Game Changer 5: Digital Fabrication

Transcript

Our 5th major transformation is Digital Fabrication, which we can understand as using machines to design and build individually, precisely, and quickly. This is arising from a number of things that are coming together, a number of lines of development. One is digital design. People are probably familiar with CAD and Computer-Aided Design—so we have digital design today, we can design things in computers. And we have computer controlled machines, literally, sort of fabrication and manufacturing machines that are controlled and can be linked to those designs. Some of the most well-known and hyped of those is 3D printers.

On top of all of these things, you do not just have the ability to design digitally and have those designs fabricated through machines, but also we have new types of feedstocks. So 3D printers often use plastic, but now they can also use lasers to weld together everything from metal powder to sand and all these kinds of things, so all of this is creating a very new capability on how we design and build things.

The kinds of implications that people are excited about and they're looking for these things have to do with "dematerialization of trade," as they call it. So instead of things having to be made in far-off places and shipped to you, the increasing promise of local groups, and communities, and individuals being able to fabricate and manufacture, in their locality, many of the things that otherwise traditionally had to be made by specialist factories in other parts of the country or other parts of the world. And of course part of this is the ability to have flexible and customizable manufacturing. Being able to design and make exactly the stuff that you want to see. And so part of the excitement of a lot of communities and smaller groups is the potential for this technology, this family of technologies to empower these individuals and small groups to design and produce exactly the solutions that they imagine for their particular challenges.

And so digital fabrication, as we talk about it, has huge potential to rewire some of the basic infrastructure and processes that much of society operates on. So digital fabrication, using machines to design and build individually, precisely, and quickly, is another one of our major strategic issues.