

Commission of the European Communities

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# **THE EUROPE PLUS THIRTY REPORT**

## **Summary**

This Report was prepared under contract by an external team following the Council Resolution of 14 January 1974. Its contents do not necessarily represent the views of the Commission, nor does the latter accept responsibility for the accuracy and completeness of the information disclosed.

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## BACKGROUND

This report was called for by a decision of the Council of Ministers of the European Communities on the 14th January 1974, on a proposal by the Commission of the European Communities.

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(1) From October 1974

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(1) From March 1975

Opinion of the Project Board of Europe Plus Thirty

In accordance with paragraph 2 of its Terms of Reference where it is stated "The Board shall give the Commission an opinion on the final report of the Team":

Noting the Resolution of the Council of Ministers of 14 January 1974 where it is stated: "The Council takes note of the fact .... that the Commission intends to submit specific proposals in the near future on the basis of the results of the preliminary programme":

Noting that the preliminary programme concerned has been carried out by the Europe Plus Thirty Project Team during 1974 and 1975 and that its results are the report of the Project Team:

Having advised the Project Director on the method and progress of the work, in accordance with para. 3 of its Terms of Reference, having been aware of the progress of the work at all stages and having contributed thereto:

Having carefully considered the Report of the Project Team submitted by the Project Director:

The Project Board transmits the following opinion thereon to the Commission of the European Communities.

- 1) The report constitutes a valuable set of recommendations to the Commission in answer to the questions contained in the Annex to the above mentioned Council Resolution.
- 2) The Board endorses unanimously the basic philosophy of the Report, stressing the need for a forward looking view and indicating the possibilities for a systematic and rational approach to it at Community level. This does not mean that every member agrees with all aspects of the Report: constructive criticism, partly of a technical nature, will constitute an important input to the future work to be undertaken.
- 3) The Board is unanimous in approving the recommendation of the Report that a continuing instrument "Europe Plus Thirty" should be set up and that it should gradually build up to the optimum staff level.

- 4) Given the present period of rapid evolution which demands that political decisions be taken on the basis of comprehensive integrated forecasting studies, the Board stresses to the Commission the urgency of this matter.

Signed : Lord Kennet : Chairman of the Project Board  
and Project Director

: Prof. N. Rasmussen : Chairman ad interim of the Project  
Board for the purpose of  
formulating the above opinion.

Project Board Members:

Dr. L. Bülkow  
Professor A. Buzzati-Traverso  
Professor Dr. H.B.G. Casimir  
Professor U. Colombo  
Professor R. Dahrendorf  
Professor Bertrand de Jouvenel  
Dr. Alexander King  
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Dr. Max Kohnstamm  
Mr. K. Pavitt  
Professor P. Piganiol  
Professor I. Prigogine  
Senator Mary Robinson  
Professor R. Saint-Paul  
Dr. Ing. J. Seetzen  
Professor Dr. H. Thiemann  
Professor P. de Wolff



MAIN RECOMMENDATIONS OF THE REPORT

We recommend that:

- 1) A long-term forecasting instrument, Europe Plus Thirty, should be set up to serve the institutions of the European Community and, so far as the latter may desire, its member governments. It should work to a time horizon of 5 years and longer.
- 2) Technology Assessment should be carried out by the continuing instrument Europe Plus Thirty, as an integral part of its work.
- 3) The forecasting should be integrated, by which we mean two things:
  - (a) Not limited to a single sector, but encompassing and integrating all sectors relevant to the long-term future of the European Communities, or to the particular problem area under examination.
  - (b) Integrated with the Communities' policy-making process.
- 4) The forecasting should be so devised that a range of possible goals and possible ways to reach them can be examined. No one goal or policy would be recommended above others.
- 5) Europe Plus Thirty should adopt a flexible and adaptive method of work, employing a wide range of quantitative and non-quantitative methods.
- 6) It should work in three ways: by assembling and integrating work done elsewhere, by letting contracts, and by in-house research.
- 7) Europe Plus Thirty should have, as well as "generalists", an in-house staff with knowledge of the following subjects:-

- Agriculture, fisheries and forestry
- Social structures and values
- Education
- Science and Technology
- Industry
- Energy
- Materials
- Environment
- Transport
- Economics & Finance
- Defence & Disarmament
- Politics & Institutions
- Technology Assessment

- 8) For the following subjects Europe Plus Thirty should primarily rely on outside advice:-

Climate  
Population  
Health  
Communications

- 9) a) The governing body of Europe Plus Thirty should be a Board of 12 members, appointed by the Commission of the European Communities.
- b) The staff of Europe Plus Thirty should be headed by a director assisted by two deputy directors.
- c) The staff should be gradually built up to 75 graduate professionals.
- d) Publication of work should be the rule, but unpublished studies should not be excluded if there is good reason.
- e) Europe Plus Thirty should be at the service of the European Commission and Parliament, and also, if they wish it, of the member governments. The relationship of Europe Plus Thirty to the institutions of the Community should be kept permanently under review by the Board of Europe Plus Thirty.
- f) At least 75% of Europe Plus Thirty's finance should come from the Commission of the European Communities.

GENERAL INTRODUCTION

FORECASTING FOR EUROPE

- Gen. 1. The need for forecasting as an aid to wise decision-making is not new, nor is it peculiar to any one country or culture. But systematic forecasting for the medium and longer-term is an especially urgent need for the European Community now.
- Gen. 2. The pace of change and the uncertainty of its direction have made forecasting more than ever necessary, to anticipate change, to prepare contingency plans, to take out insurance policies against various dangers, and to help in moulding the future as far as one can. The Community in particular, being established in response to great changes in the European and international environment of the member states, must avail itself of the best possible forecasts if it is to respond appropriately to continuing changes.
- Gen. 3. Some of the most important problems confronting us (think, for example, of energy, or of the international monetary system, or of the relations between developed and developing countries) cut right across traditional sectoral responsibilities and areas of thought. Hence the need for systematic and integrated forecasting.
- Gen. 4. The world is bursting in on us. Because of modern economic, technological and political developments, it is world forces and world factors which shape our European lives, and sometimes threaten them. Comparing the period between 1914 and 1944 with the recent past, it is clear that Europe is no longer the originator of impulses that change and affect the rest of the world, and is more and more becoming the receiving end, as witness the energy crisis. By acting together, the European countries have a better chance of once again exerting an influence on world events.
- Gen.5. Forecasting should be an aid to decision-making. The good prophet is not he who is always right, but he who is proved wrong by events because his warnings were taken seriously and acted upon by people, who thereby prevented what was feared. Cassandra was always right, only because she was always disbelieved. The good prophet does not say, as Cassandra did: "The city will be taken and sacked". This leads either to disbelief or defeatism, and the city will be taken and sacked. The good prophet says: "If we do

nothing, the city will be taken and sacked. On the other hand, if we do this, that or the other, it will not -- it's up to us". To perform his function, therefore, the good prophet must be aware of political realities, and enjoy the attention and confidence of the policy-makers.

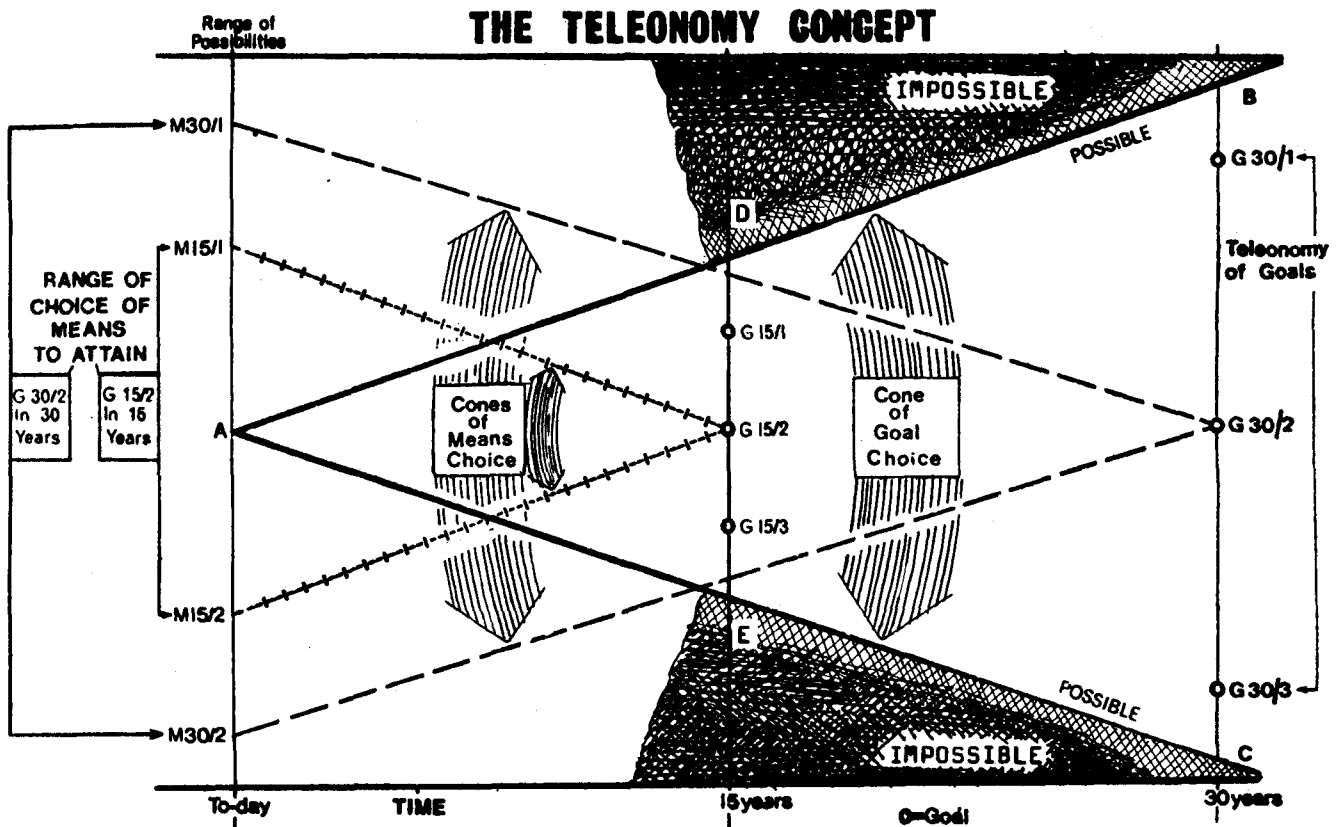
Gen. 6. It is clear that there is no point in forecasting except to help decision, and that one cannot rationally decide without forecasts. But the two processes are different in nature, and they should be and are done by different people. The forecasters will concentrate upon those longer-term issues which tend to be squeezed out by the immediate pressures of politics and government. But they must not advise the decision-makers what to do: they must only point out the probable effects of various alternative courses of action. To go further and to urge this or that is to step outside forecasting into the field of policy.

Gen. 7. What sort of forecasting, then, will be useful to those we elect to rule us, in their decision-making process? One may deploy in one's mind an image of the future as a cone. The further we look ahead, the wider is the range of possibilities - the cone expands outwards. Tomorrow will probably be pretty like today, the day after tomorrow less like. The further one looks ahead, the wider the possibilities become. Outside the cone lies the impossible. Inside it lie all the things which might happen.

Gen. 8. The range of possibilities becomes very broad if one casts one's mind, say, twenty or thirty years into the future. The job of Community forecasters should be to focus on those possible future conditions of European society (including its relations with the rest of the world) which are rationally conceivable, i.e. which could, without flying in the face of reason, be adopted as goals.

Gen. 9. The attainment of goals requires the adoption of policies. The greater the period of time that is allowed for the achievement of a particular goal, the wider is the choice of alternative policies and means which can be used to attain the goal. With a given goal to be attained at a given point in time, the nearer we move towards it (the longer we delay action), the narrower becomes the range of possible policies and instruments. One can visualise another cone, but expanding towards us this time. Thus we have two cones running in opposite directions, the goal-choice cone with its apex now and its

base in the future, and the means-choice cone with its base now and its apex in the future. We give this way of setting things out the name of teleonomy, the arranging of goals, as in agronomy, the arranging of land.



CAPTION FOR FIGURE

The future is regarded as an ever widening Cone of possible situations. (Cone of Goal Choice). Everything inside the Cone ABC is considered to be possible, and everything outside impossible. The points G30/1, G30/2 and G30/3 lie within the bounds of possibility. The distinction and description of these alternative goals constitutes the first part of a teleonomy.

Suppose that point or situation G30/2 is chosen as a goal for the Community. Then the Cone of Means Choice (dotted cone M30/1 - G30/2 - M30/2), with its apex at goal G30/2, will widen as it is projected back to the situation today, showing the range of possible means open to our choice now, and also the narrowing of the Cone as time advances. The distinction and description of these means constitutes the second part of a teleonomy.

If a 15-year goal (G15/2) is selected, the range of means to attain it is smaller than in the case of the more distant goal - G30/2. (Cone M15/1 - G15/2 - M15/2).

As emphasised in the main text, this concept is just that: a concept, a way of imagining things. In real life the business of choosing ends and means is, as everybody knows, much less tidy.

Gen. 10. One of the main products of Europe Plus Thirty could be the description of a number of alternative goals to be reached in the future, say in thirty years' time, or less. The incompatibilities between these goals would be set out, and the costs and benefits of each described. The benefits would be in terms of social goods or values apparent to all at the time of judgement, such as justice, harmony, quality of life, real wealth, etc. (none of which, it is worth noting, is strictly quantifiable). The purpose would be to facilitate the choice by European decision-makers of goals and of policies to reach them.

Gen. 11. Many of the particular techniques of forecasting originated in the U.S. It is right to remember that although the "scientific" competence of the American thinktanks was often high, it was not always matched by their political, historical and philosophical competence. The mistakes made there must not be repeated here. Forecasting should by no means be confined to elaboration of that which can be expressed numerically, however skillfully that may be done. It must also keep a firm and distinct hold of political and social reality, and any forecasting team must include people with experience, preferably direct, of politics. The academic quantitative approach often meets with "surprises" -- with qualitative breaks in quantitative curves. But those skilled in human affairs and politics tend to find fewer surprises in life, and to feel that anyone who is surprised was not looking. They know that the haves hold on and the have-nots reach to grasp; that the traduced protest, the oppressed rise up; that the weapon used is that closest at hand; that ignorance will not endure; that change is joy to the young and grief to the old; and many other things of that sort. If the forecasts produced by quantitative methods go against some of this knowledge, then they must be reconsidered.

Gen. 12. Throughout the report we hope that the reader will remember our general purpose: to devise a new instrument which will help the power centres of the European Communities to make wise decisions in a largely but not wholly uncontrollable world.

Gen. 13. The instrument will cost something, and hard-headed people will think of the economic crisis, of inflation, of "runaway public expenditure", of the proliferation of institutions, etc. But it is precisely to reduce the likelihood of these that Europe Plus Thirty would be set up. It would exist, among other things, to foresee crises, to forecast about the underlying causes of inflation, and generally to reduce the uncertainty of the future. It is short views which have landed us in our present difficulties, and now is the time for longer views. It would be paradoxical if the Community were to judge itself already too ill to reach for the medicine.

## PART I : CAPACITY AND PROCESS

### Chapter 1. Existing Forecasting at the level of the European Communities

I.1.1. By its nature, the European Community depends on long-term forecasts to a greater extent than nation states. It has itself developed, and will continue to develop, in response to the changing requirements of the member countries. Forecasting is needed to anticipate these changing requirements and to prepare alternative policies to meet them. The increasing interweaving of the economies of the member states also calls for the European dimension in forecasting; indeed there is now very little long-term forecasting that a member state can do by itself.

I.1.2. Community-wide research on the future can contribute to goal-seeking for the further development of European integration, (or indeed for a standstill where we are) and to set out options in various fields of European policy.

I.1.3. Though it is the Council which sets new goals for the Community, the Commission plays a significant part in the goal-seeking process as the turntable around which the Community network of communications is organised. Now that many of the goals of the original Treaties have been largely achieved, there is a certain lack of impetus and direction; the Community, and in particular the Commission, stands in need of the long-term integrated forecasting which could help it to set new goals.

I.1.4. The main Report includes a list of the forecasts and studies which have so far been undertaken by or for the various Directorates-General of the Commission. They concentrate on the short and medium-term, and limit themselves to individual sectors. The shortcomings of the forecasts, due to factors such as the incomparability of national statistics, the limitations of traditional sectoral forecasting methods, and the high level of aggregation, have often been compounded by difficulties at the receiving end: over-rigid division between the Directorates-General, a lack of interdepartmental coordination, and a lack of central planning within the Commission.

I.1.5. How should Europe Plus Thirty fit into the picture? A general principle for the interface can be found in the time-horizon of the work concerned. Where existing sectoral forecasting is really short-term, a mutual flow of information would be sufficient. Where the sectoral work is medium-term, ranging from one to four years, the coordination should be more thorough, involving some harmonisation of methods and the adoption of some common assumptions. Where a time-horizon of more than four years is involved, the projects in question should become part of Europe Plus Thirty. The work could well continue to be done by the same people, even in the same place, but as part of the more integrated network of the Europe Plus Thirty project as it is described below. With a time-horizon longer than four or five years, single-sector forecasting is very little use, since all the sectors start depending on one another.

## Chapter 2. Forecasting Capacity in the European Communities

I.2.1. In the last ten years, there has been an increase in the amount of forecasting in the world at large, both in governments and in industry (particularly in the multinational corporations). The pattern of forecasting in EEC countries and elsewhere, and the organisations involved in forecasting in Community and neighbouring countries, are described in



detail in an Annex to the main Report. By and large the pattern in the Community countries lies between the poles of deterministic centralism, as in the Soviet Union, and variegated private initiatives, as in the U.S. It is difficult to make any generalisation, given the great variety in the purpose and methods of approach. Moreover, the pattern is changing all the time. Europe Plus Thirty could perform a useful subsidiary function by monitoring what is happening in the field, and by helping to devise more satisfactory forecasting procedures.

### Chapter 3. The Forecasting Process

- I.3.1. The forecasting process itself can be analysed into three components: the inputs, the methods or techniques, and the use of the results.
- I.3.2. The inputs consist of information. It can be historical data, knowledge of the present situation, technical laws, political plans, etc. Often, a forecast has to rely on other forecasts to provide it with assumptions regarding what will be, from its point of view, independent or exogenous variables. Structural economic data, non-economic or social factors, and trends and developments in other parts of the world are all as important as the more familiar statistical time-series inputs.
- I.3.3. Europe Plus Thirty must decide what sort of data it needs, and obtain them. It will have to negotiate for the data with the Community Statistical Office, the national statistical services, and other bodies. The use of social indicators must be developed. Europe Plus Thirty will also need to enter into working arrangements with the most relevant institutions to get the world perspective which is indispensable for assessing Europe's future.
- I.3.4. Forecasting techniques can be classified by the three main purposes they serve: projection of the past and present into the future, image creation or visualisation of possible future states, and policy analysis. The following methods are described in the main Report:-
- single-variable extrapolation (projection)
  - envelope curves (projection)
  - analysis by precursive events (projection)

- scenarios (image creation and projection)
- Delphi (image creation and projection)
- brainstorming (image creation)
- morphology (image creation and policy analysis)
- relevance tree (policy analysis)
- cost benefit analysis (policy analysis)
- planning, programming and budgeting system (policy analysis)
- network methods (policy analysis)
- decision theory (policy analysis)
- goal setting and weighting (policy analysis)
- value analysis (policy analysis)
- conflict analysis (policy analysis)
- graph theory (projection and policy analysis)
- Markov chains (projection)
- game theory (projection and policy analysis)
- cross-impact (projection and policy analysis)
- input-output relationships (projection)
- multivariate analysis (projection)
- mathematical modelling (projection)
- computer simulation models (projection and policy analysis)
- stochastic methods (projection)
- gaming models (projection and image creation)
- optimisation techniques (projection and policy analysis)

Some of these are held to be useful, some virtually useless, some interesting but dangerous, and many in between.

I.3.5. Many of these techniques were devised for engineering and military problems. In the social sciences the scope for quantitative methods is very limited. Europe Plus Thirty should adopt a flexible and adaptive approach to forecasting, employing a whole range of quantitative and non-quantitative methods, rather than aiming at once to construct an elaborate socio-economic model of Europe. The choice of techniques must depend, among other things, on the kind of issues and the purpose for which the forecast is intended.

I.3.6. The most fruitful use of forecasting requires a continuous dialogue between the forecasters and their clients. Without direct access for the forecaster to the decision-maker himself, the whole operation is bound to be accident-prone.

I.3.7. Interaction between forecasters and policy-makers is needed at a number of points in the policy-making process:

- (i) when the defects of current policies begin to appear, in order to explore the long-term future context in which new policies will take effect,
- (ii) when policy change is being considered, to evaluate the costs and benefits of alternative new policies,
- (iii) when policy is being implemented, so that the forecasters can check the accuracy of their forecasts and learn from the experience gained during implementation.

I.3.8. The communication system between Europe Plus Thirty and the Commission must be designed so that:

- (i) information is exchanged at all relevant levels,
- (ii) the links at each level are as short as possible,
- (iii) the producers and recipients of forecasts have direct access to each other at all these levels.

#### Chapter 4. Integrating Forecasting at the level of the European Communities

I.4.1. Community forecasting can be arrived at in two ways. National sectoral forecasts can be combined into either EEC sectoral forecasts or into national comprehensive forecasts, and EEC comprehensive forecasts can be based either on EEC sectoral forecasts or on national comprehensive forecasts. Given that the Communities have their own sectoral policies, the route via EEC sectoral forecasts is the more useful for its purposes, but the other route can provide a useful check.

I.4.2. To make integrated long-term forecasting as useful as possible to the Communities, certain fundamental changes going on in the world need to be borne in mind.

I.4.3. The expectation of social relevance

There is growing insistence in Western Europe that public policies should make a real difference to people's conditions in a direct, tangible way. This means that policy-makers increasingly need to think in terms of the results of policies rather than the amount of money put into them, and that the results have to be stated in non-monetary terms (probably using social indicators). For example, you cannot measure the

health of a population by the amount of money spent on it; you have to use actual health indicators.

I.4.4. The drive for greater equality

Emphasis is shifting from the averaged outcomes of policies, to the actual distribution of costs and benefits among various nations, groups and areas. Before major new policies are introduced at EEC level, Europe Plus Thirty could assess the likely distribution of their impacts.

I.4.5. The systemic character of social issues

Forecasting should aim to show the interactions among policies, and their intended and unintended effects on any group of people. Some of the most important issues cannot be expressed in cash terms.

I.4.6. The perception of the world as a system

More and more factors and impacts outside Europe need to be taken into consideration.

I.4.7. Discontinuities in social evolution

Discontinuities in technology, social custom, culture, etc., seem to be another key attribute of the current period. Discontinuities catch people by surprise because they have yet to adjust their thinking to a faster pace of change. "Futures of research" can help to understand incipient trends to anticipate "surprises", and thus permit the formulation of wiser policies.

Emphasis and priorities

I.4.8. Studies can be of the past or of the future (the future grows out of the past); of processes or policies (processes are what other people do, policies are what you do); and of the European Community or the outside world. This gives us eight possible orientations:

	PAST		FUTURE	
	Intra-Community	Outer World	Inter-Community	Outer World
Processes	(1)	(2)	(3)	(4)
Community policies	(5)	(6)	(7)	(8)

- (1) : Social and other monitoring, in welfare terms where possible, within the Community.
- (2) : Worldwide monitoring .
- (3) : Exploratory facet of forecasting .
- (4) : Contextual exploratory forecasting, } Mainly Cone of Goal-Choice
- (5) : Ex post facto evaluation of internal policies .
- (6) : Ex post facto evaluation of external policies .
- (7) and (8) : Policy analysis proper, combining goal definition, impact assessment, and means choice. "Teleonomy" as a whole.

I.4.9. Although Europe Plus Thirty cannot neglect any of the cells, we suggest the following order of priority for concentrated work:

- (7) and (8) : should be given most attention.
- (1), (3), (4) and (5) : backing and context for (7) and (8).
- (2) : too vast for systematic study.
- (6) : too recent to be assessed yet.

PART II : FIELDS FOR FORECASTING



Chapter 1. Introductory


II.1.1. Although our emphasis is on integrated forecasting, the logic of exposition requires that we now consider the various fields of forecasting separately. The linkages between the sectors are illustrated in the following matrix:

MATRIX

		CLIMATE	POPULATION	AGRICULTURE	HEALTH	SOCIETY	EDUCATION	SC. & TECH.	INDUSTRY	ENERGY	MATERIALS	ENVIRONMENT	TRANSPORT	COMMUNICATIONS	ECON. & FIN.	DEFENCE	POLIT. & INST.
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
(Active)	CLIMATE	2		○				○	○	○	○	○	○			○	
	POPULATION	3	○	○	■	○	■	○					■			■	○
	AGRICULTURE	4	■	■		○	○		○	■	■	■	■		○	○	■
	HEALTH	5	○	○	○	○	■		○	○			○	■	■	○	■
	SOCIETY	6	■	■	■	■	■				○	■	■	■	■	■	■
	EDUCATION	7		■	○	○	■					○	○	■		○	■
	SC. & TECH.	8			○	■	■	■					○	○	■	■	■
	INDUSTRY	9		○	○	■	■	■	■				○	○	■	■	■
	ENERGY	10	○	○	■	○	○	○	■	■		○	■	■	■	○	■
	MATERIALS	11		○	■		○	○	■	■	■		○	○	■	○	■
	ENVIRONMENT	12	○	■	■	○	○	■	■	■	○	■	■	■	■	■	■
	TRANSPORT	13	○	■	○	○	○	■	■	■	○	■	■	■	■	○	■
	COMMUNICATIONS	14	○	○		○	■	■	■				■	■	○	■	○
	ECON. & FIN.	15		○	■		○	■	■	■		○	■	○	■	■	■
	DEFENCE	16	○			○	■	■	■		○	○	○	■	■	■	■
	POLIT. & INST.	17		○	○	○	■	■	○	■	○	○		■	■	■	■

The matrix is intended to show the probable impact of changes in the "active" sectors along the top on the "passive" sectors down the left hand side.

 = strong impact.     
  = moderate impact.

 = negligible.

The order of the following paragraphs is arbitrary, which simply reflects the main truth about integrated forecasting; everything depends on everything else, therefore it does not matter where you begin.

The main Report gives three examples of how particular forecasting exercises of a partly integrated sort (that is, more than sectoral, but less than "teleonomic") might be undertaken in response to a Community demand.

## Chapter 2. Climate

II.2. It is all too easy to take climatic conditions for granted and to forget that our lives can be greatly influenced by relatively small changes in the climate, e.g. through food shortages in particular areas. Between 1920 and 1960 climatic conditions were "good", but this was in fact an abnormal period in comparison with the previous five or six centuries, and there are signs that we are now returning to the conditions of the late 19th Century, with more frequent "anomalies" and "worse" weather.

An urgent task is to use models of the interaction between atmosphere, ocean, ice and earth to describe the possible effects of unpredictable natural events (including volcanic eruptions, fluctuations in the sun's radiation, fluctuations of the Antarctic ice, etc.) and of the inadvertent or intentional impacts of man on the climatic system (including air pollution, supersonic transport, irrigation projects, river-reversal, etc.)

Given that all this is a world job, Europe Plus Thirty will not need to do much forecasting in the field. It should monitor developments elsewhere, and encourage useful studies. It will need to be able to call on the services of one or two climatologists or agrometeorologists with a good awareness of climatic history and of climate-harvest relations.

## Chapter 3. Population

II.3. Any forecasting that is for human beings must take account of the number of people one is planning and forecasting for, and of the composition

and characteristics of the population. Demographic forecasts are a necessary input in general social, economic or technological forecasting, and we need to know more about the structure of the present population, and the factors that determine mortality, fertility and migration. The Community might in future be led, perhaps in the case of migration, to establish its own policy.

Europe Plus Thirty should be able to call on the part-time services of one or two skilled demographers. The main work is already being done elsewhere, and it will be enough if Europe Plus Thirty can make good use of it. It should explore the inter-relations between population and policy in various sectors at Community level. In time, it may be led to make its own forecasts, since there are many socio-economic regions in Europe that straddle national frontiers.

#### Chapter 4. Agriculture, fisheries and forestry

II.4. The Common Agricultural Policy was developed for purposes which have perhaps become less urgent over the years, and it takes little account of its own effects on the rest of the world. The famous beef and butter mountains are evidence enough that forecasting in this field has been defective. Meanwhile, the mechanisation of agriculture makes it vulnerable to possible shortages of energy and raw materials. There is also a growing demand for "natural" products and a growing concern about the environmental and ecological effects of modern agriculture.

The establishment in international law of Exclusive Economic Zones will enable coastal governments to manage the fisheries off their shores effectively, with a consequent need for Community policy in Western European waters.

Policy-oriented forecasting in these sectors will require substantial analytical research. The appropriate team within Europe Plus Thirty might be about seven people. They should cooperate with the FAO, OECD, the proposed new Food Policy Research Institute in Washington, and other institutions within and outside the Community.



## Chapter 5. Health

II.5. The cost of health care has escalated in recent years so that priorities will have to be related more rigorously in the future. There is small immediate likelihood of new improvements on the scale of, for example, penicillin. Progress is more likely in the prevention of accidents, the prevention and better treatment of cancer, the better management of mental illness, and the control of chemicals in water, the air, food, drugs and factories. This calls above all for changes in lifestyles and habits (e.g. smoking, drinking and fast driving).

The main need of Community countries is fuller exchange of information rather than adjustment to a single pattern. For Europe Plus Thirty, the best solution would be the part-time appointment of one or more senior medical scientists who would be able to maintain professional contacts over a wide range.

## Chapter 6. Social Structures and Values

II.6. Specific areas that need exploring and speculating about are: the ageing of the population, the problem of commitment to work, to the nation state, beliefs, values, the family, minorities, worker participation in the control of enterprises, and the changing function of trade unions. Europe Plus Thirty should include 6-8 people who could work in some of these areas, and who would supply social data, develop the nascent practice of social forecasting, and ensure that the work of Europe Plus Thirty as a whole keeps sight of social realities. Special contacts with the trade unions will be needed here.

## Chapter 7. Education

II.7. Europe Plus Thirty should address itself to institutional developments within the educational system in order to identify changes that would be necessary to meet possible changes in European society, and conversely, the changes in society that are likely to result from present or foreseeable structures and contents of education. The content of curricula deserves study and international comparison. There should be continuous secondary collection of data and information on enrolment, trends in labour markets, changing preferences, etc. Europe Plus Thirty should probably not include

more than two professionals in this area, but should set up a panel of experts to obtain injections of new ideas. Forecasting in education will have to remain mostly national, though the internal migration of teachers and taught within the Community demands some international forecasting, as does the Brain Drain running from poorer to richer countries all over the world.

## Chapter 8. Science & Technology

II.8. As a research and forecasting back-up to CREST (European Committee on Scientific and Technological Research), Europe Plus Thirty could enquire into who has benefited from science and technology, what sort of R & D is therefore likely in future to benefit what sort of people, and the likely effects of given sorts of R & D being undertaken by individual member states, by the European Communities as such, or on a world basis. Although radical advances in basic science are difficult - some would say impossible - to tell in advance, technology (the application of science to industry, the economy and society) is much more susceptible to forecasting. As an input to its social and economic forecasting, Europe Plus Thirty should concentrate on those technological developments which are both probable and likely to have a profound influence on society. Examples of these at present include: civil thermonuclear fusion, harnessing solar energy, and splitting water to release hydrogen; cheap ways of synthesising food; and the laser. Technological forecasting is, of course, being undertaken by private firms all the time; what is lacking is such forecasting undertaken for the benefit of society at large.

Europe Plus Thirty should also try to evaluate the way in which the demands of society will make themselves felt on the scientific system, and the effects of different regimes of government and Community subsidy and taxation on the innovative process.

To carry out the above tasks, Europe Plus Thirty should include not less than five to seven specialists. They should be headed by, or should at least be able to call on the services of two people, one each in the physical and life sciences, whose standing allows them access to research at the frontiers of knowledge. There should be extensive use of task forces, short appointments and contract work.

## Chapter 9. Industry

II.9. Vertical forecasting (about single industries or groups of industries) should be directed towards certain high-technology industries and some of the main-line industries. Horizontal issues (common to all or most industries) for forecasting should include:

- the regional distribution of industry,
- labour, capital and energy intensities,
- technology transfer and the choice of technologies,
- world division of labour,
- participation in the control of enterprises,
- the relations between manufacturing industry and the service sector,
- multinational companies,
- large and small firms,
- the humanisation of work in industry.

Europe Plus Thirty should include about 10 people, having among them experience of industrial policy, R & D policy, industrial management, industrial economics, trade unions and consumer associations. The same people should (among others) also work on technology assessment. Europe Plus Thirty should organise taskforces which would include people from industry itself, who are concerned with technology transfer and technology assessment, and possibly from other bodies involved in the same activity. There should be strong trade union participation in this work, and the forecasting should be focused on areas where a Community policy is or may be developing.

## Chapter 10. Energy

II.10. Large numbers of energy studies are now being undertaken. Many of them, however, suffer from a number of defects which make them inadequate for long-term forecasting and policy-making. They are often over-specialised, concentrating on a specific fuel and ignoring the interactions between energy and general socio-economic issues. Crude correlations are too often used, and assumptions are made on highly controversial issues. The time-horizon is often short to medium-term. Most extrapolate from the present without fully appreciating the very wide range of alternatives that could be realised 30 years ahead.

Europe Plus Thirty should emphasise the long-term, the inter-connections between energy and socio-economic-political questions, including such fields as agriculture, and the alternative options and goals. This work would involve 'listening post' activities, contracting work out, in-house studies, and close collaboration with other sections within Europe Plus Thirty. The "energy section" in Europe Plus Thirty would need 6-8 qualified people.

#### Chapter 11. Material Resources

II.11. While it has not recently erupted with quite the violence of the "energy crisis", the materials challenge nevertheless amounts to a major discontinuity and points to a new era of considerable instability and uncertainty.

In a general sense, forecasting in the materials sector is more difficult than for energy. There are many more materials to consider than there are fuels, and the technical, marketing and manufacturing ramifications of each can be very complex. Existing studies and information are in some ways less advanced than for energy.

Europe Plus Thirty will not be able to move into the construction of wide-ranging, integrative, longer-term scenarios as rapidly as in the case of the energy sector. It will need more time to validate existing data and forecasts and to develop small-scale extrapolatory forecasts. It should concentrate on the preparation of forecasts of forward demand and availability of industrial raw materials, taking account of the influence of scarcity on price levels, energy requirements, environmental needs, and possibly making alternative scenarios for various substitution possibilities. The "materials section" should, at least at first, spend a considerable part of its time as a listening post and in contracting work out to other institutions. It will need 4-5 people.

#### Chapter 12. The Environment

II.12. The "environment" is a very wide and heterogeneous subject and includes: the physical environment, the biosphere, the man-made environment (urban and land-use planning), and society's response to the challenge of environmental problems. Europe Plus Thirty must go

for fields where there is a clear and practical European Community interest.

The following could be picked out as starting points: the economic and environmental effects of alternative systems of pollution regulation and control, and the management and protection of the marine environment in the Exclusive Economic Zone of Community countries.

Five people might be needed: one expert each in water, air and land pollution, and two experts in the nascent discipline of sea-use planning.

### Chapter 13. Transport

II.13. European transport forecasting models cannot be simply the sum of individual national forecasts. National models are not able to deal effectively with international movements: a Community model would provide the external data needed by national models. For many purposes, the area studied will have to include all "Western Europe" (including Yugoslavia, Greece and Turkey).

Europe Plus Thirty should concentrate on long-distance traffic and the main-line hauls, i.e. air links, intercity rail links, national and interregional highways, principal waterways and ferries. It will have to work closely with the European Intercity Transport Study in OECD, and the inland waterway forecasting undertaken by the U.N. Economic Commission for Europe in Geneva. Europe Plus Thirty should include at least three people experienced in transport analysis.

### Chapter 14. Communications

II.14. Forecasting in this field is not so much a matter of technological forecasting as of demand forecasting. Communication needs will depend on a host of factors -- industrial and commercial policies, data-processing policies, cultural and educational policies, and the degree of economic, political and cultural integration within the Community. The development of communications will in turn affect all these. Forecasting will be needed to avoid the recurrence of congestion and delay which marks our present systems. The probable working conditions of those who will operate future communications systems must be the subject of careful forecasting.

Europe Plus Thirty should rely on the services of one or two outside correspondents or part-time members, and seminars should be organised periodically.

#### Chapter 15. Economy and Finance

II.15. Many of the factors which national forecasts have to treat as "given" become variables in forecasting and planning for the EEC. Economic forecasts and studies, however, are rarely based on the view of the EEC as an integrated economy, with its own structural relations and flows. It will be useful to construct an EEC economic matrix and an EEC financial matrix, which could be used, for example, to assess the mutual compatibility of national investment programmes, and the impact of regional policies.

Perhaps the forecasting of relative price structures in a new economic context should be the first priority. Other important questions are: trends in relative wages, modes of international division of labour, centripetal and centrifugal forces, and the role of financial systems and intermediaries.

A team of 10-15 economists would be sufficient for these long-term tasks. The support of national and Community statistical offices will be vital.

#### Chapter 16. Defence and Disarmament

II.16. The aim here is certainly not to duplicate the sort of forecasting that NATO does, but it is impossible to forecast about society in general without having, as inputs, information relating to defence. In particular, the impact of possible changes in the military-political pattern in Europe and the rest of the world, and the impact of defence technology and expenditure on national economies, are facts, and major facts, in our political and economic situation.

There should be 3 professionals who are acquainted with defence and disarmament problems in the Europe Plus Thirty team.

## Chapter 17. Politics and Institutions

II.17. Europe Plus Thirty should include at least three people with wide political experience, because forecasting in this area is a matter not so much of techniques as of knowledge about political institutions and history, and of practical experience and mature political judgement. Among the tasks of these people would be to keep the rest of Europe Plus Thirty alert to political reality, to assess the impact of emerging trends on political institutions, when appropriate to devise and compare alternative plans for new institutions, and to keep an eye on political developments outside Europe. In the main Report, Chapters 10,11,15,16, and 17 in Part II emphasise especially the indissolubility of European and world forecasting.

## PART III : TECHNOLOGY ASSESSMENT

III. Technology Assessment (TA) may be defined as the advance evaluation of potential and unintended social, economic, environmental and other effects of the application of existing or foreseen technologies. It arose out of the tension between the pursuit of technology and the well-being of society; the idea originated under this name in the U.S. in the second half of the 1960's. The U.S. Office of Technology Assessment was set up within Congress, and all Federal Agencies now have to include Environmental Impact Statements in their proposals and reports. TA has been taken up in Japan, Sweden, the Federal Republic of Germany, France and the United Kingdom. The pattern of technology assessment in the Western world, and the organisations doing TA in Community and certain neighbouring countries, are described in the main report.

The specific analytical techniques used in TA are very much the same as those used in forecasting.

TA, if undertaken at the level of the European Communities, would enable the social element to be taken into account in the Communities' progress towards economic cooperation, and should help to avoid duplication at the national level. Given that the effects of many new technologies cut across national frontiers, TA should often be undertaken internationally.

In view of the strong and clear links between TA and forecasting, we suggest that Europe Plus Thirty should be the Communities' instrument for TA. TA implies the examination of the effects of technology on the sectors that will be within the competence of Europe Plus Thirty, and also the forecasting of developments in technology itself. About seven people within Europe Plus Thirty should be engaged on TA at any one time.

Europe Plus Thirty should be able to offer TA services on request to all the Community institutions, including the European Court of Justice, and also to the European Investment Bank.

#### PART IV : EUROPE PLUS THIRTY

##### The questions

IV.1. We were asked two questions. The first was: "Should the European Communities undertake a study entitled Europe Plus Thirty concerning the foreseeable or possible developments over the next thirty years which are likely to affect the progress of Europe; and if so, will this study make it possible in particular to create a forecasting instrument which can be constantly updated?" To this we answer yes. The instrument is described in the rest of this chapter.

IV.2. The second question was: "Should the European Communities create their own Technology Assessment Office ....?" To this we answer no; not a separate one. We think that TA should be carried out by Europe Plus Thirty. The ingredients of good TA are technological, social, and economic forecasting and analysis, and these will be going on in Europe Plus Thirty anyhow.

##### Terms of Reference for Europe Plus Thirty

IV.3. We propose the following terms of reference for the continuing instrument Europe Plus Thirty: (abbreviated from the main Report)

- 1) To provide the European Communities with a comprehensive capability for long-term forecasting and other ways of thinking about the future as a basis for examining alternative policies and strategies, including:



- a) continuous forecasting related to the Communities' planning needs;
  - b) a scanning, look-out or early warning system;
  - c) an information centre;
  - d) a monitoring system for social and related developments, aimed at obtaining a satisfactory data base.
- 2) To create world-wide links with other organisations carrying out related work.
  - 3) To carry out relevant research, including methodological development, and post hoc policy evaluations.
  - 4) To carry out studies on request from Community institutions, member governments, or other appropriate agencies.
  - 5) To undertake TA.
  - 6) To undertake these functions not only on request, but also as the Board of Europe Plus Thirty considers necessary.

#### Structure

IV.4. The work of Europe Plus Thirty can be divided into three elements: the passive network, the active network, and the central team. The passive network means absorbing what goes on elsewhere, reflecting on and, as far as possible, synthesising the work of others. In the active network, a small central team would itself formulate the questions to be asked, and then commission studies from existing organisations. Finally, the central team would answer some of the questions and carry out some of the research itself, "in-house".

IV.5. The passive network is necessary but not sufficient, for Europe Plus Thirty would have no influence on the choice of the questions and the angle from which they would be answered. The active network would not provide the continuity of experience which would be necessary to adapt the advice given to the needs of the recipient. Moreover, integrated forecasting of its nature requires an "in-house" operation. The active network approach does not necessarily save money if one bears in mind the costs of outside contracts.

IV.6. We think that the right solution is a mixture of all three ways of working. In terms of cost (not man-hours) the proportions might, when Europe Plus Thirty is operating at full strength, be:

Passive Network:	10%
Active Network:	30%
In-house	60%

### Constitution

- IV.7. Any sizeable team of research workers needs a governing body to provide general guidance, to protect it from political attack, and to sift the demands which may be made on it.
- IV.8. Europe Plus Thirty should have a Board, whose responsibilities would be to settle the broad programme of work a few years ahead, to decide on the budgetary and staff allocations for different projects, to approve the contracting out of work, and to screen requests from the Community institutions for work to be done.
- IV.9. The Board should consist of twelve members including the Chairman and the Director. Three qualities should be present among members of the Council: knowledge of forecasting and TA in general, knowledge of the fields in which forecasting and TA is done, and political experience. Apart from the Chairman, who would attend especially to the external relations of Europe Plus Thirty, there should be two other members who are strong in political experience. One Vice-Chairman and two other members should be strong in forecasting and TA in general. The second Vice-Chairman should have experience of financial control. Of the remaining four members of the Board (other than the Director), one should be strong in each of the following areas:
1. social, political, educational
  2. resources, energy and environment
  3. science, technology and industry
  4. economics and finance.
- IV.10. The simplest and most convenient way to appoint the Board would be for the Commission of the European Communities to do it, after appropriate soundings. Naturally, a reasonable balance should be observed among the nationalities. The initial appointments should be for four years, but after the initial build-up one quarter of the Board should be replaced each year.

IV.11. The Director should be appointed by the Board, who would also have the power to dismiss him. He should sit with the Board but have no vote. Perhaps with the help of a small personnel committee of the Board, the Director should hire and fire staff members. He should be assisted by two Deputy Directors and an Administrator.

The staff of Europe Plus Thirty

IV.12. Although the size of Europe Plus Thirty will depend on the tasks assigned to it, it is possible to identify a minimum viable size and an upper limit. A size of less than 30 professionals would make it difficult to guarantee good links with existing professional networks and to maintain the level of internal debate necessary for useful output. Over 100 professionals, control of the quality of output begins to overload the directing staff. Our recommendation is:

Less than 30:	probably not worth it.
30-50:	worth it, but likely to lead to rather sketchy outputs
50-75:	good
75-100:	better, but not all that much better.
Over 100:	not necessary.

IV.13. The team needs to be a mixture of specialists and of people who, while having specialist knowledge, are also skilled at organising the knowledge of others. Apart from academics and civil servants, industry (management, research, and trade unions) and finance need to be represented. There should also be part-time staff and task forces, as we have discussed in Part II of this report.

IV.14. Members of the central team will need to travel to find out what is going on elsewhere.

IV.15. To avoid stagnation, there should be a measure of continuous staff turnover, with employment contracts in general limited to 4-6 years for the professional staff, once the build-up phase is over.

IV.16. Support staff will be required at the rate of 1.5 or 2 per professional. Periodic turnover will not be necessary for them.

IV.17. Despite the inevitability of professional divisions of some kind or other, cross-working will be essential, and work programmes should

never follow a particularly tidy pattern; in fact the staff should be conceived as a multidisciplinary, problem-oriented team. General analysis and integration should be the main purpose.

- IV.18. Complete openness between Europe Plus Thirty and the relevant policy-makers is the way to prevent it from becoming an object of suspicion or a source of embarrassment.

#### Publication

- IV.19. Given that much of Europe Plus Thirty's output will be of considerable interest to the public and to the scientific community, we recommend that publication should be the rule, but that unpublished studies should not be excluded if there is good reason for non-publication. The decision should rest with the Board of Europe Plus Thirty, after consultation with the relevant policy-makers.

#### Relations with Community institutions and member governments

- IV.20. No matter how good the work of Europe Plus Thirty, it will be wasted if it is not available to the right people at the right time. It will not be enough for the written output of Europe Plus Thirty to be available to the decision-makers; there must also be personal contact. The contacts should be close and continuous, but not so close as to deprive Europe Plus Thirty of the intellectual independence which will be its justification, or to prevent it from getting on with its job.
- IV.21. The Chairman and Director of Europe Plus Thirty should have right of access to the President of the Commission of the European Communities and to individual Commissioners, who should have the reciprocal right to send for the former. Individual staff members of Europe Plus Thirty should have their own contacts with those Commission officials most nearly concerned with their work. Administratively, Europe Plus Thirty should depend from the Commission as a whole.
- IV.22. There should be the same rights of access between the Chairman of Europe Plus Thirty and the President and Secretary General of the European Parliament, as between Europe Plus Thirty and the Commission.
- IV.23. Relations between Europe Plus Thirty and the Council of Ministers should be via the Commission.

These relations should be constantly reviewed in the light of possible future changes.

IV.24. The European Court of Justice might in future wish to ask Europe Plus Thirty for certain studies.

IV.25. It might be useful for member governments each to designate one official to handle their contacts with Europe Plus Thirty, and it would clearly be useful for these national officials to meet from time to time at the premises of Europe Plus Thirty. Europe Plus Thirty could also act as a forum of informal discussion among national long-term planners.

#### Responsibility for Funding

IV.26. The question who pays for Europe Plus Thirty is bound up with the question who has the right to ask it to undertake work, which we consider first.

IV.27. The need for Europe Plus Thirty has been expressed specifically by the Council and Commission of the European Communities. Europe Plus Thirty should, first and foremost, entertain requests for work from the Commission, and the Parliament. Requests should also be entertained from member governments, the European Investment Bank, and later perhaps from other organisations and associations at the European level. The Board of Europe Plus Thirty should sift the requests to ensure an orderly workload.

IV.28. We think that Europe Plus Thirty should never be allowed to depend for more than a quarter of its income on sources other than the Commission, and that the greater part of that quarter should come from member governments. Only by the imposition of such a ceiling will it be possible to ensure staff security, and to avoid both professional and financial anxieties and dangers.

IV.29. The money that Europe Plus Thirty receives from the Commission should come to it in a quantity negotiated and settled (with an inflation clause) for a reasonable number of years, so as to permit the development of long-term forecasting programmes in an atmosphere of confidence. The detailed allocation of the funds should be left to the Board of Europe Plus Thirty, to ensure maximum academic and professional independence.

#### Build-up of Europe Plus Thirty

IV.30. TA may be done fairly quickly, but forecasting work is long-term by its very nature. It takes a long time to do it, and even longer to judge its value. We are anxious that Europe Plus Thirty should be

given time to prove its value, and recommend, therefore, that it should be guaranteed a minimum life of 10 years. At the end of this 10 year programme, the Commission, the Parliament and the Council, or whoever will then be the power centres, should assess the achievements and utility of Europe Plus Thirty and decide whether or not to arrange for a new ten-year programme.

IV.31. The ten-year build-up of Europe Plus Thirty should be divided into three phases (see Illustrative Table).

<u>PHASE</u>	<u>YEARS</u>	<u>WORK</u>
Preparatory	1 (or 1 - 2)	Council appointed. Director chosen, work structure and plan developed, premises obtained.
Build-up	2	Staff assumed. Forecasting begins. High proportion of "listening post" work. Technology assessment begins. Task forces organised.
	3	Staff assumed. First forecasts appear. First technology assessments appear.  TAs continue and appear from now on.
	4	Staff assumed. First "Teleonomic" forecasting appears. Increasing proportion of contract work and in-house work.
	5	Staff completed. First forecasts updated.
	6	Staff complete. First full teleonomy appears. Integrated "teleonomic" forecasting continues. Stable proportion achieved between in-house, contract, and listening post work.
Undisturbed Run	7	All work now fully integrated and the "double cone" approach fully exploited.
	8	Second teleonomy appears.
	9	As Year 7.
	10	Third teleonomy appears. Commission, Parliament and Council begin to review achievements and utility of Europe Plus Thirty.
	11	Review completed, and decisions taken about future of Europe Plus Thirty.

Cost

IV.32. Assuming a figure of 75 professionals, an average number of supporting staff of 1.5 per professional, and a reasonable figure for external contracts, symposia, conferences, etc., then the annual cost, after the five-year build-up period, would be 5.6 million units of account, at 1975 prices (see Annex 4 in main Report for details).

Geographical Location

IV.33. We have recommended that Europe Plus Thirty should have a close relation with the Commission of the European Communities, but not too close. Europe Plus Thirty should, therefore, find premises which are between one and three hours, door to door, from the offices of the Commission. With less than one hour, people would be dropping in for no good reason, both ways. More than three hours would mean that every meeting required an overnight stay.