

factor^y

Magazine for a sustainable economy



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Topic

GROWTH

Growth – We have to talk Illusions about Growth How We Measure and Define Growth Grow, please! “Post-growth” as a Business Model Gunter Pauli and Blue Economy When Sustainability Grows The Right Growth at the Right Time

Growth – We Have to Talk

Why not give it a try? Go to the Google News website (news.google.de) and type in the term ,growth'. The result: probably more than 12,000 hits in the news from the past two days. Now try again with the term ,post-growth'. You will find a few or none at all. Searching on the normal Google website will have results on a similar scale: 25 million hits for growth and 8,200 for post-growth.

We know that in a limited system, like our planet, endless growth is impossible. Given this knowledge, it is existential for us to handle growth properly. Our economy and news are still dominated by the principle of growth, whatever the cost. Growth is good and shrinking is bad.

However, in the light of the continuing economic crises, climate change, Fukushima and social cutbacks, even our affluent society cannot miss the message: the tree of endless growth is past its prime.

Increasingly, we are coming to realize that we live in a society that is shrinking while others are experiencing growth. Meanwhile, it is becoming evident that quality of life and happiness also depend on other things besides increasing the volume of money in circulation or the GDP.

This is also reflected in the growing debate on the future of growth in politics and the media. Criticising growth is becoming socially acceptable and terms





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such as ‚post-growth‘ can be found more frequently. In spite of the Growth Acceleration Act, a commission of enquiry by the German government is researching a generally acceptable guiding principle for growth, prosperity, quality of life and, of course, sustainable development.

With this issue of factory, we want to contribute to this debate. In recent years, this topic has been the focus of many articles, books and events. Admittedly, it is a very large and complex subject, but nevertheless essential for our future. Under what circumstances are we able to both live sustainably and have a sustainable economy? How can we influence growth?

These questions are the driving force behind the creation of our magazine. This issue on growth concentrates on giving information on the current state of the debates concerning this topic by explaining differing opinions about it, and encouraging a positive outlook by giving positive examples. With our factory issues devoted to these kinds of topics, we want to contribute to spreading the understanding that it is

necessary to lead our economy towards sustainability.

It is our goal to publish four issues of the factory magazine for sustainable economics every year. The magazine will be provided free of charge; it is beautifully designed and can be read on a screen or a tablet. After all, sustainability is also about having something to read that is pleasing for both the mind and the eye. Apart from that, we will feature news, events, individual articles and service-information on our website.

The publishers, the Aachen Foundation, the Efficiency Agency NRW and the Wuppertal Institute for Climate, Environment and Energy, are looking forward to a future with factory. We, the authors, editors and graphic designers, are happy to be part of this project and hope that you will enjoy this first new issue. Enjoy!

Ralf Bindel
Editor

Translated from the German by Luzie Schmitt, Christine Kühn and Larissa Burkart

Bequem. Grün. Von hier.



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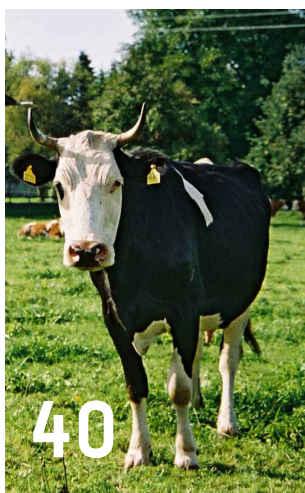
8



24



34



40



19

3.43597¹⁰

The number of Escherichia coli intestinal bacteria in one culture after 17.5 hours and 35 cell divisions amounts to 3.4359710. Bacteria may be the origin of life and without them the human body could not function and our soil would be unusable. The human body consists of approximately 10 trillion cells (10^{13}) and our bodies contain ten times as many bacteria. Bacteria multiply through cell division. The process starts slowly, but the number of bacteria doubles every 30 minutes. As the system approaches the limits of space and nutrients, dying and new bacteria will balance each other out and a dynamic equilibrium is created. When there are no nutrients remaining and the population limit is reached, cells will either starve or die off because of highly concentrated excretion products.

0.6

According to the recent theory of the cosmological expansion of the earth, the radius of the earth is expanding 0.6 millimetres annually. This means the expansion rate comes to 2.3 times 10^{-18} per second if the calculations and research data derived from the Hubble constant are correct. However, it is also generally accepted that the expansion of the universe occurs only in very large areas where there is no gravitation from individual objects. Galaxy clusters, galaxies, the solar system and planets such as the earth are therefore not subject to cosmological expansion.

258

This is the number of children being born every minute worldwide. The estimated world population is over 7,027,042,890 (as of 11 January 2011, 7 PM Central European Time). This is six percent higher than the estimated 110 billion people who have ever been born. By 2025, the United Nations estimates a world population of eight billion people. By 2015, 79 million will be added annually. This rapid growth started around 1894, when the world population hit the one billion mark. In the 20th century, the world population almost quadrupled: by 1927: 2 billion, 1960: 3 billion, 1974: 4 billion, 1987: 5 billion, 1999: 6 billion, 2011: 7 billion people. Since the end of the 1960s, the growth in the global population has been declining: from 2.1 percent (end of the 1960s) to 1.15 percent in 2009.

3-130

According to the latest research, that is how many species become extinct every day. This is 100 to 1,000 times higher than the natural rate. In 2009, the Stockholm Resilience Centre conducted a study which concluded that the tolerable rate of biological variety becoming extinct has already been exceeded by over 1,000 percent and that this will be the greatest ecological problem – even greater than climate change

5-12

This is the number of years after which the knowledge in the world will have doubled, according to current estimates. One important aspect is the speed with which information is spread via the Internet and electronic mass media. In 2003, a study concluded that the growth of saved information between 1999 and 2002 increased by about 30 percent annually. In the middle of the 17th century there were fewer than one million people with scientific and technical training. Between 1850 and 1950, this number rose from one to ten million and in 2000, the figure amounted to 100 million.

11340

The data volume of files that will be shared monthly by computer users in 2014 will total 11,340 petabytes, says the US-American network hardware producer Cisco; this includes only downloads of copyright protected music, movies and literature. In 2009, the monthly shared data volume was still at 4091 petabytes. Until 2015, file sharing traffic will grow by 19 percent annually, says the Federal Association of the Music Industry.

19.9

This is the percentage of green electricity in Germany in 2011, according to calculations by the German Association of Energy and Water Industries (BDEW). In 2000, renewable energies only represented 6.6 percent of the total. Since the Fukushima catastrophe in March 2011, the German government has reconsidered its policy on energy. The goal now is to reach a rate of 36.8 percent green electricity by 2020. Currently, lignite is the main power source, at 14.6 percent.

22200

The number of organic farms that existed in Germany at the beginning of 2011 totals 22,200. That is 5.7 percent of all farms with an area of 5.9 percent. Every year, about 1,000 new organic farms are founded, which represents growth of 5.4 percent. In 1996, there were 7,353 organic farms, covering 2.1 percent of the arable land. Since domestic farms cannot satisfy the consumer demand, imports of organic goods are rising. The turnover of organic goods in the retail sector is 3.4 percent.

50

In the US, the probability of catching an illness in the intensive care unit due to multi-resistant MRSA bacteria is currently 50 percent. In Germany, the incidence of such infections in hospitals lies at 15 to 20 percent, depending on the region. The fact that bacteria are becoming ever more multi-resistant to antibiotics is increasingly a problem in medicine. This is caused by the unnecessary prescription of antibiotics, the use of antibiotics in the food industry and incorrect use by patients. 40 million pigs in intensive livestock farming in Germany are being treated with antibiotics.

Illusions about Growth

They do exist, the ‚limits to growth‘. Everyone is familiar with the key words nowadays: climate change, overexploited oceans and high oil prices. If you ask companies and politicians about this, they quickly start talking about competitiveness. Without growth, individual companies as well as entire economies would quickly be out of business. Ecologists counter that continual growth will also lead to collapse – it will just take longer. Both of them are right.

By Bert Beyers

Translated from the German by Theresa Lupek, Alina Junk and Larissa Katja Burkart



What's the deal with growth?

Growth has something to do with increase, enlargement, development, augmentation, expansion, and extension. It is all about getting more.

Economically speaking, growth is usually defined as the percentage increase in gross domestic product, i.e. the annual increase in the total value of all goods and services produced by an economy. This, however, disregards important factors. Meanwhile, growth often occurs at the expense of natural living conditions. Thus, we are losing sight of the actual goal of economy: the quality of life.

The era of hyper-growth

Around 1950, there were about 2.5 billion people living on earth. Today there are about seven billion. In the second half of the 20th century, the economy expanded at the same explosive rate, the global gross domestic product increased sevenfold. The two World Wars were followed by three decades that historians refer to as the 'Golden Age'. In Europe,

North America and Japan, broad levels of prosperity that had been reserved for millionaires only in the days of their grandparents, like telephones, washing machines and cars. In the second half of the 20th century, global water consumption tripled, carbon dioxide emissions quadrupled and commercial fishing quintupled.

Can economic growth last?

Of course it can. By 2050, the world population will have grown to between nine and ten billion people. By the middle of the century, the world population will most likely have reached its climax. China and India alone will then each have reached a population of 1.5 billion people, which is more than the total world population was in 1950. People in China, India and Brazil also want telephones, washing machines and cars. As we get closer to the year 2050, we will not only be experiencing growth, but also increasingly our limits. ▶



Limits to growth

In terms of the climate issue, the world is in a difficult situation. The rapid growth in the global population, the increasing prosperity of a 'middle class' in densely populated emerging markets as well as energy that is predominantly generated from fossil fuels have an impact on the current situation. There is no chance of preventing an increase in the earth's average temperature by about 2° Celsius. If we were really to reach this goal, the man-made greenhouse gas emissions would have to be reduced to about one third by 2050, which would be very ambitious.

There will be a completely different trend up until the middle of the 21st century with respect to the economic growth process and the comparatively low energy efficiency in countries like China, India or Brazil. Instead of reducing today's emissions to 30%, there will be a significant increase with nearly doubled emissions. If this were to actually take place, the ultimate climate disaster could no longer be prevented.

The consequences would be much more severe than those of a global financial crisis, which could be overcome within a few years' time. Restoring the global climate system, however, would take ten 10,000 years or even more.

So far, we have not even talked about peak oil (the imminent point in time when the global oil production reaches its maximum rate), unprecedented losses of biodiversity, the collapse of fish stocks, water scarcity in many parts of the world or the global loss of fertile soil. There is no point in denying the fact that there are limits to ecosystems.

The boomerang effect

Technological progress brought about unprecedented opportunities. The ability to make fire opened up a much larger environment to humankind, thus providing a broader variety of food. From the Neolithic revolution about 10,000 years ago to the so-called Green Revolution of the modern day, the yield of agricultural land has increased drastically. The fact that we can feed seven billion

people today is a direct consequence of technological progress.

The so-called boomerang effect is considered to be the antithesis of technological progress. In the middle of the 19th century, the British economist Stanley Jevons was the first to ever describe this phenomenon: "It is wholly a confusion of ideas to suppose that the economical use of fuel is equivalent to a diminished consumption. The very contrary is the truth. As a rule, new modes of economy will lead to an increase of consumption according to a principle recognized in many parallel instances." James Watt's steam engine was approximately seventeen times more energy-efficient than previous models, but it was also responsible for an enormous increase in coal consumption. ►



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What does this mean?

In terms of figures, annual growth of 3% means a doubling of goods and services every 23 years, a thousand-fold increase within 234 years. Thus, even in the long run, it does not help to reduce the amount of waste generated per unit of industrial products. If we examine the figures, we can easily see that this process will and must end at some point.

The only way is to strictly incorporate the 'limits to growth' in economic regulations, and this needs to be done on a global level. This is difficult, but not impossible. Regarding climate, there are annual limits on the emission of greenhouse gases. In terms of fishing, there are fishing quotas and if we really want to preserve parts of biodiversity, certain regions simply should not be used for commercial purposes. No ifs and buts. The boomerang effect would be leveraged in just one step. Within these framework conditions, competition would then ensure effective and 'dematerialized' solutions and thus, a global socio-economic market economy.

Meanwhile, developed countries start to realise that growth cannot be perpetuated with credits – a painful farewell is imminent. ■

»The unprecedented orgy of growth regarding the history of mankind that has occurred over the last few decades has put the population of the first industrialised countries in a state of intoxication,

and where they choose to remain. They fear the disillusionment, the hangover. Therefore, they try to maintain or even to slightly increase their state of intoxication with stimulants such as monetary delusions, public and private debt or the like. According to the consensus view, human beings are only satisfied and the public good only works in a state of intoxication.«

How We Measure and Define Growth

The discussion on growth is on the rise. Furthermore, the perception of this traditional economic factor is also changing. The search for alternatives has officially started. We summarised the most important concepts in the following chapter.

By Ralf Bindel

Translated by Theresa Lupek, Larissa Katja Burkart and Alina Junk

Economic growth

Generally, the term economic growth refers to the increase in gross domestic product (GDP), i.e. the increase in the sum of the prices of all economic goods and services produced in a national economy within one year. A distinction is made between nominal growth on the one hand and inflation-adjusted real growth on the other hand. In most national economies, economic growth is one of the main objectives in politics. In order to prevent or reduce a rise in the unemployment rate due to technological productivity, economists demand a GDP growth of more than two percent.

Zero growth

is a condition without economic growth, i.e. a situation in which the GDP of an economy is neither increasing nor declining over a certain period of time. If, in a state of zero growth, productivity is increasing in a national economy, economists expect decreasing employment figures and decreasing incomes in pension and social funds. In the 1980s,

the green movement demanded zero growth in order to stem the consumption of resources and environmental pollution. During the 1990s, however, views changed and taxation on resources was called for ('tax energy instead of work').

Sustainable degrowth

is a downscaling of production and consumption growth. It is a measure to avert economic growth that is socially, ecologically, economically and politically unsustainable. John Maynard Keynes, Nicholas Georgescu-Roegen, Ivan Illich and Andre Gorz as well as the authors of the book 'The Limits to Growth', which was published in 1972 and commissioned by the Club of Rome, are considered to be the masterminds behind this theory.

Decroissance

is a French movement based on consumption-critical ideas, which was widely discussed in France up until the presidency of Nicolas Sarkozy. The

movement is rather radical and does not only reject an obligation to ensure growth, but also a Green New Deal.

Post-growth economics

In Germany, there are many different scientific approaches critical of growth influenced by Niko Paech, Gerhard Scherhorn, Adelheid Biesecker, Sabine Hofmeister, Uwe Schneidewind and Hans Christoph Binswanger. These approaches are orientated towards a strategy of sufficiency with a strengthening of local and regional supply patterns and reforms with regard to soil and money. Since the financial crisis of 2007, policy-makers, researchers and the media have broached the issue of declining real wages, collapsing growth and shrinking cities. A paradigmatic change is looming in both perceptions and debates. Sociologists like Ulrich Beck insist on accepting and creating shrinking cities. ►



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Prosperity Without Growth

is the title of the book written by the British economist Tim Jackson, commissioner of the Sustainable Development Commission of the British government. According to his theory, prosperity without growth is not a utopian dream, but a necessity. He does not believe that primary energy consumption can be decoupled from a countries' economic power and insists on a new concept of prosperity and a redistribution of work.

Uneconomic Growth

Uneconomic growth is a term used in the US to refer to a condition in which the direct benefit of economic growth is outweighed by mere unsustainability. Herman Daly, a former World Bank employee defines 'uneconomic growth' as an increase in economic growth at the expense of resources and quality of life and builds on qualitative growth instead of de-growth. ►

Genuine Progress Indicator

GPI is a business indicator that is supposed to replace the GDP (gross domestic product). It was created on the basis of the former Index of Sustainable Economic Welfare (ISEW) and is used to measure whether economic growth of a country actually leads to increasing wealth or well-being. GPI also considers the capacity of and damage to the ecosystem, and furthermore includes social and political sustainability. Yet there are no globally binding criteria for its measurement. GPI is one of 20 indicators under discussion that could become part of the prosperity indicator suggested by the EU.

Growth Acceleration Act

is the law for the acceleration of growth passed by the German Bundestag in 2009. Within one year, the third economic-growth package implemented immediate fiscal measures against the economic and financial crisis, which has impacted the economy since 2007.

New growth was supposed to be generated with tax breaks. The former Federal President of Germany, Horst Köhler, declared the tax reduction plans to be a risky game: “As if it were the state that could make for ever more, ever faster growth.”

Ecological Footprint

is defined as the area of the earth necessary to permanently allow the lifestyle and living standard of a person living under a continuation of today’s production conditions, given in hectares per person and year. Mathis Wackernagel and William E. Rees came up with the concept in 1994. In 2003, Wackernagel founded the Global Footprint Network, which collects data worldwide. According to the network’s data and the European Environment Agency, the globally available area for meeting human needs is being exceeded by 23 percent. At current consumption rates, one person needs an average of 2.7 hectares, but only 1.8 hectares are available. Europe requires 4.7 hectares (ha) per person,

but only has 2.9 ha. Germany needs about 5.1 ha, the US 8 ha, Brazil 2.9 ha, China 2.2 ha, and India 0.9 ha. Almost all countries are enlarging their footprint annually.

(UN)Happy Planet Index 2.0

is an index that combines data concerning life satisfaction, life expectancy and ecological footprint and that integrates sustainability, in contrast to GDP and Human Development Index (HPI). The average life expectancy is multiplied by life satisfaction and divided by the ecological footprint. Despite high life expectancy, a country like the US comes in in 150th place, mostly due to its excessive consumption of resources, Bangladesh is in 41st place and Kyrgyzstan in 19th place.



Growth, Well-being, Quality of Life

more precisely: “Study Commission on Growth, Wellbeing and Quality of Life – Paths to Sustainable Economic Activity and Social Progress in the Social Market Economy“. This is the title of a cross-factional working group of the lower house of the German parliament. Since January 2001, this group is supposed to work on developing a common position that can be backed by the majority of the population. Within one year, the group had 16 meetings with various experts and researchers. 17 members of the German parliament and 17 external experts, appointed by the various factions, comprise the group. The goal is a debate about the well-being ratio and the possible creation of a progress indicator that goes beyond the GDP. This indicator is supposed to take into consideration material economic status, access to and quality of employment, distribution of well-being, social inclusion and cohesion, intact environment and availability of limited resources, educational chances and standards, health and life expectancy, public services, social security and political participation as well as subjective satisfaction. The commission wants to examine the possibilities of a creative regulatory policy and subsequently draft a final report outlining concrete recommendations for action based on their findings. ■



»Growth can solve some problems, but in doing so, it causes others... The earth is finite. Physical growth, including the human population, their vehicles, homes, and factories cannot go on forever.

However, the limits of growth are not limits to the number of people, their vehicles, homes, factories – at least not directly. They are limits of performance

– the steady flow of energy and material, in order to keep people, vehicles, homes and factories in operation. They are limits of the rate at which humanity harvests resources (crops, grass, wood, fish) and emits waste (greenhouse gases, toxic substances), without enlarging the planet's capacities correspondingly.«

Dennis and Donella Meadows, Jorgen Randers

Meadows, Donella; Randers, Jorgen; Meadows, Dennis: Limits to Growth, The 30-Year Update, White River Junction, 2004, p. 8 ff



Grow, please!

Not everything that grows in the economy is bad. Sometimes the right thing grows – and even in the right direction. A good example is crafts. If the principle of the craft were to grow as opposed to the principle of industry, we would all win.

By Christine Ax

Translated from the German by Merle Manon Kolmorgen, Theresa Lupek and Lara Nettekoven

There are some large craft enterprises with more than a thousand employees. However, most of them have fewer than ten. Sometimes you only recognise the difference to industry in places where work is actually still performed manually. After all, new technologies and automation are part of the daily routine in almost all manufacturing companies nowadays. But no industrial enterprise could survive without manual labour. Just think about the many external craft enterprises that maintain, repair or install equipment for the German companies Bayer or VW every day.

The differences between crafts and industry though, are rooted in their structure. Craft enterprises are almost always family enterprises. Most of them find their customers within a circuit of 50 kilometres. Craft is the biggest employer in Germany and provides apprentice positions for many young people. This economic sector is a stronghold of stability. Nobody is as active at training young people and as loyal to their employees: these enterprises often still keep their employees even when it is basically not possible anymore.

Manually through the crisis

A craft is crisis-proof despite the closure of numerous enterprises every year. For centuries, crafts have been employing 15% of all people on average. Its 280 professions and countless specialisations depict the professional capability of our civilization and the diversity of our traditional and cultural heritage. The crafts, as an institution and a highly dynamic economic sector, is an asset that is even available in case of financial or other crises.

There are only a few types of machinery, tools and processes that could not be produced, reproduced, copied or repaired by Germany's production and process experts in the electronics and metal crafts in the case of an emergency. I must admit that I am a fan of crafts and am repeatedly deeply impressed by what unbelievable competence the many small, invisible craft enterprises have and steadily develop.



Sustainable Crafts

Even though it seems as if the topic of sustainability has not yet been fully understood by the key actors in the Central Association of German Crafts, the Association of Chambers of Crafts and the chambers themselves: a sustainable economy needs crafts. The opportunities that would result from a post-growth transformation-process for craft enterprises are immense. Crafts are vital for the energy turnaround and steadily grows thanks to these tasks. In the sectors of mobility and in repair, maintenance, and reuse and recycling, crafts are just as essential as for the manufacturing of the particularly beautiful, the seldom and the unique.

Granted, it takes some time until even the last craft enterprise has recognised the signs of the times, but the pioneers and some parties of the craft organisation promote this process. The activities of the professional associations of sanitary facilities, heating and air-conditioning technology and the electronic crafts represent good examples of this development.

There is a surprisingly large number of inspired entrepreneurs in crafts who have been setting an example for a long time and have shown that economising can be done more humanely and more sustainably. These innovators are a considerable resource for change, quantitatively and qualitatively.

Crafts: the Basis for Cultural and Creative Industries

The diversity of craftsmanship is an important part of our collective cultural heritage, a part of our culture's DNA. A recently published study documents how closely modern cultural industry and crafts are interwoven with one another. It illustrates that one out five craft enterprises generates all or at least a large part of its turnover as part of the modern cultural and creative industry.

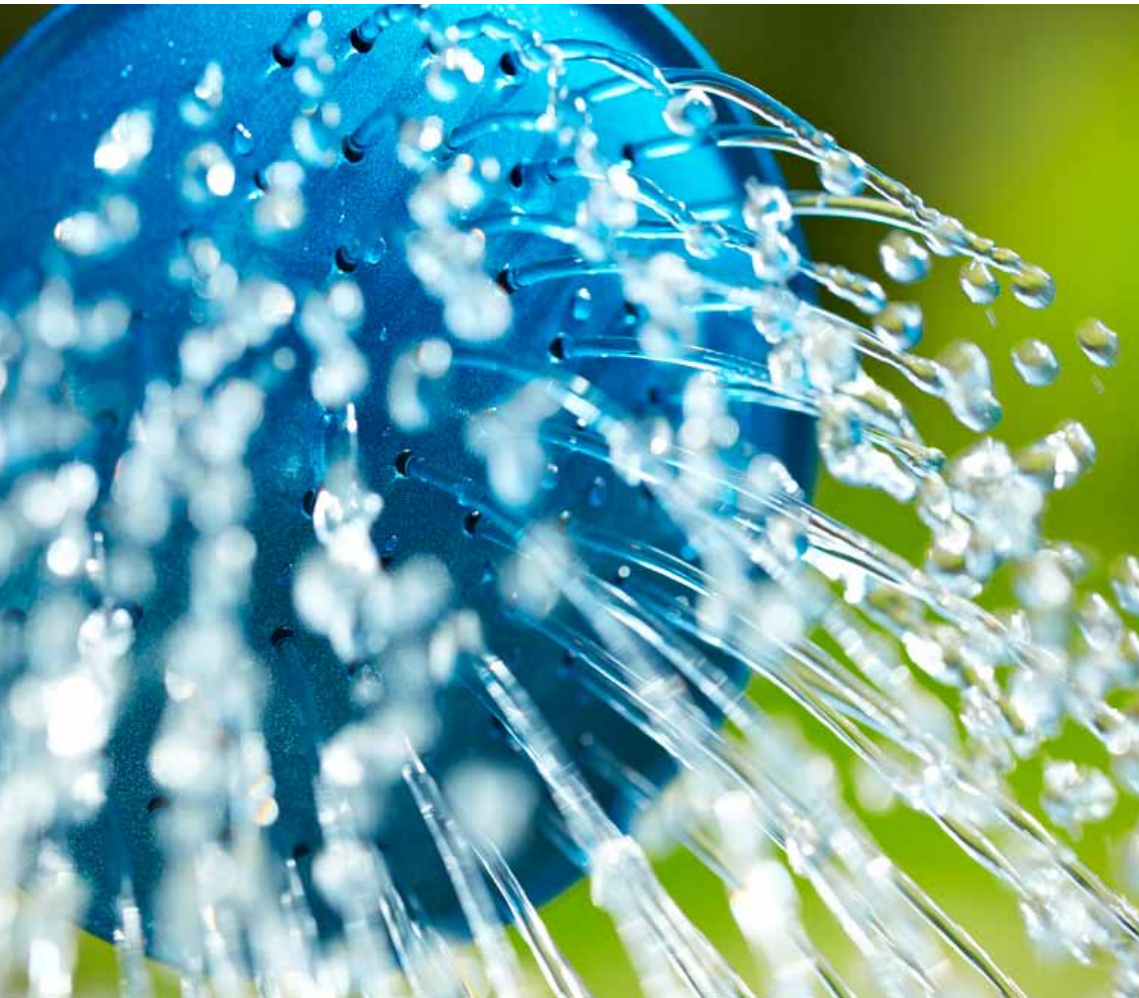
The "principle of the craft" as a condition for every type of art – from painting, to architecture and all the way to the production of cakes – is of practical and fundamental importance and is significant to education policy; when there are discussions nowadays about how our

skills and our expertise can blossom in the post-growth society, then a different, qualitative type of growth is meant. In fact, beyond the old paradigm of "ever faster and ever more", a world is imaginable in which only what is really supposed to grow, actually grows: the good life, public goods, fulfilling employment, diversity of arts, sustainable products, and an abundance of time. ►

Prevention of Consumption Needs Craft

And finally, crafts are also the key for sufficiency strategies that are supposed to make redundant consumption unnecessary. Walter Stahel, a mastermind of sustainability, explained another important principle of sustainable economy on the basis of his ageing car, a Toyota, which he keeps repairing and with which he even participates in vintage car rallies: if we want to generate our wealth with less energy and raw materials, we should use products and their parts longer. This requires products with parts that can be used longer and more intensely before the raw materials that were used to produce these products go back into the cycle.

And therefore the activities in the sectors of maintenance as well as reuse and recycling are the main ones that enable a type of wealth that can manage without the constant new consumption of raw materials and energy. Essentially it is like this: whatever is not worth the effort of lasting use, care and repair for us as individuals or as society is probably also not of real importance for our fortune and the good life. Therefore we need growth in the principle of the craft. ■



»Growth means an increase in quantity of a physical product. 'Development' means an improvement in quality in the use of a given flow that either results from better technological knowledge or a better understanding of the product's purposes.

This is why an economy, which is in a stationary state as a subsystem of planet earth, can develop but does not grow – just as our planet can develop without growing.

The notion that we can save the paradigm of growth by dematerialising our economy, or “decoupling” it from resources, or substituting information for resources, is pure imagination. We can surely eat lower on the food chain, but we cannot eat recipes!«

Based loosely on Herman E. Daly

Daly, Herman E.: Beyond Growth: The Economics of Sustainable Development. Beacon Press, 199699

“Post-growth” as a Business Model

The debate on the future of economic growth has reached the heart of society. The German Bundestag (lower house of parliament) appointed a study commission to this issue. It is vital that companies take part in this debate as well.

By Prof. Dr. Uwe Schneidewind

Translated from the German by Alina Junk, Theresa Lupek
sand Merle Komorgen



Searching for a "basic needs development" society

The current relevance of the discussion on the future of economic growth is subject to tension. On the one hand, there are our visions of the future and our social systems, including pension or health insurance and reduction of government debt, which seem to depend indispensably on continuous economic growth. On the other hand, our chances of achieving this kind of growth are decreasing. Some reasons for this are changes in demographics, increasingly saturated markets, a smaller increase in the quality of life despite nominal growth as well as global environmental pollution.

As a result, it is worth searching for ways to form a "basic needs development" (W. Sachs) society, meaning a society that allows quality of life and prosperity during periods of growth as well as during periods of recession. Getting there requires extensive social, cultural, and institutional changes. It constitutes an immense program of social innovation.

Companies are indispensable

This kind of project cannot be done without the help of companies. Companies are important places for ideas and experiments, also related to social change. Therefore, they play an important role and have great responsibility. At first, it might seem like a surprising idea that companies could influence something to be 'less', 'slower', and 'decentralised' – formulas that play a central role in the debate on economic growth. On second glance, it becomes clear that there are a number of similar approaches already in place that can be developed further.

Purist interior design turning 'less' into luxury or a vacation at a monastery are just examples for ways of expressing consumer behaviour in response to an increasingly accelerated and supersaturated world. The idea to "simplify your life" is another well-known formula for strategies of reducing that opens your eyes for basic reflections on the range of products and services companies offer. ►



Prof. Dr. Uwe Schneidewind is the President of the Wuppertal Institute and a member of the Study Commission on Growth, Wellbeing and Quality of Life of the German Bundestag

Picture: Wuppertal-Institute

Read more (In German):

Schneidewind, Uwe/Palzkill-Vorbeck, Alexandra: Suffizienz als Business Case. Nachhaltiges Ressourcenmanagement als Gegenstand einer transdisziplinären Betriebswirtschaftslehre. Wuppertal Impulse zur Wachstumswende. Wuppertal Institut, December 2011. (Download at www.wupperinst.org)
www.wupperinst.org/publikationen/entnd/index.html?beitrag_id=183

factor.v



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Deceleration aims at ‘slower’ and ‘more reliable’ and thus normally better, higher quality products that cater to needs for a longer term.

By extending the average life span of a product from two to four years, the material productivity of the material used for the product is simply increased by factor of two. Deceleration strategies are also becoming more relevant in the service sector. Movements like “Slow Food” or “Slow Travel” are an expression of this mind-set and go against the popular trends in the food and tourism industry to increase the rate of production and the number of experiences.

Regionalising strategies are common in several areas – ranging from local food segments to strategies of re-communalising the energy supply.

Dare to Experiment

These examples show that companies can contribute to the “basic needs development” society without worries. For young entrepreneurs, this presents very interesting business opportunities and an opportunity to drive forward important social change.

»Our investments are geared towards working expansively on consumer markets. Exciting new products find the perfect opponent in us, the consumer – simply because we love new things.

In our everyday lives, we get caught up in our own consumer patterns. We use material things like a language to communicate how important we are, how much we love each other, and where we stand in society.

We use these things to make our own identity stronger, to document that we are socially embedded, and they have real meaning in our lives. That is where the dilemma lies. And this is also where we are rooted in the economic structures; it is somewhat like social logic.«

Tim Jackson

In a keynote speech held on April 6, 2011 at the Heinrich Böll Foundation, Berlin

Gunter Pauli and Blue Economy

Better quality for better prices is the objective of Blue Economy. Its inventor, Gunter Pauli, is an entrepreneur, advisor, author, travelling speaker and an educator. He wants to meet everybody's basic needs with his Blue Economics by using what is available regionally.

By Bert Beyers

Translated from the German by Christine Kuhn, Luzie Schmitt and Alina Junk

Your concept is called Blue Economy – why?

I have been working on promoting more environmentally friendly economic standards, a green economy, for 30 years. Ten years ago, I realised that everything that is good for people's health and the environment is expensive. It costs too much money. After the financial and economic crisis in 2008, I finally realised that green solutions are only good for those who have money; which is not a good thing. We should create an economy which can ensure that people's basic needs are met by using the means available to us. This is why I think Blue Economy has to emphasise innovation; we should be entrepreneurs, we should not divide society up into good and bad, and we should always choose the best option.

Why “Blue”?

When looking at earth from space, it is a blue planet, not a green one. There is the blue sky and the blue ocean, too.

If I understood you correctly, at Blue Economy, it is all about relations; between things and people, and on all levels you can imagine; it is about relationships and smart synergies, the kinds you might overlook at first sight. Can you give me an example of the Blue Economy?

Since we are sitting here having coffee one might wonder: What is that in my cup? The answer: Only 0.2 % of the material that coffee farmers in Colombia and Kenya harvested. Once again, only 0.2 % of the material is actually being used, and no one who drinks coffee has ever felt bad about wasting 99.8% of the material. Those who drink tea only use as little as 0.1 per cent of the material. There is something most people drinking coffee or tea don't realize: There is a large amount of waste material rotting away and turning into methane gas.

Are you talking about the left-over coffee grounds?

Coffee grounds, the husks, and all the other parts of the coffee plant that are not used. It is funny that the coffee's added value is based on the 0.2% in our



Gunter Pauli, Foto: Bert Beyers

cups. The rest is waste material. One of the largest processors of coffee is Nestlé, where about three million metric tons of coffee waste material is burnt in the course of the production of Nescafé. Three million metric tons are used as a source of energy. This is exactly how these processes are working now. They just didn't know any better when they first designed the production process. Thanks to research at the University of Hong Kong found in 1991 that one kilo of coffee grounds allows the cultivation of half a kilo of shiitake mushrooms. ►

Twenty years ago, shiitake was not well known, but today it has been established as a highly nutritious mushroom with neither fatty acids nor cholesterol. In other words: a product we should be eating more of.

How does Nestlé respond to your ideas?

I met the former chairman of Nestlé, Helmut Maucher, in Davos. He told me he thought it was an excellent idea. We went on to look at the figures and I told him Nestlé could produce one and a half million tons of shiitake with its three million tons of coffee grounds. In about ten years Nestlé could become the largest producer of healthy mushrooms worldwide. This could put them in competition with China, which now already exports EUR 17bn worth of mushrooms.

So how did the project play out?

Nestlé said that their core business was selling coffee, not mushrooms. This means that they do not have the core competence needed for the mushroom sector. This is why they do not want to sell mushrooms. However, I would say that Nestlé has a supply chain management that should be able to handle this or they could outsource the task. But they had the impression that it would not be possible to place the product on the market. But coffee and shiitake got together anyway.

Worldwide, already 15 000 employees work in the field of utilising coffee by-products. They work in Zimbabwe, Tanzania, Columbia and Brazil. However, coffee grounds are also produced in Europe. Ten top chefs in Berlin have decided that they want to grow 14 different types of mushrooms using these coffee grounds. There are agreements with La Place in the Netherlands, with the Kraft company in Paris, and with Starbucks in Madrid. The project is really taking off now. People today are aware of the fact that Europe is in the midst of a crisis which jeopardises jobs. Starbucks in Madrid has managed to create 60 additional jobs by means of added value.

How do you experience communication with companies?

Here is a Unilever example involving tomatoes: the skin of the tomato is full of colour pigments which Unilever could use directly in their own production processes. We have worked for years on this subject in order to explain how it works scientifically. Yet, when the company is finally ready, there will be other difficulties to tackle, that is to say reorganising the supply chain management.

However, due to the risks attached to reorganising the supply chains, nearly none of the major companies would consider this step. The only one ►

who could influence this is the financial director, with the argument that the cash flow could be increased.

How could this problem be solved?

When we talk to a company now – a month ago, for example, I met some of the major companies of the chemical sector in Madrid – I have to rewrite my speech, translate it into cash flow and stress the advantages for the balances. This usually leads to success on my side. Yet, if I only talk about the technical side, the problem is that the listeners are not well enough acquainted with the subject.

So it is about a common language basis.

I think we, as supporters of the green or blue economy, use a language that had up to now only been understood in the field of corporate social responsibility and sustainability but not in business. Therefore, we, as the ones who want innovation that leads us to a more sustainable society, need to adapt our language in order to make our arguments comprehensible for large companies. Showing Starbucks in Spain that they could upgrade their company brand by selling super healthy mushrooms and creating jobs at the same time, was not corporate social responsibility. For Starbucks, this presents a new approach towards changing their business model. Now Starbucks

branches in other Spanish cities can no longer imagine not growing mushrooms. They realise that customers appreciate that they can get mushrooms for half the usual price. This is exactly what the blue economy is about: it has to be cheaper and we are able to create jobs. Our approach is to combine the two things.

How does blue economy see growth?

In my opinion, we should not blindly discuss growth. I have lived in South America and Asia and if one billion people worldwide are desperately poor, we simply need growth. Yet, this growth has to be different from the European or US-American idea of growth. We need a new concept of growth. For us, growth is primarily about providing for the basic needs of the entire population. To achieve this, we need to develop innovative business models. A sewage treatment plant costs money. A landfill costs money, too.

Usually, people pay taxes to cover these expenses. This means that money is extracted from the economy to finance these disposal services. If we used a reasonable chemical method, as Korea does for example, we would be able to produce four times as much biogas by using sewage sludge and organic waste from the landfill. This is more than the best scientists have predicted. We talk about smart grids but not about smart chemistry. ►



In which categories do you think of growth?

Humans are the only species on this planet with a concept of lack. Other species have always had enough or even in abundance. And when there was not enough, species adapted. Yet, it is strange that we are the only species that maintains a linear idea of growth. A basic need is water, for example. However, this does not mean that we should waste 40 litres of water flushing a toilet like they do in the USA. This does not make any sense. What we should do instead is develop more toilets that only require one and a half litres to flush, and reclaim the water afterwards. The whole debate about growth is a sham: are you in favour of it or against it? This is not the right question. The question should be: what is the best solution? ■

www.community.blueeconomy.de

www.zeri.org/ZERI/Home.html



»The end of economic growth is pure fiction. We are rather in the middle of a gigantic cycle of growth that will last for the next few decades.

(...) While we discuss the limits to growth, the people in Asia, Latin America and Africa have set out to realise their dreams of a better life – modern apartments, substantial food, television, computer and telephone, fashionable clothes, individual mobility and trips to foreign countries. Nothing and no one will stop them. Only the question remains whether this enormous boost of new goods and services will lead to ecological collapse or whether it can be controlled in a sustainable way.«

Ralf Fücks

Fücks, Ralf: Das Wachstum der Grenzen (The limits to growth). In: Das Magazin der Heinrich-Böll-Stiftung, issue 2, 2011



When Sustainability Grows

Growth and a sustainable economy, how does this go together? It works particularly in small and medium-sized enterprises that are usually not associated with sustainability at first glance: craft enterprises. Examples show that this is exactly where limits to growth imply more sustainability.

By Christine Ax

Translated from the German by Christine Kuhn and Luzie Schmitt



Nearly one million craft enterprises exist in Germany. The economic sector is subject to a continual process of change. Every year, thousands of craft enterprises are created, closed down, bought up or taken over. Most of them work locally and very rarely open a branch. This is why they can copy successful concepts without competing with each other.

These enterprises rarely grow out of their status as craft enterprises to become 'mass producers' and 'industrial' enterprises. Nevertheless, small-scale enterprises have strengths and weaknesses related to their size. Growth, however, is not on the agenda for most craft enterprises. Growth is not easy, it hurts, it requires money, time and the full attention of the manager. Growth is always a critical phase and full of risks. Is investing worth it? Does the market, the environment, the customer change? But sometimes growth is necessary and makes sense. It needs to be approached carefully, since craft enterprises cannot afford errors. They do not have the required assets to take high risks. The following three enterprises demonstrate that growth is possible in a sustainable way and does not always require great size. ►

Apprenticeship workshop of the Huhle Stahlbau GmbH in Wiesbaden.

Photo: Huhle



Growing together: cooperation that works

In 2008, the Wuppertal enterprise Raumfabrik won a prize for cooperation. Since then, a lot has happened. The Wuppertal model, meaning the cooperation of various enterprises for renovation, redevelopment and construction, has been very successful and has been adapted in other places throughout Germany. Other similar enterprises have been founded in order to offer everything concerning living/renovating/building from one supplier.

Klaus Braun, chairman of the association and one of its founders, says that the cooperation had been extremely valuable for them. Now they work with clients on projects that they would never have tackled on their own. This concept enables all of the partners to draw from each other's competences and know-how, as well as to acquire new clients. They do not only share and exchange business prospects but also ideas and experience. Common problems, such as recruitment initiatives and marketing issues, are solved together.

More than half of the founders consider the concerted enterprise a success. They have remained part of Raumfabrik until today. Expanding Raumfabrik is not on the table for now, as the effort to integrate more partners would be too high. However, the model could of course be multiplied. Concerning his painting company, Klaus Braun has not regretted taking part in this association. With ten employees and eight apprentices, his company is neither big nor small for a paint shop.



Breakfast with the apprentices in the RaumfabrikForum during a visit of the mayor of Wuppertal, Peter Jung. Photo: Raumfabrik

The question whether he would like his company to grow has already been answered. Braun admits he does not want the size of his company to increase – rather to decrease. He prefers being big among smaller businesses to being small among bigger businesses. ►

Sustainable growth

An Austrian craft enterprise in the federal state of Vorarlberg has been developing in a very peculiar and sustainable way for the past 30 years. While still young, Arnold Feuerstein, the company founder, was very successful, but an early heart attack forced him to reconsider the growth issue thoroughly. The result was an unusual and highly successful company that is living and growing by its own rules.

The company, which goes by the name of 'Dorfinstallateur' (village plumber), enables master craftsmen to work according to the principles of an 'independent entrepreneurship' that incorporates all of the benefits and strengths that can result from the assistance provided by 'staff units'. Each of the 15 shareholders leads a team of his own in the form of a regional 'profit centre' and is at the same time unburdened as well as supported by centralised services. Every shareholder participates in the company's success and is involved in major decisions. The 'systemic' management supports and organises internal communication as well as the company's further development including all of its 'units'.

The more than 100 employees of the company have just recently defined sustainability as the prime corporate objective; there is no clear definition of the required number of shareholders. This exceptional business model provides the ideal setting for anyone who wishes to grow into corporate responsibilities. The values the company stands for are the following: working in teams with fun and respect; turning



A photovoltaic roof application by the village plumbers

Photo: Dorfinstallateur

every customer into a regular customer; being a social role model; and assuming responsibility for economic efficiency and healthy growth.

So, what is meant by the term 'healthy growth'? Johannes Ouschan, the company's CEO, explains it this way: "First of all, our understanding of growth concerns quality. Maximising profits is not our goal; it's exactly the other way round: our profit represents the result of successfully applied values. We ourselves only want to earn as much money as we really need. In addition, we want to produce and supply items that people really need and that are of sustainable use as well." ►

Inter-generational contracts: family businesses

Siegfried Huhle, co-owner, and father of the current CEO of the Huhle Stahlbau GmbH, a steel construction company, explains that the entire company agreed to take a break from economic growth. The family-run enterprise has been in the market for 100 years and has accumulated a staff of 100 employees. This much growth was not planned. Siegfried Huhle is convinced that the company's growth has to do with their dedication to junior staff training; his strong commitment to future generations goes so far as to buying his employees' children's diapers for the first year of their lives.

When Siegfried Huhle talks about his apprentices, he praises them highly: "All of them are so good that you want to keep them – and when you have good employees, you do a good job, which then leads to increasing numbers of orders." Since he also serves actively as the guild chairman and has a thorough knowledge of the steel construction industry, he knows from his own experi-



Apprenticeship workshop of the Huhle Stahlbau GmbH in Wiesbaden.

Photo: Huhle

ence that the leadership succession is a particularly critical point in terms of growth for the entire company. To him, growth is only practical when it is fun and when the company's future is secure. Siegfried Huhle believes that it is unnecessary for the economy as a whole to grow any further. In his opinion, it is important to concentrate on securing the social achievements for the employees and to work on the protection of the environment. He and his partners have been actively involved in a circle of eco-profit businessmen for a long time; there, talk accompanies action. Due to the new building that has recently



For his company, Siegfried Huhle received the Regional Award of the Deichmann Promotion Prize Against Youth Unemployment in the Federal State of Hesse on 21 September 2011. Photo: Huhle

been constructed, the company's office building is capable of generating more electricity than it consumes. No reports on sustainability are drafted, but the company lives according to principles of environmental protection and social commitment. Since 2010, when his son became a part of the company's leadership, Siegfried Huhle has been responsible for another important task: Friday has recently become 'Emil's day'. This is the time when he takes his grandson for a walk through town in the buggy, proudly showing Emil the bridges and buildings in the city of Wiesbaden that granddad and his team once built. ■

»The greatest obstacle to changing one's lifestyle is a substitute religion underpinned by technology, according to which a disconnection of the traditional link between economic growth and the consumption of natural resources is possible.

When the media, politicians, and other multipliers of social life inculcate us with the credo that the next industrial revolution, the Green New Deal, or another dematerialisation is just around the corner, thus letting the chalice of a change in lifestyles pass from us once more, nobody has a reason to give up ecologically disastrous practices, since the responsibility lies with the progress in disconnecting the link between economic growth and the consumption of natural resources.«

Niko Paech

In an Interview with Faktor X

The Right Growth at the Right Time

Growth at any cost – these times are over. Companies that apply principles of sustainability have other important objectives. Hence, natural limits of growth emerge – or there are simply no limits, because there is still a lot of room left for the green and blue growth of a sustainable economy; considerable room exists for companies striving to grow, to stimulate growth, to subdivide or to not growth.

By Ralf Bindel

Translated from the German by Larissa Burkart, Christine Kühn and Theresa Lupek



The GLS Bank: growing in order to achieve more sustainability

There's a full house again – even though it is Saturday: more than 600 members have come to Bochum, where the headquarters of the GLS Bank is situated. The members want the bank to enable greater social change. For this purpose, the bank needs to increase its equity capital in order to finance the ecologically and socially equitable real economy.

It is already the second general meeting that takes place in 2011, this time, however, it is an 'extraordinary' shareholders' meeting. It provides a further demonstration of the bank's sustained growth: in 2010, the balance sheet total increased by more than 37 per cent and the total value of granted loans increased by 22 per cent. On average, the bank gains 2,000 new customers per month. These customers want to choose the area where their money will be invested in, or they need loans for projects such as organic farming, social facilities, or ecological construction.

According to press officer Christof Lutz, the bank feels the effects of the financial market crisis in a positive way. More and more people do care about how their money is spent. The bank only finances sustainable businesses, ranging from organic food stores to solar energy projects. By publishing regular reports on granted loans, the bank brings about transparency, which is appealing to members and customers. Since the number of employees rose by 34 per cent to reach almost 400 employees, additional office space is needed which will be provided by a building located next to the headquarters.



Headquarters of the GLS Bank in Bochum, Photo: Frank Rogner

The headquarters is being remodelled pursuant to the Gold Standards set up by the German Society for Sustainable Construction.

Thomas Jorberg, spokesman of the management board, says that the bank's growth is sustainable in order to enable more sustainability. He does not object to growth – as long as it is true, ecologically and socially equitable growth. This is the reason why the general meeting was held, where the introduction of a dividend on shares was accepted with a large majority of 94 per cent. Thomas Jorberg is convinced that, by taking this step, they are creating the prerequisites for increasing the number of members and the amount of the equity capital. Sustainable development grows together with the bank's growth – and vice versa.”



The municipal utilities of the city of Bochum: more 'eco' from electricity

We are still in the same city, but a few hundred meters away, close to the central station: the new administrative building of the Municipal Utilities Bochum (Stadtwerke Bochum) is built on concrete piles for the use of geothermal heat. For two years, they have been providing electricity all over Germany; soon they are going to provide gas throughout the country as well. Their influence has grown and so did their responsibility.

On the one hand, the liberalisation of the energy markets has strengthened the position of four large energy companies that own a large complex of nuclear and fossil power plants and network operators; on the other hand, however, it enabled small municipal utilities to gain more strength in the market. The most famous example can be found in the case of the 'electricity rebels' who founded the company EWS Schönau, situated in the Black Forest, which is one of the four major providers of green electricity nationwide.

The Municipal Utilities Bochum also offer green electricity: affordable electricity from Austrian hydroelectric power plants (one euro more per month), or higher-priced tariffs for the development of locally based renewable energy sources. At the same time, they are building their first offshore wind farm in cooperation with a number of other municipal utilities; Trianel, a European-wide operating company, directs the project. Nevertheless, Trianel is still building coal-fired and gas-fired power plants.

The municipal utilities are operating locally and under democratic control and the fact that they are growing puts pressure on the former monopolists. Their traditional locations are changing because urban population is declining or saving electricity, gas, and water; when working together, the municipal utilities gain a stronger position in the market in order to provide large capacities as well as a large network. The primary objective of the Municipal Utilities Bochum is to strengthen local energy sources as well as co-generation plants for combined heat and power electricity generation.

The new administrative building of the Municipal Utilities Bochum, Photo: Municipal Utilities Bochum



The decentralised supply through regionally situated small hydroelectric power plants, composting plants, coal mine methane plants, co-generation plants, and photovoltaic roof systems is growing faster than it is the case with large energy groups such as RWE and EnBW. According to Thomas Schönberg, the company's press officer, growth is not their corporate objective. Instead, they wish to satisfy as many customers as possible.

When the balance sheet total increases, there is also enough economic strength left to co-finance the local public transport system, or to accomplish the re-municipalisation of other electricity and water suppliers. Here as well, growth is in the interest of the municipality. According to Schönberg, the municipal utilities in Bochum is just one of many municipal utilities which follow the same principles. ►



Organic farm in the Mangfalltal valley

Photo: SWM

The municipal utilities in the city of Munich: more 'bio' throughout the country

Let's stay with the municipal utilities, but let's go 600 kilometres southwest of Bochum and the Ruhr area to Munich. Being one of only a few German cities with a positive residential development, Munich has been experiencing a baby boom since 2009. The Munich City Utilities (Stadtwerke München, known as the SWM for short), Germany's largest municipal supplier of electricity, gas, water, district heating, and public pools, is expanding.

In Munich, home to 1.3 million residents, about 170,000 customers already obtain green electricity from hydroelectric power; further eco tariffs promote regionally situated hydroelectric power plants. The inhabitants of Munich also have electricity for the popular e-bikes and for future e-cars, the electricity being only renewably generated in an environmentally responsible way. The contribution of renewable energies to the city's energy supply is supposed to increase: the SWM could be able to produce enough green electricity at their own plants to meet the requirements of the entire municipality of Munich by the year 2025. ►

The particular aspect, however, is that organic farming is growing around the city of Munich, promoted by the SWM. Other than many European cities where water supply has been privatised and for which negative impacts the residents have to count the cost now (literally), the SWM have been acquiring pieces of land during the past few decades in order to ensure the quality of drinking water. The SWM lease the pieces of land within the water supply catchment area of the water intake facilities to organic farmers only. The lease is on favourable terms in order to make sure that those who have not been organic farmers by then will start organic farming.

The concept is working out: already more than 110 farmers have been shifting to conservation of resources and appropriate livestock farming since 1992. According to what Christian Ude, Munich's mayor, says in the documentary 'Water Makes Money', the organic farmers are responsible for 2,700 hectares, which is the largest connected organic farmland area throughout Europe.

The SWM support the farmers fi-

nancially and assist them in terms of the commercialisation of their organic products. Both parties benefit from the concept: the inhabitants of Munich ensure the quality of their water and keep the efforts and costs for water treatment at a low level, while increasing the supply of healthy products from the local area and safeguarding livelihoods at the same time.

In the documentary 'Water Makes Money', Munich's concept serves as a model for the water supply in Paris, where they have just begun to apply a similar concept – after the remunicipalisation of its water supply service. As for the German-French co-production, it is available at full length on YouTube.

W. L. Gore and Associates: Staying small in order to grow

Starting in Munich, we are crossing the big pond to learn about growth consulting for companies. We are visiting W. L. Gore and Associates, whose headquarters are in Newark,

Delaware, which is located in the middle of the US East Coast and is the second smallest state in terms of surface area. Delaware owes its wealth to the DuPont family, founders of one of the biggest chemical groups in the world.

The chemist Wilbert (Bill) Lee Gore worked here for 16 years until he and his wife started their own business in 1958. He worked with Polytetrafluoroethylene, the famous PTFE, which is better known by the registered name Teflon by DuPont. He used this substance to develop Gore-Tex, the textile fibre membranes used for waterproof, air-permeable clothes.

As well-known as the insulating, weather-resistant fibre is, we know little about the anti-growth-culture of this multi-billion dollar company. This culture has led the company to achieve

continuous growth in regard to its balance sheet total, number of employees, patents and products. However, this only occurs in units of about 150 employees.

This number, which is identical to the so-called Dunbar number, has proven itself to be key for a functional growth process at Gore. Bill Gore once said in an interview that in his experience, growth becomes difficult once they exceed this number. Therefore the company builds new factories and buildings, but all of them are autonomous units within the company.

One of the 'associates' explained that one aspect of the company's growth principle is that every new factory comes with a parking lot that houses 150 cars. Once they see people parking on the lawn, they know that the time has come to build a new factory. At Gore, all employees are referred to as 'partners.' There are no official titles, regardless of salary, responsibilities or duration of employment.

There are no department managers, bosses or supervisors but rather sponsors and mentors, which the employees elect themselves based on who they think is best suited for those tasks. There are no organigrams, no budget or strategy plans and salaries are agreed upon in democratic fashion. The most appealing rooms in the buildings are either conference rooms or open-access areas, so that nobody can distinguish themselves based on the location of their office.

Gore & Associates is regularly among the top ten of the world's most popular employers. Gore & A., which started as a small company with few

employees in the 1960s, has become a private association of enterprises with a turnover of USD 3 billion and 9500 employees – pardon, associates, who work in autonomous units of 150 people in 30 countries and only have to adhere to the company's corporate culture.

This is a fascinating model for growth, which is based on the empirical Dunbar number. This number defines social groups of about 80 to 230 individual members as the most vital, innovative and resilient groups. There are two Gore factories in Germany: both are located near Munich and employ no more than 150 associates each. ■



»The key question is: Can we implement this technically

Can we optimise the use of resources and energy to such an extent that we will overcompensate the expected growth and thus reduce our overall environmental impact - or will this efficiency revolution, as we call it at our institute in Wuppertal, not be sufficient on its own? This topic is being discussed quite controversially, even at our institute. I am sceptical whether technological innovations alone will suffice to bring about an efficiency revolution. Therefore it is crucial to identify ways which can combine the needed technological progress with redefined concepts of civilisation and wealth in order to assess their potential.«

Uwe Schneidewind

During an interview with Faktor X

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From today's point of view, Ludwig Erhard's campaign slogan from 1957 calling for "wealth for everybody" would have to be broadened to "well-being for everybody".

This broadened concept of wealth includes not only material goods but also social aspects like the quality of life and satisfaction of the population."

Horst W. Opaschowski

Opaschowski, Horst W.: Wohlergehen für alle (well-being for everybody). Hamburger Abendblatt, 12.10.2011

factor^y – the Magazine for Sustainable Economy

Although the word 'factory' is mostly associated with the manufacturing industry and industrial production, it can also refer to '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.

factor^y 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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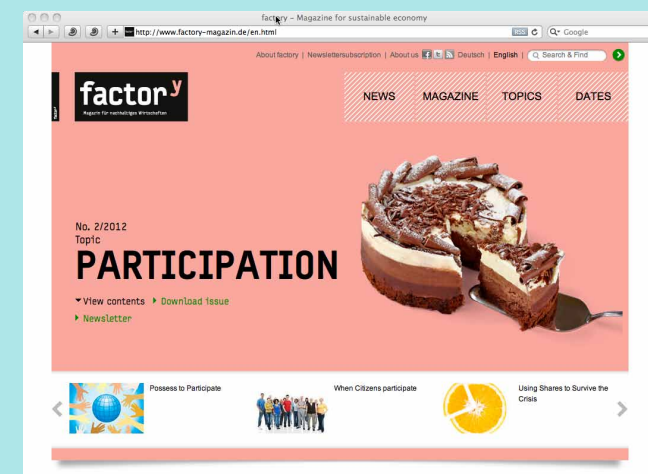
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