

factor^y

Magazine for a sustainable economy



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Thema

DO-IT-YOURSELF

From Hand Axes to 3D Printers Standing on One's Own Feet Should you really DIY?
About restrictions and creativity DIY – Contours of a new living and
economic culture Subsistence ReLoaded – For More Sustainability?! Becoming a DIY
enthusiast: how to turn an idea into a sustainable company
Brew it yourself! The Aesthetics of Do-It-Yourself

Die Verantwortung fürs Geld kann man am Bankschalter abgeben, muss man aber nicht.

Geld ist ein soziales Gestaltungsmittel —
wenn wir es gemeinsam dazu machen.



More Do-it-Yourself



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Michelle Obama is into DIY, as is her husband. The First Lady planted a garden at the White House and added some beehives. By planting this garden, she is promoting the concept of community gardens. With the bees' honey, the US President brews his own beer: a Honey Brown Ale. Its recipe has been published by the White House, so that everyone has access to it and it is said to be not bad at all.

Urban gardening, do-it-yourself and the collaborative revolution are the 'green' topics of the feature pages over the last two years. No doubt there is a trend towards people working more, and this does not refer to paid full-time work. In these times, when nearly everything can be done digitally, doing something with your hands is a growing social phenomenon, doing more yourself and doing it together with others. Do-it-yourself is not just an attitude. ►

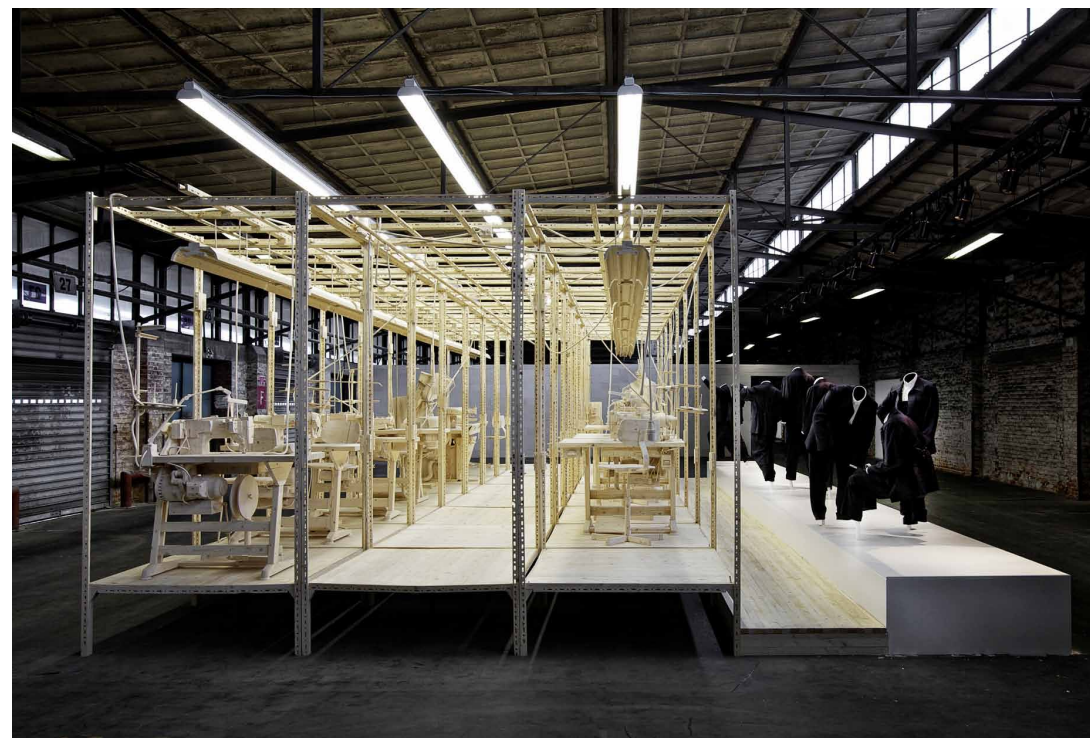
In fab labs, hacker spaces or repair cafés, a cultured and self-confident elite encounters people whose financial and manual skills are not sufficient to have something done or to do it themselves. In Greece, even entire hospitals are built by the do-it-yourself method nowadays.

Part of the economy is changing: typical consumers are becoming prosumers who co-design and co-produce as companies turn part of the value chain over to them. Entrepreneurs have discovered that a high degree of manufacturing penetration helps them to cater to clients' wishes in a flexible way. They are more productive if prosumers help them. If there are new technologies like 3D printers, the relation between consumers and producers can shift even further – to one side as well as to the other side. It will change in any case. And if, on top of that, resource protection and sustainable development become the focus of DIY enthusiasts, ... oh, they already have? Well then, have fun homebrewing!

Ralf Bindel, Editor

Translated by Christin Schell, Melanie Haschka

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Artists are DIY enthusiasts by definition. If most of them did not put their ideas into practice themselves, there would be no art. The Sewing Room by István Csásny, one of the highlights of this years' DOCUMENTA (13), puts emphasis on the relationship between crafts and art. Sewing machines, ironing boards, neon tubes, cables and cotton reels are hand-carved out of wood; the mannequins wear elegant blue overalls. The life-sized machines and tools conjure up the image of a disused factory; the end of a type of work that has disappeared.



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4321

The 30 largest German DIY superstore chains have 4,321 locations; 15 years ago they only had 2,414. The 10 biggest discounters have 15,898 stores in Germany. Source: Dähne-Verlag, Baumarktzahlen 2011 (Dähne publishing house, DIY superstore numbers 2011)

348x10⁶

Germany does not have just one, but 348 million screws loose. This is the result of an estimate made by Forsa on the behalf of Bosch. 86 percent of the 1,000 people questioned are planning to tighten the screws. Source: www.presseportal.de/pm/74672

300

Currently, Germans spend EUR 300 on average for DIY projects in order to keep their households or houses in good condition, from painting walls to complete roofing jobs. Hiring a professional would cost approximately EUR 2,000. Source: GfK Living & Retail, BHB 2011

40%

The power tool sector is especially concentrated in Baden-Württemberg and especially in the region around Stuttgart that is unique for Germany. Almost 40 percent of the world market are realized by companies like AEG Electric Tools (Winnenden), Baier (Asperg), Bosch (Leinfelden, Murrhardt), Fein (Stuttgart, Schwäbisch Gmünd), Festool (Wendlingen, Neidlingen), Flex (Steinheim), Metabo (Nürtingen). Source: de.wikipedia.org/wiki/Elektrowerkzeug

6x10⁶

In 2003, Bosch was the first manufacturer to use the lithium-ion technology for battery-powered power tools. By 2007, six million cordless screwdrivers of the Ixo model that uses this technology had been sold. Therefore, this screwdriver is the best-selling power tool worldwide since 2004.

Source: de.wikipedia.org/wiki/Robert_Bosch_GmbH

24

A simple glued laminated timber board and 24 hours is all you need for the 24 Euro chair, a high-quality, timeless piece of DIY-furniture by the architect Le van Bo from the series Hartz IV (German labour market reform of 2005 that regulates and brings together unemployment and social security benefits) – producing instead of consuming. Source: www.hartzivmoebel.blogspot.de/

2126

The number of commercial breweries in the USA has increased from 89 to 2,126 in the last 33 years. 100 years ago, there were already nearly 2,000 breweries. 1,300 breweries are currently being planned. The boom of the North American Craft-Beer-Breweries and the creation of 100,000 new jobs can be attributed to the hobby brewers.

Source: www.brewersassociation.org

40%

German men spend 40 percent of their working time (including unpaid and paid work) for family and household work, whether there are children in the household or not. This share increases from 60 percent to 80 percent for women if they live together with children. Source: Alltag in Deutschland, Forum der Bundesstatistik 2004 (Daily life in Germany, Forum of Federal Statistics 2004)

2012

Right now, there are still 1,916 urban community gardens, but by the end of 2012, there are supposed to be 2012. Under the ambiguous title of Capital Growth, the City of London helps to build new gardens in the city that deliver foods. Over 40,000 people are participating.

Source: www.capitalgrowth.org

8

The companies with the highest manufacturing penetration have more than an eight percent advantage in productivity compared to the average of the industry. Companies with a low manufacturing penetration are around four percent below this average. DIY and Insourcing can therefore mean an advantage in productivity of more than 10 percentage points. Source: Fraunhofer-ISI, PI-Mitteilung Nr. 48, 2009 (Fraunhofer Institute for Systems and Innovation Research, PI-statement#48, 2009)

75

Blogs and websites on the DIY exhibit website, ranging from bausteln.de to wawerko.de, invite people to rummage. Source: www.diy-ausstellung.de

2800

Expli.de, one of the largest DIY-community platforms, which was founded by DIY enthusiasts in 2008, provides 2,800 instructions in 10 categories reaching from arts and crafts to learning and love. Source: www.expli.de

0.2

Work done by women in relation to work done by men amounts to 0.2 when it comes to construction and trades, 2.3 when it comes to household work and gardening, 2.1 when it comes to support and caring for other household members, and 1.6 when it comes to unpaid work in general. Source: Arbeitsteilung zwischen Männern und Frauen. Alltag in Deutschland, Forum der Bundesstatistik 2004 (Division of labour between men and women. Daily life in Germany. Forum of the Federal Statistics 2004)

"Thus the hand is not only the organ of labour, it is also the product of labour."

Only by labour, by adaptation to ever new operations, by inheritance of the resulting special development of muscles, ligaments, and, over longer periods of time, bones as well, and by the ever-renewed employment of these inherited improvements in new, more and more complicated operations, has the human hand attained the high degree of perfection that has enabled it to conjure into being the pictures of Raphael, the statues of Thorwaldsen, the music of Paganini.

But the hand did not exist by itself. It was only one member of an entire, highly complex organism. And what benefited the hand, benefited also the whole body it served; and this in two ways."

Friedrich Engels, The Part Played by Labour in the Transition from Ape to Man, in Dialectics of Nature, Karl Marx/Friedrich Engels - Foreign Language Publishing House, Moscow, 1963



From Hand Axes to 3D Printers

Do-it-yourself is a new, yet old trend. DIY stores, ATMs, ticket machines, Ikea, and Wikipedia are part of our everyday life. In a world in which businesses transfer part of their production to the customer, the latter develops more and more ideas for home production.

By Ralf Bindel

Translated by Stefanie Scheu, Antje Boldt, Caroline Hutter



In the open high-tech-workplaces and hackerspaces, where laser-cutters and CNC-machines represent the new DIY generation, 3D printers are the latest technological achievement. There is one at the headquarters of the Labor hacker community in Bochum as well as in Garage Bilk, a garage lab in Düsseldorf, and probably also in most other so-called fablabs in Germany and all over the world. Prices start at EUR 1,500, but compared with their 'big brothers' in industry, which cost EUR 50,000, there is a big difference in performance. However, there is one thing they are really good at: manufacturing spare parts. "When the rollers of our dishwasher were worn out, we just printed a similarly shaped piece." says Laurenz of the Labor hacker community. The members of the community agree: "The build-it-yourself printers are not yet fully developed. The pieces still need some post-treatment," says Jens.

However, the 3D printing industry is changing. Makerbot, the New York manufacturer, presented its latest 3D printer 'Replicator II', which can achieve a resolution of 0.1 millimetres. Nowa-

days, there is software that can control distributed 3D printers online; there are cheap 3D powder printers for pieces of ceramic and metal; and giant Australian printers that are as big as an entire train compartment and capable of manufacturing four types of metal at the same time.

Independence through 3d printers

Trend researchers call the 3D printer a killer application (see p. 30) that could reduce the material intensity of self-organized processes. In future, the printers will print themselves, numerous parts and even weapons or meat. Today, every smartphone contains as much processing power as entire floors of mainframes had in 1970.

Businesses as well as DIY-enthusiasts can use these technologies to produce more for their own use, for example development prototypes or on-demand print production. Today, businesses already manufacture tools and functional components internally by using laser technology. Every manu- ►





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facturing company is familiar with rapid manufacturing, working without the use of semi-finished products or processing steps that consume additional resources. Following the out-sourcing boom, more and more production processes are now performed internally.

But the 3D printers are not yet fully developed, DIY companies are still visions of the future and the debate about the effects on the resources of high-tech-DIY has only just begun. DIY is still a rather old business model that represents the success of DIY markets for most business analysts. The DIY movement, which emerged in the 1950s in England, has become an economic sector of unpaid work. The sales volume of the 30 largest German DIY stores has doubled to EUR 30bn over the last 15 years and the number of stores has increased to 4321. The number of over 14-year-old Germans who perform handicraft work between several times a week to no more than once a month has not changed significantly over the last five years. They amount to 45 million, whereas the number of those who never do handicrafts increased from 21 mil-

lion to 25 million.

The effects on the resources in Germany, as a nation of DIY, are difficult to assess. According to the 2001 study on the time budget conducted by the German Federal Statistical Office, it seems that businesses working in the industrial sector produce three times more themselves than those who do not work in the commercial sector. This means that those who work with their hands anyway, are more likely to roll up their sleeves and tackle tasks. In addition, those who have more time are more likely to do it themselves. Basically, the amount of unpaid work is greater than that of paid work. At the same time, women perform more unpaid work than men.

The Awareness of Doing-it-Yourself

We cannot assume that every household owns a toolbox full of unnecessary power tools, even if Bosch's cordless screwdriver Ixo is the best-selling power tool with more than 1.5 million units sold since 2003. Although more and more

power tools are equipped with rechargeable batteries, it will still take a long time before all tools run cordlessly. Even the overall result appears to lean in favor of the individual process.

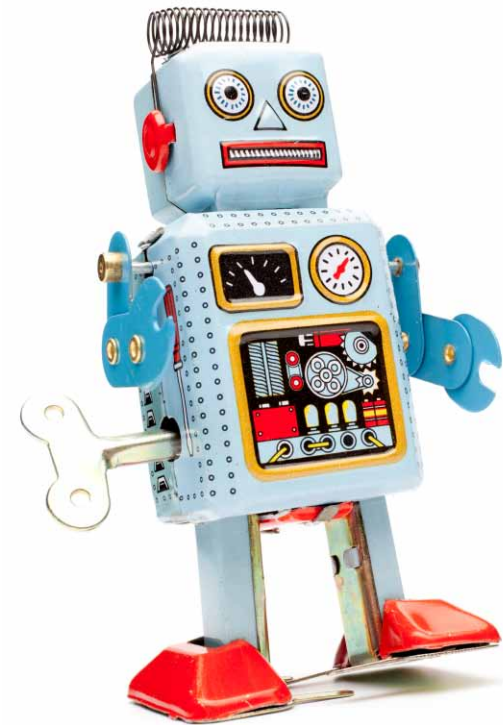
Given that needs, financial situation, competence, creativity, fun, and time represent determining criteria of DIY, there is a tendency towards using less material for a longer period of time. Anybody who works with his or her hand, fixes things, maintains a weblog or does social work appreciates materiality, time expenditure and the value of unpaid work. For instance, DIY enthusiasts will not sacrifice a table – which does not necessarily need to be a unique homemade table – just to follow the latest home furnishing trend as easily as those who consume ‘subconsciously’.

Another point is the object’s accessibility: "If you cannot fix it, you don’t own it", reads the Do-it-Yourself motto of the site, which examines all kinds of new electronic devices for their self-reparability. There are now many examples of the fact that users have lost control over usability, ranging from non-exchangeable smartphone or laptop bat-

teries, the deliberately limited working life of printers to malfunctioning cars which can only be repaired – even by mechanics – after determination of the defect with the help of a diagnostic cable which needs to be inserted into the car and connected to the head office. The response: open-data initiatives that make design data available to the public, open workshops and repair cafés in which people can learn and practice how to repair things. Another possibility is to train young people, as shown in the example by Simon Wigger (p. 41).

More or less DIY?

In this edition of factory, sociologist Andrea Baier (p. 33) and consumer researcher Gerhard Scherhorn (p. 17) speculate about the positive impacts of DIY on sustainable development, global change and the great transformation. Hence, DIY, fablabs, open workshops, urban gardening and joint DIY production seem to be necessary elements for the education achievement of this kind of sustainable development. This should ►





be rewarded by the UN within the scope of its campaign 'Education for Sustainable Development'.

Negative effects of DIY can occur when individuality pushes community into the background. Decentralised is an advantage over centralised in the macro-economic and geographical sense; however, on a micro level, jointly-used systems are more resource efficient. For example, food: canteen kitchens are more resource-efficient than individual households; still, the greatest resource factor in the area of food production is agriculture. For example, the energy supply: a combined heat and power unit (CHP) which supplies local heating to several connected households is more efficient and resource-saving than a miniature CHP installed in every basement; in contrast, disconnected central lignite-fuelled power stations are a great example for wasting resources. In general, collaborative use of things is the most efficient way to save resources: car-sharing, energy cooperatives, local public transportation, shared flats. The modern, resource-saving tools of DIY enthusiasts are called 'collabora-

tive consumption'; DIY enthusiasts get their power tools via renting forums and smartphone-apps such as Whyown.it or Leihdirwas, where tools can be borrowed from others via the Internet.

From Consumers to Prosumers

Speaking of 'unaware consumers,' basically, Birger Priddat (p. 24) is right – we already do a lot ourselves, even if we do not produce things for our own use. As prosumers, we are no longer exclusively consumers, since we produce, design and evaluate things. Businesses incorporate the willingness to participate in these processes. Thus, the core of added value increasingly shifts towards the end of the chain – improving quality is the last step in the process. Prosumers take on a wide variety of production tasks. From banking to getting gas, from Amazon and Ebay to Ikea, from online printing services to supermarkets, from voice-controlled maintenance to setting up entire systems, these are all activities that are now counted among the usual activities of prosuming in which we have ►

to invest additional resources and time.

In return, businesses have to upgrade their customer management and customer communications. Monitoring evaluations and recommendations in social networks, reports, and user tests are important for quality assurance, and quick reactions are important for the corporate image. Ecological and social deficits quickly turn into a devastating PR-disaster.

An increasing saturation of consumer needs in many segments leads to more hedonistic consumption, individualized products and 'mass customization'. The sellers' market is turning into a buyers' market. Buyers are no longer searching for products but sellers are searching for customers instead. Consumers can make use of their new market and bargaining powers and are increasingly doing so.

The development from consumer to producer shows: the trend is towards 'more DIY', both on the consumer side and the business side.

In this respect, it makes sense that 3D printers, such as the Replicator II, are already considered a future production

system for domestic use. It is possible to imagine that, with the same amount of resources, universal desktop fabrication conducted by fully automatic 3D printers could replace the consumer goods industry as we know it today. If every 3D replicator could use the same open data model, every household could produce the necessary consumer goods itself. There would not be a market-induced necessity for an excess of production and sales by individual prosumers; only agriculture and the manufacturing of large items would remain unaffected. The requirements for such a vision of almost complete DIY are open-data models and a fair distribution of resources. The best known manufacturer of reasonably priced 3D printers for domestic use is slowing the process down though. The product data model for the new Replicator II is no longer Open Source and prosumers can no longer actively participate in shaping the product. ■

Ralf Bindel is the editor of factor^y.



"Prosumer management:
Beyond the production of
products and services,
companies could offer classes
or training to enable users
to keep products in good
condition, to service them or to
repair them."

Niko Paech, Befreiung vom Überfluss. Auf dem Weg in die Postwachstumsökonomie, München, 2012, oekom-Verlag

Translated by Christin Schell, Melanie Haschka

Standing on One's Own Feet

Do-it-yourself (DIY) does not stand for the division of labour, but for the preservation of resources. A modern subsistence economy cannot exist without it.

By Gerhard Scherhorn

Translated by Lea Schiefen, Karina Janowska, Christin Brauer



I can neither produce a digital camera on my own, nor can I repair one myself. However, supposing things were done right, the manufacturer would have needed to design a product with such clever functions and such high-quality components in a manner that the product can be returned after use and the materials can also be recycled and re-used! How can I buy a new product with a clear conscience if I must assume that the old one will turn into waste and be destroyed?

The fact of the matter is that I buy new things despite having a bad conscience. As I cannot stand this, I will repress the anger and will blame those responsible: the manufacturers and the government. However, this does not turn the world into a world I want to live in. I am wishing for a world that can endure in the future: a world of subsistence.

Many readers probably associate subsistence with the terrifying vision of constant DIY. However, a subsistent system works differently. The Latin word *subsistere* means 'to withstand'. Thus, a sub-

sistence economy is an economy that sustains itself. In the past, this term referred to the self-sustaining economy of the indigenous and agricultural people. Today, the word is used to describe the developing forms of a modern economy that sustains its own bases of life.

A subsistence economy is also based on the division of labour as it is not possible to produce the most necessary products for life all alone. For me, it may be possible to produce a wooden shelf myself, but even for this I need boards, nails, a hammer and a saw. However, if all new products are either made of renewable materials like the shelf, or of recyclable materials like the camera may one day be, and if non-renewable materials are returned in closed cycles (or replaced by renewable ones), I can be a part of the system that is not dependent on manufacturing products that will become waste.



Sustainability of Industrial Products

To some extent, the recovery of products is already possible: one can lease a car, the manufacturer or the leasing company takes it back after some period of use and provides a new one. What is lacking here is recycling of the old car in such a way that all materials are reused. Mobile telephones are lacking this as well: according to the Council of Sustainable Development, there are about 60 million old mobile telephones that are not used in Germany alone. Inside of them are three tons of gold, 30 tons of silver, 1,900 tons of copper, 151 tons of aluminium and 105 tons of tin. It is unbelievable that no one has ever dug up this treasure. Many more resources had been necessary to produce it; they could have been saved.

Even things like synthetic material carpets that do not seem to be eco-friendly can be recycled: with the right techniques they can be recuperated after they wear out, be broken up into their molecules and recombined into something new. Even if you think about

it a long time, you will not find an essential industrial product that is not recyclable or else able to be made recyclable. Even after a long period of thinking, one cannot find an important industrial product that is not or cannot be made recyclable.

Already twelve years ago, the renowned US economist and sociologist Jeremy Rifkin drafted a future society of 'access', in which the economy is not characterized by the purchasing of things, but rather by leasing, sharing, exchanging and returning, separating, reusing and recycling. In brief, he outlined an economy that is characterized by preferably closed cycles where production, use, preservation and repair, return and reuse follow one another. From the beginning, these cycles are tied to the motto of not wasting anything. Within these cycles, everybody is involved responsibly in the process of DIY: the manufacturers, the traders, and the consumers.



Sustainable DIY

Whatever we do ourselves in a subsistence economy serves the preservation of substance in the end. The natural and social bases of life are of a limited nature. DIY is the preservation of raw materials, eco-systems, climate, health, education and social integration. So, in the end, it is the preservation of community resources that we can use for economic activities. However, they are not meant to be used for consumption, but have to be passed on from one generation to another. We can only operate in a sustainable manner if we preserve our resources and, if possible, cultivate them. In other words: if we invest again in their preservation and renewal instead of saving and "externalizing" the costs for it.

This also applies to products and services that we as individual person can produce ourselves: cooking, baking, preparing salad, cultivating potatoes, growing flowers and herbs, fattening geese or pigs, knitting pullovers, sewing dresses and patching socks, washing clothes and dishes, cleaning the apart-

ment, building toys, laying tiles, repairing the bike, generating renewable energy with a photovoltaic system on the roof.

We perform all these activities as individuals. However, if there is no supporting infrastructure and no social movement developing around them, these services will remain a hobby for a few people. An example is the DIY of health-related activities. Many medicines, doctor's visits and operations would not be necessary if everybody ate healthily and exercised. Indeed, only a few people live like that which is also

due to the lack of health-promoting structures. When pursuing activities that refer to the household, garden, cultivation, handicrafts and healthcare, we are making plenty of products and performing many services ourselves, even if everybody contributes only a few of them. We perform these activities by using renewable materials and renewable energy for their production and usage. Thus, they contribute to the preservation of natural bases of life. ►





This also applies to the social bases of life; the area of social and cultural cooperation. We create and preserve them through musical, artistic, literary and poetical activities of non-professional singing, painting, pressing, writing, forming, playing an instrument, teaching, educating, reading, learning, private pediatric and geriatric care, nursing, neighbourly help and last but not least through voluntary work in communities, initiatives and organizations. We do these things ourselves.

The Sense of Subsistence

A subsistence economy is about conserving and renewing the bases of human life and its natural and social environment in a way that they are not used up or discarded and do not become non-sustainable one day because we have overexploited them.

This was already an issue in the subsistence economies of the 'primitive' people of the Stone Age. They adapted their needs (food, clothes, and living place) to annual variations of weather, plant growth and animal population in such a way that they had enough to eat in bad years. That is why in good years, they harvested only a part of what nature offered to them. Nowadays, we can, with the help of technology, at any time consume more than earthly resources allow. However, modern technology also makes a subsistence economy possible: ►

it makes individual DIY easier. If DIY is combined with industrial products coming from and returned to closed cycles, all essential products and services are produced according to the principle of subsistence. As consumers, we participate by partly producing products and services ourselves and returning industrial products and services to the cycle after use. We gradually abandon all products and services that cannot be returned into a cycle. This has to be the goal: that, in the long run, a subsistence economy does not exist alongside an industrial economy focused on the consumption of resources, but that the level of subsistence of the overall economy is increased step by step. ■

Gerhard Scherhorn is an economist and was a professor of Consumer Economics at Hohenheim University. Until 2005, he was director of the research team 'Sustainable Production and Consumption' at the institute of Wuppertal. His latest publication is 'Geld soll dienen, nicht herrschen. In 2008, he and Daniel Dahm published the book "Urbane Subsistenz. Die Quelle des Wohlstands.'

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"The balancing act between lower manufacturing costs and single-item productions seemed to be impossible in the past.

Nowadays, information and communication technologies like product configuration ensure that the optimal product for the buyer is brought together with the capabilities of the company."

Prof. Frank Huber, Chair for Marketing I, Johannes Gutenberg University of Mainz, Press release dated 15 April 2009

Translated by Christin Schell, Melanie Haschka

Should you really DIY? About restrictions and creativity

There are many arguments against DIY, including our lack of professionalism and that we put a lot of time and resources into DIY. We are already doing too much ourselves and now we feel the need to re-invent ourselves on top of that.

By Birger P. Priddat

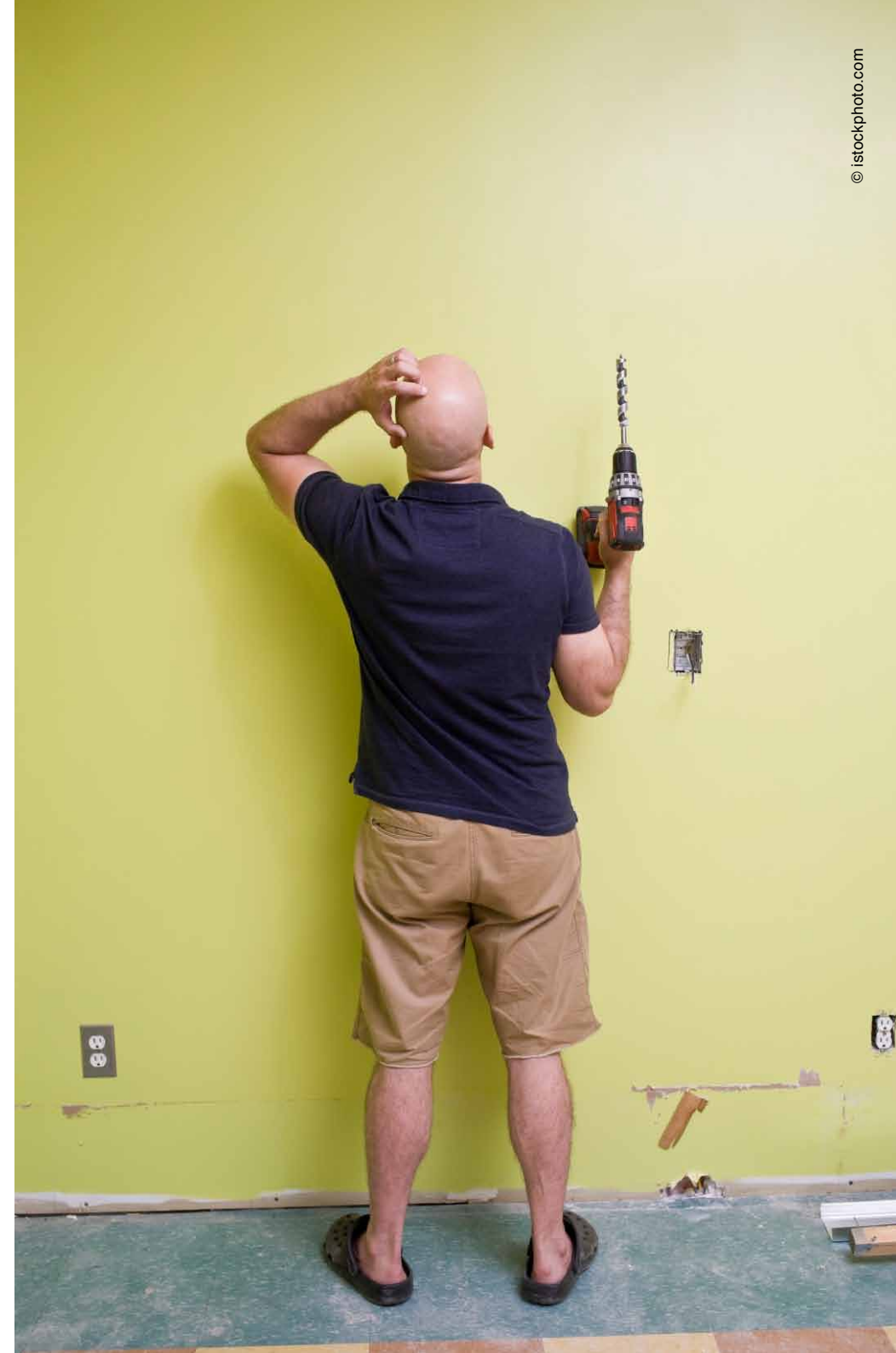
Translated by Alina Junk



In an ultramodern, dynamic society that is based on the division of labour, it is at the very least worth noticing if someone does everything themselves. It is a somewhat archaic attitude which is not improved by the motto 'simplify your life!'. This motto is more an expression of an attitude that compensates for one's lifestyle rather than a viable way of life. There is little evidence for the claim that when you do it yourself – whether it is adding onto your house, redecorating, fixing your car, moving, digging up your garden – you save money. However, what we do ourselves often does not lead to high-quality results. Instead of doing something we are qualified to do, we do amateur work in domains in which others could do a much better, faster and cheaper job. This is a means of de-professionalisation.

Resolving these questions is not that easy in a society in which we are more likely to prepare our own food than to go to a restaurant. There is a deep structure to DIY which we have gotten used to so much that we barely even notice it any more. Why would we buy pricey machines that are only actually washing clothes in three percent of the time we own them, when instead we could pay someone to pick up our dirty laundry and return it to us nice and clean on a fixed date?

Services which guarantee getting us where we want to be on time have more benefits than owning a car we still have to drive ourselves – which severely limits other potential uses. In this world, driving services are smart supplies as opposed to having unused capital in your garage. What is the use of having 1.5 tons of steels just sitting there for more than 20 hours and getting only two to three hours of use each day? This ex- ▶





ample characterises property as a symbol of uselessness.

If we start thinking about how we have gotten used to handling so many aspects of our lives ourselves – pumping gas, assembling furniture, operating an ATM, separating waste, grocery shopping and even carrying our own bags, mowing the lawn and sweeping up leaves etc. – we should be surprised at how inefficiently we spend our lives. In Japan, groceries are delivered to customer's homes, at least in larger cities. For the Japanese, shopping is not a stressful process, since it does not involve carrying heavy bags across town or at best to the car on the other end of the parking lot. They can move around free of stress – they feel liberated.

However, the tendency to do things ourselves is growing. We take it for granted that we pump our own gas or get our money from the ATM and refer to this as presumption, a combination of consumption and co-production. The same goes for electronically managing our bank account ourselves. Today, we are used to these man-machine interfaces to such an extent that we mistake them for a modern version of a division of labour. We can see something changing here indeed; instead of having to go to the bank, we can quickly handle bank matters online.

While having others provide services that ease our burden is something we consider unprofessional in the areas named above, we accept these services whenever they are presented technologically. We save time by moving around in the virtual world instead of the real world. Since we spend so much time in front of a computer screen without moving, we spend our time at the gym or a wellness spa – and even pay for ►



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it. The time we spend working out is more than the time we save thanks to virtual high-tech services.

Online, we experience new forms of teamwork. While we are using information, knowledge and narratives online, at the same time, we are also putting information, knowledge, personal data, and pictures online – in various social networks, chat forums, blogs etc. By extensively using this knowledge universe, which is based on a division of labour, we also supply it with everything we produce online ourselves. It is presumption and co-production based on a division of labour which could never be done by just one person. However, it is a form of social intelligence to which we constantly contribute. The kinds of do-it-yourself which arise from this, the ‘web creativity’, include old impulses on the one hand but are also a way of producing for others.

The virtual realities created like this work as new social realities in social networks, for example as some kind of an approval-exchange-production cycle. What was described as presumption above now receives a new kind of reality. By consuming/copying, networkers re-invent themselves as a remixed version of themselves (created online from their homes). By doing this, *they re-invent themselves for others*. They introduce themselves to others in the way they believe to be the right way to get approval, relevance and web presence.

Consumption stops being private acquisition and starts creating transformational goods that change the user, as the latter presents himself differently in order to be perceived by others differently. We are experiencing – our humanistic read- ►

ers might want to turn their heads away for a moment – an educational procedure which is community-oriented. It is not private consumption but more like some kind of prosumption which is publicly available online. The other users from whom we re-invent ourselves consume what we upload. Consumption is done both by the ones we re-invent ourselves for and by ourselves since we consume their approval or feedback. In an unexpected way, societies are shaped: online communities. Since we re-invent ourselves for the online community, it is all about connectedness. While traditional do-it-yourself was a human/thing relationship, *re-invent-yourself* is more of a human/human relationship in cyberspace. We act as performers and give ourselves a personality in which we rehearse and experiment with new means of meeting others. What this means for society and its varieties of identities is still unclear. But instead of tiring themselves with physical work – ‘people of action’ controlling matter – modern online users are auto-productive in online communication – and while re-inventing themselves they can be seen the same way they can see others. People start working on ‘social issues’. ■

Philosopher and Economist Priddat is head of the Lehrstuhl für Politische Ökonomie (chair of political economy) at the private Witten-Herdecke University in Germany. His fields of research include culture, art and economy in the widest sense and his newest book in co-operation with Klaus-W. West ‘Die Modernität der Industrie’ deals with the modernity of industry.

Selber übersetzen:

- simplify your life** – Vereinfache Dein Leben
- life-style-compensation-attitude** – Lebensstil-Kompensations-Attitüde
- smart supplies** – Intelligente Lieferleistungen
- shoppen** – Einkaufen
- prosumption** – Sowohl Verbrauch als auch Co-Produktion
- wellness** – Wohlbefinden
- high-tech-virtual-services** – Ständig verfügbare Dienstleistungen durch permanente Internet-Verbindung
- social networks** – Soziale Netzwerke wie Facebook, Google+
- Chats** – Online-Kommunikation per Textnachricht, Audio oder Video
- blog** – Individuelle Publikationsmöglichkeit (hergel. v. Web und Logbuch)
- knowledge** – Wissen
- net-creativity** – schöpferische Fähigkeit des Internets
- remix** – neu zusammen gestellt
- networker** – im sozialen Netz Arbeitende/r
- digital homemade** – per Computer selbst zu Hause hergestellt
- e-fabric** – Elektronisch gestütztes Produktionszentrum
- netpresence** – Wahrnehmbarkeit im Internet
- net-compatibility** – Vergleichbarkeit im Internet
- community-oriented** – gemeinschaftsorientiert
- net-community** – Internet-Gemeinschaft
- connectivity** – Möglichkeit, ständig kommunizieren zu können



"Wikipedia makes it possible: Last year, the 42-year-old computer technician had the ambition to become Kenya's aviation pioneer.

He taught himself the secrets of building airplanes with the help of the Internet.

Nderitu, who answers all questions as if he was explaining to an amateur how to build a chest of drawers, says that especially the Wikipedia website was helpful. The prototype is jacked up on three pedestals. Nderitu and two mechanics are putting together the single pieces, except for the wings made of aluminum, which are stored in front of the building due to space issues. He bought the engine of a Toyota Corolla from a used-car dealer. The wheels are from an Austin Mini. He ordered the flight instruments via the Internet in America. The propeller made from magahony was carved by a carpenter according to his instructions. Nderitu estimates, that so far he has spent half a million Kenyan schillings on his passion. That is the equivalent of 5,800 Swiss Francs."

Markus M. Haeffliger, Nairobi, Tollkühner Kenyaner in fliegender Kiste. Neue Züricher Zeitung, 29.10.2010, 04:36

Translated by Christin Schell, Melanie Haschka

DIY – Contours of a new social and economic culture

To what extent will 'do-it-yourself' influence the economy in future? What is its quasi-industrial aspect? Will the new trend toward DIY attain sustainable effects and how will companies integrate it into everyday business? The following article presents the perspective of a futurologist.

By Holger Glockner

Translated by Dominika Gajdzinski, Vera Metzger, Christine Tschoppe

In recent years, there has been much debate on the trend toward DIY and its implications for the economy and society. Nevertheless, there are several social, economic and technological proponents supporting the trend. On the one hand, DIY expresses a longing for autonomy and participation; economically it represents the purest form of individualisation; and technologically it is often only made possible by modern information and communication technologies.

On the other hand, the medium- to long-term effects on economic structures remain rather uncertain. The DIY trend could considerably influence isolated markets, such as those for the production of media content, power generation, fashion and design. However, effects remain limited in many cases. From the ecological point of view, the conflict between the objective to protect resources and the desire for individualised products is still unresolved. Individualisation and personalisation in economic processes are often achieved only at the expense of efficiency. Thus, following the social breakthrough of do-it-yourself, the use of resources will

initially increase. 3D printing, the killer application of DIY, might well change this in the foreseeable future: the new processes turn the usual design methods upside down. Products are no longer made with prefabricated forms, but are 'printed' layer by layer. In this way, material intensity can be reduced, which ensures the sustainability of self-organised processes. Yet it is crucial for this development to concentrate not only on production, but also on the logistic processes involved.

However, sustainable do-it-yourself requires forms of cooperative individualism. Only in cooperation, not in autonomy, can individuals manage the (partial) changeover to a new social and economic culture in an eco-efficient way. Both individual learning processes as well as the development of creativity and innovation have to be combined with a reconfiguration of value networks. This will provide start-up companies with the opportunity to redefine and reconnect the interfaces between the separate process stages.

In the future, DIY will most likely be successful in certain niche markets.

The most common concept will be do-it-yourself with instructions. Businesses will offer individuals the possibility to design products and processes themselves. Intelligent forms of collaboration are the critical success factor for the possibilities that new technologies provide for do-it-yourself. ■



Sociologist and economist Holger Glockner is a member of the management team of the Z_punkt foresight company, based in Cologne. He analyses the creation of sustainable future markets and is an adjunct lecturer at the FU Berlin in the master's programme in Future Studies.

"Now the customers are gradually becoming an active element in the value chain by increasingly designing their own product environments."

Against this backdrop, the move to decentralised production and even personal manufacturing (fabbing) may be logically consistent, but its consequences are surprising. Instead of setting up new plants abroad, innovative production methods such as real-time manufacturing lead to an increase of miniature factories in urban environments. This often involves former downtown retail areas which previously stood empty. So-called fabbing centres will become the new temples of product manufacturing and presentation. Here, customers can see with their own eyes how their ideas and demands are turned into unique products. They can even get involved actively. Today's range of possible fabbing-services runs from spare parts to tailor-made shoes, personally designed high-tech furniture to lightweight city cars with a regional touch. It seems as if the customers have quickly caught on – the fabbing-fever is raging, a completely new game has begun."

Andreas Neef, Klaus Burmeister, Karlheinz Steinmüller, Beate Schulz-Montag, Basis - Deutschland und Europa 2020, brand eins 10/2003 - Zukunft
(Source: http://www.z-punkt.de/fileadmin/be_user/englisch/D_Downloads/2003_Europe_Scenario.pdf, Date: 05 December 2012)

Subsistence Reloaded – For More Sustainability?!

They have names like Open Design City, NeuLand or Dingfabrik. The new urban community gardens and open workshops have telling names. More and more examples of people doing things communally have been appearing recently. So is this good news for the planet?

By Andrea Baier

Translated by Amanuel Woldeyohannes, Shane Morris, Simon Varga





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Subsistence and DIY work were supposed to save the world once before. It was claimed that doing it yourself might be able to mitigate the social and ecological devastation associated with the capitalist production of goods worldwide. In the 1980s, New Left economists such as Andre Gorz predicted "the end of wage labour" and speculated on its positive social and ecological effects. Today, theoreticians from Germany's post-growth movement like Niko Peach are calling for industrial production to be reduced by half while encouraging the expansion of self-sufficiency in order to compensate for the expected decline in wealth levels. David Graeber, an American ethnologist and leading theoretician of the Occupy movement, suggests that we should work less and live more because of our ecological situation, saying that finding a way to throttle the economic machine is the main problem that we face. Could subsistence and do-it-yourself work act like a spanner in the works of this machine? And if so, under what conditions?

Once you stop believing in the fairytale of sustainable growth, there is no way of getting around the ideas of sufficiency and subsistence. However, the question remains: What type of subsistence and what social factors would be most effective and productive for a sustainable post-growth economy?

One final truism to consider is that people who make their own things do not necessarily also have a sustainable lifestyle. Home-made items are usually cherished, cared for, not thrown out as quickly and are also repaired more often. However, this relationship to home-made items is not always applied to other objects. It has yet to be proven that people who tend to make their own things lead their lives using fewer resource-intensive consumer goods like cars, single-family houses or similar items. DIY work is fundamentally embedded within the lifestyle of individuals. With a lifestyle that is prudent and therefore sustainable to begin with, independent work can share the



characteristics of prudence and sustainability and contribute towards them. In contrast, a carefree attitude towards consumption will also be reflected in people's independent work ("Wovon Menschen Leben" 2007).

The bottom line is that it always depends on how sustainable your lifestyle is as a whole. On this point, Nikoli Paech says that only the sum total of all the ecological effects of a given individual's activities allows for conclusions to be drawn on his or her overall level of sustainability.

It is also not at all certain that DIY work is comparatively more ecological and that waged work is less ecological. According to women's studies scholar Ruth Becker, the use of materials as well as the production and disposal of pollutants from doing crafts could be even more problematic from an ecological point of view than in the equivalent professional occupation.

Wikipedia Praised

What is relevant in the context of sustainability is not that more and more

people are becoming enthusiastic about DIY, but rather that many people, particularly the young, have recently been explicitly connecting DIY to ecological and social questions. This is how they discuss the topic of the new urban gardens, in particular in public workshops, alongside topics of industrial agriculture, the global trade of foodstuffs and the destruction of seed supplies. Other topics discussed with a view to sustainability at these workshops include the inbuilt half-life of goods, resource waste and disenfranchisement due to disempowerment.

The way we deal with items is changing. At the Munich communal garden *o'pflanzt is*, for example, the founders wanted to buy as little as possible from the very start. This was not just because they were short of money, but it was rather done on principle. As a consequence, the garden temporarily turned into a warehouse. Items such as wood, chairs, glass and plant pots were neatly sorted. All the materials that were donated or found were used to build cold frames, raised beds, greenhouses, an outdoor kitchen, a clubhouse and a

workshop. Even to this day, useful industrial waste continues to be used in imaginative new ways in the garden. Recently someone brought used but high-quality ironing boards that, once covered with white tablecloths, could serve as comfortable bar tables at outdoor festivities.

Meanwhile, the mini-hotbeds made from milk cartons in the *Prinzessinnengarten* in Berlin have become legendary. Jakob Ottlinger from the *Annalinde* communal garden in Leipzig notes that communal gardening gives you a completely different perspective on items found by the side of the road and that walking through the city becomes a completely different experience. With attempts to use as few additional resources as possible and utilise what is already available, "Repair, Upcycle and Improvise" has become the motto of the communal gardeners. They also meet up at other kinds of workshops like sewing and knitting events, at so-called fablabs - production labs for the development of new prototypes, at clothes swaps and at DIY cafeterias. In Cologne, Dingfabrik ►



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regularly organises well-attended repair cafés. According to one of the association's members, the idea was originally imported from the Netherlands.

Furthermore, it is interesting that the new do-it-yourselfers, both male and female, clearly see themselves not only as individuals but also as members of a collective. The feeling of being part of something bigger, to which they can contribute, is palpable. These new workshops often define themselves as fablabs, even if they do not work exclusively with 3D printers and laser cutters but practice traditional crafts as well. Just like community gardens, these workshops try to create infrastructures and networks that increase peoples' level of autonomy and enable them to do things themselves. The protagonists want to democratise production and bring it back from the factories to the open workshops and neighbourhoods. They want to create new commons, as is the case with the Allmende-Kontor (Commons-Office). The name of this city-wide coordination agency for Berlin's urban gardening initiatives, which

has its own community garden at the Tempelhofer Feld, clearly underlines this attitude. The swapping and sharing of know-how, tools and space are the most important factors. Being largely influenced by the experience of the Internet, *Contraste* magazine described these urban community gardens as a "real-world Wikipedia".

This shows that new, creative and urban forms of subsistence have been created, tested and developed in the DIY communities, for example, prolonging the life of items (by repairing and upcycling them) and intensifying the use of industrial items (through collective use) on the one hand and home production and self-sufficiency on the other hand. Networks, swap-meets and infrastructure that make the collective use of these production methods possible have also been created. In addition to this, non-market goods such as time, know-how, improvisation skills are contributed by participants while building social relationships. ►

A Farewell to Post-social Relations

In an interview, one proponent of this new form of do-it-yourself explains what is new about the concept. To her, there really is something new about these movements, insofar as they generate a whole new approach and redefine the roles of community and cooperation, which are no longer considered a necessary evil but an advantage for individuals. Whereas she considered do-it-yourself to be something very individualistic and rather exclusive in the past, with an emphasis on owning houses, and gardens etc., she now sees it as something clearly extraverted, as a profoundly cooperative process based on the exchange of knowledge and mutual instruction. For her it has become something that is neither geographically nor socially exclusive, something that is about the relationships with people and the way we create and produce things.

Consequently, today's do-it-yourselfers are by no means 'post-social'. Karin Knor-Cetina notes in her essay *Umriss einer Soziologie des Postsozi-*

alen (outlines of a post-social sociology) that in these DIY projects, new forms of community are being created and tested, while social relationships in general are weakening and breaking down. All of these projects are about the empowerment of the self in a community context. 'Traditional' open workshops, such as the Munich-based *Haus der Eigenarbeit*, have provided a framework for the development of communities of tinkerers, the exchange of technical knowledge and mutual giving of advice. Again, working in a common space was one of the important aspects of the open workshop's attractiveness, although individual work on personal projects remained the usual practice.

What is remarkable is the fact that communality has an economic connotation. Consumption and production are being redefined. New commons are being created and exploited collectively. In this context, the reappropriation of basic cultural techniques (such as gardening, cooking, carpentry, sewing etc.) is on the agenda. People of the industrial age do not have these basic skills anymore, ►





says philosopher Christine Ax, and this lack of skill is what the world expects of them. DIY enthusiasts no longer accept this type of deprivation. Champions for this cause want to cope with everyday life independently and to become the masters of their own lives again. This new movement is also characterised by its questioning nature in regard to modern myths and dualisms, re-enchantment with the world and abolition of the separation of nature from culture as well as of people from objects.

Communities as an Asset

The individual projects do not deal with every single issue simultaneously. Participants focus on certain issues and some projects are more critical of society or economic growth than others. Naturally, issues such as the global food industry and seed and soil issues (peak soil) are dealt with in the community gardens rather than in the fablabs, which are very often full of gadget-enthusiasts and technophiles. However, all projects take aspects like the willingness to share and exchange, the question of

the consumer status and regaining lost knowledge into account, as well as issues like the right to participate and influence as well as seeing oneself as a responsible citizen.

With regard to such social and political aspects, the direct ecological impact of repairing, recycling, sharing and exchanging can be considered to be essentially negligible. According to my observations, the energy efficiency of many community gardeners is quite impressive. Vegetarianism, locally produced organic food and second-hand clothing are popular. However, air travel is controversial. But it is not all about numbers; it is about the attitude towards life expressed by DIY. It's about the broader ideas that are connected to individual work (recycling, repairing, local supply, the ability of self-subsistence, regaining of cultural techniques). In this case, seemingly new ways of living are invented that are less resource-intensive ►

and, at the same time, attractive. In his book *Debt: the First 5,000 Years*, David Graeber calls for the reconversion of the market economy into "human economies", economies characterised by the individual relations of human beings rather than exchanges between strangers. The new projects repeal hegemonic economic principles in real life and replace them with principles such as solidarity and mutual assistance. Principles, which Graeber refers to as 'communism', are most important in the field of private subsistence, i.e. in family and household domains. "The sociology of everyday communism is a potentially enormous field", Graeber says. However, due to certain ideological blinkers, this field has rarely been dealt with. The female protagonists of the various DIY cultures have nonchalantly freed themselves from such blinkers, i.e. from traditional modern resentments or dualisms like wage labour versus independent work and subsistence, urban versus rural or development versus tradition. They undermine such dualisms in an elegant manner by trying to combine

subsistence with making a livelihood, by bringing agriculture back to the city and by regaining and reinterpreting seemingly outdated knowledge. The anthropologist Bruno Latour would probably say that they are not modern anymore. ■

Andrea Baier is a sociologist and conducts research on subsistence, regionalization and sustainable ways of living for the writer's foundation Stiftungsgemeinschaft anstiftung & ertomis in Munich. Her most recent publication is '*Selbermachen statt Konsumieren*' (Doing it Yourself Instead of Consuming).

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Paech, Niko (2012): *Befreiung vom Überfluss. Auf dem Weg in die Postwachstumsökonomie*, München: oekom Verlag

Rasper, Martin (2012): *Vom Gärtnern in der Stadt. Die neue Landlust in der Stadt*. München: oekom Verlag

"And despite all of this, it is not a matter of going back to nature, to the stone age or anywhere else. What lies before us is a reorientation and reevaluation, a new approach dealing with knowledge and experience. Coming to terms with the natural bases of our existence and particularly with how these bases are organised economically and socially, is an expression of a definite political position.

Gardening has always been conservative; the fact that it is now acquiring subversive aspects is new."

Martin Rasper: Vom Gärtnern in der Stadt, die neue Landlust in der Stadt. (On gardening in the city; the new yearning for the country in the city) Munich, 2012, oekom Publishers.

Translated by Christin Schell, Melanie Haschka

Becoming a DIY enthusiast: how to turn an idea into a sustainable company

At the beginning, there is an idea: I can do it better myself. For the sake of changing the economy, it is essential for us to become DIY enthusiasts and thereby spread green or blue innovation. Crowdfunding and microlending offer new financing possibilities for an economy with a grip on reality.

By Simon Wiggen

Translated by Nadja Gröner, Nadja, Desiree Münch, Vid Roposa



Ulrich Prediger was weary of his situation. He wanted to change something. His company car was standing in front of his house, but instead of using his Mercedes estate car to drive to work, the 40-year-old economist went by bike every day. On his nine-kilometre trip to work through Freiburg, he had to go past 24 traffic lights. With his bike, it took him as long as with his car. Prediger, a manager for medical technology, asked himself why his employer did not provide him with a bicycle to get to work instead of a company car. The idea of his own company, called 'LeaseRad', was born. Today, three years later, he has seven employees and provides companies all over Germany with bicycles for employees to get to work. A good idea turned into a sustainable company and the medical technology manager became a DIY enthusiast, because he wanted to change something.

Anybody with a sustainable idea who wants to become an entrepreneur has completely different opportunities today than ten or twenty years ago. Starting with professional support for a business plan to consulting and financ-

ing; platforms on the Internet, networks and financial support simplify the implementation of an idea. Even if sustainability has only played a minor role in this domain, green founders can benefit from all these things.

Doing it without banks

The latest and at the same time most exciting idea for financing projects is crowdfunding. Instead of taking out a major loan from a bank, a large group of interested people helps finance the project by providing many small contributions. The sponsors get resulting products and services for a reduced price or they get back their silent partnership investment plus interest. It is not only professional investors that can invest money, but also idealists, daring people and small investors. For most of the crowdfunders, as for the DIY enthusiasts, it is all about the realization of an idea. On platforms such as *kickstarter.com*, founded in 2009 as one of the first of its kind, or on the German platform *seed-match.de*, founders can present their ideas and find supporters for their pro- ►

jects. Only when the whole amount has been committed do the founders receive their money. If they cannot find enough supporters, the founders go away empty-handed. Linda Bergset says that investors do not just come knocking on your door. In the Borderstep Institute for Innovation and Sustainability, she especially deals with the financing possibilities of sustainable business start-ups. She emphasises that founders have to do a lot of advertising for their projects.

The advantage of crowdfunding is that founders do not depend on a bank's willingness to lend, an experience Ulrich Prediger had when he started his 'LeaseRad' business. This entrepreneur from Freiburg, Germany, remembers that the first bank pulled out after only a few months, and that it took the second bank half a year to release the money. He financed *jobrad*, his current project, which is a leasing system for low-priced ebikes for employees subsidized by their employers, via crowdfunding on seedmatch.de. Instead of the necessary EUR 50,000, he obtained twice as much as he needed thanks to 175 participants. With crowdfunding, money is raised

when many investors believe in the idea. Linda Bergset thus refers to crowdfunding as a "democratization of financing". A disadvantage is that the swarm is not always more intelligent than individual experts in banks. Bergset warns that just because somebody came up with a good idea, produced a high quality video and advertises a lot, does not mean that the idea itself and its later implementation are good as well. Most of the numerous crowdfunding-portals offer only few projects; some portals have managed to only last for a short period of time and have already been abandoned. Even though more and more money is being invested collectively, there seems to be a concentration on only a few significant portals.

Promoting culture and development

This financing model is especially popular with artists. After all, DIY enthusiasts of cultural projects rarely have chances to receive money from banks or business angels. Here, crowdfunding means 'culture on demand' where books are



only printed as soon as there are enough people interested in them and where videos are only recorded once the project has been financed.

The largest German platform for crowdfunding, in the framework of social commitment, is [betterplace.org](https://www.betterplace.org). 224,900 donors have already implemented more than 4,000 projects in 140 countries through this platform. Moreover, the portal reflects typical elements of modern founding: later founders became aware of the fact that it is necessary to facilitate the process of fund raising both on their journeys and when working in development aid. Especially small projects, which are not run by large NGOs, have difficulties in obtaining development funds. The idea of facilitating this process sprang from the minds of several people independently from each other. They joined forces, idealists gave their money and experts gave their expertise. Finally, the largest 'self-made' donation platform in Germany was created. Thanks to a subsidiary, which consults companies in the field of corporate social responsibility (CSR) and invests its benefits in

[betterplace.org](https://www.betterplace.org), this idea will pay off in the long run.

Anybody who wants to found a sustainable company but does not rely on many investors nor need a lot of funds, for example for the initial purchase of equipment or the financing of merchandise purchases, can also apply for a microloan.

The ecologically ethical GLS Bank and the German Microfinance Institute (DMI) have established around 60 Microfinance Service Providers that can offer EUR 100m with the help of Mikrokreditfonds Deutschland. What began as a non-bureaucratic help for individuals in developing countries found its way into business start-ups in Germany as well. Even "unbankable" founders can obtain small amounts with short terms. It is fast, easy and requires no expensive assessments. In this way, many DIY enthusiasts have already started their own little businesses. ►



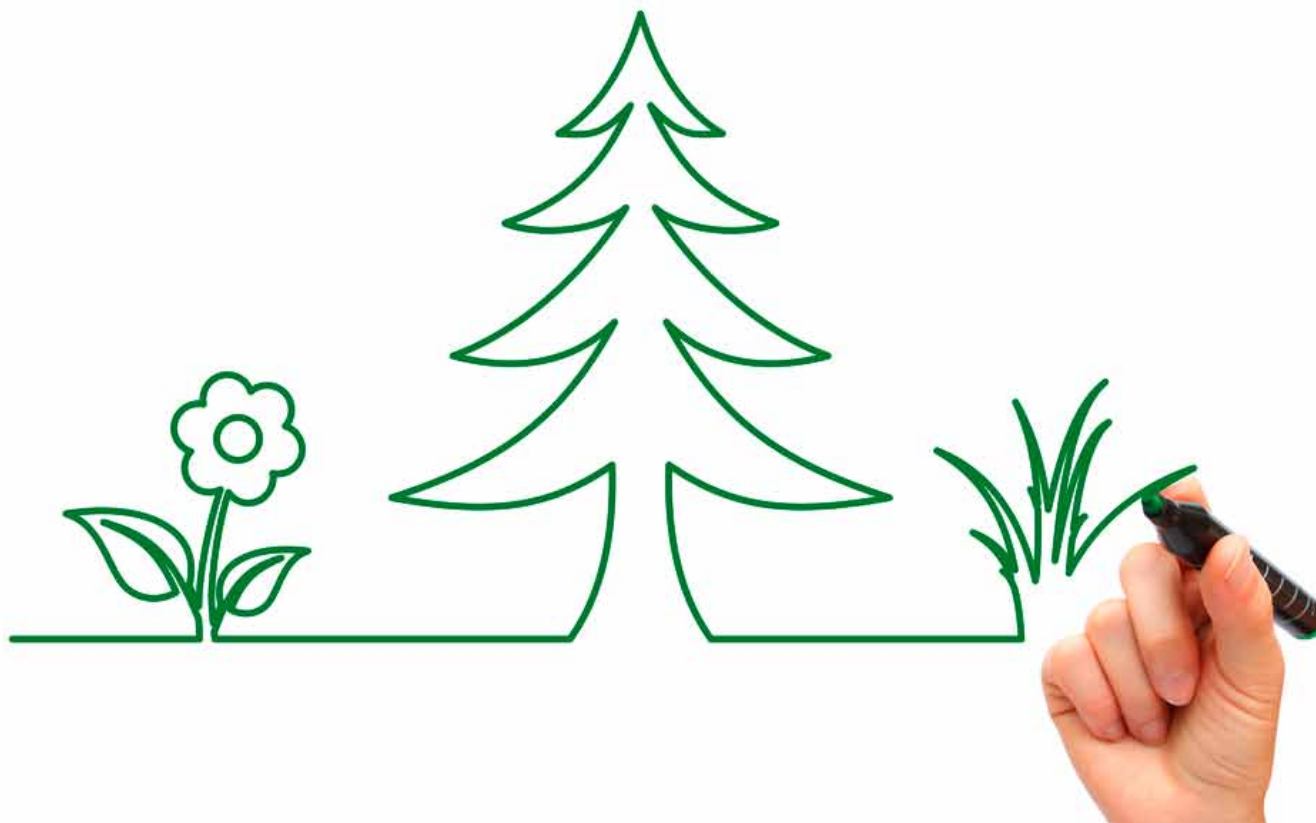
Help to help yourself

However, founders and DIY enthusiasts are not always exclusively dependent on financial aid. Sometimes, collaborating helps as well. For example, Enbreeze, a company based in Cologne, Germany, which wants to produce small maintenance-free wind turbines in the near future, can always access the international group's Autodesk simulation software for free. Enbreeze benefits from professional tools while Autodesk establishes new contacts and polishes its green image. Furthermore, the two companies want to increase the rate of innovation in the sector. According to Dr. Ralf Weiss, researcher at the Borderstep Institute, founders are a major source of stimulation for the economy. He believes that young founders are the backbone of energy transition, because they are full of ideas that big companies would never think of or are reluctant to try out. It is not always the case that a whole new company will necessarily emerge from a sustainable idea and Rainer Hering (59) from Bochum, Germany, is the perfect example of that.

This retired electronic engineer has started a voluntary workshop at one of Bochum's high schools. Instead of switching the circuits and plugging them into plugboards, he teaches students between the age of 11 and 18 how to fix electronic devices such as irons and toasters. According to Hering, instead of throwing away used devices and buying new ones, students learn how to deal with resources economically. In addition to that, he believes that he might

get them interested in working as engineers and thus help fight against labour shortage in Germany. Hering thinks that those who do not wish to use the fixed devices anymore can offer them to a municipally supported second hand shop. This is one more excellent idea of how to make students sustainable DIY enthusiasts. ■

Simon Wigger is a journalist and works for gemeindemenschen.de. In the second issue of Factory 2012 he discussed civic participation.



"Companies with a greater vertical production range are generally more productive."

The paradigm shift is becoming apparent, because so far the rule in management was to restrict oneself to core competencies and to outsource all allegedly non-value adding processes to suppliers. According to Dr. Steffen Kinkel, head of the Competence Center Industrial and Service Innovations at the Fraunhofer Institute for Systems and Innovation Research ISI, the results of the study show that the transaction costs in coordination with suppliers, interdependencies and supplier margins make outsourcing less and less attractive. Considering the fact that capacities are under-utilised during the financial crisis, insourcing could prove to be a better strategic option.

Dino Trescher, Fertigungstiefe als Wettbewerbsvorteil nutzen, Fraunhofer-Institut für System- und Innovationsforschung (ISI), Pressemitteilung, (using vertical production as a Competitive advantage, Fraunhofer Institute for Systems and Innovation Research ISI, press release) 21.4.2009, 10:09

Translated by Christin Schell, Melanie Haschka

Brew it yourself!

Beer is a very good example of why do-it-yourself is necessary. The model of "brew it yourself" can be applied to many aspects of everyday life: wherever industry leaves an insipid taste, DIY enthusiasts first fight for the satisfaction of their individual needs and then provide innovations and culture for the community.

By Ralf Bojanowski and Ralf Bindel

Translated by a group of translators





Fritz Wülfig, a beer connoisseur and home brewer from Bonn, Germany, says that he travelled a lot searching for well-hopped beers because they have become increasingly rare in Germany. So he decided to go to the USA. And he was so impressed by the beer culture there that he began to brew his own beer at home. Beer, culture, USA? How do these words go together in the country of Bud, Coors and Miller, where one can get one of those cold, probably tasteless beers on every corner? But for beer connoisseurs and people interested in taste, the USA is a Mecca of beer diversity nowadays. What is the basic idea of this innovation? Brew it yourself!

Lack of taste, quality and variety is the mother of invention. For several years now, Americans have been tired of the flat, commercial uniform taste of US beer. They began to brew their own beer. The home brewers were inspired by German, English, Belgian, and Czech styles. They used traditional recipes and created something new: designer beers brewed with hop varieties from around the world, with a complex, full-bodied and aromatic taste.

Beer Rebrewed

Home brewers are re-discovering traditional types of beer. For example, take a sip of the new version of the India Pale Ale (IPA). Of course, this pale ale is not as strong as the beer the English brewed for their officers in Colonial India, but it is still as hoppy as it used to be. Another exquisite beer which US home brewers have made available worldwide is the Russian Imperial Stout, a refined balance of coffee, chocolate and a subtle tart flavour.

Today, the individual styles of home brewing are conquering much of the world. This may not be true for every country, but at least Germany was struck by the idea of crafting one's own beer. Even though Germany is the home of a wide range of beers and a large diversity in tastes, Germans tend to consume well-known and low-priced brands. Therefore, the growing interest in home brewing is a positive development. Nevertheless, compared to famous beer brands, less well-known but really special beers are rarely available. The so-called consolidation process



continues; major breweries are buying up smaller regional ones and closing them down in order to sell their own products. A study conducted by the Hans Böckler Foundation in 2010 shows that 45 major breweries in Germany (of a total of 1,322 breweries) supply two thirds of the market. Small and craft breweries can hardly compete with prices less than EUR 10 for a case of beer. In Franconia, the Land of Beer, traditional and family-led breweries close down almost every month. In addition, Franconian breweries are confronted with a generational change.

Nobody wants to take over small local breweries if the trade supervisory office is threatening with cost-increasing hygiene regulations because of the change of ownership. Therefore, lack of variety, taste and a dying tradition are now, even in Germany, good reasons for becoming a home brewer. So, there is an increasing number of people boiling their own brews at the stove at home, lautering it in the bathtub and fermenting and storing it on the balcony in order to avoid uniform beers and to win back the lost taste. Internet forums

for hobby brewers have more and more members. The number of accessory suppliers has increased tenfold and double-digit growth in sales has been achieved.

Getting away from uniform taste

Increasing attention for the gradually growing movement already makes some home brewers like Fritz Wülfig enter the next phase of merchandising their products. His beer is officially called Fritz Ale and the types of beer are American Ale, Imperial IPA, Imperial Stout and IPA. Wülfig is still working for Deutsche Telekom, but he has not been brewing at home for a longer time. The new part-time brewer explains that the positive feedback on his beers – first among a circle of friends and later beyond that circle – has made him commercialize the project of home brewing. In the beginning, Wülfig was a guest brewer in a small Cologne brewery. Now he works in the larger Siegburg abbey brewery. Both are house breweries that only sell their own beer in the brewery ►



restaurant. Home brewers do not have this possibility; they have others instead.

Wülfig sells his beer through an online store, which means that beer fans all over the world can enjoy his ales. Surprisingly, the industry is the reason for this development: a steadily increasing number of different people are willing to brew small amounts of beer – a seemingly unpretentious product – with high personal expenditure. In Germany, just like in the USA, standard taste prevails, while ingredients, processing time and storing time are being reduced due to austerity measures. Even small breweries are adjusting to this. Nowadays, the preference for beer is cool, fresh and bottled. Bitter, hoppy, dry and complex taste and the use of beer as a cooking ingredient are considered oddities that no one knows anymore and with which people need to become familiar again. Today, in order to drink well-hopped beer or to end your day with a Russian Imperial Stout, you need to brew it yourself, know home brewers or buy expensive Craft Beer. After all, one thing is certain: home brewing is costly and a good brew could take up to six hours of your

time. Anyone could brew beer in simple pots and plastic containers, but the cost for additional brewing equipment and accessories, energy and ingredients turn home brewing in Germany into something financially unattractive, although brewing 200 litres of beer per year is tax-free. In addition, home brewing is not environmentally friendly: usually, heating uses electricity and immersion chillers use drinking water.

It is not yet common to process ingredients from organic farming. Moreover, many home brewers use their own small stainless steel brewing machines, which, compared to a smaller number of big vessels used in breweries, cause increased material consumption. However, home brewing emphasises social collaborative aspects, as can be seen from the newly founded, non-commercial Dortmunder Bürgerbräu, a group of local home brewers in Dortmund, which is the former beer capital of Europe in terms of quantity. Here, home brewers have formed an association in order to finance and set up a bigger brewing machine that is used by the members of the association. Therefore, it is more



resource-efficient and more reasonably priced than a small brewing machine used at home. Aside from this, brewing in company is even more fun and you can get advice, help, and encouragement for every batch.

Social Benefits of Craft Breweries

The tradition of municipal breweries like the ones that can be found only in a few places in Bavaria and Thuringia is a good example of the common use of resources and social production. These breweries are under municipal ownership, and each and every brewer is allowed to use the beer produced at the brewery, serve it on their premises, or sell it by the barrel. This is how local competition fosters high quality beers, and, above all, enriches the diminishing variety of tastes. Especially visitors to small towns surrounding Windisch-essenbach close to the Bavarian-Czech border can enjoy these beers, because almost every house in that area offers a different kind of *Zoigl* beer. Municipal breweries or rented facilities that are

owned by commercial breweries could be the FabLabs, Flavour Labs, and Open Workshops of home brewers – and the birthplace of variety 2.0.

However, home brewing is not merely about searching for lost taste. For Günther Baumann, co-founder of the non-commercial Munich Richelbräu, another joint hobby brewery, it also includes aesthetic components. Baumann adds that brewing has both a sensuous side and an aspect critical of contemporary culture. According to him, brewing beer is some kind of holistic approach to life. Explaining his passion, he says that handling natural raw materials, weighing and measuring, tasting and pouring liquids from one container into another and bottling beer gives him a certain satisfaction. This process helps him forget the stress of everyday life and also enables him to physically enjoy the result of his work. The home brewing production may not be very profitable and for some microbrewers even a losing deal, but home brewers are idealists, Baumann admits. He adds that they are afraid that with the monopolisation of the brewing industry and concentration ►



on but few global players, the variety of beers will be lost and someday only a uniform, tasteless beer will be left. According to Baumann, they stand for variety, eagerness to experiment, and the element of surprise when at the end of a brewing day a new type of beer has been created.

Beer on the Move

The USA can be called the Mecca of home brewing with an estimated number of one million home brewers, 900 brewing clubs, and 300 hobby brewing competitions. In Germany, however, the movement is only just beginning. In the USA, brew-it-yourself enthusiasts have massively promoted the beer culture. Nowadays, many of them have dared to take the step of starting their own businesses. In the last year alone, 350 breweries were set up in the USA and in Germany the home brewing scene is growing, too.

More than one hundred home brewers, which are currently registered with the main customs office in Munich alone, may provide a representative

indication thereof. Between 1996 and 2009, even the number of microbreweries with an annual production of less than 50,000 hectolitres rose by 11 percent from 1,036 (out of 1276 in total) to 1,149 (out of 1,327) breweries. All microbreweries, producing less than 20,000 hectolitres a year, however, only account for 1.5 percent of the German breweries' total output, which steadily decreases to the current amount of almost less than 100m hectolitres a year. Until now, there have only been a few newcomers in Germany that turn brewing into their career. Most of the new craft breweries are headed by experts. The appreciation of beer in the home brewers' environment has been growing: there are more and more beer sommeliers, beer festivals and beer shops – and the large breweries are reacting. ►



Fighting the counterculture

As with all movements, the globalised beer industry has also started to deal with the counterculture of craft beers. Considering the overall decrease in sales, the beer industry recognises the economical potential of the craft beer section. One strategy is the development of a luxury product line like BraufactuM, which was put on the market by Radeberger, the largest German brewing group. The group is trying to jump on the craft beer bandwagon by offering 25 'partner products' of nine other breweries and nine of their own varieties. These 'gourmet beers', the costs of which range from three to thirty euros, are relatively cheap compared to the luxury products of Carlsberg, the fourth largest brewing company in the world. Their Jacobsen Vintage No. 1 and No. 2 that come in 0.375-litre bottles cost EUR 270.

Another strategy of the beer giants to get smaller fish out of the beer market pond works the same way as the consolidation process. The most innovative producers are immediately bought out and their niche products are

turned into mass-produced items. This, of course, does not happen without a fall in quality, as many takeover stories in the history of beer demonstrate. One such example is that of the milkman and home brewer Pierre Celis. After Hoegaarden lost the last of its breweries in 1966 Celis began brewing the local style of Belgian wheat beer in an old washtub. Since 1991 Stella Artois, now the largest brewing cooperation in the world and operating under the name AB Inbev, has produced Hoegaarden and has turned it into the world's best-selling wheat beer.

Brewing craft beer, quality issues and the wish to become commercially successful by industrialising production are in the case of home brewing all parts of a typical economic cycle that can be found in many areas of DIY, especially in food production. However, it is the home brewers who, time and again, give new energy to this system of innovation and turbulent market shifts. Gregory Noonan, a pioneer of the North-American craft beer scene and owner of the Vermont Brewpub, says that the worst thing he could imagine is that home brewing would cease to be the engine

that drives the sector forward. As soon as beer brewing is dominated by trained experts that only brew for professional reasons rather than out of passion, craft brewing will cease to be what it is today. ■

Ralf Bojanowski is a journalist and writes about cultural studies and beer.

Ralf Bindel is the Editor of Factory and a beer enthusiast.



"From a sustainability perspective, it can make perfectly good economic sense for us to once again do things for ourselves ...

or to function within local production communities and economies. The former also provides a good feel for the value of work and of a product—and also makes it clear why, in a world where "greed is great", someone is sure to lose out."

Jens Thomas. Wenn auch Frauen zum Baumarkt gehen. Selbermachen – eine Revolution der Märkte oder eine Anpassung an die Erfordernisse der Arbeitswelt (When women also go to the DIY store. In Selbermacher – Do it Yourself – a Revolution in the markets or an adaptation to the demands of the labour market). An interview with Verena Kuni, art, media and cultural studies expert, co-editor of the volume "Do it Yourself – Die Mitmach-Revolution" and curator of the exhibition of the same name. 29 September 2012 through 28 April 2013 in DASA (Dortmund). Telepolis.de. 17 December 2011

Translated by Christin Schell, Melanie Haschka

The Aesthetics of Do-It-Yourself

Crochet needle vs. Apple MacBook and creative solutions vs. industrial products: how does the DIY movement influence young designers and how does DIY contribute to the concept of aesthetics? What do resource-saving design projects in the age of prosuming look like? Marion Digel, a professor at the Folkwang University of Arts in Essen, answers these questions in an interview with Ralf Bindel.

Translated by Yin Yu, Mehmed Sariyildiz, Miriam Handrick





The e-desk is Yuki Ishiguro's diploma thesis at the design faculty of the Folkwang University of Arts in Essen. An old sewing machine, which is still produced today, forms the basis of this desk. While you pedal, the desk's belt drive is activated and its dynamo produces electricity, which is then stored in a battery. You can connect your laptop or mobile phone through various interfaces to the e-desk and benefit from the electricity you have just produced yourself.

This project was supervised by: Prof. Marion Digel, Prof. Claudius Lazzeroni

Ms. Digel, will the passion of people for DIY, fab labs, and pre-fab products make young designers redundant?

The DIY movement is not new at all. Its beginnings go back to the 1950s, reaching its peak in the 1970s. As the Whole Earth Catalogue shows, designers have always influenced the DIY movement. Young designers are still engaged on a conceptual level as the pre-fab projects such as e-desk or KEEP show.

Do these projects combine DIY and resource saving?

As a reaction to the debates on sustainability and the DIY movement designers come up with surprising projects. The so-called e-desk, presented in Yuki Ishiguro's diploma thesis, uses the pedal system of a sewing machine to charge mobile phones and laptops. KEEP, Johannes Kunz's bachelor's thesis, modernises and lends aesthetic appeal to older Hi-Fi systems. While working at the e-desk, you can charge the battery of your notebook and keep fit at the same time. KEEP will help you avoid tons of electronic waste.

But you have to be interested in saving resources, don't you?

Yes. Both theses build on different DIY concepts and rely on the consumers' sense of ecological responsibility. These concepts do not point the finger, but use people's interest in DIY and their emotional connection to their devices. Once you arouse their interest, they get involved in resource saving.

Both projects also reveal a new kind of aesthetics.

The e-desk combines the aesthetics of the industry culture with Japanese minimalism, while KEEP combines the old with the new. The KEEP project gives old devices a new look, while still preserving the peculiarities of former generations. KEEP thus transforms your home into a unique place in our age of digital technology.



How important is aesthetics?

KEEP is not a new device. Instead, durable ones are being reused. This gives the opportunity to get something new without wasting resources. The "heat-shrink-tubing" provides a note of nostalgia and gives the HiFi-system a new identity. It is also important to note that everyone can build the system themselves due to its simplistic nature. The aesthetics of improvisation.

But not everyone is so keen on the idea ...

Well, students are, even though many of them purchase mass products (e.g. those made by Apple). They question the concept of aesthetics in our modern society, which is influenced by mass-produced articles. But even Apple focuses on minimal material usage just as in the minimalistic aesthetics of DIY.

Are there any rules to follow in order to reach the promising future of the aesthetics of DIY?

In case there is a typical creative characteristic of DIY, we must refer to it as an individualised juxtaposition of different

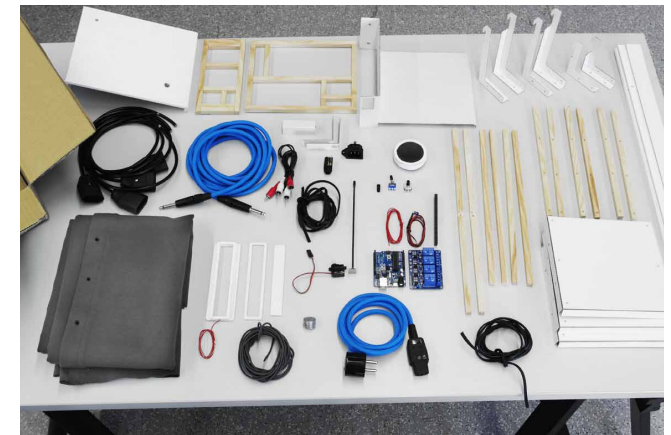
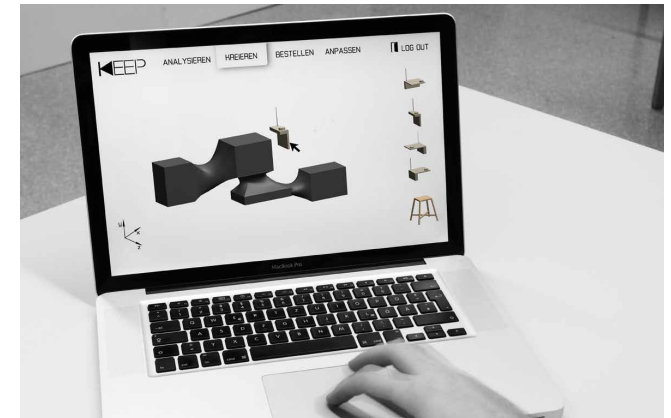
cultural influences. I am certain that there are creative 'outgrowths' just as there were in the beginnings of digitalising graphic design. However, even these aim to challenge the current concepts of aesthetics.

What are the implications for designers?

The role of the designer manifests itself in making man interact with objects or concepts of ecological consumer behaviour. If these concepts are open for interpretation, an aesthetic of imperfection, the improvised and the modifiable is created. The result is a rather open concept of aesthetics that young designers adopt.

Do you believe in the feasibility of such projects?

This DIY movement will spread if the aesthetics prove popular and people enjoy getting involved. At the moment, we have to speak of a countermovement to mass consumption and I believe that this trend will go on. This will give us the opportunity to come up with ideas for concepts in less developed countries. ►



KEEP, an idea presented in the bachelor's thesis by Johannes Kunz. Electronic waste is the fastest growing mountain of rubbish. Therefore, KEEP aims to make audio products that are about to be thrown out and to be replaced attractive again. In terms of the sound system and the energy used, these systems have been at the same level for decades. This project was supervised by Prof. Marion Digel and Prof. Claudius Lazzaroni.



As almost all audio devices can be accessed via infrared remote controls, KEEP takes on the role of a mediator between these devices. Moreover, KEEP allows you to freely programme your devices via smartphone apps according to your needs. With regard to aesthetics, KEEP places products that you would normally throw away into textile cases and gives them a new look in an abstract and amorphous shape. KEEP offers you various options to present your unique work of art; you can either place it on its legs or hang it onto the wall with its wall brackets.

How popular are DIY and resource saving among design students?

It depends on the research focus of the university, of course. The students here in Essen are already thinking more about the significance of production and consumption. If students are allowed to act as driving forces in the production and consumption process, they will feel far more excited than just designing a case. Such creative designers are strongly in demand, especially in terms of strategic development.

But projects like e-desk or KEEP have a rather modest effect on resource saving.

It is the addition of the small effects that leads to the great effect. You have to make consumers aware that they can have a major impact on resource saving by contributing little by little. And this concept can be marketed as well. I would say that more than half of our students want to have an effect on society. In this regard, ecology is not the only aspect of sustainability design; social aspects such as inclusion and participation are also important. Moreover,

sustainability design suggests creating products that bring their users pleasure.

Does prosuming, i.e. the participation of consumers in the design and production process, play a role for young designers?

Yes, indeed! We pay considerable attention to consumer behaviour, conduct surveys, and try out new concepts and models in cooperation with our users. Moreover, our students already know what prosuming is all about because they grew up in the age of prosuming. But the individualisation of products still has its limits: consumers need role models and guidance. Within these limits, however, there is a lot of freedom to design. ■



Prof. Marion Digel is the interim Dean of the School of Design and teaching in the Industrial Design programme of the Folkwang University of Arts in Essen.

factory^y The Magazine for Sustainable Economics

Although the word "factory" is mostly associated with the manufacturing industry and industrial production, it can also indicate Factor Y, the factor by which energy consumption needs to change so that future generations will find themselves living in similar conditions. Such an understanding of sustainability implies that all aspects of economic activity need to be addressed with sustainability in mind, including consumer practices as well as the manufacturing and services sectors.

Factory highlights the role of businesses in sustainable development and aims to draw the drivers of the economy into the public debate. Such development entails resource efficient economic practices for both producers and consumers as well as educating and informing them about sustainability issues.

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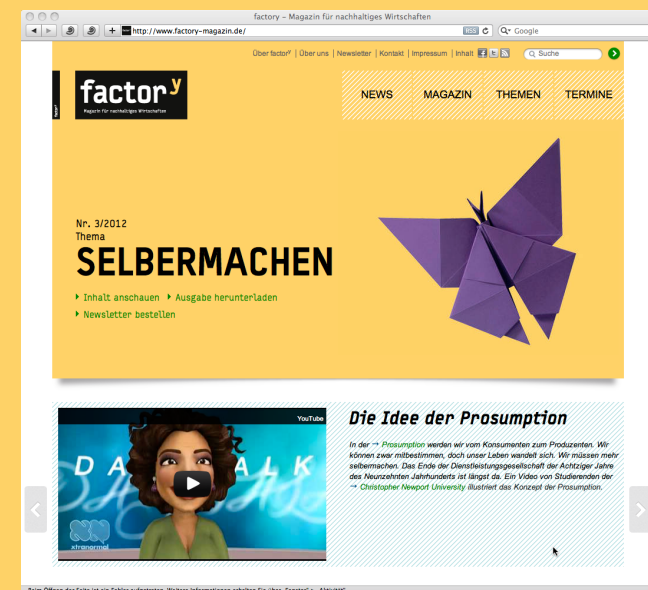
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