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**NRW 2000 - The economy, employment, qualifications and technologies - alternative scenarios and variants for social development - Project carried out as part of the SoTech Programme of the Land of North Rhine-Westphalia, Frankfurt, 1989 (unpublished)**

*Weert Canzler*

**Abstract**

The present study "NRW 2000: The economy, employment, qualifications and new technologies - alternative scenarios and variants for social development" was carried out by the Batelle Institut (Frankfurt) on behalf of the Ministry for Labour, Health and Social Affairs of the Land of North Rhine-westphalia in conjunction with the programme "Man and technology - social responsibility and technology shaping" (SoTech). In two scenarios not dictated by regulatory or political interests qualitative assessments are made of future developments in the sectors of the economy, employment, qualifications and new technologies as well as in the underlying external conditions.

The "self-regulation" scenario assumes favourable external conditions under which the economy of North Rhine-Westphalia will develop up to the year 2000, with growth just below the national average. Structural change from an industrial society to a services society will proceed apace, and many new small services companies will emerge from the change in company structures. For large sections of the labour force, however, this rapid structural change will lead to problems of qualifications and acceptance. Employment problems also remain unsolved in the "self-regulation" scenario.

Completion of the European internal market will bring advantages and disadvantages for NRW. On the whole the region will remain a good location for quality production.

There is a new trend towards decentralization through greater use of information and communications technologies.

The "consensus-forming" scenario assumes more problematical underlying conditions which will be countered with a cooperative political and economic style. Compared with the national average, economic development will be similar to that in the "self-regulation" scenario, but the employment trends with the introduction of new technologies will be far more positive. Qualification can also keep pace with the demands of technology.

Taking the two scenarios as a basis, the study recommends a series of more conventional suggestions for political and economic players.

European development is depicted quite differently in the two scenarios. Successful European integration in the self-regulation scenario is offset by a permanent crisis in the Community and a worsening of East-West and North-South relations in the consensus scenario.

## **I. Introduction and methods**

### **Reasons for the study and objectives**

Like the study "NRW 2000: Technical progress and labour market in NRW" of the DIW (German Institut for Economic Research) and the report "Microelectronics, labour market and possibilities of change" by the NRW 2000 working party, this study was carried out on behalf of the Minister for Labour, Health and Social Affairs of the Land of North Rhine-Westphalia as part of the SoTech Programme "Man and technology - social responsibility and technology shaping". The SoTech Programme, in which between 1985 and 1989 more than 100 applied research projects in the fields of microelectronics were given support totalling DM 60 million, was an attempt at social democratic redefinition of socially compatible research and technology policy in North Rhine-Westphalia. The programme was part of the "future technologies initiative" of NRW, which had served since 1985 to promote, research and shape future technologies.

The authors see the study as a contribution to the dialogue-orientated concept of socially compatible technology shaping: "It is the main of this project to use the scenario method to depict various underlying conditions for developments in North Rhine-Westphalia up to the year 2000. The presentation of possible futures should encourage managers in industry, administration and associations to continue their dialogue on socially acceptable technology shaping from the viewpoint of changed conditions and future changes. It should also show where the challenges lie to achieving socially acceptable technology shaping with an internationally competitive economic structure in North Rhine-Westphalia"

The study began on 1 October 1986 and was completed in May 1989. It is currently being evaluated by the North Rhine-Westphalia Ministry for Labour, Health and Social Affairs.

### **Terms of reference and composition of the team**

The task for the team from the Battelle-Institut was to sketch an "open picture of the future" of "how the economy, employment and qualifications in North Rhine-Westphalia might look in the year 2000 with the advent of new technologies".

The team consisted of four members, two sociologists and two economists.

### **Methods employed**

The authors used the Battelle scenario method which "describes consistent series of influential factors which in probabilistic terms set out at least one alternative, i.e. two different future sets of conditions for the sphere of action of the user". With the aid of scientifically well-founded descriptors, in which the previous development trend is illustrated and plausible development possibilities are described, the current state of play on individual

subjects will be incorporated into the scenario modelling. The individual aspects of images of the future world will be presented in clearly visual form.

In the view of the authors the results in the Battelle scenario method are not dictated by regulatory factors or political, economic or other interests.

## II Content

In contrast to the study "NRW 2000: Technical progress and the labour market in NRW" of the DIW, the Battelle study makes a qualitative assessment of the economy, employment, qualifications and new technologies. Empirical data are used merely to illustrate assumed trends. There have been two future pictures of the economy, employment and qualifications painted under the influence of greater use of new technologies:

1. The "self-regulation" future
2. The "consensus-forming" future.

In the first, "self-regulation", the State's role is reduced. It makes no attempt to dictate or intervene in the economy by way of social redistribution.

The hypothetical underlying conditions provide for a positive development in world politics and the world economy. At round 2 %, economic growth in NRW under these conditions is just 0.5 % below the national average. NRW will remain handicapped in terms of economic structures. New businesses and company growth in the modern branches cannot compensate for the downswing in the coal and steel industries.

As for income, there will be an increasing differentiation and at the same time a scissor-like drifting apart between safe, high-earning core workers and permanently endangered, poor-earning marginal workers. The structural change from a production to a services society will march steadily on in the "self-regulation" picture of the future. Particularly marked will be the shift from company-related services to small special operators. The new company structures forming can offset some of the losses in other sectors.

A further positive effect will come from the successful use of reclaimed industrial wasteland. In the manufacturing trade the emphasis will switch to the new branches of electronics, office automation, sensory analysis, biotechnology and special-purpose mechanical engineering. Interestingly, environmental technology does not play a large role in this scenario, the reason being the lack of State pressure. With European standardization environmental protection requirements will lose some of their pungency, and company investment in environmental protection will reduce with central, regional and local authorities pulling back the same time.

Although the rapid structural changes prescribed by company management will mean for many companies a time gain in international competition, they will often go hand in hand with qualification and acceptance problems with employees. In this particular scenario the completion of the European internal market shows both advantages and disadvantages for

NRW as a location. Contributing to the disadvantages are the competing locations in South and North-West Europe where many concerns are setting up shop. However, North Rhine-Westphalia will remain a guaranteed location for high-quality production.

The further spread of information and communications technologies and the compact communications infrastructure will lead to decentralization and relief of congested areas. New services firms will spring up above all on the edges of conurbations. Science and research - especially technology transfer - will make a positive contribution to structural change. In the self-regulations scenario the outlook is unfavourable for employment and qualifications.

The second scenario entitled "consensus-forming" envisages fairly difficult foreign trade conditions. The consensus model differs appreciably from the "self-regulation" future: "In an external trade crisis the best model is one which represents collective interests, emphasizes the social link in the market economy and permits greater coordination of company investment decisions, State infrastructure policy and union tariff policy without leading to undesirable trends due to official interference".

In the consensus model NRW will have real growth of an annual average 1.5 %, some 0.3 % lower than the national average. North Rhine-Westphalia companies will be particularly successful in the sectors of automated manufacture, process technology, environmental technology and the data processing branches of soft and hardware ergonomics.

The consensus scenario also anticipates extremely high growth in the services sector, especially in telecommunications and many small and medium-sized consultancy firms. Greater employment in the services sector - especially part-time work - may prevent fairly high unemployment, but only at the expense of a lower level of income compared with the self-regulation scenario.

As far as company structure goes, the large concerns will generally be successful in the consensus scenario. Company concentration will go hand in hand with decentralization measures.

Financial room for manoeuvre will remain limited against a background of high borrowing.

The qualification of workers has high priority in North Rhine-Westphalia. This is regarded as an important "contribution to safeguarding the future".

Apart from the different external conditions and role assignments for the State, the two pictures of the future differ primarily in the way economic structure, company size and distribution of income will develop.

On the whole structural change goes further in the self-regulation model. This means a greater loss of significance of the iron and steel industry and a larger increase in company-related services compared with the consensus hypothesis. At the same time work and income ratios diverge more in the self-regulation model.

The process of technology introduction is initially slower in the consensus scenario than in the self-regulation scenario, since from the levels of operation to overall economy it is governed by the rules of negotiation and compromise. Nevertheless, by the year 2000 technology introduction in the consensus model will reach approximately the same level.

### **Operating options for the players**

According to the Battelle Institut, despite the narrow limitations of Land-level policy in view of the lack of power vis-à-vis the Government and increasingly vis-à-vis the European Commission, the two scenarios present the Land Government with a number of options. It must be the Land Government's objective to improve the efficiency of the State administration, to promote target-specific, future-orientated technologies and to support research and development in the companies. This includes the promotion of new companies and an improvement in the pre-performance structure through specific company targetting. Further tasks of the Land Government would be to coordinate local labour market initiatives, long-term traffic planning and the reclamation and reutilization of industrial wasteland.

The aim of the Land Government economic promotion activities is above all "climate and image improvement, greater cooperation with the groups and associations involved, modernization and services-orientation of its own administration, initiation and accompaniment of a number of individual projects and hence, overall, the production of new conditions for the joint mastering of structural change".

On the whole the recommendations to the political operators remain conventional. They involve almost exclusively promotional measures which were already recommended in the 1980s in the strategies of "activation of endogenous potential" and "innovation-orientated economic development". Measures have long since been taken in all important economic regions for new companies, company resettlement, surface recycling and a better transport infrastructure. These measures are important elements in the inter regional competition of economic locations. Image advertising and a better business and investment climate have long since become the minimum standards of regional economic policy.

The study recommends that the large concerns in NRW support the hiving-off of companies and establishment of new ones. Large companies should also strengthen joint research and development and qualifications.

The trade unions should take account of the requirements of small and medium-sized undertakings and also climb down from their demands for subsidies for production structures which are no longer tenable.

### III Outlook

#### Effects on Europe

Apart from other factors, the two scenarios depicted differ above all in their assessment of the effects of the creation of the European internal market and political developments in the Community as a whole. In the "self-regulation" scenario effects on Community development are positive: "There now really is a European routine method of solving problems which crop up time and again. Freed from the burden of the old agricultural market order, we have been able to turn increasingly to new types of joint initiatives, such as regional structure development and coordination of the environmental, research and technology policy". Better transport conditions, multilingual satellite programmes, increased tourism within Europe and the introduction of a second foreign language after English in schools in Europe support the process of European integration in this scenario.

New European large-scale projects in space travel - e.g. a European manned space mission for the year 2010 - contribute to a "vision of Europe". Although in the self-regulation scenario financial and currency union in the Community will still not be achieved the European currencies will be stable within a worldwide system of fixed exchange rates.

In the field of environmental protection European integration will act as a break. The high standard of the environment in Germany at the end of the 1980s cannot be maintained in this vision of the future.

As regards foreign policy, a block constellation is still assumed, but this will be far more permeable than in the 1980s. Technology transfer and the export of high tech from West to East, which up to the end of the 1980s was reduced to a minimum by the COCOM restrictions, will run practically without a hitch. A further example of cross-block economic cooperation will be the completion of demanding development projects in Siberia with substantial participation of Japanese and European firms.

Seen from the year 1990 the future of middle Europe is not without its irony. At the joint between East and West German-German relations will continue to be particularly sensitive in this scenario: "As East-West relations improved German-German relations took a positive upturn, although in this instance the realms of possibility are clearer than between the two blocks en masse. In contrast to problem-free business contacts will still have the problems of holiday trips and visits or emigration to the Federal Republic. Nonetheless, a whole series of practical problems involving infrastructure cross-linking for energy, transport and telecommunications have finally been ironed out".

In the second scenario, the consensus model, the position of Europe and the world looks quite different: "The lasting crisis in the European Communities swallows up funds without prospects of success, the financial consequences of worsened East-West relations are increasingly difficult to uphold, and the debts of Third and Fourth World countries and their ecological problems cannot be solved".



The overall picture is negative: "The prevailing impression is that the rapid technological progress has overstretched western industrial nations".

Creation of the common internal market has failed. There are still huge differences between the rich and the poor among Community Member States. Promotion of the Community's regional structure is not coordinated; it is merely pushed along in accordance with the directives of the respective Member State government. The example of regional structure promotion merely emphasizes what in general applies to the European institutions: "In this area there can be no more talk of greater powers of decision of the European institutions than in other areas".

## **Conclusion**

The Battelle study scenario do not offer new concepts of problem-solving from a general European viewpoint. In the consensus scenario the poor underlying conditions and the difficult European and East-West situation leads primarily to an active role by the Federal and Land governments. The limits of national policy regarding global problems, such as destruction of the environment or the North-South relationship, were not focused in the study. The perspective of active regional policy under the conditions of accelerated European union is also missing. Against the background of global challenges it is certainly a priority to develop innovative and participational political and economic forms for the future and to devise scenarios in which local and regional possibilities of action are highlighted.