Open Design is not a clear-cut ideology, but it has different manifestations

BY JEROEN JUNTE

With angular movements, but extreme precision, the laser cutter moves over a piece of fabric in the Fablab in Amsterdam. Little by little, a sharp pattern forms itself in the fabric. In front of the machine, that resembles a large copying machine, a fashion designer is standing, hands on hips. She waits patiently, as the piece of fabric is transformed into a bathing suit in just a few minutes. In her own workshop it would have taken her days to cut the pattern out of the fabric, but in the Fablab she only has to enter her design into the computer, after which the laser finds its own way. A little further down the Fablab, a designer makes an elegant decoration in a wooden plank with the digital milling machine. The graphic decoration is designed on the computer, after which the milling machine applies it to the wood, all just by pressing one button.

Next to an array of computers, the Fablab has almost ten similarly advanced appliances at its disposal - from knitting machines to laser cutters. And in front of almost every machine, someone is waiting for his or her design to be ready.

“The Fablab is a high tech open workshop where everybody can produce his/her own design or somebody else’s”, Bas Van Abel of Waag Society, the initiator of the first Fablab in the Netherland, explains. “The use of the machines is free, the participants only have to bring the material. And each design can only be produced once. "The Fablab isn’t a factory where designers can produce their products in large quantities." Meanwhile, the Netherlands already has five of these fabrication laboratories, while worldwide, there are already more than forty. All Fablabs are connected by an enormous database. "Everyone who makes something here has to record how his/her product is manufactured. This way we build up an enormous open source database about how you can easily make self-designed products."

A wall of the Fablab in Amsterdam is filled with monitors, which show live footage of foreign Fablabs. Van Abel: “If we, for instance, don’t know for sure if a material is suitable to be cut with a laser, we can easily check it with a Fablab in Barcelona or Boston.”

3D-PRINTER

This innovative way of digital production, where knowledge is freely accessible, is called Open Design. “If someone in the Fablab has engraved a piece of soap with laser, it must be possible for everyone to read how this is done, so that not everything has to be reinvented over and over again. "The extent in which the design is really shared, depends on the designer. Van Abel: "If we, for instance, don’t know for sure if a material is suitable to be cut with a laser, we can easily check it with a Fablab in Barcelona or Boston.”

The rise of the Open Design is closely connected to the development of digital production techniques, such as computer-controlled milling machines or laser cutters. The cost price of such machines has dropped to less than a thousand Euros.

The most extreme example of this is the 3D-printer, an advanced machine that builds up products layer by layer by ‘burning’ synthetic fabrics to each other with a laser beam. This makes it possible to realize almost every design with one push on a button. On condition that the design is digitally filled. This way, the production of goods shifts from the manufacturer to the consumer. "Imagine there is a digital printer in every post office, or DIY stores like Gamma, where you can download your design, print it and take it home with you."

One step further would be that consumers have their own 3D-printer at home. According to Van Abel, that’s only a question of time. "Already there is a RepRap out there, a digital 3D-printer that can reproduce itself. It won’t be long before everybody knows somebody with a 3D-printer to make their own 3D-printer with.”

The advantages of this Open Design are evident. Van Abel: “In principle, everybody can make products themselves, without interference from the industry. A consumer, say, in Japan can manufacture a product from a designer in Norway using a technique that has been developed by someone in Brazil. Just think about the amount of energy saved in transport and distribution of raw material. With this, the process of innovation will be accelerated; creativity and knowledge will be shared. After all, two know more than one.”

Another asset of this personal fabrication is that products can be better adjusted to the individual wishes of the consumer. By way of illustration: someone with extremely big hands can very easily produce gloves in size XXXL thanks to Open Design. " Nowadays, companies produce bulk to recover the investments made in moulds and machines.”

INSTRUCTABLES RESTAURANT

The rise of Open Design is closely connected to the Internet, which has expanded the possibilities to express and share creativity tremendously.

Millions of people build websites, edit pictures or post clips on YouTube. This do-it-yourself-culture is now crossing over to the physical world. Already on the website instructables.com, more than a million people post their ideas, varying from culinary tips to the design of new products.

During PICNIC, the annual media and technology conference that takes place in the Westergasfabriek in Amsterdam, a restaurant is built that is entirely composed on the basis of ideas on instructables.com. One of the supporting themes of PICNIC this year is Open Design. “Just as people freely swap recipes so that everybody can prepare a course, you can find all information on how to equip a restaurant yourself on websites like www.instructables.com” says Arna Hendriks, co-initiator of the Instructables Restaurant. “The Instructables Restaurant is really a metaphor for Open Design. Presently, we find a recipe or a manual for the Instructables Restaurant on the site too. The beauty of it is that everyone can adapt the restaurant to their own wishes. A vegetarian in Berlin will make a slightly different restaurant than a meat-eater in Rio de Janeiro.”

Meanwhile, next to peer-to-peer platforms such as Instructables.com there are also websites that offer professional designers and amateurs the possibility to commercialize their ideas. On Ponoko.com designers can find a manufacturer for their products. On Etsy.com they can sell their self produced designs. Hendriks: “Open Design is not a clear-cut ideology, but it has different manifestations. As long as knowledge is shared, there will be change in Open Design. The only difference per case will be what is shared and what is not.”

GYM SHOES

If someone is a designer, the professional product-designer should re-educate him/herself. “It won’t come to that”, predicts designer Wilfried van Abel: “Anyone can design a shoe. It only needs a water reservoir and a hole to put the flowers in. But a gym shoe for example, takes years of research by Nike or Adidas.”
That’s not something you design just like that in your attic room.” According to Tjepkema, it’s mainly that the production will shift to the consumer, not the designer. “The concept of the product with which consumers can get to work, will always be devised by a professional designer.” But developments go fast. This summer, Tjepkema, it’s mainly that the production can be regulated. He has already decided to make advance use of this development: “I hope that in a few years time I will have a workshop in which I can make the seat smaller, for instance. If you’re somewhat smaller, you can make the seat smaller, for instance. Unfortunately, his furniture manufacturer Vitra isn’t interested in developing this prototype until further notice.” So Laarmann experiments with his own studio about the possibilities of digital manufacturing. A few years ago he invented the Bane Chair. This chair is designed and produced with the aid of advanced software from the automotive industry and could be produced digitally anywhere around the world. The problem, according to Laarmann, is the monitoring on the production and the as yet limited choice of material. “Maybe the manufacturers use inferior raw materials, or maybe they make a stack which they sell illegally, after you’re gone.” With the design platform Droog Design and Waag Society, Laarmann is devising a way in which this production can be regulated. He has already decided to make advance use of this development: “I hope that in a few years time I will have a workshop in which I can design products for others. Not armchairs or doormats, but cool products that I wished I had thought of myself.”

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Even though, Laarmann is also sceptical about the bleach this production can be regulated. He has already decided to make advance use of this development: “I hope that in a few years time I will have a workshop in which I can design products for others. Not armchairs or doormats, but cool products that I wished I had thought of myself.”

Evers warns, there is also a downside to the Fablabs isn’t optimal either, because there is no universal code yeti with which the knowledge can be documented. Just as for software, a new language has to be invented for digital fabrication.” Besides that, most digital production machines are valuable and not easy to use. No wonder that only a select company of students, artists and other creative professionals have found their way to the Fablab.

To promote the use of Open Design, the (Un)Limited Design Contest has been organized together with design platform Prämmla and Creative Commons NL. “As everybody has to be able to participate, we have kept the procedure very simple,” Van Abel says. “Make a digital design, print it and put it together. That’s it.” Participants can send in their own design or use an existing design from the database of Fablab as a starting point. Categories vary from Form, Food, Fashion and Fusion. Entirely in style, the best design will be awarded with a 3D-printer.

The only condition is that contributions are actually made in the Fablab and can be also imitated or adapted. The (Un)limited Design Contest is the only design contest in which all participants can be sure that their design will actually be taken into production. Van Abel: “They can even offer their design for sale on Etsy.com. This is Open Design in optimal form!”

Open Design is no replacement, but an alternative

After all, when everybody can copy a design for free, how will a designer make money?