



# The Knowledge Society in Germany: Current situation and future trends

*Description of the Euforia project*

*Introduction and background*

*National circumstances*

*Knowledge society in Germany: the current situation*

*Drivers for the knowledge society in Germany*

*Impacts on a future knowledge society in Germany*

*Views of the future knowledge society in Germany:  
Scenarios*

*Policy implications and role of key players*

*Annex 1: list of experts*

This report is available in electronic format only and has not been subjected to the standard Foundation editorial procedures.

## *Description of the Euforia project*

In the context of its four-year work programme, *Analysing and Anticipating Change to Support Socio-Economic Progress 2001-2004*, the European Foundation for the Improvement of Living and Working Conditions launched a project on 'European Knowledge Society (KS) foresights for living conditions, working conditions and industrial relations'. The purpose of the project is increase understanding of the 'drivers' of a KS and to anticipate their potential impacts on living conditions, working conditions and industrial relations. The underlying aim is 'to identify and support paths to positive transformation while avoiding unsatisfactory development paths'.

The European Knowledge Society foresight project sets out to be a new type of Foundation project, a 'developmental' project. It is intended that the project should be at the same time:

- integrative
- explorative
- experimental
- developmental
- forward looking

The project intends to look at life as a mix of living conditions, working conditions and industrial relations and to analyse these strands through experimental, developmental and future-oriented methods. The project should encompass research, network building and the fostering of exchange of information and expertise with KS specialists, social partners and the state. The 'foresight' concept links the project closely to the Commission's sixth European Research Programme 2002-2006 concerning network-building and the innovation policy framework of the European Research Area.

The project is also closely related to the goals of the declaration of the Lisbon Council. The Council's declaration set out the aim for Europe to become 'the most competitive and dynamic knowledge-based economy, capable of sustained economic growth with more and better jobs and greater social cohesion.' The project's relation to the declaration lies through investigating how social foresight can fill the gap between the Lisbon Council employment strategy and technology foresight.

The project has now entered its second phase (2002 - 2003) aiming at the:

- development of a report on advancement indicators of the Knowledge Society
- establishment of temporary national foresight centres in three different EC Member States
- production of national Knowledge Society foresights concerning the 'drivers and impacts' of the Knowledge Society
- production of a synthesis report consolidating the project results

## **1. Introduction and background**

The term “Knowledge Society” (KS) is seen as a label for the currently evolving society which is increasingly moving away from:

- Industrial production to services development and delivery, i.e. the production of tangible good to intangibles
- Stable and dependent forms of working at fixed locations to more flexible forms of working at different locations including mobile working
- A single school and job carrier with clear start point (school leave) and fixed end point (pension) to a permanent knowledge acquisition and updating via life-long-learning etc.

EUFORIA has been set up as a project to chart the development of the KS in different EU member states using different means and methodologies. The present report deals with the German situation.

EUFORIA has addressed the task of describing and analysing the KS in Germany in a systematic manner. To begin with Information Society and other relevant indices developed by other authors and institutions like the World Economic Forum, IDC etc. were identified and the results of which presented for Germany to provide a first glance overview of the present situation of the country on its way towards a KS.

In addition, the results from the EUFORIA KS advancement indicators report relating to Germany are presented and briefly analysed followed by a SWOT analysis describing the strengths, weaknesses, opportunities and threats of the German economy and society.

These are further substantiated by the results from various discussions with the experts from the National German Knowledge Society Foresight Centre which empirica set up in late 2002. These discussions mainly took place in two workshops carried out on 15 January 2003 in Bonn and 2 June 2003 in Berlin.

The following EUFORIA experts took part in the workshops:

Federal Ministry for Economic Affairs and Employment (BMWA): Thomas de Graat

Federal Ministry for Economic Affairs and Employment (BMWA): Ralf Franke

Federal Ministry for Education and Research (bmbf): Ursula Zahn-Elliott

Federal Ministry for Education and Research (bmbf): Matthias Kölbel

IG Metall (Metal worker’s union): Dr. Ulrich Klotz

Deutscher Gewerkschaftsbund (DGB): Dr. Christa Dahme

Federation of German Industries (BDI): Matthias Krämer

ETUC European Trade Union Confederation: Dr. Norbert Kluge

Institute for Labour Market and Occupational Research (IAB): Dr. Werner Dostal

VDI/VDE Technology Centre Information Technology: Dr. Daniel Bieber

Politik-digital: Clemens Lerche

The following empirica employees also participated:

Werner B. Korte

Dr. Karl A. Stroetmann

Ingo Meyer

Lutz Ellermann

Further EUFORIA experts from Germany who were not able to attend the workshops but send their contributions include:

Dr. Stefan Empter, Bertelsmann Stiftung

Dr. Axel Pols, BITKOM

Prof. Dr. Helmut Krcmar, Technical University München

Dr. Rainer Schmidt-Rudloff, Bundesvereinigung der Deutschen Arbeitgeberverbände (BDA)

Prof. Dr. Henning Klodt, Institut für Weltwirtschaft

Annette Mühlberg, Hans Gabriel, Ver.di Vereinigte Dienstleistungsgewerkschaft

Dr. Lothar Kamp, Hanns-Böckler Stiftung

Dr. Matthias Knuth, Institut für Technik und Arbeit

Prof. Dr. Eckard Minx, Burkhard Jänsch, DaimlerChrysler AG

Dr. Susanne Schnorr-Bäcker, Statistisches Bundesamt.

The present report describes first the current German situation regarding living and working conditions and industrial relations along with giving some background information (Chapter 3). The current situation of the KS in Germany is described making use of the above sources (Chapter 4). The report then provides some views of the future KS in Germany in form of different scenarios (Chapter 5) and ends with a description of policy implications and the likely role of key players in society and economy (Chapter 6).

## **2. National circumstances**

The current situation of the Knowledge Society in Germany has to be understood on the basis of the specific national circumstances regarding living and working conditions and industrial relations. It is therefore necessary to give an introduction to those three areas describing the current situation and fleshing it out with some of the historical and political backgrounds.

### **2.1. Living conditions**

#### **2.1.1. National socio-economic and demographic situation and trends**

##### **2.1.1.1. Demographic development**

Germany is an ageing nation. In 1900 44% of the German households had 5 or more children, today only 4%. 50% of German households have one, 38% two and only 12% three and more children. Statistically, the average German family has 1.4 children (Statistisches Bundesamt: Datenreport 2001). The vast majority, i.e. two third of German households are single (36%) or two-person households (33%). A hundred years ago these figure reached only 7% and 15% respectively. It is expected that this figure will reach more than 70% in 2015 (single: 37%, two-person households: 34%).

While in 1990 the mortality rate and the birth rate were at almost the same level a gap between both emerged over the past 10 years. Today 734,000 people are born while 828,000 die each year (2001 figures). It is only due to the rather high numbers of immigrants that the German population has increased over the past decades from 69,3 million in 1950, 78,4 million in 1980, 79,8 million in 1990 to around 82 million in 2001. Future projections and forecasts assume a continuously widening gap between mortality and birth rate. Under the assumption of 200,000 immigrants per year the population will constantly become smaller and only achieve figures of 78 million in 2030 and 70,4 million in 2050. These figures will be even lower when assuming a number of 100,000 immigrants per annum resulting in 75,2 million in 2030 and 65 million in 2050.

Almost a quarter of the German population is older than 60 and only slightly more than 20% below 20 years of age. Fifty years ago these figures were 14.6% being more than 60 and 30.4% under 20. The projections for 2050 assume a figure of 37.4% over 60 and 15.9% under 20. While there are around 40 pensioners per 100 actively employed people today this figure will rise to 75 to 80 in fifty years time.

##### **2.1.1.2. Family patterns, types, issues and problems**

A dramatic increase of single households in Germany over the past years can be observed. Together with the two person households they make up 70% of the population. The double-income-no-kids household type has become very popular. The only differences can be found among the foreign workers ("Gastarbeiter") living in Germany with significantly higher numbers of children. The overall share of foreign workers increased from 6.4% in 1989 to 9.0% in 1997 to an overall number of 7.4 million. However, and especially in larger cities the children of foreign workers sum up to around 25% while the average share of people from abroad is below 10%. This has resulted in completely different family types of this group as opposed to the ones of the Germans.

There is a high and further increasing number of single parent households in Germany. In 2001 2.1 million out of a total of around 9.5 million partnerships with children of age 18 or less are single parents (Statistisches Bundesamt: Datenreport 2002). In Germany one out of three marriages gets divorced. The figure is constantly increasing. In 2001 7.5% of the population were divorced.

### 2.1.1.3. Labour market and employment

The annual economic growth in Germany was rather low in the past years and below 1%.

The unemployment rate is amongst the highest in Europe with around 9%.

Unemployment is unevenly distributed across Germany with only approx. 5% in Federal states like Bavaria and Baden-Wuerttemberg and more than 20% in Saxonia-Anhalt and Mecklenburg-Vorpommern (new Bundeslaender).

There is an oversupply of lower qualified people in the German labour market, which to some extent explains the high unemployment figures. In addition there are huge regional disparities in regional development with the new Federal states suffering from the non-existence of an industrial structure.

Despite high unemployment figures a skill shortage in a number of industrial sectors has become apparent. Some years ago the "Green Card" activity by the German government was started to attract IT specialist from abroad to the German market.

The "normal" German worker is an employee. Self-employment is not valued very highly in Germany. Nevertheless it has steadily increased in Germany over the years. Currently around 10% of the male non-agricultural workforce are self-employed. Compared to countries like the UK these figures are rather low. However, while in the UK the numbers stagnate, they do further increase in Germany.

There has been a big discussion in Germany about the so-called "Scheinselbständige". This is the group of self-employed who do not employ any further staff members and are mostly working for only one customer. This group is estimated to include 1.7 million people, i.e. 5% of the workforce. After the implementation of a number of changes in legislation in 1999 these workers are now treated as employees and are entitled to full social security payments from their employer who formerly used to be their customer. It goes without saying that this process has led to many disruptions and problems, many of which are still not solved. The debate continues.

### 2.1.1.4. Female employment

Female employment has risen throughout Europe and the USA over the past decades. The German figures are around the European average, i.e. German is in the mid-field compared to other European countries. While in 1974 half of the German women were employed the figure has risen to 61% in 1998. However, this figure needs to be treated with caution and can not be interpreted as an even increase across the whole of Germany since we have to deal with a 92% employment of women in the new Federal states as opposed to a much lower one in the old Federal states. Compared to countries like Sweden (76%), Switzerland (74%) or the USA (71%) these figure are low but high when looking at countries like Italy (44%) (Source: OECD).

### 2.1.1.5. Economic situation of families

The average monthly household income in Germany in 2000 was approx. 2,600 € which sums up to an average annual income of approx. 31,100 € (Statistisches Bundesamt: Datenreport 2002). With this figure Germany is still amongst the top in Europe. However, social security contributions have steadily increased over the years and amount to more than 40% of the gross pay today (paid by employee and employer at 50% each). The peak rate of income tax is 53%.

Also, no real tax-relieves for families have been implemented in Germany so far, although even claimed for by the Federal Institutional Court. The most recent tax reforms turned out to be most advantageous to singles, high-income groups but not so much to families.

Rather high indirect taxes on cigarettes, alcohol, petrol exist in Germany. However, when comparing these to other European countries Germany is in the mid-field.

For those individuals and families without any income there is a social benefit payment system in place in Germany which is paid for by city and municipality administrations and not by the Federal state governments. The height of payments heavily depends on the number of family members. There have been many juridical and legislative debates about the best space between social benefit payments and the income of low income groups. Normally the net income of a low income family with three children is taken as the standard for comparison to the same type of family living on social benefits. In 2000 the difference was around 640 DM in the western part of Germany and 425 DM in the eastern Federal states. This difference meets the juridical specifications. But critics believe this difference to be too small and to operate as a disincentive to work.

Table 1: *Low income group income and social benefits payments in Germany*

<b>Families with 3 children living on ...</b>	<b>Social benefit</b>	<b>Income (low income group)</b>
<b>West-Germany</b>	3,559 DM	4,200 DM
<b>East-Germany</b>	3,258 DM	3,683 DM

Note: 1 € = 1.958 DM; Source: ISG (*Institute for social research and policy*)

Nevertheless and in general, Germany is still a rather wealthy society, although with huge disparities across the Federal states. Especially the eastern Federal states have a level of income which is around 80% of the one in the western part.

#### 2.1.1.6. Further key issues of the current situation: costs of living, health care and retirement

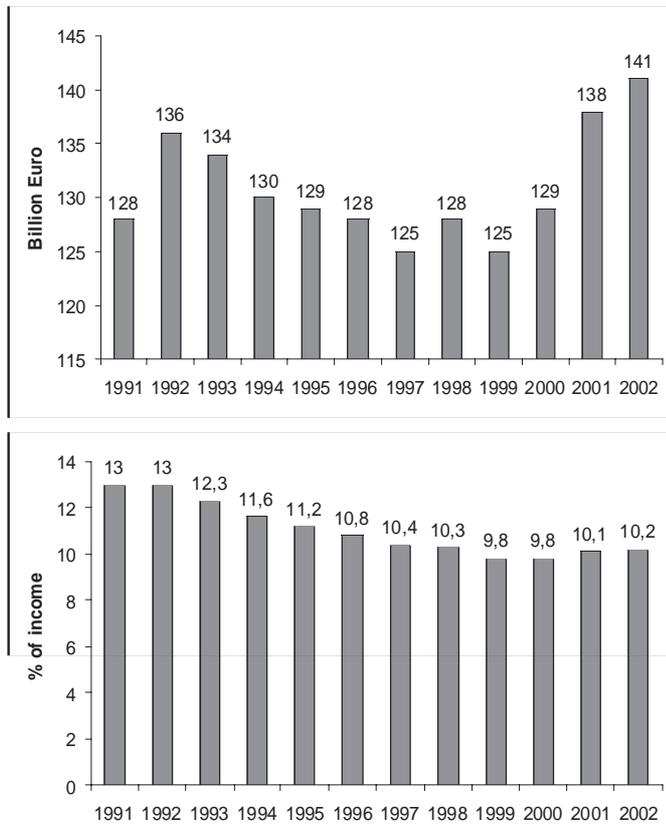
The current situation in Germany is characterised by growing costs of living, health care and retirement provisions and simultaneously sinking incomes due to higher non-wage labour costs. This development is furthered by German politicians declaring on the one hand the need to save money by cutting expenses (thus cutting benefits received by the citizens) and on the other hand urging citizens to increase their investments into the economy.

The increasing feeling of insecurity about what the future might bring leads (amongst others) to the following consequences:

- **Rising saving ratio**

In 2002 the saving ratio was at approx. 10.2 % of the available income. It has risen for two years and has reached the highest level since the German Unification, despite the fact that interest rates are at the lowest level for years. The reasons for this are twofold: first, an unwillingness at the side of citizens to spend money in times of a negative economic situation, second, the discussion about an increase in private retirement provisions as compared to the momentarily governmental-financed system leading to a still higher financial strain.

Figure 1 a & b. Savings of private households in Germany



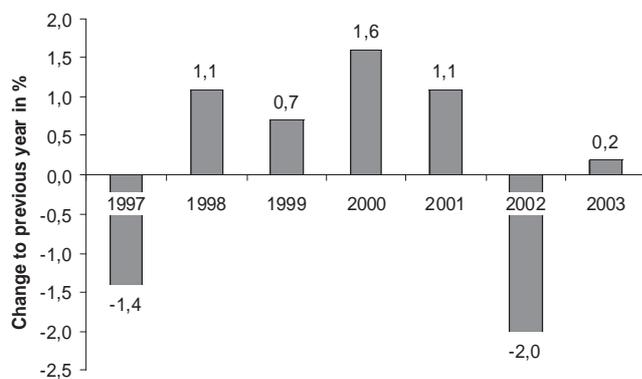
Source: NSI Germany (Statistisches Bundesamt).

Note: 2002 figures estimated.

■ Stagnating sales rate in retail trade

The turnover in retail trade has risen from 1998 to 2001 but has stopped to do so in 2002, falling at about 2.0 % as compared to 2001. In 2003 there seems to be a stagnation with a slight rise of 0.2%. The reasons for the stagnating sales rate in retail trade are virtually the same as given above: an insecure economic situation and growing anxiety about job security and upcoming higher expenses.

Figure 2: Turnover in retail trade in Germany



Source: Union of German Retail Traders, NSI Germany.

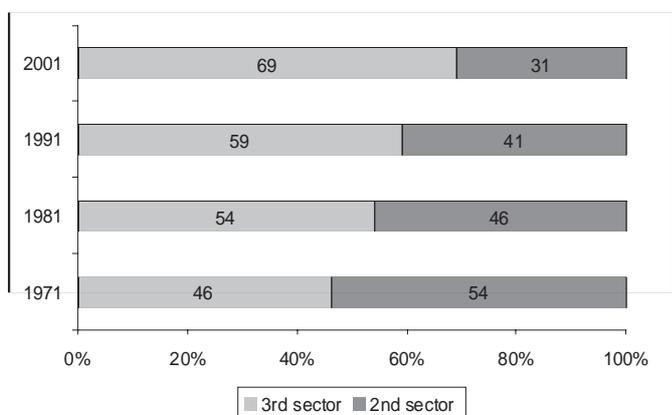
Note: Time span of 2003 figures is January to May.

It cannot be neglected that German society is facing some economic and social problems that call for a fundamental and extensive reformation in many areas.

**2.2. Working conditions**

As in most European countries the development of the labour market is characterised by the growing tertiarisation. In the beginning of the 1970s more than half of German employees still built, harvested, mined and produced. Today about 2/3 (69% in 2001) of German employees work in the third sector as bankers, insurance brokers, consultants or salesmen, they are transporting passengers and cargo or attend on guests. One major reason for this change is the continuously increasing level of labour and production costs exceeding by far those in threshold and developing countries.

Figure 3: *Tertiarisation in Germany*



Source: *NSI Germany*

Additionally, several changes regarding work forms can be noted. There is a growing share of part-time workers among Germany’s employees. The number has risen from 14.0 % of all employees in 1991 to 20.8% in 2001, most of these (~86%) being women. Among the motivations of the part-time workers are a better work-family balance, the desire for less hours of work and a general shortage of full-time jobs (the latter being true mainly for the East German federal states ). The growing number of part-time workers is only one indicator for an ongoing shift towards more flexible work-forms. Recent statistical analyses show that flexible working arrangements such as (mobile) telework, tele-cooperation, training and life-long-learning are advancing but many other factors remain unchanged. .

The Adaptability of Work Arrangements Index (AWAI) created by empirica in 2002 gives an overview on the current situation regarding worker and company-centred flexibility. The results for Germany on both scales of the index are given below. The country rank relates to Germany’s position among the EU-15 states. (for further information on the AWAI-Index cf. the EUFORIA Advancement Indicators Report or GAREIS, KORTE: ICTs and the Adaptability of Work Arrangements in the EU, empirica, 2002).

Table 2a: AWAI worker-centred flexibility index

Dimension	Time		Place		Contract		Content		AWAI Worker-centred Flexibility Index	Country Rank in EU-15
	Voluntary part-time working	Discretion over working time	Home-based teleworking	Job feasibility for telework	Perceived job security	Job tenure	Participation in decision making	Lifelong learning		
Germany	43	92	38	92	72	77	75	79	8.63	5

Source: *empirica*.

Table 2b: AWAI company-centred flexibility index

Dimension	Time		Place		Contract		Content		AWAI Company-centred Flexibility Index	Country Rank in EU-15
	Part-time working	Atypical working hours	Mobile teleworking	Tele-Cooperation	Employment protection in legislation	Involuntary temporary workers	Management by objectives	Employee training provided by company		
Germany	48	71	92	82	49	21	62	78	7.38	6

Source: *empirica*.

Another barrier on a way to more flexible forms of work are the rather strict legislative regulations on employment protection existing in Germany. There are, of course, two sides to this problem: for example, strict dismissal protection prevents many companies from hiring new workers fearing not to be able to lay them off when getting into economic difficulties. On the other hand the principle of hire-and-fire can also not be desirable as it leads to growing social and economic uncertainty on the side of the employees.

With regards to working conditions the shift towards the Knowledge Society in the years to come will also depend on the development of flexible forms of work as described above. Many other problems like the currently high unemployment rate will probably diminish in the wake of these changes.

### 2.3. Industrial relations

It is impossible to describe the situation of industrial relations in Germany without a strong emphasis on the role of the unions. Since their appearance in the 1880s following the conclusion of the first labour contracts they played a nearly unbroken role in the industrial relations (with the only exception of the time of the Nazi-regime from 1933 to 1945, when all union and employers' federation activities were prohibited). Their main aims have always been the reduction of weekly hours of work (from 82 hours per week in the 1870s to about 38 hours per week today), the reduction of unemployment and the strengthening of the employees position opposite to the employers.

However, following a European trend, for the last 8 years all German unions, combined in the German union federation (Deutscher Gewerkschaftsbund, DGB), have experienced a strong decrease in members. From about 9,800,000 in 1994 to about 7,700,000 in 2002: a decline of more than 21%! The reasons for this are manifold:

- A change in the way collective labour agreements are negotiated. Negotiations for agreements on tariffs seem to become more and more ineffective due to the fact that they usually lead to a clash between the two powerful opponents (the employers and the unions) who are both nearly unable to compromise. In the course of such a conflict the government has had to intervene ever more often in the last years resulting in a decreasing credibility of both the unions and the employers. As a further consequence many larger employers are considering to leave collective labour agreements in favour of local business-wide agreements to avoid these conflicts. A popular example has been the Federal state of Berlin who recently left the collective labour agreement to negotiate an own agreement.
- A growing unwillingness for union-related activities among employees. During some of the latest tariff negotiations described above many employees expressed their opinion that continuing work with consistent payment seems to them preferable to unemployment caused by austerity measures implemented by the employers in order to finance higher wages. Therefore the broad back up of strikes and other forms of industrial conflict experienced in the past is decreasing even further.
- Most recently, the largest Germany union, the metal worker union (IG Metal) has experienced the complete failure of the tariff agreements and appending strikes in their fight for reduced weekly hours of work in the eastern federal states of Germany. The resultant conflicts within the union are momentarily leading to a steep drop of the unions esteem among the metal-workers in particular and the union movement among the population in general.

Here as in the other fields examined the need for reformation is obvious. The industrial relations will make up another key part in the shift towards the Knowledge Society as they are the base for all changes in working conditions. The German unions will have to grab their chance for an active role in these changes quickly so that their important contribution to a socially acceptable and sustainable working environment can be made.

### ***3. Knowledge society in Germany: the current situation***

In order to describe the current situation of the Knowledge Society (KS) in Germany firstly, a series of existing Information Society, Growth Competitiveness, Networked Readiness, E-Readiness etc. Indices from different authors and institutions like World Economic Forum, IDC, etc. were searched and identified and the results of which presented for Germany. This gives a very first overview of the German society and economy on its way towards the KS.

*Secondly*, an analysis of existing statistics from various sources was carried out. This analysis is based on the “EUFORIA Knowledge Society Advancement Indicators Report”, which provides a statistical analysis of the current situation and past developments for the EU15 and where possible providing comparisons to the US and other countries.

*Thirdly*, and on that basis, enlarged by comments and contributions from national experts from the EUFORIA National KS Foresight Centre set up by empirica in late 2002 (cf. annex 3 for details) a SWOT analysis was carried out to identify areas where Germany is strong but also those where it is weak and where opportunities and threats may occur.

*Fourthly*, an elaboration and presentation of the drivers and national specifics which are deemed relevant and important by the above experts and which are responsible for and can be used to better understand the present situation and past developments was done.

*Fifthly*, likely future trends of the KS in Germany have been specified together with the experts differentiated according to different domains and issues: economy, technology, social issues, politics, environment, values.

### **3.1. Knowledge society-related indices**

This chapter provides some general information about Germany and ratings for the country along relevant KS-related indices to give a first general overview of where the country stands in terms of progress towards the KS.

#### **3.1.1. General information for Germany**

Germany is the largest EU Member State with a population of more than 80 million. Economic growth has decreased over the past years and is at a rather low 0.2 %. Inflation has always been at very low levels and has remained so. One of the largest problem of German economy is the rather high unemployment rate of around 10%. Especially after the reunification of the country in 1989, it has grown strongly and shows very large regional differences with peaks in some East German regions at around 25%.

Table 3: *General information for Germany*

<b>Area</b>	357,021 square km	
<b>Population</b>	83,251,851 million	
<b>Economy</b>	<b>2001</b>	<b>2002</b>
- GDP growth	0.6 %	0.2 %
- Inflation	2.0 %	1.4 %
- Unemployment	9.0 %	9.5 %

Sources: *The CIA World Fact Book 2002 (Area, Population); Statistisches Bundesamt, NSI Germany (GDP growth, Inflation); Bundesanstalt für Arbeit, Federal Employment Office (Unemployment)*

#### **3.1.2. KS-related indices ratings for Germany**

The following indices with some relevance to measuring a country's position in terms of progress towards the KS have been identified:

- a) Information Society Index
- b) Networked Readiness Index
- c) Technological Achievement Index
- d) Global IT IQ ranking
- e) E-readiness ranking
- f) Growth Competitiveness Index.

The ratings and rankings on these for Germany are provided in the following overview where it becomes apparent that the country ranks fairly good on these indices but not at all exceptionally good and can not be called a frontrunner but a (rapid) follower.

Table 4: Ratings on KS-related indices for Germany

Index	Rank	WWW	Source
Information Society Index 2000 or later	15 of 55	<a href="http://www.worldpaper.com/2002/feb02/isi.jpg">http://www.worldpaper.com/2002/feb02/isi.jpg</a>	IDC
Networked Readiness Index 2002-2003	10 of 82	<a href="http://www.weforum.org/pdf/Global_Competitiveness_Reports/Reports/GITR_2002_2003/GITR_Rankings.pdf">http://www.weforum.org/pdf/Global_Competitiveness_Reports/Reports/GITR_2002_2003/GITR_Rankings.pdf</a> <a href="http://www.cid.harvard.edu/cr/profiles.html">http://www.cid.harvard.edu/cr/profiles.html</a> <a href="http://www.cid.harvard.edu/cr/pdf/gitr2002_ch02.pdf">http://www.cid.harvard.edu/cr/pdf/gitr2002_ch02.pdf</a>	World Economic Forum
Technological Achievement Index 2001 or later	11 of 72	<a href="http://www.undp.org/hdr2001/techindex.pdf">http://www.undp.org/hdr2001/techindex.pdf</a> <a href="http://www.undp.org/hdr2001/popupmap.html">http://www.undp.org/hdr2001/popupmap.html</a>	UNDP
Global IT IQ ranking 2002	13 of 100	<a href="\\NTSERVER_DAT\Projekte\Sibis\Literatur\Brainbench_globalitiq-report_2002.pdf">\\NTSERVER_DAT\Projekte\Sibis\Literatur\Brainbench_globalitiq-report_2002.pdf</a>	Brainbench
E-readiness ranking 2001 or later	8 of 60	<a href="http://www-1.ibm.com/services/strategy/files/IBM_Consulting_The_2002_e_readiness_rankings.pdf">http://www-1.ibm.com/services/strategy/files/IBM_Consulting_The_2002_e_readiness_rankings.pdf</a>	Economist Intelligence Unit and Pyramid Research
Growth Competitiveness Index 2001 and 2002	14 of 80	<a href="http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5CReports%5CGlobal+Competitiveness+Report+2002-2003">http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5CReports%5CGlobal+Competitiveness+Report+2002-2003</a>	World Economic Forum

### **3.2. Strengths - weaknesses - opportunities - threats**

The statistical analysis of the current situation and past developments show that Germany takes the position of an average country among the EU member states.

The potential for future development is quite high but is at the moment not tapped. Appropriate measures to do so are not yet existing or are still on the verge of showing effects.

Among the indicators analysed there are some showing quite a lot of promise as well as some indicating an imminent crisis.

A more comprehensive overview of the situation is presented in the following country profile providing the data for Germany along 29 relevant KS-related indicators. The indicators have been grouped in areas:

- Media
- Education
- Work & Employment
- Economy
- Social Inclusion
- Innovation Ability
- Quality of Life.

Data for each indicator is presented in a standardised way, i.e. the EU15 average was set at 100 and the values for each indicators calculated as a deviation from this. The higher a value, the better a country performs on a specific indicator. In some cases, the values had to be inverted to ensure that a high values carries a positive message. This applies to indicators like for instance CO2 emissions or infant mortality rate where in the present example high values mean low emissions or low infant mortality rates .

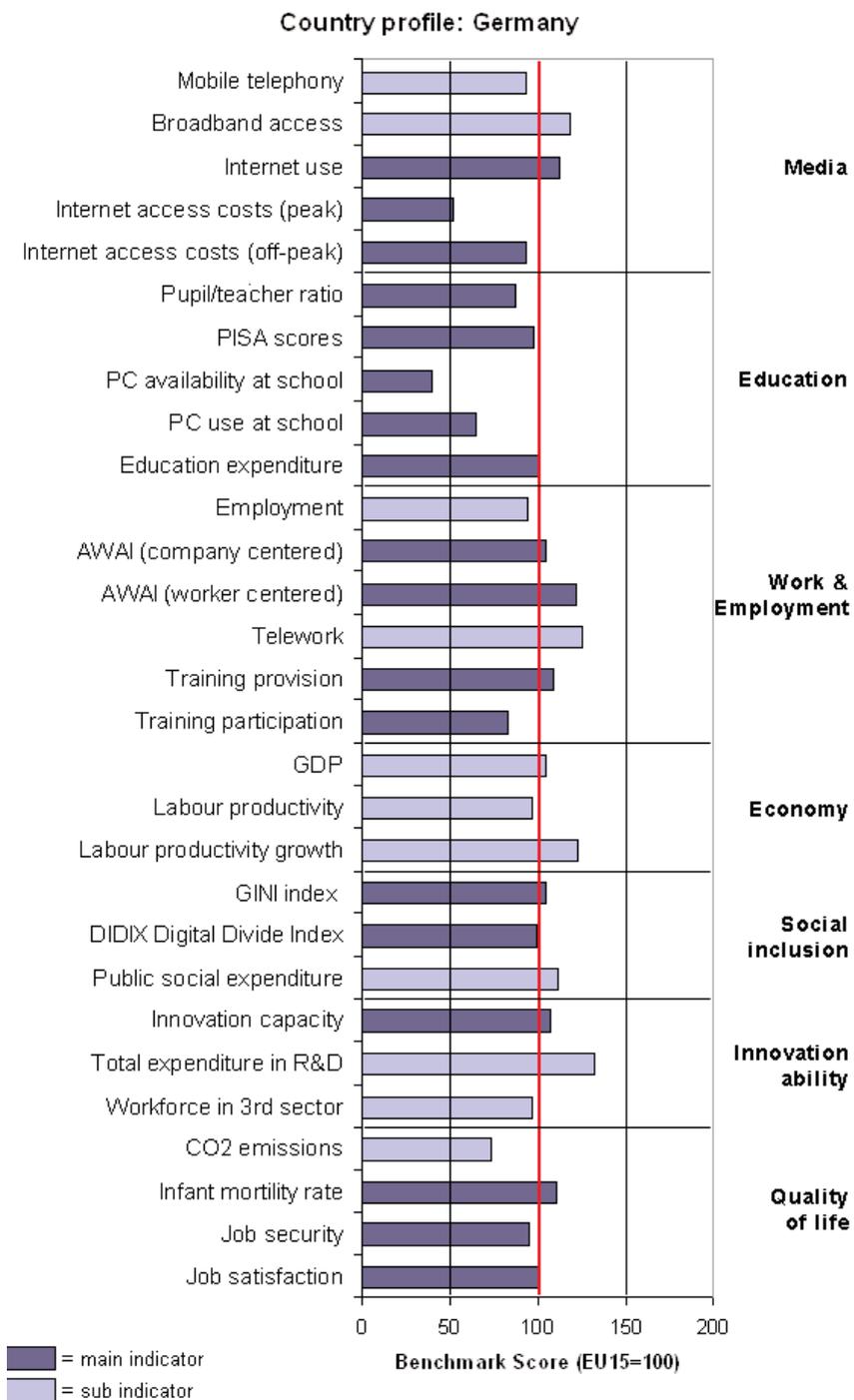
A differentiation was made between main indicators and sub-indicators to specify an importance and a weight attached to each.

According to this country profile and when comparing it to those of the other EU member states the following becomes apparent for Germany:

- a) Media use in Germany is at an average level but broadband access is provided to and used by an increasing number of companies and citizens with Germany taking a rather good position in this respect in Europe. However, internet access cost are still rather high in Germany, especially at peak times.
- b) Education is an area where Germany performs rather poorly. This is reflected in the rather low combined PISA score (putting together the results for reading, mathematical and scientific literacy) and which has been subject to a lively public debate in Germany. Despite the activities and funding of initiatives like “Schulen ans Netz” (schools to the net), availability and particularly the use of computers in schools is at substantially less than European average levels. This is reflected by the PISA figures for 2000 asking head teachers for the PC availability at schools but also by OECD figures from the same year where 15-year olds were asked to report about the computer availability at school for use almost every day.
- c) Although unemployment is currently high and still rising, a positive development can be observed towards an increasing flexibility of work arrangements in the labour market in Germany. This applies to both, companies and the workers. New forms of working like teleworking have started to be implemented more rapidly in Germany and are now already above the European average with rather strong increases over the past years.
- d) Training provision by companies is above average in Germany but training participation in general is still lagging behind. Today training is used mainly for adapting to technological or organisational changes such as new software versions or new accounting-measurements. Training in the wider sense of life-long learning and self-directed learning with the aim of furthering the employees self-development remains at lower levels. Strong investments in training (~17 Bio Euro per year), however, give reason to hope for a positive change.
- e) While labour productivity is still below EU-average, its growth is not. Together with a slightly above-average GDP it paints a picture of a moderately successful economy. This picture, however, is endangered by recent economic changes that will lead to a further decrease of economic power.
- f) Germany is among the best performers with respect to social inclusion measured using the GINI index, i.e. income disparities are at lower levels compared to many other European countries, not least to above-average social spending. However, it needs to be noted, that the variations here are not very large across the European countries.
- g) Digital literacy of German citizens is better than in most of the larger EU member states (except the UK) but lower than in the Scandinavian countries. Again, Germany is an average performer.
- h) When it comes to innovation ability (measured using the Innovation sub-index of the WEF’s Global Competitiveness Index) Germany again takes the role of an average performer. The total expenditure in R&D as % of the GDP - another indicator used to measure the innovation ability -, however, is above average in Germany if still not at the level government would like to see it. Since R&D expenditures are always paid from the ‘cash-flow’ there is a danger here for Germany that these will in the future decrease due to the sluggish economy and the household consolidation efforts to meet the Maastricht criteria.

- i) Despite a high public awareness of environmental problems, CO2 emissions in Germany are still higher than in the EU on average. All other quality-of-life indicators (infant mortality, job security, job satisfaction) show again a quite average performance.

Figure 4: Knowledge society country profile: Germany



A grouping of the different results in a SWOT matrix showing the following strengths, weaknesses, opportunities and threats for Germany:

Figure 5: Knowledge society SWOT analysis: Germany

<b>Strength</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Innovation ability</li> <li>• High willingness to engage in self-directed training</li> <li>• Flexible work forms are appreciated by many</li> <li>• Broadband access</li> </ul>	<ul style="list-style-type: none"> <li>• Educational system is lagging behind</li> <li>• Electronic media and education do not go together most of the time</li> <li>• Rising unemployment</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Flexible, innovative and well-trained workforce manages the shift towards a service industry</li> <li>• Rather little income disparities</li> <li>• Quality-of-Life</li> </ul>	<ul style="list-style-type: none"> <li>• Poorly educated new generation of workers heavily reduces Germany's innovation ability</li> <li>• High unemployment prevents the necessary economic boost</li> <li>• R&amp;D threatened due to sluggish economy and household consolidation</li> </ul>

It is not an easy job to summarise Germany's performance and progress towards the KS in one sentence. What seems to be true is that many KS-related aspects (only) remain at an average level in Germany, but that the potential, on the other hand, is high if it is tapped. To do so it would be necessary to concentrate on the strength and opportunities and use them to cope with the weaknesses and threats.

#### 4. Drivers for the knowledge society in Germany

The present chapter tries to specify the national specifics and drivers which were identified as those responsible for the present situation and past developments of the Knowledge Society in Germany or at least had some impact.

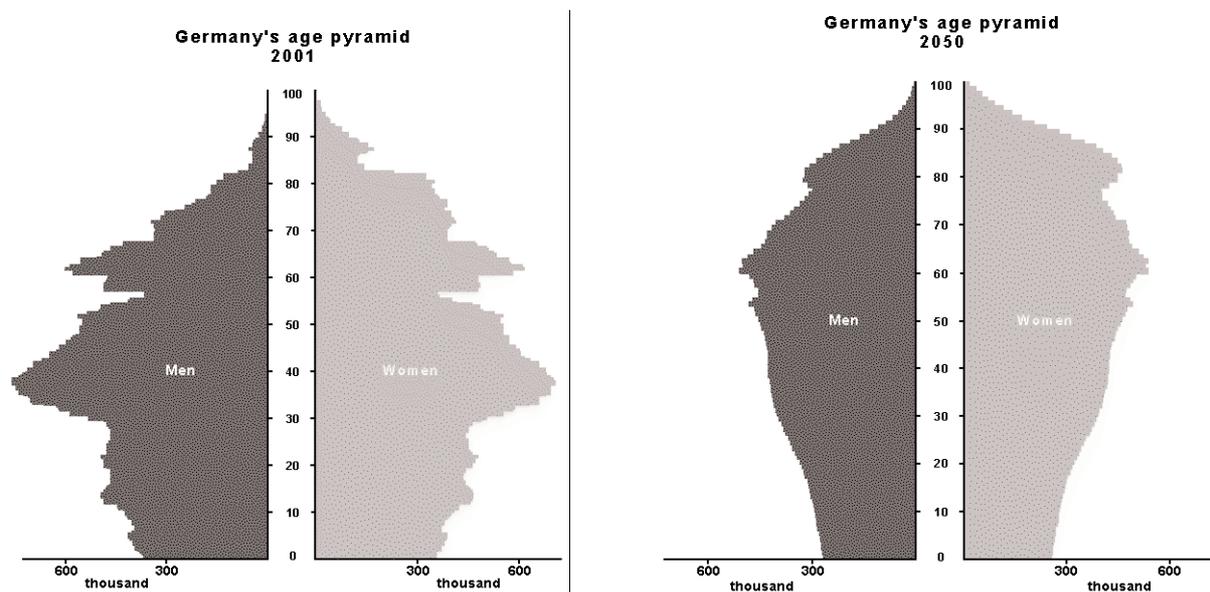
##### 4.1. What the experts think

Some central points from the discussions with the EUFORIA experts in both workshops are presented below.

##### 4.1.1. The problem of the ageing society has been recognised in Germany and is being approached

Political decision makers have recognised the problem of the heavily ageing society; it is also fixed as a problem in the awareness of large parts of the society. So far there are no appropriate instruments for "shrinking" societies, in particular with weak or even negative economic growth with simultaneously increasing and high unemployment. There are no models for social assurance in a reducing population, although they are by all means conceivable. Here there is a deficit in planning and discussion. However, politics in Germany has started to prepare and execute reforms in order to get a grip on and master the problems of the ageing society. However, the financial and other margins, e.g. for the creation of employment opportunities for older employees so that they can again contribute to the social security system, are further limited because of necessary investment in the reconstruction of the East which in the past years has cost billions and will still do so in the future, partially financed from social insurance funds.

Figure 6: *Ageing society in Germany*



Source: *NSI Germany*

#### **4.1.2. Germany's strength lies less in the "export of knowledge"**

Germany's economic strengths lie in the manufacturing industry and industry (e.g. mechanical engineering, car industry, chemical industry), less in the service industry. This is why the German economy has more problems than many other countries with the "export of knowledge", which, in the future much more than before, will be a leading force for the creation of wealth.

#### **4.1.3. Germany has a strongly structured, hardly permeable education system**

Germany has an education system which undoubtedly shows strength with its dual education system and produces qualified employees in a number of professions. However, the education and training system is strongly structured in e.g. different school types (e.g. secondary school, middle school, grammar school, vocational school, etc) where interchangeability is very low. This is regarded as a weak point because once a path has been chosen, permeability upwards is very difficult even with the necessary good qualifications.

#### **4.1.4. Germany is a society with strong social extremes regarding Internet use and also education, qualifications, etc.**

Not just the PISA study but also tendencies in other areas have shown that concerning the use of certain things (e.g. Internet), or in the acquisition of knowledge, qualifications etc, in comparison to other countries there are large social differences in Germany, i.e. we are dealing with strong extremes.

#### **4.1.5. In Germany no special systems exist for the promotion of excellence**

In Germany there are no special systems for the promotion of excellence which could help gain a better position in comparison to other countries in the "creation of genius". A stronger differentiation of the education system is needed - not a blocking of the best - more consideration for the actual wishes of the learners, more involvement of the learners - as can for example be observed at the private universities (European Business Schools, etc). If mass production and duplicating work shrinks more and more in favour of the development of digitalisable goods and services, in the future Germany will need more people with (excellent) ability instead of skills.

**4.1.6. In Germany there is both a lack of variety and a lack of differentiation in the support measures available in schools**

In order to survive in a knowledge society it is necessary that citizens are as well qualified as possible and have a high level of education. In Germany there is both a lack of variety and a lack of differentiation in the support measures available in schools where support for the weaker student should go hand in hand with opportunities to stretch the most able students (“two speeds”).

**4.1.7. In Germany a (exaggerated) certificate culture exists**

In Germany there is a (exaggerated) certificate culture (which is likely to be an anachronism in 2015). In order to carry out certain activities and professions or found a company particular certificates are required. On the other hand however, certificates also create trust and transparency. A European harmonisation is necessary. Experts’ estimate for 2015: It is important that an individual has a university degree for example but less so in what subject. The exception: specific professions such as doctors.

Certificates are also a result of the information society. The increasing abstractness of requirements no longer allows the gain of competence through “experience”. Thus, such non-certificated qualifications loose their importance. European harmonisation is only possible on the basis of certificates not in non-certificated elements.

**4.1.8. Small regional structures hinder supra-regional, overall politically desired structures**

Example: Employees’ mobility on the labour market is desired or legally enforced. However, de facto, it does not take place because the unemployed do not wish or are unable to afford the additional mobility costs for insecure opportunities. If those who require the services carry the costs of moving - as it was with the ministries for the relocation to Berlin - then these problems could be met efficiently.

**4.1.9. Despite its strong industrial structures, Germany is a late mover and follower in areas like IT and bio technology industry**

German industry has a strong industrial structure with companies which has proven to be highly innovative. It appears as if this strength has led Germany to become rather inactive in future-oriented areas and industries like IT and biotechnology. As a consequence, Germany became a later mover and follower in these industries. Following and catching-up was (will be) possible due to the good learning aptitude of German companies and workers.

**4.1.10. In Germany there is a lack of entrepreneurship which could positively contribute to growth**

Entrepreneurship in Germany as in most other European countries is not very much developed. The situation seems to be quite the opposite in the US, where its strongly these organisations which create employment and growth.

**4.1.11. In Germany there is a ‘culture of dependency’**

Most Germans are seeking a depend job and are not interested in any form of self-employment or any form of employment bearing more risk. This mentality is supported since the German system as it stands strongly rewards dependency with good payments and wages. Dependency pays.

**4.1.12. Germany is a society of compromise**

The German society is one which always tries and aims at a balance (of motions). As a consequence, extremes hardly exist (like for instance in the US) and mechanisms for compromise achievement are in place (e.g. social partnership model). However, this sometimes constrains more radical structural reforms which are urgently required in Germany in many areas.

**4.1.13. In Germany there is a lack of integration of immigrants**

Immigration in Germany was believed to be a temporary phenomenon. This resulted in a rather poor integration of immigrants starting with the lack of language training and in subsequent problems in many different areas.

**4.1.14. In Germany labour is highly taxed**

Taxation of labour is extremely high in Germany resulting in very high labour cost. It is believed that a shift of these taxes to consumption / excise tax is needed to achieve a better competitiveness of the Germany economy.

**4.1.15. In Germany we mainly find consumer spending but only few investment expenditures**

Investments in Germany have hit rock bottom. Economic growth purely on the basis of consumer spending is not feasible. The situation is continuing to deteriorate German economy and society should no further active measures be taken by government and other key players.

**4.1.16. Germany had to bear large cost of reunification**

It is without question that Germany had, has and will still have to invest enormous sums in the re-construction of the Eastern part of its country after the reunification. These sums are missing in other areas of political action.

**4.1.17. In Germany there is a permanent structural political blockade**

The governmental system in Germany is characterised by a multi-level government with Federal States having (in many cases) the power of veto concerning decisions taken by the Federal government. Under the present and also past political constellations with different political majorities in the two parliamentary chambers (Bundestag: Federal parliament, Bundesrat: Federal State parliament), Germany was faced with permanent blockades for party political reasons and an inability to political action. There is an urgent need for new regulation mechanisms to avoid such blockades in the future.

**4.1.18. Size as a handicap**

Germany also seems to have a handicap simply due to its size (more than 80 million inhabitants) making it very difficult to act as flexible as countries like Denmark or Finland. It is said that an 'ideal' size of a country is at around 5 million inhabitants since social pressures and different forms of monitoring and supervision - contributing to and facilitating flexibility and faster action - are operational and work much better in smaller countries. The size would then be similar to the one of some Federal German states like for instance Bavaria and Baden-Wuerttemberg.

## **5. Impacts on a future knowledge society in Germany**

The present chapter describes the impact of a future national trend towards the KS as identified and formulated by the EUFORIA experts in the above workshops. Metaplan technology was used intensively to obtain expert statements and results differentiated by context areas as follows:

- a) Economy
- b) Technology
- c) Social issues
- d) Politics
- e) Environment
- f) Values.

The results are documented in short statements according to the above-mentioned structure. Figures in parentheses reflect experts' marks in points. This means, the more points a topic receives the more important experts deem it to be. These importance ratings are also graphically depicted in the overview figures at the start of each sub-chapter to provide the reader with a quick overview.

## 5.1. Economy

Figure 7: Economic impact and expert rating



Source: EUFORIA expert workshops, Germany

### 5.1.1. Networking and outsourcing (9)

Location independent work in networks (networking) will be widespread in 2015, telework is becoming normality. Organisations will increasingly outsource work which will further accelerate the development to global networking.

### 5.1.2. Employees' participation in organisations (capital, decisions) (6)

In order to be successful in the market, organisations will increasingly develop and introduce new models for employees' participation. These relate to employees' share in organisations' decisions and capital. Such "legitimate" and serious share models increasingly determine organisations' success.

### 5.1.3. The role of low productive non-knowledge work (6)

Low productive work in all areas (incl. office jobs) will either be rationalised by ICT, low paid, subsidised or carried out through moonlighting. It will result in increasing differences in income compared with knowledge workers and thus lead to a greater polarisation of society.

### 5.1.4. Concentration and monopolisation of organisational landscape and content (6)

In the course of the development of the knowledge society a further increasing concentration and monopolisation of the global organisational landscape can be expected. This means that in the future in each sector some few global players will determine and control the market. A similar development will also take place regarding content, i.e. some few organisations will become the key organisations regarding content provision.

**5.1.5. "Leasing instead of buying" (3)**

In the knowledge society possession of goods (not just regarding ICT) will lose in importance. Goods, e.g. technology based services, will increasingly be leased. This means that organisations and individuals will pay for use rather than for possession of goods (e.g. software). Suppliers will develop suitable user licences and bring them into the market.

**5.1.6. Less income from dependent work, more from capital and self-employed work (2)**

Employees will increasingly realise their income through self-employed work and accumulated capital (Keyword: "I Ltd"). Dependent employment, the currently still dominant work form, will lose in importance.

**5.1.7. New growth market: eHealth (-)**

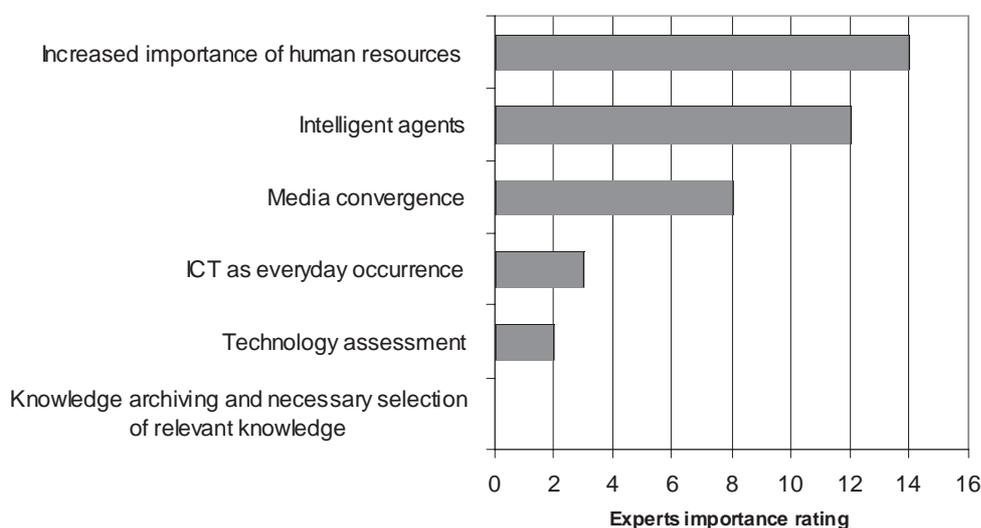
For many and - also because of the demographic development - rapidly increasing groups of people health and wellness are becoming important topics. These will develop into new growth markets; an eHealth market which will further accelerate the development to a knowledge society will emerge.

**5.1.8. Domestic structure of the tertiary sector. Necessity for new indicators (-)**

Knowledge-based activities will increase in the knowledge society. Along with this comes a further fanning out of the tertiary sector whose statistics is only unsatisfactorily recorded and covered. Here it is necessary to develop new statistical indicators for an improved gathering and measurement of these developments and characteristics of the knowledge society

**5.2. Technology**

Figure 8: *Technological impact and expert rating*



Source: *EUFORIA expert workshops, Germany*

**5.2.1. Increased importance of human resources (14)**

Organisations increasingly realise the high importance of human resources and treat them equal to investments.

At the same time however, human resources form the limit of flexibilisation and the implementation of technology, i.e. certain groups of people do not have the requirements for an essential further flexibilisation and ICT use, others refuse. Both have effects on the employability of these groups.

### 5.2.2. Intelligent agents (12)

Intelligent personalised agents (“intelligent agents” such as autonomous research agents, avatars, improved virtual reality, individual knowledge maps) with new “intelligent” human-machine-intersections/interfaces will be widespread to help cope with the flood of information and to create transparency.

### 5.2.3. Media convergence (8)

Convergence of currently still different media (e.g. PC, TV, mobile communication) will be completed.

### 5.2.4. ICT is becoming an everyday occurrence (3)

ICT has taken hold of all areas of life and is widely used. Mobile use of the Internet is becoming a matter of course. E-learning has increased further, in private households as well as organisations.

### 5.2.5. Technology assessment (2)

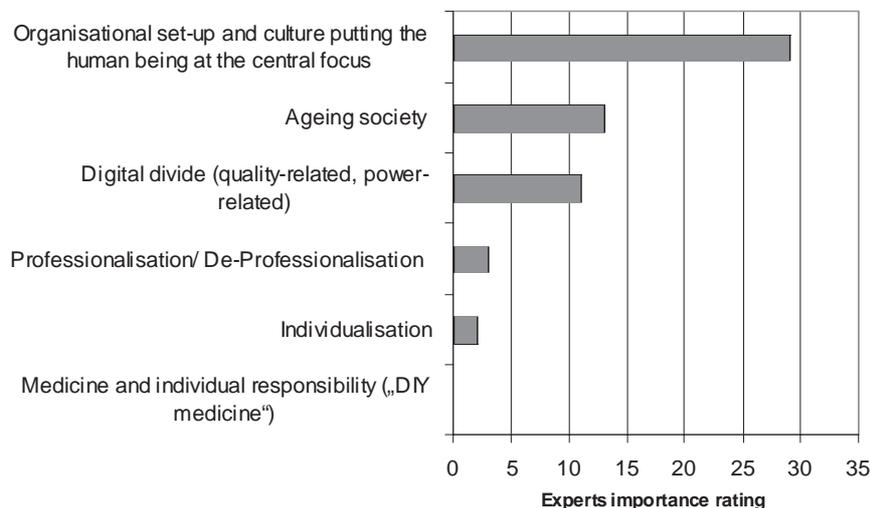
Development and research of technology will orient themselves stronger than today and will be linked to the “needs” of society. This is accompanied by an early examination of the sustainability of technological developments.

### 5.2.6. Knowledge archiving and necessary selection of relevant knowledge (-)

In line with the development of continually growing digital libraries questions occur regarding necessary selection on the one hand and, on the other hand, secure electronic long term archiving of information and knowledge of digital as well as “analogue” information (e.g. books) from the past centuries.

## 5.3. Social issues

Figure 9: Social impact and expert rating



Source: EUFORIA expert workshops, Germany

### 5.3.1. Organisational set-up and culture which recognises the human being and puts them at the central focus (29)

New business forms for dealing with knowledge workers (away from the paradigm of the “screw factory”) arise where the human being is seen as the central success factor and guarantor.

The increase of knowledge-based work leads to an increased need for qualifications. It will lead to an intensification of lifelong learning and result in significantly fewer continuous employment biographies, ie everyone will carry out a sequence of different “occupations” during their lifetime.

Employment will become an episode in an otherwise leisure oriented life. As a whole, variety and the wealth of choice in society and lifestyles will increase.

It will result in a flexibilisation of employment law and an increase in insecure employment with simultaneous longer and more flexible working hours.

The lack of qualified workers cannot be offset by a higher quota of female workers.

The question of where stabilising anchors for individuals can be found in the future when the previous ones (workplace, family, regional surrounding) have been lost (also see 1.6.3) remains unanswered.

### **5.3.2. Ageing society (13)**

The continually increasing over-ageing in the shrinking society leads to changes in values, needs (e.g. regarding ICT) and also to generation conflicts which among other things result from the fact that the older section of society also increasingly determines the markets.

### **5.3.3. Digital divide (quality-related, power-related) (11)**

The digital divide is still a central topic in 2015. “Non-liners” will be left behind more and more. The further privatisation of the educational system exacerbates the social differences and the restriction of access to valuable information (which is only accessible through payment) leads to a further social polarisation of society.

### **5.3.4. Professionalisation/ De-Professionalisation (3)**

Services in all areas of life, previously provided by relatives or volunteers, experience a professionalisation, i.e. they are increasingly offered as a professional service by third parties (for a current example the provision of professional care services by service providers through the introduction of nursing care insurance in Germany).

### **5.3.5. Individualisation (2)**

Individualisation is intensified through ICT, social contacts become increasingly commercialised (already today through introduction agencies and fitness centres). For certain target groups (e.g. pensioners, disabled) the Internet is becoming their “access to the world” from which they would otherwise be largely excluded.

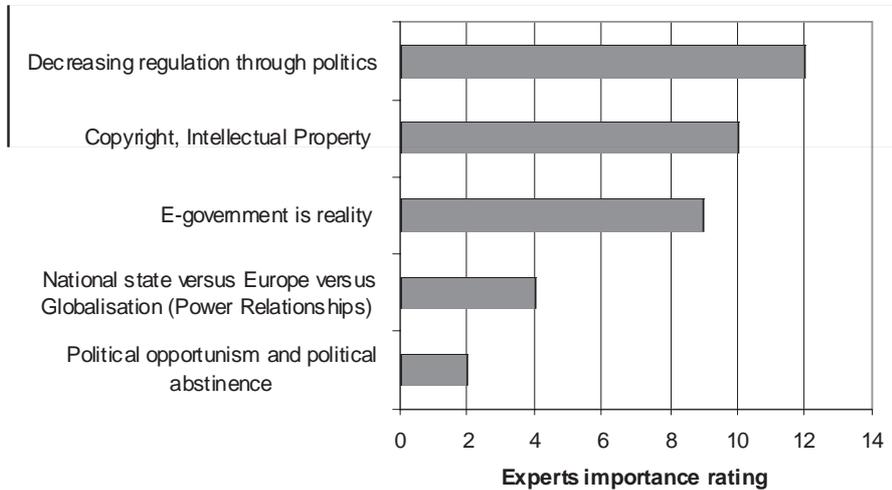
Social control (e.g. consumer behaviour) via ICT and digital rights management technologies is increasing: “1984” happens in 2014.

### **5.3.6. Medicine and individual responsibility (“DIY medicine”) (-)**

The health system is subject both to heavy cost pressures and consequently to change. Citizens will increasingly use self-medication before undertaking a billed visit to the doctor.

## 5.4. Politics

Figure 10: Political impact and expert rating



Source: EUFORIA expert workshops, Germany

### 5.4.1. Regulation (12)

Regulation through politics is decreasing due to an increasing privatisation of state services.

Because of the worldwide network, security of use and possible emergency scenarios are given increased importance. Security policies must ensure security in data networks. However, it remains to be seen how far this will be realised by 2015.

### 5.4.2. Copyright, Intellectual Property (10)

Property or licence rights for knowledge are becoming an important topic (e.g. gene patents) and the handling of intellectual property is becoming a political key decision.

### 5.4.3. E-government is reality (9)

The increasing complexity of administration forces an extensive use of ICT. E-government will be widespread in 2015 but will also have met its limits. E-democracy will be an integral constituent of e-government.

### 5.4.4. National state versus Europe versus Globalisation (Power Relationships) (4)

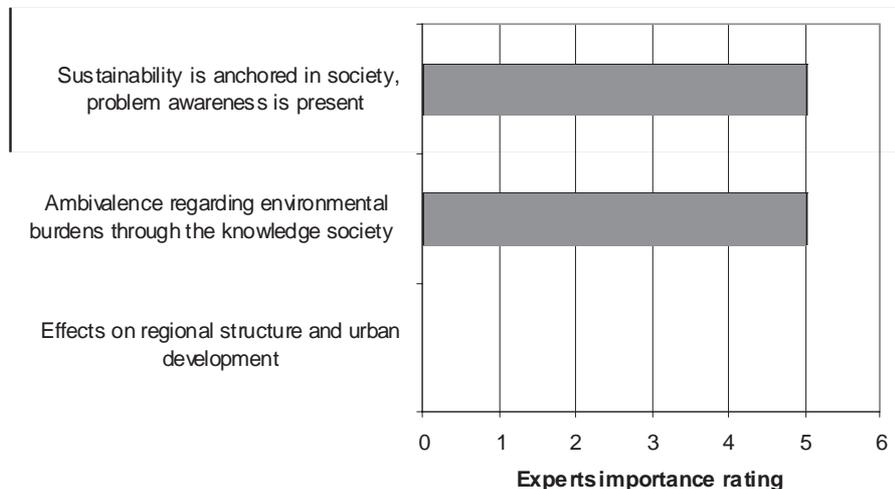
The further advancing globalisation leads to a further decrease of national leadership through politics. In spite of advancing globalisation citizens will continue to think (small) regional and be segmented.

### 5.4.5. Political opportunism and political abstinence (2)

A continuing “political opportunism” in favour of the voting majority of the elderly will aggravate the political abstinence of the young. This will result in an “over-ageing” of politics which will lose sight of certain target groups.

## 5.5. Environment

Figure 11: *Environmental impact and expert rating*



Source: *EUFORIA expert workshops, Germany*

### 5.5.1. *Ambivalence regarding environmental burdens through the knowledge society (5)*

There are two contrary hypotheses:

- The increasing non-materialisation of the economy reduces the environmental burden
- There will be increasing worldwide environmental pollution in the knowledge society

Environmental pollution is also increasing due to the further polarisation of societies and economies in the world as well as the increasing poverty (as is currently noticeable in the developing countries).

The emerging understanding of long term risks to health means that by 2015 there is no more cellular mobile network.

### 5.5.2. *Sustainability is anchored in society, problem awareness is present (5)*

The principle of sustainability is deeply anchored in large parts of the population. Europe has developed into a leading force in the area of development and use of environmental technologies.

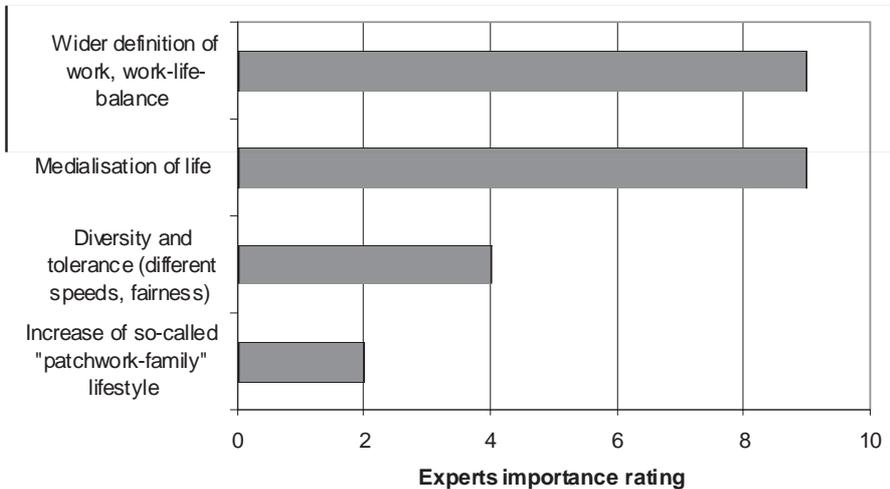
### 5.5.3. *Effects on regional structure and urban development (-)*

Life and Work become geographically closer again. As a result the inner city office towers will become the industrial ruins of tomorrow.

Problems with worsening traffic gridlock will significantly push forward the wide application of ICT.

## 5.6. Values

Figure 12: Impact on social values and expert rating



Source: EUFORIA expert workshops, Germany

### 5.6.1. Medialisation of life (9)

There will be a US-Americanisation of the media: everything that increases market share will be broadcast. There will be a split society regarding media competence and the emergence of even more sector programmes - analogous to the development on the magazine/printed media market.

There will be an often unquestioned belief in the Internet: "What is on the Internet is true."

Nothing will be believed any longer, reality is no longer expected behind information.

Increasingly, simulation is displacing reality.

People lose the ability for face-to-face communication.

Access to ICT and telecommunication networks will be free of charge. ICT competence will be defined as a general qualification.

There will be a commercialisation and monopolisation of intellectual property.

### 5.6.2. Wider definition of work, work-life-balance (9)

"Work" receives a much wider definition and will surpass the classical employment. Work also plays a smaller role in determining status.

People increasingly search for a work-life-balance.

### 5.6.3. Diversity and tolerance (different speeds, fairness) (4)

Diversity of values, mix of religions, new philosophies determine the period around 2015.

Older people are in the majority and dominate politics: either right to vote for children or only voting up to the age of 75. There will be distribution conflicts between the generations.

There will be a large need for security and stability. The question is: who will deliver this?

Fairness of distribution as a global benchmark will become a central topic which will be unavoidable for world coexistence.

#### **5.6.4. Lifestyles (2)**

People increasingly forego long-term relationships.

This will mean an increase of so-called “patchwork families”.

### **6. Views of the future knowledge society in Germany: Scenarios**

In the context of foresight and futures studies, scenarios are visions of future possibilities. They go beyond simply profiling the future in terms of one or two key variables, to present a more fleshed out picture, in which many details are linked together. These may be details of a future history or of a state of affairs. A “future history” will present a sequence of events or developments of trends. An “image of the future” will elaborate the circumstances at a particular point in future time. Typically either approach will present us with a mixture of quantifiable and non-quantifiable components. Often both will be combined. (cf. Miles, Ian: Scenarios and Foresight - towards a constructive integration. Draft paper, June 2002).

In EUFORIA, and based on the results and discussions discussed above, the EUFORIA team at empirica developed a series of scenarios to include different visions of the future KS in Germany.

Three different scenarios were developed:

- a) Scenario no. 1: CRASH: “Crash into the second league”
- b) Scenario no. 2: STAGNATION: “Business as usual”
- c) Scenario no. 3: CHANGE: “From average to excellence”

The structure of the scenario descriptions was agreed upon in the project and is depicted in the following overview:

- A. “Headline Description”
- B. Specific features of pathway, main trends, events and turning points
- C. Economic Structure and Performance
- D. Social and Political Circumstances

E. Living Conditions:

- a) Family structures, household composition
- b) Child- and elder-care
- c) Domestic division of labour
- d) Living standards
- e) Time use
- f) Work-life balance
- g) Social and political participation
- h) Access to public services

F. Working Conditions:

- a) Levels of employment and Unemployment
- b) Skills and training required at work
- c) Quality of working environment
- d) Part-time working
- e) "New" forms of work

G. Industrial Relations

- a) Strength and strategy of trade unions
- b) participation in decision making concerning organisational and technological change

The scenarios were presented to and discussed with the German experts from the National Foresight Centre - amongst others - also at the second EUFORIA workshop on 2 June 2003 in Berlin. Afterwards, the scenarios were further developed based on the comments from the experts and are herewith presented in their final format.

The experts were also asked to specify the most desirable scenario to strive for. They unanimously selected scenario no. 3: CHANGE: 'From average to excellence'. This was then taken as the vision to aim at and to specify necessary policy implications, social innovations etc. and roles of key players to achieve it.

Chapter 4.2 presents the three possible scenarios highlighting the one deemed most desirable by the experts.

***6.1. Common elements to all scenarios***

Common elements to all scenarios were specified at the start of scenario development to lay the common grounds for each of them. These addressed the following aspects:

- a) Demography
- b) Information and communication technologies
- c) Global economic growth

- d) Europe
- e) Security
- f) Social issues
- g) Labour market
- h) Education.

Further details on each of them with respect to the likely situation in 2015 is provided below:

#### **6.1.1. Demography:**

- Ageing society: the share of elderly people (>65) has reached 40%
- The average number of children/family is very low and even lower than today (around 1 child/family)
- The number of single parent households and patchwork families will have increased drastically
- The number of immigrants - mainly from east European countries - further increases; almost 15% of the German population will be immigrants in 2015

#### **6.1.2. Information and Communication Technologies (ICT):**

- PCs and the internet are used by almost 90% of European and German households,
- The convergence of currently still different media (e.g. PC, TV, mobile communication) will be completed.
- Access to the internet has become ubiquitous within and outside of the home
- Very high speed wireless broadband access available in urban and densely populated regions; sparsely populated regions have to rely on digital TV and lowerband mobile telecommunications access

#### **6.1.3. Global economic growth:**

- China and south-east Asia / the Pacific rim have become the growth pole of the world economy, followed by the Americas

#### **6.1.4. Europe:**

- The United States of Europe do not exist. Europe remains to be fragmented especially after its extension to the EU25 in 2004. Most of today's EU15 countries moved together closely in economic etc. terms and countries like Estonia, Slovenia etc. are following. However, the other countries lag behind these at some distance in economic etc. terms.

#### **6.1.5. Security:**

- Terrorism, religious wars etc. continue to exist as in the early years of the 21st century
- The Palestine problem still remains unsolved
- In metropolitan regions, security issues gain in importance, ghetto districts both for the rich and the poor develop

#### **6.1.6. Social issues:**

- poverty of the lower classes increases
- pension and health systems will provide only for basic coverage
- the danger of social conflicts increases

#### **6.1.7. Labour markets:**

- the scarcity of qualified workers has increased, competition from the growth poles of the global economy has increased
- lower qualified local people as well as immigrants keep basic wages down
- older people will be required to work longer, their qualifications are highly valued

#### **6.1.8. Education:**

- Investments in and structural reforms of the educational and training systems finally take place, but their impact will be felt only in 5 to 10 years
- Support for high-tech research, elite universities, continuing education will finally gain key priority

### **6.2. Scenario descriptions**

In EUFORIA, and based on the results and discussions discussed above, the EUFORIA team at empirica developed the following three scenarios to include different visions of the future KS in Germany:

- a) Scenario no. 1: CRASH: “Crash into the second league”
- b) Scenario no. 2: STAGNATION: “Business as usual”
- c) Scenario no. 3: CHANGE: “From average to excellence”

The experts unanimously selected scenario no. 3: CHANGE: ‘From average to excellence’ as the most desirable one. This scenario was then taken as the vision to aim at and to specify necessary policy implications, social innovations etc. and roles of key players to achieve it.

Table 5:

"Headline Description"	Crash  "Crash into the 2. league"	Stagnation  "Business as usual"	Change  "From average to excellence"
<p><b>Specific features of pathway, main trends, events and turning points</b></p>	<p>The societal, governmental and institutional inertia and inability to reforms has persisted and negatively impacted all spheres of the German society and economy.</p> <p>Most attempts for reforms were nipped in the bud and ended in hollow compromises.</p> <p>There is no sign of change. Germany has managed to paralyse itself.</p> <p>The increased number of older voters has made basic structural reforms impossible.</p> <p>Many young, well-trained people are attracted towards the intellectual and economic growth poles of the global economy</p>	<p>Germany all-in-all, has till 2015 continued to perform and develop as it did previously, i.e. in the early years of the 21<sup>st</sup> century, and thereby continued to demonstrate its problems to real structural reforms at all levels in the country.</p> <p>However, there are first signs of change. Government, society and large parts of industry have tried to put into reality necessary structural reforms and implemented further changes which followed along the lines of the 'Agenda 2010' announced by the German Federal government in 2003. However, in some cases these reforms have been carried out only half heartedly and have lacked effectiveness since their original objectives got diluted to some extent in the political process due to compromises the government had to agree to towards the strong opposition parties in both chambers of parliament (the Bundestag and Bundesrat) and the trade unions.</p> <p>However, but only recently, there are positive signs of understanding among the social partners etc. towards the needs for changing the situation and reforms to bring Germany back on track. These key players have started to throw away old traditions and dogmas and started to more efficiently and effectively approach each other and co-operate in developing solutions.</p>	<p>Germany has successfully managed to overcome its societal, governmental and institutional inertia and demonstrated its ability to fundamental structural reforms at all levels in the country. The 'Agenda 2010' in 2003 was just a starting point for a major turnaround in Germany.</p> <p>Social partners and other key players managed to bite the bullet, threw away old traditions and dogmas, and started to efficiently and effectively approach each other and co-operate in developing solutions.</p> <p>Social security, pension and health systems focus on those most in need, more room has been provided for individual responsibilities and foresight, thus freeing public funds for investments in education, research, innovations and an advanced ICT infrastructure</p>
<p><b>Economic Structure and Performance</b></p>	<p>Germany is and continues to be faced with zero or even negative growth and GDP development.</p> <p>Bankruptcy figures, especially among SMEs are reaching new peaks every year and have exceeded the number of 50,000 per annum.</p> <p>Germany finds itself in a permanent no or little growth situation.</p> <p>Entrepreneurial attitudes among the workforce and population are still not very widespread. The vast majority is only interested in a 'dependent' job and shies away from self-employment or starting an own company.</p> <p>German society, governments, political parties, social partners, industry and other associations and have demonstrated their inability to change their conservative attitudes and to agree on the urgently needed political reforms.</p> <p>Most attempts for such reforms were nipped in the bud and ended in hollow compromises.</p> <p>VAT has been increased from 16% in 2003 to 25% in 2015 to try to keep the public budget in a better balance.</p>	<p>Germany shows only rather low levels of growth and GDP development which range between 0.5 and 1.0%.</p> <p>Although not in a recession, Germany only achieves average or even below average growth rates compared to other EC Member States.</p> <p>Bankruptcy of SMEs continue to stay at rather high levels resulting in job losses and a still rather high unemployment (cf. below).</p> <p>Government programmes to create an entrepreneurial spirit among school/university leavers and the workers, paralleled with financial and tax incentives has shown first very small successes in 2015. It remains to be seen whether this will be a sustainable development.</p> <p>Different to the situation in the late 20<sup>th</sup> and early 21<sup>st</sup> century, the social partners, employer and industry associations as well as other relevant key players have listened to reason and shown some understanding of the needs and are starting to find more constructive and productive ways of co-operation in developing necessary reforms and solutions.</p>	<p>Germany has managed to get back to a sustainable economic growth of between 1.5 and 2.5%, which is around the European average but only when counting the EU15 and not the EU25, where higher growth rates exist.</p> <p>Bankruptcy of SMEs was cut down significantly, also resulting in an increase of employment figures.</p> <p>Government programmes to create an entrepreneurial spirit among school/university leavers and the workers, paralleled with financial and tax incentives, were successful, and the number of new entrepreneurs has doubled compared to what it was in the early 2000s.</p> <p>Different to the situation in the late 20<sup>th</sup> and early 21<sup>st</sup> century, the social partners, employer and industry associations as well as other relevant key players have successfully managed to find and implement highly constructive and productive ways of co-operation in developing necessary reforms and solutions.</p> <p>There no longer exists a federal budget deficit, and at all public levels surpluses allow do decrease public debts thus freeing funds for investments in other fields.</p>

Figure 5: (cont.)

"Headline Description"	Crash  "Crash into the 2. league"	Stagnation  "Business as usual"	Change  "From average to excellence"
<b>Economic Structure and Performance</b> (cont.)	However, and despite the drastic VAT and other tax increases, the national debt still keeps growing . The money is needed to finance the high unemployment, the still not completed integration and development of the Eastern part of Germany, and to compensate for the lack of governmental income from other sources at Federal, State and municipality level.	The household deficit could be reduced and is now approaching to meet the Maastricht criteria and is almost balanced after a two step increase of VAT (in 2005 and 2012) from 16% to 19%.	The economic growth, the successful implementation of the social reforms but also a two step increase of VAT (in 2005 and 2012) from 16% to 19% have contributed to this.
<b>Social and Political Circumstances</b>	<p>Unemployment benefits are down to the level of income support (Social welfare).</p> <p>The income gap between those in work and those without has widened resulting in further societal tension and an increase in crime especially in those regions with high unemployment.</p> <p>Poverty has become an issue, as indicated by the increasing and very high share of homelessness in 2015. Policy has identified this as an area in need for action but not yet responded and not become active to solve the problem.</p> <p>The reform of the social welfare system failed, the necessary structural reforms of the social security and welfare systems did not take place or the few ones which where intended and started with enthusiasm were in the end diluted due to many compromises which had to be made to pass them through parliament and get the blessing of the trade unions.</p> <p>In 2015 payments into social security and welfare systems have almost reached 50% of a worker's income, payments to the pension funds alone have reached 25%.</p> <p>Reforms of the educational system did nor occur or failed. Germany is still far away from all-day schooling.</p> <p>Germany continues to have a strongly structured, hardly permeable education system. Once a path has been chosen, permeability upwards is very difficult even with the necessary good qualifications.</p> <p>Still no special systems for the promotion of excellence which could help gain a better position in comparison to other countries in the "creation of genius" exist.</p>	<p>Unemployment benefit has been reduced in a number of steps and is now significantly lower than it used to be in the early 2000s but still slightly above the level of income support (Social welfare)</p> <p>As a result of this the gap between those in work and those without has widened but not (yet) led to any turmoil. Poverty rates are still at an "acceptable" level. Policy does not see any need for action in this area.</p> <p>The social welfare system has undergone some reforms but mostly more or less "cosmetic" ones due to compromises policy decision makers had to find with the social partners and other lobbyists to get at least some reforms implemented. More serious and necessary structural reform activities also strongly and repeatedly demanded by the EU are still not visible.</p> <p>Payments into social security systems have increased steadily since the above "cosmetic" reforms did not reveal any real success. Payments to the pension funds alone have reached figures of more than 20%. The rather negative results of the PISA study for Germany have resulted in policy action towards the implementation of all-day schooling with 50% of the German schools now following this model. In parallel, the still rather strongly structured education system has become more permeable.</p> <p>There have been long political debates about the implementation of educational systems for the promotion of excellence. Some Federal States and some private investors have managed to establish some schools and universities for the promotion of elites. However, these are still very scarce and not widely spread.</p> <p>The vast majority of politicians has realised the need for reforms at all levels.</p>	<p>Unemployment benefit has been reduced in a number of steps and is now significantly lower than it used to be in the early 2000s but still slightly above the level of income support (Social welfare). This has been achieved in a societal consensus since all parties concerned agreed on the need for such action.</p> <p>The social welfare system has undergone some serious reforms. It is no longer entirely financed through payments by the economically active part of the population but also through direct taxes and dues including VAT.</p> <p>The share of the workers' income for payments into social security systems could be reduced step by step. In 2015, payments to the pension funds are down to 12% as opposed to more than 19% in 2003 and the total social security payments down to 25% of income. German social security systems are on their way to recovery and sustainability.</p> <p>Federalism in Germany has undergone some serious changes. In 2015 Federal government sets the general policy objectives and guidelines for the Federal states. These have been restructured to build larger regional units, thereby reducing their number from 16 down to 10, been given more responsibility and entered a phase of much higher competition against each other. Education and literacy have become a top national objective and are now under the responsibility of the Federal government. Standards in the field of education are now set at a national level to make the German educational system highly competitive at an international level.</p> <p>All-day schooling has become the norm in Germany and the education system is highly permeable. Schools and universities for educating and promoting elites – partly funded by public money, partly by private investors - are common place.</p>

Table 5: (cont.)

"Headline Description"	Crash  "Crash into the 2. league"	Stagnation  "Business as usual"	Change  "From average to excellence"
<b>Social and Political Circumstances</b> (cont.)	<p>The further privatisation of the educational system exacerbates the social differences and the restriction of access to valuable information (which is only accessible through payment) leads to a further social polarisation of society.</p> <p>Patch-up jobs by politicians are common place in all political areas resulting in no real changes and reforms urgently needed.</p> <p>Immigration, especially from Eastern European countries and war regions in the world, is increasing. Most of these immigrants do not belong to the group of highly qualified workers. Germany has difficulties in absorbing them and integrating them into the workforce and provide employment. As a result, they add to the ever increasing number of unemployed.</p> <p>Due to the economic problems and the lack of employment opportunities a new phenomenon starts to occur which can best be described as brain-drain. Qualified Germans leave the country to get employment elsewhere, a phenomenon which is rather familiar from the past in countries like for instance Greece or Ireland.</p>	<p>However, most of them still do not dare implementing these full-heartedly and/or speak about this openly and honestly to the citizens since they do not want to appear in public as the ones to pass on bad news and are afraid of not being voted for at the next elections.</p> <p>Immigration continues as it was in the early 200s with all the associated problems of bringing the lower qualified immigrants into employment.</p>	<p>All these reforms were carried out in a societal consensus. Politicians of all parties, the citizens, the social partners and the vast majority of other key players and interest groups have developed a common understanding of the needs for change and joined forces in developing appropriate strategies and solutions. These also included cuts in certain areas (e.g. level of unemployment money, pensions etc.).</p> <p>Germany has developed into an attractive country for skilled immigrants. As a result, immigration of qualified workers to Germany is increasing. The advantages for Germany are obvious: availability of required skilled workers, payments of these into the social security systems, contribution to economic development etc.</p>
<b>Living Conditions:</b> <b>a) Family structures, household composition</b> <b>b) Child- and elder-care</b> <b>c) Domestic division of labour</b> <b>d) Living standards</b> <b>e) Time use</b> <b>f) Work-life balance</b> <b>g) Social and political participation</b> <b>h) Access to public services</b>	<p>a) Single households have further increased. Families only very rarely have more than one child.</p> <p>Divorce rates have peaked: 2 out of 3 marriages are getting divorced.</p> <p>Single parenting and 'patchwork families' are commonplace.</p> <p>b) Child- and elder-care systems have not undergone any real changes compared to the year 2000.</p> <p>Kindergarten opening times are still restricted to morning care services only in the majority of cases resulting in problems of employment for mothers.</p> <p>The nursing care insurance system introduced in the late 90s has not resulted in major beneficial changes to those concerned. The provision of professional care services by service providers through the introduction of nursing care insurance in Germany has not changed the situation since it was cut down to not further increase the financial burden of the workers and employers and now only addresses those with serious health problems and disabilities.</p>	<p>a) Single households have further increased. Families only very rarely have more than one child.</p> <p>Divorce rates have increased: more than 50% of the married couples are getting divorced.</p> <p>Single parenting and 'patchwork families' have also increased.</p> <p>b) Services (including child- and elder-care services) in all areas of life, previously provided by relatives or volunteers, experience a professionalisation, i.e. they are increasingly offered as a professional service by third parties (for a current example the provision of professional care services by service providers through the introduction of nursing care insurance in Germany).</p> <p>c) The traditional division of labour between women and men has not changed at all which is also reflected in the domestic situation still following the traditional division of labour between the genders.</p> <p>As a result of this, the overall employment rate and especially the female employment has only slightly increased compared to the level of the year 2000.</p>	<p>a) The number of single households has slightly increased but families have also started to have more than one child.</p> <p>Divorce rates have remained at similar levels compared to 2000.</p> <p>The same holds true for single parent households.</p> <p>b) The nursing care insurance system introduced in the late 90s could be expanded over the years and resulted in major beneficial changes to those concerned. Care for elderly people is not to be provided entirely by relatives. Germany has managed to implement a model comparable to those in Denmark and other Scandinavian countries.</p> <p>c) The traditional division of labour between women and men has started to change slightly due to the fact that an increased number of women have entered employment and are increasingly starting to share the burden of domestic work with their partners.</p> <p>d) The living standard is high compared to the European average but with regional disparities. The Eastern parts of Germany are still lagging behind although the gap is slowly closing.</p> <p>e) The average working week in Germany is still 38 hours.</p>

Table 5: (cont.)

"Headline Description"	Crash  "Crash into the 2. league"	Stagnation  "Business as usual"	Change  "From average to excellence"
<p><b>Living Conditions:</b></p> <p>a) <b>Family structures, household composition</b></p> <p>b) <b>Child- and elder-care</b></p> <p>c) <b>Domestic division of labour</b></p> <p>d) <b>Living standards</b></p> <p>e) <b>Time use</b></p> <p>f) <b>Work-life balance</b></p> <p>g) <b>Social and political participation</b></p> <p>h) <b>Access to public services</b></p> <p>(cont.)</p>	<p>Elder care services are mostly still provided by relatives who would, however, prefer this to be dealt with by residential care or through a professional institution. In addition, this has become increasingly problematic since families do no longer exist in the traditional sense of the word and less relatives feel responsible for caring for the elderly in their families.</p> <p>c) The traditional division of labour between women and men has not changed at all which is also reflected in the domestic situation still following the traditional division of labour between the genders.</p> <p>As a result of this, the overall employment rate and especially the female employment has almost stagnated at the level of the year 2000.</p> <p>d) The living standard is still high compared to the European average but with high levels of regional disparities. The Eastern parts of Germany are still seriously lagging behind.</p> <p>e) The 32 hours week has become reality in Germany.</p> <p>Flexibilisation of the labour market has resulted in a flexibilisation of employment law and an increase in insecure employment with simultaneous longer and more flexible working hours despite the official 32 hour week.</p> <p>f) People increasingly search for a work-life-balance by way of making use of 'new' flexible forms of work (including – at least to some extent – home-based working) which a substantial share of the workforce make use of. However, for many, flexible working has not been a blessing, since it has resulted in working long hours, self-exploitation and thereby deteriorated their family relationships.</p> <p>g) There is a strong disinterest in politics especially among the youth having lost their belief in politics to solve existing problems. As a consequence, participation in political activities has further diminished</p> <p>Participation in voluntary (e.g. social) work is increasingly diminishing.</p>	<p>d) The living standard is still high compared to the European average but with high levels of regional disparities. The Eastern parts of Germany are still lagging behind.</p> <p>e) The average working week in Germany is 35 hours.</p> <p>Flexibilisation of the labour market has resulted in a flexibilisation of employment law.</p> <p>Insecure employment with simultaneous longer and more flexible working hours has become reality for many in jobs with more responsibility.</p> <p>f) People increasingly search for a work-life-balance. Improvements in work-life balance have been achieved by an increasing number of those making use of 'new' flexible forms of work (including – at least to some extent – home-based working) which a substantial share of the workforce make use of. However, for many, flexible working has not been a blessing, since it has resulted in working long hours, self-exploitation and thereby deteriorated their family relationships.</p> <p>g) There is a strong disinterest in politics especially among the youth having lost their belief in politics to solve existing problems. As a consequence, participation in political activities has further diminished.</p> <p>Participation in voluntary (e.g. social) work is increasingly diminishing. Many still expect that government has to provide the necessary (social) services and payments in times of social crises.</p> <p>A continuing "political opportunism" in favour of the voting majority of the elderly has started to aggravate the political abstinence of the young. This has started to move towards an "over-ageing" of politics which loosing sight of certain target groups.</p> <p>h) The increasing complexity of administration forces an extensive use of ICT. E-government has become widespread in 2015 but will also have met its limits.</p> <p>E-democracy will be an integral constituent of e-government. Access to public services is increasingly been achieved via online e-Government services. Government Online 2005 was followed by Government Online 2010 and has successfully implemented online government services at all governmental levels.</p>	<p>Flexibilisation of the labour market has resulted in a flexibilisation of employment law which organisations as well as workers make extensive use of.</p> <p>Longer and more flexible working hours still remains reality for many in jobs with more responsibility.</p> <p>f) People increasingly search for a work-life-balance. Improvements in work-life balance have been achieved by an increasing number of those making use of 'new' flexible forms of work (including – at least to some extent – home-based working) which a substantial share of the workforce make use of.</p> <p>This is becoming increasingly possible since more and more families are now enabled to employ other people to carry out the domestic work tasks freeing themselves for their families.</p> <p>g) With the advent of innovative, future-oriented and sustainable policies at all levels, interest in politics especially among the youth has increased. Participation in political activities has become popular.</p> <p>Participation in voluntary (e.g. social) work is increasing. There is no longer the belief that government has to provide the necessary (social) services and payments for everything but that citizens are also responsible for these tasks.</p> <p>h) The increasing complexity of administration forces an extensive use of ICT. E-government will be widespread in 2015 but will also have met its limits. E-democracy has become an integral constituent of e-government. Access to public services is increasingly been achieved via online e-Government services. Government Online 2005 was followed by Government Online 2010 and has successfully implemented online government services at all governmental levels. The minority of the population without access to the internet (mainly those with low income and low levels of education) is still excluded from the use of online public services. The 'digital divide' along 'income' and 'education' is still existing but decreases.</p>

Table 5: (cont.)

"Headline Description"	Crash  "Crash into the 2. league"	Stagnation  "Business as usual"	Change  "From average to excellence"
<p><b>Living Conditions:</b></p> <p>a) Family structures, household composition</p> <p>b) Child- and elder-care</p> <p>c) Domestic division of labour</p> <p>d) Living standards</p> <p>e) Time use</p> <p>f) Work-life balance</p> <p>g) Social and political participation</p> <p>h) Access to public services</p> <p>(cont.)</p>	<p>There is an overwhelming expectation that government has to provide the necessary (social) services especially against the background of the very high social security payments. A continuing "political opportunism" in favour of the voting majority of the elderly has strongly aggravate the political abstinence of the young. This has resulted in an "over-ageing" of politics having lost sight of certain target groups.</p> <p>h) The increasing complexity of administration forces an extensive use of ICT. E-government has become widespread in 2015 but will also have met its limits. E-democracy will be an integral constituent of e-government. Access to public services is increasingly been achieved via online e-Government services. Government Online 2005 was followed by Government Online 2010 and has successfully implemented online government services at all governmental levels. As a consequence, the minority of the population without access to the internet (mainly those with low income and low levels of education) is increasingly excluded from the use of online public services. The 'digital divide' along 'income' and 'education' is still existing and there are no signs of change.</p>	<p>As a consequence, the minority of the population without access to the internet (mainly those with low income and low levels of education) is increasingly excluded from the use of online public services. The 'digital divide' along 'income' and 'education' is still existing and there are no signs of change.</p>	
<p><b>Working Conditions:</b></p> <p>a) Levels of employment and Unemployment</p> <p>b) Skills and training required at work</p> <p>c) Quality of working environment</p> <p>d) Part-time working</p> <p>e) "New" forms of work</p>	<p>a) The overall employment rate and the female employment rate went down below the levels of 2000. The targets set by the EU to increase both have not at all been met.</p> <p>The average unemployment rate has reached more than 15% with regional peaks at 30% in some East German regions.</p> <p>b) Qualifications and skills of the workforce and its ability and willingness to life-long-learning - which used to be at very high levels after World War II and still in the first decade of the 21st century – have deteriorated as a result of the poor education and resulting qualifications of the school leavers. The lack of qualified workers cannot be offset by a slightly higher quota of female workers.</p>	<p>a) The overall employment rate and the female employment rate remains at about the level as in 2000. The targets set by the EU to increase both have not been met.</p> <p>The average unemployment rate has remained at a rather constant level of around 10% with regional peaks at 20% in some East German regions.</p> <p>b) Germany has managed to keep the qualifications and skills of the workforce and its ability and willingness to life-long-learning - which used to be at very high levels after World War II and still in the first decade of the 21st century – at the level of 2000.</p> <p>c) Regulations relating to the working environment in terms of ergonomics and health issues to be ensured by the employer have remained at the same level over the years.</p>	<p>a) The overall employment rate and the female employment rate have overachieved the goals set by the EC and are now at around 80% and 65% respectively.</p> <p>The average unemployment rate could be reduced to around 6% but still with regional peaks at 15% in some East German regions.</p> <p>b) Germany has managed to keep and even increase the qualifications and skills of the workforce and its ability and willingness to life-long-learning at very high levels.</p> <p>c) Regulations relating to the working environment in terms of ergonomics and health issues to be ensured by the employer have remained at the same level over the years.</p> <p>d) The spread of part-time working has increased due to the need for an increasing number of qualified workers in most sectors and because it better fits the needs of the companies and the workers especially in the services sector.</p>

Table 5: (cont.)

"Headline Description"	Crash  "Crash into the 2. league"	Stagnation  "Business as usual"	Change  "From average to excellence"
<p><b>Working Conditions:</b></p> <p>a) Levels of employment and Unemployment</p> <p>b) Skills and training required at work</p> <p>c) Quality of working environment</p> <p>d) Part-time working</p> <p>e) "New" forms of work (cont.)</p>	<p>c) Regulations relating to the working environment in terms of ergonomics and health issues to be ensured by the employer have been tightened up even further ensuring good quality working environments for employees at all their work places but putting an additional burden on employers.</p> <p>d) The spread of part-time working has increased but mainly due to the problems of industry to offer full-time jobs as a result of the long-lasting economic recession.</p> <p>e) The implementation and use of 'new' flexible forms of working, especially home-based working at a more frequent but also on an occasional basis has not further spread and was even reduced compared to what it looked like in the early years of the 21<sup>st</sup> century. The main reason being that workers do not want to move their workplace to their homes but stay "where the power" is, which has become the common perception in order to secure their job.</p>	<p>d) The spread of part-time working has increased due to the problems of industry to offer full-time jobs in some areas on the one hand and because it better fits the needs of the companies and the workers especially in the services sector on the other.</p> <p>e) 'New' flexible forms of working are rather widely spread in Germany and especially high among part-time workers. The trends towards an increase of flexible working already visible in 2003 continued. Now, the country belongs to the top group in Europe when it comes to flexible working including the Scandinavian countries, the Netherlands and the UK with more than a third (and in some countries even more than half) of the workforce working from a home-base more or less regularly.</p>	<p>e) 'New' flexible forms of working are rather widely spread in Germany and especially high among part-time workers. The trends towards an increase of flexible working already visible in 2003 continued. Now, the country belongs to the top group in Europe when it comes to flexible working including the Scandinavian countries, the Netherlands and the UK with more than a third (and in some countries even more than half) of the workforce working from a home-base more or less regularly.</p>
<p><b>Industrial Relations</b></p> <p>a) Strength and strategy of trade unions</p> <p>b) participation in decision making concerning organisational and technological change</p>	<p>a) German trade unions with the more dogmatic decision makers are in place in 2015, have managed to keep changes of work-related issues at a minimum. A further flexibilisation of work, extended working life going beyond the age of 65, softening the protection against unlawful dismissal etc. could all be successfully resisted.</p> <p>Government was and is not able to oppose something against this union strength. De-facto, unions are seriously impacting German economic and social policy in a way that has turned out to be harmful too the economy.</p> <p>b) Participation of trade unions in decision making concerning organisational and technological change is no longer a topic. Companies' willingness to allow for this is hardly existing due to the fact that in times of recession they think they know best what to do and the dogmatists who got the upper hand in the trade unions with whom they are not willing to have a dialogue.</p>	<p>a) German trade union strategies and policies have continued as they were and are impacting German economic and social policy in the same way as before. The social partners continue to find compromises as always in Germany but doubts exist whether this always happens to the advantage of the German economy in a globally competitive world.</p> <p>b) Participation of trade unions and workers in decision making concerning organisational and technological change is at the same level as it has already been in 2000. Employers have identified the advantages in terms of motivation and productivity resulting from this and have widely moved towards that practice. The trade unions play the role of a moderator in this process.</p>	<p>a) Changes in society and the economy could be achieved in consensus between the social partners and government. Trade unions have even become a driving force for change.</p> <p>However, around the year 2005, trade unions were at the verge of collapsing after the heavy quarrels and disputes with government and employer and industry associations but successfully managed to throw over board old dogmas. They could successfully avoid a situation known from the UK under the conservative Thatcher government in the 1980s where the trade unions made themselves more or less superfluous and basically seized to exist in their traditional role as a trustworthy and reliable social partner.</p> <p>b) Participation of trade unions and workers in decision making concerning organisational and technological change has substantially increased. They and their role has been acknowledged as very positive by many employers and they identified the advantages in terms of motivation and productivity resulting from this and have widely moved towards that practice. The trade unions play the role of a change agent and moderator in this process.</p>

## **7. Policy implications and role of key players**

### **7.1. Policy needs**

The policy needs as seen by the experts are as follows:

- Implementation of the Agenda 2010 defined by the German Federal government in 2003 as a first step, bearing in mind that the Agenda's scope is by far too small to affect all areas of society.
- Therefore continuation and extension of the reform activities and development of follow-up activities and further activities along the same lines which need to be implemented consequently, consistent and with political courage.
- Finalisation and implementation of the Federal finance and tax reform.
- Comprehensive exchange spanning all parties and interests addressing the strategic issues and visions and paths of reforms of the German society.

There are different views as to the mechanisms for such an exchange. Some see a re-launch of the "Bündnis für Arbeit" (alliance for work) in a different format, i.e. as an open forum for all relevant key players to discuss issues at hand without permanently blocking each other, as an appropriate means. Others believe that especially the absence of the alliance of work has been the driver to change and brought some movement into the whole debate.

In order to achieve the above, a redefinition of the role and function and a different self-conception of the Trade Unions and various associations is required. They should no longer play the role of stakeholders preserving and protecting what they see as key achievements of the past but should become key actors for designing societal reforms and changes geared towards a common vision.

There is the need for an appropriate public awareness and insight into the needs of such a reform where also media can play an important role. This includes the creation of an awareness among citizens but also among all stakeholders and key players in the whole process. One sometimes gets the impression that some stakeholders still seem to be guided in their work by traditional beliefs no longer appropriate as a means to solve today's problems and that citizens have not quite understood the need for reform activities to achieve a functioning and sustainable society in the future.

Action is needed along the lines of the above points for reform instead of an exchange of ever-changing expressions of opinion.

Experts feel that a stronger co-operation of government and opposition to overcome the problems caused by the dual parliamentary system could help to faster agree on and implement the necessary changes.

Up to now the reforms agreed on or under discussion are rather limited in scope and can only be seen as a very first step in the right direction.

### **7.2. Key social innovations required**

Key social innovations required include

- a new political assignment of the three actors: state, economy and civil society. This needs to include more taking over of responsibilities, independence and authority by industry and businesses but also citizens and NGOs in all areas of society

- more and new co-operation and control and steering mechanisms spanning all sectors, which can take over responsibility where the state on its own is no longer able to solve problems (or was never able to do so).

### **7.3. Annex 1: List of experts**

EUFORIA experts of the German National Foresight Centre:

- Federal Ministry for Economic Affairs and Employment (BMWA): Thomas de Graat
- Federal Ministry for Economic Affairs and Employment (BMWA): Ralf Franke
- Federal Ministry for Education and Research (bmbf): Ursula Zahn-Elliott
- Federal Ministry for Education and Research (bmbf): Matthias Kölbl
- IG Metall (Metal worker's union): Dr. Ulrich Klotz
- Deutscher Gewerkschaftsbund (DGB): Dr. Christa Dahme
- Federation of German Industries (BDI): Matthias Krämer
- ETUC European Trade Union Confederation: Dr. Norbert Kluge
- Institute for Labour Market and Occupational Research (IAB): Dr. Werner Dostal
- VDI/VDE Technology Centre Information Technology: Dr. Daniel Bieber
- Politik-digital: Clemens Lerche
- Bertelsmann Stiftung, Dr. Stefan Empter
- BITKOM, Dr. Axel Pols
- Technical University München, Prof. Dr. Helmut Krcmar
- Bundesvereinigung der Deutschen Arbeitgeberverbände (BDA), Dr. Rainer Schmidt-Rudloff
- Institut für Weltwirtschaft, Prof. Dr. Henning Klodt
- Ver.di Vereinigte Dienstleistungsgewerkschaft, Annette Mühlberg, Hans Gabriel
- Hanns-Böckler Stiftung, Dr. Lothar Kamp
- Institut für Technik und Arbeit, Dr. Matthias Knuth
- DaimlerChrysler AG, Prof. Dr. Eckard Minx, Burkhard Jänsch
- Statistisches Bundesamt, Dr. Susanne Schnorr-Bäcker

**W. B. Korte, I. Meyer, Empirica**

**EF/04/06/EN**