed the show. At first, we weren't sure if the ROI was very good, but over time the initiative proved to be a great investment because it had staying power."

On a smaller, consumer-targeted scale, 3D modeling is being used to transform the way tablet users interact with ads. One example is online media start-up Cooliris, whose recent advertisements for iPad have deployed interactive 3D models of everything from cell phones to BMWs. Cooliris co-founder and CEO Soujanya Bhumkar maintains that, though visually impressive, 3D technology moves beyond gimmickry because it provides an interactive, user-driven encounter not found in other ads.

"You can really touch, feel, and play with the product. It lets you drive the experience," says Bhumkar. Cooliris' technology is also able to ➡

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monitor the way in which users interact with their adverts – telling them which part or features of the product are most examined, thus giving clients a unique insight into what consumers are attracted to.

"A 3D image experience can be very positive for consumers," says Google New Business Development Manager Sidney Chang. It's why 360-degree views and videos are becoming common among retailer websites, many of which have seen higher conversion rates as a result. "Integrating 3D technology into ad formats would be the next step since it allows users to interact with and view products from every angle," he explains. This added layer of realism provides a much richer experience. But although Chang thinks 3D will become more common as the technology evolves, he foresees some challenges along the way: "Users are not used to interacting with 3D images [so] the 3D design itself has to cue the users to interact with the image."

What makes 3D ad campaigns even more likely to represent the future is the ease with which 3D modeling can now be carried out. Whereas in the past the practice was only accessible to high-end industry professionals, software such as Google SketchUp (which was developed by Colorado start-up @Last Software in 2000 and acquired by Google in 2006) is leading the way in bringing 3D tools to everyone.

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SketchUp has a unique and intuitive 'push/pull' interface that makes 3D a genuinely accessible problem-solving tool for architects, engineers, game developers, filmmakers, and even amateur designers. What's more, Google's online 3D Warehouse gives users the opportunity to upload their models and share them with the rest of the world.

Marketing Manager Gopal Shah says the advantages of 3D modeling are clear: "You can draw something, and then quickly and easily rotate it and view it from the front, back, or any angle you wish. One 3D model can contain all the information that previously would have taken you a pile of separate drawings to make."

The software, which boasts millions of users, is already revolutionizing interior design, and could also provide a huge benefit to home retailers. By uploading free-to-use models of their products to the 3D Warehouse, stores can give prospective customers the chance to 'try before they buy,' virtually placing merchandise within a digital version of their living room. ➡

Of course, designs created via 3D modeling applications still have to be physically manufactured. It's all very well being able to model your dream table, but what good is it until you can eat your dinner off it? That's where the democratization of 3D printing technology – which has been with us since the 1980s but is only now becoming truly affordable – comes in.

Instead of printing ink on paper, 3D printers physically replicate a digital model by spraying fine layers of a liquid material which then solidify. Buddy Byrum of industry leader 3D Systems, whose recent acquisitions of 3D printing companies Z Corp and Vidar Systems have demonstrated its commitment to making the technology affordable for everyone, says that 3D printing is on the brink of something huge.

"There's an analogy that you can look at – with 2D photography for example. Twenty years ago, if you had a photo printer at home it would not have had much use because digital cameras were not widely available. The same phenomenon exists today with 3D printing." But, he says, that is all going to change. "The amount of advancement is explosive today in terms of making it easier for the everyday person to go online and purchase or design their own content, all with tools that don't require an engineering degree to understand."

Say you want a new vase for your living room: It's now entirely possible for a person to log on to SketchUp, design their own model, and send it off to a company like 3D Systems to be 'developed.' A few days later, the vase arrives on your doorstep. Unique. Individual. Your own creation. When 3D printing eventually makes it into the home – and Byrum says there's no doubt it will – the process will be even simpler. There is every possibility that we'll be printing our own clothes, our own furniture, our own tools. It should transform both the design and consumer experience, giving us the sort of customization options that disappeared in the age of mass manufacturing.

The rise of 3D technology is just getting started. In the past 150 years we have seen a shift from the still image to the moving image, from silence to sound, from monochrome to Technicolor. Each of these revolutions was initially dismissed as a gimmick before being embraced by the world. Now it's the turn of the third dimension. As the technology evolves and becomes ever more accessible, there's no doubt it will transform the way that our children's generation will work, play, learn, and build 🌐