

On the threshold of the sixth Kondratieff The health market — the future driving force of the economy from 2000

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ARE WE WITHIN A LARGER ECONOMIC CRISIS?

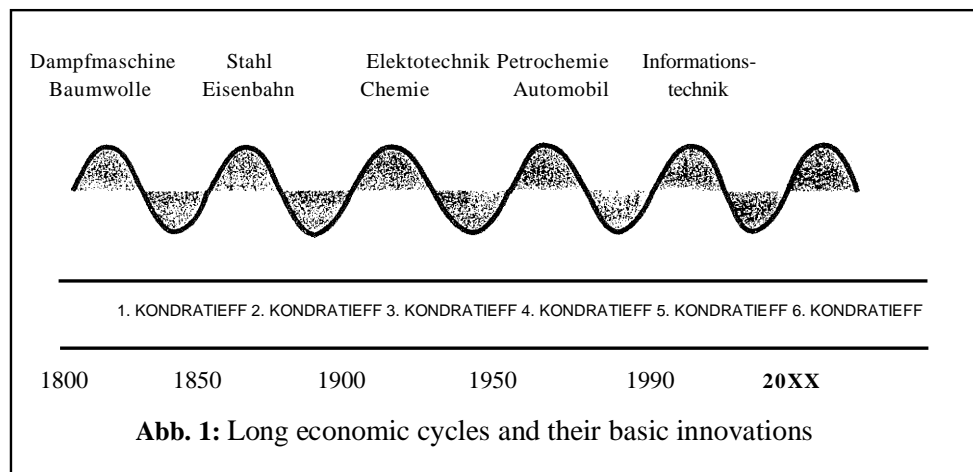
The market economy knows no steady progress, but rather upturn and downturn, boom and recession alternate regularly. Short and medium term economic fluctuations lasting from 3 to 11 years are generally well known. But long variations lasting from 40 to 60 years occur in the market economy, too. They are called Kondratieff cycles.

Crises appear as a matter of course in the market economy. They occur in the final phase of an economic cycle. Crises may last a few months and be limited to a few industries, but they may also extend over several years and influence the entire economy of a region or country.

The last great economic crisis occurred in the 1970s when the OPEC countries increased the crude oil price dramatically without giving the industrial countries time to adapt. This marked the downturn of the fourth Kondratieff cycle (**figure 1**). Serious crises occur especially in the transition between two Kondratieff cycles.

Kondratieff cycles are innovation phases caused by basic innovations (**figure 1**). The first Kondratieff cycle was caused by the discovery of the steam engine and its use in the textile industry. The second Kondratieff cycle was the era of steel. The third Kondratieff was caused by the electro-technical and chemical industry. This was the first long cycle which profited from the application of scientific findings (the discovery of the principle of the electrical dynamo and the new insights of quantum theory into the structure of matter). The petrochemicals industry and the car were the basic innovations of the fourth Kondratieff. This brought mass traffic to the streets and into the air and marked the peak of the industrial society. Presently we are in the fifth Kondratieff cycle which gets its driving power from the use of its basic innovation, namely computer technology.

The upturning phase of the fifth Kondratieff ends (at least in Europe and Japan) at the end of the 1990s. Unless the course is set consistently towards the next (sixth) Kondratieff cycle, lasting



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improvement of the economic situation cannot be counted on in the next years. What can be said at present about the next long cycle? Which basic innovation causes it and carries it along?

WHAT COMES AFTER INFORMATION TECHNOLOGY?

The most important source of economic growth is improvement in productivity. If it is not enough,

or if the resources liberated by improvements in productivity are misdirected, a recession cannot be avoided. For Germany, productivity increases are the only way to get significant economic growth.

Productivity is presently regarded as mainly a commercial problem. How it can be improved on the national economic level is a comparatively neglected subject. This is understandable, since until now businesses, not societies, primarily competed against each other.

Violence, crime, drugs

- Crime (Global annual costs are more than 1 000 billion US dollars. Every 50th male US citizen was in jail during the mid-1990s.)
- Drugs: an annual turnover of more than 800 billion US dollars.
- Bribery and corruption: about 3-5 percent of business costs is caused by bribery and corruption. (Globally this is about 1 000 billion US dollars.)
- Alcohol abuse (An annual turnover of more than 600 billion US dollars. More is spent on alcohol than on research.)

Environmental damage and waste of energy

- Environment: The annual destruction corresponds to about 10 % of the global national product (more than 2 800 billion US dollars per year in 1996).
- Waste: 80 % of all finished products are used once and then thrown away. At least 2 500 billion US dollars of raw materials and energy are wasted annually across the globe.

Military expenses, internal national and private security

- Military expenses: 1 000 billion US dollars annually in the 1980s. Since 1990 about 800 billion US dollars annually.
- Costs of internal national security: 1 200 billion US dollars (police, prisons, courts, security complexes, weapons, etc.). In the USA this is more than 300 billion US dollars annually.
- Secret services throughout the world cost about 100 billion US dollars annually.
- Costs of (civil) wars = ? (Gulf war, Yugoslavia, Czechoslovakia, Chechnya, Northern Ireland) The magnitude cannot be determined.

Social costs (strikes, unemployment)

- Strikes: Globally more than 5 million days on strike annually in the 1980s.
- Costs of unemployment: More than 300 billion US dollars annually in the industrialised countries.
- Break-up of families: Every second marriage in the USA ends in divorce, while every third marriage in Germany ends in divorce.

Health damage

- Low productivity in the health services: lack of information, lack of competition, strong minority interests, wrong developments (e. g. inadequate prevention; the wrong diet costs about 100 billion DM in Germany, 600 billion US dollars globally; 30-40 % of patients who visit a practical doctor suffer from psychic disturbances and illnesses).
- Psychic disturbances: 14 % of the population in economically developed countries is psychically very ill. Fear costs about 100 billion DM annually (mobbing costs about 30 billion DM), more than 1 000 billion US dollars globally per year.
- Costs of illnesses caused by low quality water, sleeping disturbances, air pollution, poisons, medicine abuse, etc. = > ??

Other unnecessary losses / costs

- Lack of information: patents (about 50 % of research and development expenses (about 300 billion US dollars) are unnecessary and could be saved.
- Traffic (Global costs through traffic jams are more than 1 000 billion US dollars). Germany: 200 billion DM is annually lost through traffic jams!
- The global turnover of the shadow economy is at least 4 000 billion US dollars. The global turnover of lotteries: at least 800 billion US dollars.

Figure 2 Entropic costs

However, quality of life is not determined by business but rather by national economic productivity. As the following remarks will show, the inner disturbances within modern society have reached an extent which reduces the growth process and with it the standard of living considerably. It is important to try to measure these losses quantitatively.

If all destructive phenomena in figure 2 are added up, one gets a sum of about 10 000 billion US dollars per year. This is about five times the German national product and one third of the global national product'. This „entropic" sector² is not simply an undesirable side effect, a slight drawback to modern progress. Instead, it now eats up the largest part of the resources urgently needed to solve the predominant problems of our time.

If **figure 2** is carefully considered, the large percentage of psychically caused costs is obvious: fear costs the German economy 100 billion DM annually (the costs of mobbing — i. e. terror and harassment at the workplace, is estimated at 30 billion DM annually). One quarter of commercial fires is caused by arsonists (only fires costing millions are taken into account). One quarter of the German population defrauds his or her insurance. 14 % of adults in economically developed countries suffer from serious psychic illnesses. 300 000 minors are sexually abused annually in Germany and sustain incurable psychological damage. 60 % of German managers suffer from neuroses. 40 % of German workers have switched off from their work and give no thought to the health of their organisation. One third of the patients who visit a practical doctor suffers primarily from psychological disturbances and illnesses. The world-wide drug market is by now larger than 800 billion dollars. According to a study by the World Health Organisation, depression will be the second most important cause of death during the next twenty years.

Social relationships are ruined to a high degree in the USA. During 1995 more than 2 % of the male working population was in jail and almost 7 % was on probation. To keep a criminal in jail in the USA costs about as much annually as it does to send a student to Harvard University. Several states within the USA now spend more money on prisoners than on students. If the number of prisoners and the number of people working outside the regular economy (because they find no occupation) are taken into account, the unemployment rate is as high as in Europe.

This implies that there is a common factor for this development: psychosocial disturbances and illnesses. Damaging and destroying the environment must also be regarded as a psychological and mental illness if this is done knowingly.

THE NEW BASIC INNOVATIONS: ENVIRONMENT AND HEALTH

One of the segments with the largest rationalising reserve in figure 2 is the environmental sector. Environmental pollution increasingly checks global economic and social development. Around 2 billion people live without clean drinking water. In the People's Republic of China more than 70 000 companies were closed down in 1996 because they polluted the environment excessively. At the beginning of 1997, the Asiatic Development Bank declared that environmental pollution now constitutes nine percent of the gross national product.

The productivity reserves of the environmental sector are considerable: only the saving presently possible for the USA is estimated at 1 000 million US dollars per year. Globally this amount is estimated at more than 2 500 billion US dollars. At present as many people in Germany work in this sector as in the car industry, but with only a quarter of the turnover. This means that this sector offers exactly those labour intensive jobs which are urgently needed.

Investing in environmental protection has at least four advantages:

1. The costs of raw materials, other materials, energy and waste removal can be decreased significantly.
2. The health burden through noise, pollution, poisonous substances, etc. is reduced.
3. The German economy has a strong competing position in this field. During the last ten years and longer the global demand has grown above the average, and the short term and long term export opportunities can be categorised as very good.
4. An intact environment contributes substantially to physical and psychic well-being and therefore also to the ability to achieve, to health and to the quality of life.

Environmental protection is no longer a matter for romantic or nature-friendly outsiders. During the spring of 1997, 2 500 American economists, including six Nobel prize winners, demanded that the American government invest more in environmental protection. Environmental protection would

not only improve the standard of living, but in the medium term also increase productivity in the USA.

THE KEY IMPORTANCE OF IMMATERIAL INNOVATIONS IN THE FUTURE

If the costs of the present health industry (globally about 5 000 billion US dollars) are added to the costs of the entropic sector, one gets a sum total of about 15 000 billion US dollars. In other words: physical, psychological, mental and social disturbances and illnesses form the world's largest single market and also the largest growth reserve because of its still untapped productivity potential.

How can a part of this enormous reserve be made productive? According to our findings, the key is better psychosocial health. How can it be improved? Psychosocial health is passed on primarily by the family.

The intact family is the place where trust, the ability to judge human nature, co-operation, humour, performance, loyalty, reconciliation, physical well-being, and readiness to work is learned and practised. Since the family [as an institution] is in crisis, the most important institution for the transfer of psychosocial abilities has partly fallen away. (Every second marriage in the USA and every third in Germany ends in divorce. Many mothers work and have little time for children. In nuclear families and single parent households only limited spheres for social experience exist).

Since the family no longer passes on psychosocial health or only does so in a limited sense, and even the traditional medical sector only offers limited resources, businesses are starting to take over this task themselves. A clear indicator is the growing demand for personnel and management consultation (coaching), the high premium put on social competence, as well as the increasing investment in internal staff development within firms. Managers will not only have to consider how work is allocated and how functional the work processes are, but will increasingly have to take into account the quality of interpersonal relationships. This means that staff relations will in future play a rather more active role.

The high art of forming relationships with other people so that these are regarded as creative and productive is presently only inadequately mastered, both in theory and in practice. The transfer of psychosocial abilities is to a large extent still a quest and an experiment. The connection

between health, economics and religion is not taken seriously enough in Europe. General Motors, Ford, Chrysler and other firms in the USA employ 4 000 Christian clergymen to reduce fear and stress at work.

The Christian church is another institution with much experience in the transfer of psychosocial competence. Even today it still has access to a wide variety of methods. New studies in the USA prove that religious convictions have a healing effect on body, soul and mind and a positive effect on the ability to form relationships. Active Christians are not only healthier than atheists, they also deal better with illness and other people. Atheists incline more to physical and mental disabilities. They are also prone to egoistic-aggressive behaviour, up to and including suicide.

The traditional health sector does not pay enough attention to the psychosocial health market (**figure 3**). The established health industry is biologically, chemically and technically orientated, burdened by many internal problems (totally inadequate prevention and information transfer, strong minority interests which inhibit innovation), and not prepared for taking advantage of the holistic health trends. It is therefore not surprising that consulting companies, private seminar organisers and the personnel and health branches of private economy³ are the most productive promoters of the newly developing health sectors (**figure 3**).

Up to this point, a large part of health costs was carried by the social system. By now this practice has reached its limits. In the sixth Kondratieff there will be a radical change. Not only ill people but also private businesses will increasingly have to contribute to treatment costs caused by their products (**figure 3**). A typical example is the American tobacco and cigarette industry. After a first agreement in 1997, this industry will contribute about 370 billion US dollars to the treatment costs of diseases caused by smoking (lung cancer, heart and circulatory diseases) over the next 25 years. Other industries like the chemical industry, energy producers and car manufacturers may count on similar agreements. In this way the health sector will receive considerable additional sums of money.

HEALTH AND ECONOMIC GROWTH

What is interesting about the entropic sector (**figure 2**) is that it is essentially an information

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Figure 3

market. Destructive behaviour in people is caused by impaired internal information processing and dysfunctional communicative relationships.

Can health in a holistic sense turn into a driving force for growth and employment? At first glance this does not seem so, since long phases of prosperity were hitherto caused by „hard“ factors like steam engines, railways, cars and computers. How can a „soft“ factor like health be the driving force behind a new Kondratieff cycle?

At this point the results of modern growth theories should be reviewed. Machines, products, technologies, services, masses of people or capital are not the most important sources of economic growth. The most important factor is growth in productivity. This third factor (next to work and capital) is determined by new or improved competence. The first Kondratieff was, strictly speaking, not powered by the steam engine, but by the new competence in building and employing steam engines. The fifth Kondratieff is not powered by information technology, but by new competence in developing, producing and employing information technology. Economic growth is mainly determined by new and improved competence in dealing with all factors influencing productivity: equipment, infrastructure, management, research, development, training, organisation, motivation, health, political conditions, etc. Cognitive competence (e.g. logical thinking and good vocational training) played a central role in the industrial society, as it still did at the beginning of the fifth Kondratieff.

With the sixth Kondratieff there will be a basic change in abilities determining productivity. Technology for instance is globally available and no longer brings a relevant advantage within

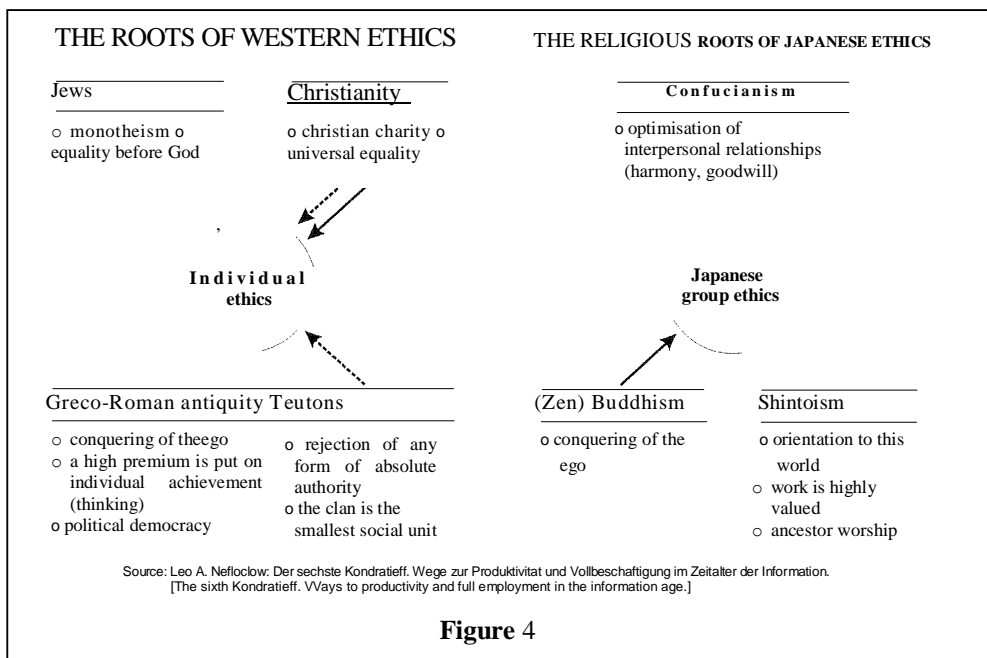
economically developed countries. (Simply formulated: all firms in North America, Europe and South East Asia use the same computers, satellites and Internet connections.) Access to capital also no longer results in relevant advantages, since the stock exchanges of the world are available to everyone. Even research, development, subject knowledge and organisation — and this is new — result in fewer comparative advantages, since they balance out as part of the trend of world-wide globalisation. How do American, European and Japanese computer specialists really differ?

What will differentiate businesses and economies in future is the quality of „soft“ factors like co-operation, creativity, absence of fear, a sense of responsibility and loyalty. These are not cognitive qualities, but psychosocial ones. They appear in no balance sheet, profit and loss calculations or national economic calculations. They cannot be measured directly with physical machines or through turnover. However, they are still factors which will determine the ability of businesses and economies to compete.

Since the „soft“ factors are becoming increasingly important for success, the businessman of the future will have to give at least as much attention to internal relationships in the business as to obtaining capital, new technologies and new markets.

VIEW OF THE FUTURE

It would be an illusion to believe that all destructive behaviour could be eliminated from the world. But between illusion and resignation a wide spec-



trum of behaviour options exists. If one should succeed in converting 10-15 % of the entropic sector into the productive sphere, and in carrying through the technical and organisational improvements possible in medical circles, the pharmaceutical industry, the trade in health products, biotechnology, environmental protection and services for patients, enough resources will be available for the next great innovation phase.

Western Europe enters the sixth Kondratieff with several good prerequisites: medical and environmental technology is highly developed, as is the health infrastructure (spa businesses, hospitals, sanatoriums, trade, research institutions), a well developed demand for ecological products exists, and finally, an already highly developed sensibility to health in a holistic sense is present.

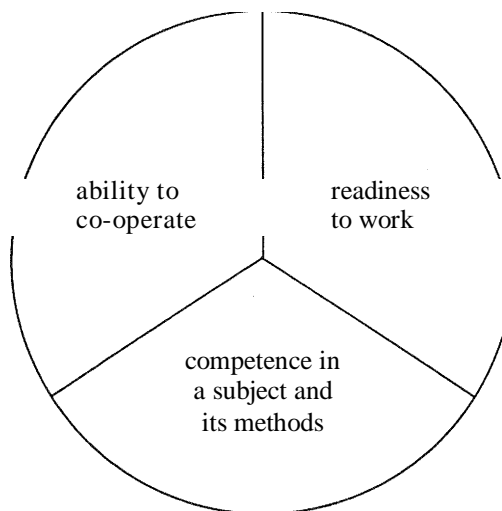


Figure 5

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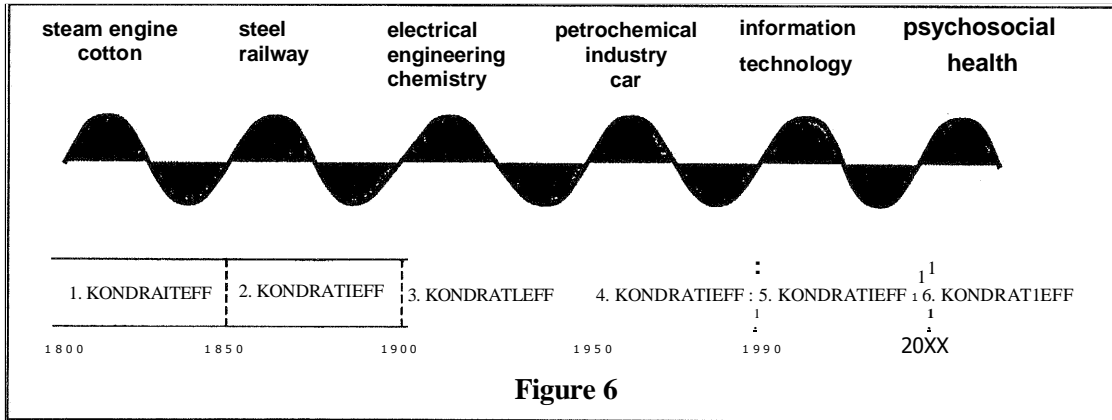
SECOND UPDATED EDITION

VIEW INTO THE FIRST CENTURY OF 2000

The 20th century has just ended. No century has been as exhaustively analysed and documented as this one. What lies behind us is comprehensible.

What lies before us, however, is largely unknown. Futurology is a comparatively neglected subject. One of the few scientifically based instruments available to futurology for shaping the future is the theory of long cycles (insofar as it is applied to the innovation level and not to historical time series). In its short form it says that nations with a market economy pass through profound reorganising processes at intervals of 40 to 60 years, which follow a certain ordering principle. Those who recognise this pattern early on and put it into practice, put themselves at the forefront of development and profit most from the upturn of the long wave, the so-called Kondratieff cycle.

As we know, we are at present within the fifth Kondratieff cycle, which is driven by development and use of information technology. In Europe, the boom phase of this long cycle ends with the 1990s. The statistics are clear: While the average growth rate of information technology was over 16 percent in the 1960s and 1970s and around 12 percent in the 1980s, it fell to under 8 percent from 1990—1996. The crisis symptoms typical of the final phase of a long cycle can no longer be ignored, namely widespread pessimism, absent perspectiv-



es and mass unemployment in spite of stable prices and low taxes. Within the next five years, a strong recovery in Europe is unlikely. What conclusions can be drawn from this? Which strategies do we need in order to leave the depression as soon as possible?

During the fifth Kondratieff it was important to improve existing working processes and relatively well-structured information flows within the business using information technology. This started with wage and salary slips, continued with the regulation of manufacturing as well as text processing and finally turned to multimedia interlinking of entire businesses. Parallel with these processes, organisation was trimmed to short and efficient information flows. Keywords are: flattening of hierarchies, decentralisation, extension of group work, world-wide net-working. By now, the growth potential inherent in the fifth Kondratieff has been unlocked to a large extent.

A Kondratieff cycle, however, is not only a long economic cycle, neither is it only an all-em-

bracing innovation process. Rather, it is a phase of innovation and competence. The driving force behind the next long-term cycle, the sixth Kondratieff, will be a part of society containing large reserves of untapped productivity and ability.

What can we say today about the next Kondratieff cycle? Which indicators can we use to recognise the large new markets of the 21 century in time? Which options for shaping the future are available? An answer to these questions is presented in the book discussed here in DFR.

NOTES

- 1 The global national product presently amounts to about 28 000 billion US dollars.
- 2 Entropy in physics is a measure of the disorder of a system. In figure 2 the term expresses the disorder in the world.
- 3 A reduction by one percent in the number of ill workers in the Volkswagen factory will save almost 100 million DM a year.