

# Proper Anticipation Conditions for Globalization Processes Planning

Wiktor H. Adamkiewicz

Technical University of Gdańsk,  
Gdynia Maritime Academy, Poland  
E-mail: olga@vega.wsm.gdynia.pl.

*Motto. The improvement of socio-economic systems should ensure much greater benefits than perfecting physical systems. (Forrester J.W.)*

*Motto. The protest connected with the efforts to improve socio-economic systems is seized by those who are hungry for power and under various banners create the sources of threats. Their slogans make people believe that their economic problems are caused by violating their national, religious and cultural conditions. This way all kinds of fundamentalism are born" (Montbrial T - the Head of the French Institute for Foreign Affairs, 1999).*

*Motto. Current world makes us accept unity of the humankind. In the past isolated communities could afford to think that each of them is principally distinct. Some of them could even exist in total isolation. However, today, everything that happens in one region may influence other regions. Our new interdependence involves a combination of our own and others' interests [Dalaj Lama].*

## Abstract

The paper deals with a certain fragment of global economic undertakings. This fragment involves methods applied in anticipating future states of processes and effects which these processes cause. These methods have been worked out in the last 100 years and were based on research carried out by companies operating on homogeneous local markets. They are used to analyze single financial, manufacturing, technical, social and other problems. Some of them allow to discover the effect of mutual influence of individual processes, namely, the effect of synergy. However, most of these methods are totally unsuitable for analyzing current global economy. The aim of the paper is to point out certain particular possibilities of improving the existing situation, at least partially.

**Keywords:** Globalization, anticipation, social systems.

## 1 Introduction

The most important problem of the present time is the growing discrepancy between the results of scientific research and the ways of repairing the real surrounding world which depend on these results. A peculiar paradox takes place. An avalanche of scientific discoveries allows people to understand the details of the surrounding reality more precisely. People, who do not necessarily belong to the top intellectuals begin to notice very bitterly the disadvantages of everything they deal with every day. The reactions of people persuade those in power to take the repair initiative. However, the

consequences of repairing the world are unsatisfactory. It results from applying methods and scientific algorithms in solving practical problems, especially social sciences in a broad sense. Algorithms and methods describe the methods of correcting some specific faults. Applying them corrects the faults but causes disadvantageous changes in other areas. A huge loop of impossibility occurs. One should turn to Norbert Wiener for assistance who understood his feedback loop more generally than we do on the basis of applications in the field of technical sciences.

The paper deals with a certain fragment of global economic undertakings. This fragment involves methods applied in anticipating future states of processes and effects which these processes cause. These methods have been worked out in the last 100 years and were based on research carried out by companies operating on homogeneous local markets. They are used to analyze single financial, manufacturing, technical, social and other problems. Some of them allow to discover the effect of mutual influence of individual processes, namely, the effect of synergy. However, most of these methods are totally unsuitable for analyzing current global economy. The author has dealt with this problem for over 30 years. The author could benefit from a good experimental ground. He lived in a communist country where there was a conviction about the effectiveness of analytical prediction of everything including an enterprise called „the State.“ It is common knowledge that nothing was confirmed in practice. Today, the same methods along with the same conviction are applied to predict the effects of globalization processes. These effects are visible without the necessity of carrying out special analyses. The aim of the paper is to point out certain particular possibilities of improving the existing situation, at least partially. Partial improvement refers to the performance of independent companies operating on the global market. It is well known that decisions which refer to global activities are based on political decisions. The author does not engage in the discussion on this issue.

### **1.1 Processes**

The essential problem of globalization is the anticipation effectiveness of future states of systems participating in this process and future states of the systems' environment. Globalization is defined in various ways. Generally speaking, it is a set of processes which change the world. These processes exist objectively which means that there are no ways to eliminate or limit them. Globalization effects are assessed negatively although the process provides benefits. Current scientific and professional literature includes many studies, research results and reports of government institutions and independent organizations. Mistakes made in the course of globalization processes are listed. Tragic consequences have been described. However, these analyses lack methodological reflection. There is a list of wrong detail decisions in the course of global undertakings. According to the authors, the blame is on people or groups of people who make wrong decisions.

It is difficult to present the discussed problem convincingly in such a short text. Most of the above mentioned sources of information is based on various political, ideological and scientific assumptions and the authors' private experience which derives from their place of birth and residence. Thus, they are one-sided. Recommendations referring to

the ways of improving economic situation, for example, in Ghana or my native country, the postcommunist Poland, sound especially naive. The authors who live, for example, in California have no idea about the real social and economic conditions existing in these countries. Apart from this fact, many papers contain contrary conclusions drawn on the basis of the same assumptions. Thus, it is easy to prove falsity of these assumptions and reasoning by comparing the logic behind these texts. I have discussed a few of such examples in public. Due to conservatism of scientific circles it is much more difficult to expose mistakes made in scientific theories which are not adjusted to current times. Applying the „Maslow’s Needs Hierarchy Theory” pyramid is senseless in many countries and still it belongs to the basic tools used in marketing planning. The principle of Pareto-Lorenza, worked out by a railway engineer, Vilfredo Pareto, 100 years ago is entirely unadjusted to the system analyses carried out today. Adam Smith’s microeconomics has been created for homogeneous markets on the basis of analysis of neighboring factories. The theory of this brilliant visionary described the effect of synergy by means of suggested methods of analyses. Today, there are no homogeneous markets so such analyses in fact do not show the effect of synergy which takes place.

## **1.2 Methods**

One of the most important current problems is the dependence between the results of scientific research and practical application. It is essential to consider the effectiveness of decisions made in the course of solving practical problems on the basis of algorithms which have been approved by scientists.

The described situation is typical for any discipline of current human activity. The way of solving problems based on the belief in effectiveness of scientific methods is the reason for mistakes. Therefore, familiar methods of planning the fragments of global activities are applied. Even though the assumptions are not based on political decisions and derive from objective needs, the effect of synergy is not taken into account. The applied methods are not linked by system reasoning. Lack of knowledge on the effect of synergy is the source of all mistakes in the development of our civilization.

Thus, it is necessary to apply the ways to link the results of the familiar methods to anticipate future events in such a way as to consider synergy deriving from simultaneous activity of many processes. In order to achieve it we should return to the „roots” of system theory and cybernetics taking into account the original definition of the system and the notion of the „Black Box”, which is essential in applying any system considerations. Various theories of system were created for technology needs. These theories have been adopted by economics, management sciences and even philosophy. Many disciplines rejected these theories as „mechanical”. And rightly. However, the essence of system reasoning have been forgotten. A return is not very difficult. One should start with determining the essence of the Socio-Econo-Techno systems. The next step would be to determine the ways of modeling the systems, processes taking place in them and synergy phenomenon caused by them. Then, we should determine the range of possibilities to anticipate the states of economic systems. The following step would be to determine the essence of global systems and processes and their measurable and non-

measurable parameters. The methods of obtaining algorithms of anticipation analysis might also prove useful.

### **1.3 Anticipation**

It seems that acceptance of the simplest definition of an anticipatory system is absolutely sufficient to meet the needs of considerations included in this paper. Therefore, it is a system which can anticipate future states of its environment and on the basis of such prognosis it is able to adjust its existence to the changing environment. Such change takes place in order to preserve its existence and carry out its own goals, goals which are the essence of its existence.

Anticipatory system, as any other system, consists of a set of elements (objects - physical, energetic, informational or abstract) as well as relations (links) existing between these elements. One of these relations conditions the existence of a system as a relatively isolated object. It is a system-formative relation. Elements of the system may also be systems. This is a static picture of a system - its photograph taken at a given moment. System dynamics is connected with processes which take place in its interior and its environment. As we know, a process is a sequence (set) of succeeding states. Processes are expressed by means of some relations existing between elements. Thus, the analysis of changes taking place in relations is important. Processes may change features of the elements which are not systems but homogeneous objects (physical, energetic, informational or abstract). Processes may also change features of elements which are called systems. The essence of anticipatory system is the existence of elements and connected relations which are able to analysis changes in the environment and anticipate future states of environment on this basis. Such elements and relations may in certain conditions exhibit anticipatory abilities or not. It is the very specific type of synergetic effect. In the anticipatory systems created artificially (technical equipment-machines) we can present this picture in a direct way. In natural systems existing around us (and inside us) precise determination and research of elements and relations exhibiting anticipatory abilities seem impossible. Then, it is necessary to determine some indirect methods. In such case maximization of objectivism in the conducted research is essential. Therefore, we should carefully consider what elements of the research workshop can be based on premises with a low level of objectivism.

### **1.4 Synergy**

This is the most important aspect in the systems research. It was noticed as far back as the ancient times. The ancients formulated the thesis: „The whole is more than the sum of parts”. The Synergistic Effect can be easily defined in technical sciences. For example: the collection of all engine parts without giving them an appropriate structure (assembly) is not the engine. In social sciences the problem is not so easy. In such studies there are two possible variants:

- studying the system as the whole and then analyzing its components after decomposition of the system,
- studying particular components and then their aggregation (summing up) to the whole system.

In the second instance the Synergistic Effect may or not may be detected. However, one cannot be sure that the effect in the whole range has been detected because the essence of the Synergistic Effect lies in the additional relations between the components of the system. These are such relations which are not revealed in the course of studying individual components. Particular components may also show certain new features, which are not revealed in individual components. Then, the way to search for the Synergistic Effect must always have its beginning in an appropriate definition of the whole system. So the study of components can take place after thorough decomposition of the system into the subsystems. In my view, only in the course of decomposition of the system, all relations can be detected, and among them also those which constitute the Synergistic Effect. Such relations obviously result from certain features of the components. I am of the opinion that direct search for and study of those features is meaningless because they manifest themselves only within the system as a whole causing exactly the Synergistic Effect. We can presume that these features are of a very complex character and depend on all other features of the component. So, those component features that cause the Synergistic Effect within the system can be studied and defined indirectly. The starting point for such studies should be the previous designation of the relations causing the Synergistic Effect.

On the basis of the presented opinions it appears that the key problem while studying the Synergistic Effect is the competence for detecting all possible relations found within the system. In the systems in question, there is a great number of relations. It is not possible to study all the relations simultaneously. So, it is very essential to classify the relations property and study them in respect of hierarchy. It is inadvisable to carry out such operations intuitively. The error margin can be too large. On the other hand, it is advisable to use the appropriate mathematical models in order to classify the relations and study them in respect of hierarchy.

## **2 Globalization**

### **2.1 The Essence of Globalization**

Globalization is a process affecting the whole globe. It results in a growing number of connections between various kinds of activities. The present form of globalization is based on the development of transport and communication. Therefore, technology development is a significant parameter of the course of global processes. Changes in the technical methods of dealing with the environment are an important element in the development of societies. Ever since the beginning of human development technical inventions contributed to changes in social behavior. These changes took place slowly and were noticed over long periods of time. They were not noticeable within the time of one generation and therefore did not cause conflicts. However, several times the intensity of changes resulted in the creation of new society organization. Nowadays, the rapid pace of technology development causes significant changes within the time of one generation. The changes raise various objections.

Success of globalization involves work division, innovations transfer and free flow of ideas, goods services, an increase in competitiveness and consequently efficiency rise and better satisfaction of the consumer needs.

Increasing differences between the areas of poverty and wealth are a significant effect of globalization. Wealth increases in rich regions whereas the poor regions are struck with stagnation and worsening living conditions. There are many causes and their sources vary. One of them is the fact that people who carry out globalization are reluctant to making investments in the poor regions. One of the reasons are the improper methods used to carry out development analyses. Analysis methods are adjusted to the situation in the developed countries. Thus, the determined investment trends cannot apply to poor areas. The second reason results from political decisions and deals with the selection of areas which are granted investment credits guaranteed by government institutions. The next reason is the mobility of the stock exchange capital. Changes in the trends of capital flow give rise to disturbances in regional economic situation and discourage future investors. It happens in spite of the fact that less than 20% of capital is involved in investments and international trade. Over 80% is the speculative capital not subjected to regional conditions (World Bank Report: „Issues and Projections for the 90's. Long Term Outlook"). Therefore, the mobility of capital also derives from incorrect understanding of the global situation. There are also other reasons for the increasing stratification of poverty and wealth. Countries belonging to the OECD technologies based on new inventions provide over 35% of GNP (OECD Report „The Economic Impact of Technology", 2000). In the developing countries the expenditure on R&D amounts only to 4% and the population of scientists and engineers - only 14% (OECD Report „Forum for the Future: Conference on Long-Term Prospects for the World Economy"). Global expansion of enterprises, reduced importance of local economies, increasing exchange of knowledge and information take place while whole world areas become marginal (United Nations Committee on Science and Technology for Development, Report 1995). A large part of the society develops close contacts but cannot control divisions (Francisco R. Sagati „Knowledge and Development in Fractured Global Order"). There is a lack of legal regulations and mechanisms for controlling the flow of increasing financial means (Symonides J., Human Rights. New Dimensions and Challenges, UNESCO 1998). According to the World Bank Report, 2000, 2.8 billion people, almost a half of all the world's population lives on \$2 a day. The number includes 1.2 billion people who live on less than \$1 a day. An average income in the wealthiest countries is 37 times higher than an average income in 20 poor countries. Globalization also deals with the means of information transfer. All people have access to it and the poor are aware of their poverty. It is a new social situation. At the same time it has been stated that poverty does not involve only low income but also the lack of education, bad health condition and malnutrition. Helplessness, weakness and fear have been included in the definition of poverty. The condition of the environment is significant as well. Nowadays, 1.5 billion people do not have access to fresh water. 2.4 million children die every year due to diseases transmitted by water and 1.8 million due to air pollution in the their area.

The condition for proper development is adjusting activities not only to the market needs but also to the state of social awareness. Economic processes currently taking place must be considered on the global scale. Development of mass media caused specific range of human mentality development. In all parts of the world people are aware of their economic and social situation. Poor people are aware of their poverty.

## **2.2 Globalization Objectives**

Globalization is controlled by people for whom a regular global development is not the most important. Objectives are carried out by groups of politicians and businessmen. Their activity lacks coordination. The effects of global processes are a random sum of various activities. Therefore, people who carry out these processes are unaware of the existence of the synergy effect. The main mistake made when planning and carrying out global processes is the lack of analysis and evaluation of the synergy effect. Creating plans exclusively based on financial analyses is also a mistake. Another mistake is to carry out market research and development opportunities at the investment location in an unknown area and based exclusively on the theory of micro-economy. Global activities also include processes of other type, for example, cultural differences. Lack of historical afterthought is one of the sources of mistakes made during the analysis of globalization course. The desire to cross borders is as old as the history of human kind. It also bears the burden of violence. The story of economic and cultural expansion reappears throughout the history. It is essential to know to what extent the current expansion derives from the traditional colonial expansion. Globalization has been taking place not only as a process of economic exchange but also as a process of civilization pressure. Therefore it is still the source of conflicts. Global market is the aim of globalization. Yet, there are tendencies to create a uniform culture.

## **3 Globalization as a Managerial Problem**

### **3.1 Globalization Management Objectives**

Globalization is not an automatic process. Globalization processes are planned by people who are authorized to make strategic and economic decisions. However, the details are based on the decisions made by a great number of decision-makers at lower management levels. These decisions deal with various simple activities. Thus, globalization consists of a large number of small events which cause changes on a world scale. It is like at war, when generals create the strategy and people are killed by simple soldiers. Terror is the action which makes the soldiers' tasks easier. In the discussed situation terror means placing people, including customers, in a situation with no choice (McWorld? - MacDonalds has already begun its production of local food products in some regions of the world). Therefore, a wrong strategic decision may have many negative effects while carrying out detailed objectives.

The necessity to consider the problem of globalization management derives from the existence of dangers including, among others, extending poverty areas, rise of social conflicts, disorderly mobility of capital, concentration of direct investments only in certain areas of the globe. The problem must be considered also due to increasing

regional xenophobia resulting from the fear of: strangers, change of residence, work loss, helplessness, distinctness, uncertain situation, cultural threats, lack of communication between generations. People may feel endangered also in case of lack of food, rapid increase in population, changes in work processes and the conviction that the spiritual needs may be satisfied by faith in a different God, which implies a change in the organization of social life. It seems that the only chance to create the bases for a globalization management system is to establish international organizations independent from governments and organizations founded for political reasons. However, we cannot exclude the possibility of establishment of a lobby and political pressure in such case. However, we may suppose that the private businessmen associations will not be interested in political aims and will try to avoid creating sources of dangers. As far as enterprises are concerned, there are algorithms of efficient management. They include economic, social, mental, cultural technical and other parameters. All these parameters should also be applied in globalization management. Management should involve proper rules in cooperation between the participants of global processes. It is difficult due to interest differences. Thus, we may only postulate joint actions in dealing with carrying out relatively objective analyses which would indicate any possible dangers. Objectivity may be ensured by selecting proper parameters for the processes subjected to research. The aim of making a definite decision is to determine the importance hierarchy of these parameters. The problem of determining importance hierarchy of parameters is essential in complicated situations which emerge during globalization. Objectivity also depends on exclusion of ideological and political premises as the basis for the analysis.

### **3.2 Parameters of Globalization Management**

Globalization management concerns economic practices. Decision models should therefore contain all the necessary parameters. It is necessary to determine the importance hierarchy of parameters for a specific task. Criteria for determining the parameters' hierarchy may be based on the results of the currently existing analyses. These analyses are carried out generally with a non-system approach and thus require application of various analyses with opposing results. Many mistakes made in the analyses of globalization processes have been discussed by the author in his previous papers.

#### **3.2.1 Measurable Parameters in Globalization Management**

Data is presented by specific figures, for example: the GNP growth rate, density of road network, correlation between the society's wealth and overpopulation of cities etc. Moreover, opinions obtained from polls, for example: the rate of tax fraud, the level of teaching mathematics, easiness of establishing an enterprise, etc. Such parameters are obtained by means of algorithms presented in elementary textbooks. Results of the analyses determine the range and location of the investment. The results incline to invest in areas whose characteristics are similar to the investor's native country. The results are unlikely to show the possibility of investing in a poor country or one with a culture raising any ideological doubts.



### **3.2.2 Non-Measurable Parameters in Globalization Management**

There is a necessity to conduct research on the impact of current civilization on the changing trends concerning: mentality, social behaviors within one's native society and towards foreigners, organization and ways of living, the attitude towards responsibilities which one has had so far, the attitude towards ethical and religious norms, the attitude towards political and national problems, the attitude towards knowledge. Such information is essential for determining the condition of current social awareness in the analyzed region. Lacking this knowledge a manager from a Western culture will fail to cooperate with people of different mentality. When assessing one should also be informed to what extent the positive features of the current culture appear in the area of potential economic expansion, for example: competitiveness, research and designing, technology development, innovations, access to capital market, the existence of high risk capital, E-Commerce, the cost of flights, the need for specialists from other countries, independence of civil servants, health care organization, etc.

## **4 Technical Background of the Problem**

### **4.1 Science Versus Technology**

The aim of this paper is also to present the author's opinion on the methods used in scientific research whose results are to be applied in practice. It mainly refers to the research whose results describe global problems. General thesis is the conviction that balanced development of the world economy depends on:

- Direct investments (physical),
- Manufactured goods,
- Development of the Small Business.

The essence of the discussed problem lies in its complexity [66]. This problem, as a scientific task, should be considered from the point of view of exact sciences. However, it is not possible. There are no research tools which would allow to carry out a similar synthesis effectively.

Sciences were created on the basis of observation of various phenomena and their interpretation by means of various models. Simplification of models which acquired the form allowing for mathematical interpretation played a significant role. At the same time it is forgotten that the development of technology is based on mathematical models only to a small extent. A large number of decisions derives from the experience acquired by generations of technology creators. This experience is collected in textbooks comprising the „codified practical knowledge” (see: The Engineer's Great Charter produced at Massachusetts Institute of Technology - U.S.A.).”

Designers and constructors would not create anything if they based their activities exclusively on scientific knowledge. Such knowledge only serves to determine general range of their creative search. The rest involves intuition supported by system approach to the problem. Thus, the situation is different from the general opinion.

The development of technical sciences has also a significant influence on the mentality of creators in all scientific disciplines. We mean the myth about the sources of

technology success based on incorrect understanding of the essence of its development. This development also influences the way cybernetics and system theory are perceived. Few people know that medieval builders of cathedrals used system procedures although there had not been any technical sciences or the ideas of Ludwig von Bertalanffy and Norbert Wiener. Therefore, we do not acknowledge the fact that technical actions have always been applied with the use of system approach. The use of cybernetic and system ideas was a natural consequence of this state. There are publications in which the authors (economists, sociologists and others) advise to apply system approach in treating problems, just as in technology where designers (according to these authors) first carefully design bearings, clutches and gear wheels and then assemble the machine. If we proceeded this way no working machine could be created.

#### **4.2 Designing in the Process of Management**

The necessity to search for more effective sources of reducing production costs arose due to growing globalization of markets and internationalization of the range of competence. It is connected with the necessity of enterprises system modernization. The new tendencies in management sciences appeared due to changes taking place. One of them is a strategy called „management by projects.” Its characteristic feature is the application of designing methods in planning economic undertakings. Generally the history of such reasoning may be described as follows: about 30-40 years ago persons and institutions dealing with the application of network analysis methods in different fields of activity started to organize. The network methods, as known, have belonged to the set of basic techniques used by designers. Engineers have cooperated with economists (representatives of social sciences) in this field. This way the applied methods have been confronted. For many years designing methods of various structures including organization have been developed. Specialists also dealt with designing undertakings and methods of efficient implementation of designs as well as a large number of other derivative problems. This way the strategy of „Management by Projects” originated.

#### **4.3 Modeling for Inclusion Various Branches of Sciences in the Analysis of the System**

The term of a model applies to such a system which can be imagined or materially realized, and which reflects or reconstructs the focused object in such a way that its examination gives us new information about it. The final goal of modeling process is to obtain a mathematical model. As it has already been stated it is hardly ever possible to identify a mathematical model of the whole object. Therefore, mathematical models are substituted by other models. These models are accurate as far as logic is concerned. Such models are created at particular stages of designing (synthesis) or the analysis. The specificity of systems induces a necessity to look closer at synthesis and analysis on the multidisciplinary and interdisciplinary ground. Therefore, the designers since long ago, have employed the elements of systems approach in their activity. These elements may generally include:

- The hierarchical decomposition of the designed and analyzed objects and processes;

- Carrying out the synthesis from a simplified general conception to details, and not vice versa;
- Including various particular branches of science into the process of synthesis at proper stages.

The synthesis that is designing can be treated as the process of several stages which collects and transforms information and whose products are the models of objects and processes (the designing solutions). The way of obtaining the models of objects used in engineering practice constitute an example of the intuitive adoption of the systems attitude as a natural and psychologically justified creative attitude. Let us assume that: a detailed notation of a project constitutes a systems isomorphic model with a real system. Isomorphism occurs when a model exists in the super system. Furthermore, if we consistently apply the principles of the systems method during the decomposition in the process of analysis and during the aggregation of the models in the process of synthesis (designing), then we can obtain:

- In the process of synthesis (designing) the creation of the hierarchical sequence of models homomorphous with a real object of higher and higher degree of minuteness up to the final objective which is an isomorphic, detailed notation of the construction.
- In the process of analysis (in the scientific research) the creation of a contrary sequence of models of higher degree of abstractness, and of lesser and lesser minuteness.

The creation of both sequences of models should be accompanied by:

- The increase of the formalization of the notation, especially of the models of higher degree of abstractness;
- The decreasing role of the considerations based on intuition.

An ideal situation would be achieved when hierarchical models of a sequence resulted successively from one another. This process of resulting would consist in summing or subtracting the features and the elements, and also in their generalization or decomposition. Since decomposition (aggregation) will occur not only according to the elements of a system, but also according to the numerous features of these elements, the created set of models will be multi-parameters - hierarchical. This set can be represented in the form of a special dendrite (tree). The process in which particular grades of hierarchy result from each other will consist in adding (subtracting) the elements and/or their features.

In order to make the discussed proceeding constitute the basis for solving a posed question, that is for steering the inclusion of various branches of science at different stages into the process of solving a problem, it is essential to make a choice as far as the point of view is concerned according to which the decomposition will be made. The basis for this choice may be only, in the author's opinion, "the generalization method". This principle leads to another assumption: the basis for the choice of the point of view from which the decomposition of a model will be made should be the analysis of the features of a modeled object as the element of a certain super system, in which a given object functions. We can summarize the nature of the designing process as the following description of procedure involving the following steps:

- Determining the design model of the task - which is a troublesome negotiation task between the orderer (the originator) and the designer as there is a need to obtain maximum precision of the designed task according to the intentions of the orderer. The task must be described in terms adjusted to the design tools. It usually leads to obtaining additional information. At this stage even the long-term development plans may be taken into account.
- Determining sets of measurable and non measurable criteria of the projects' assessment. It has to be negotiated with the orderer (originator).
- Carrying out the designing process in an iterative way. It means verifying the effect of every decision connected with the designing on the basis of proper criteria and return to the previous decision in order to draw the designing solutions closer to the set aims.
- Preparation of several alternative designs.
- Selection of the design to be carried out on the basis of a determined set of selection criteria.

There is no possibility of creating a relatively optimum design solution by any other method than the one presented. It also refers to designs in organization and management. At present there is a proposal to consider designing from the point of view of the theory of change. Therefore, the designed system (physical object, process or event) is the system which will introduce the required change after having been installed in a different system. The „different system” should be understood as the currently existing environment. The theory of change as the basis for science of designing has been accepted by some groups of specialists dealing with „management sciences” as the clearest justification of the possibility to use designing methods in forecasting the course of economic processes.

#### **4.4 Strategy “Management by Projects” for Globalization**

The suggestion involves application of the „Management by Projects” management strategy in preparing decisions dealing with global processes. The nature of this strategy requires the use of designing methods known to engineers in carrying out analyses. Thus, designing is understood as conceptual preparation for any action. This method of analysis has been introduced in order to consider the synergy effect which results from simultaneous activity of many processes. Considerations are based on the „Black Box” known from cybernetics. This procedure may be described in the following simplified way: designing „from the general to the detail” - first, the whole problem is approximately designed. After having worked out the initial the problem is divided into detailed tasks. The results of detailed studies are combined into a whole. The main elements are: iterative procedure which involves analyses of the previous designing stages after having completed every next stage. This way previously obtained results are corrected and a design of at least three different versions is obtained in order to carry out the evaluation of the non-measurable parameters.

The „Management by Projects” strategy has been propagated by the International Project Management Association. The 10th Congress of this Association (almost 900 participants) which was held in Vienna in 1990 and called „Management by Projects”.

The strategy is widely applied by ambitious enterprises. There are many professional studies devoted to this topic.

The problem of taking non-measurable parameters into consideration is known to engineers. Designing every technical object largely depends on consideration of parameters which cannot be subjected to figure evaluation. The introduction of this method of reasoning in enterprise management has a long tradition. In 1980, the Federal Republic of Germany established the VDI 22-21 norm dealing with introduction of various changes in an enterprise. The norm refers to the process of including the non-measurable parameters as follows: determining the set of non-measurable parameters, determining the importance (X) of every non-measurable parameter for a given decision problem by assigning the value of, for example, from 1 to 10, and then determining the level of consideration (Y) of every non-measurable parameter in every one of the 3 (at least) completed designs - also according to proper score. The undertaking (decision) design which obtained the maximum score is carried out:  $\sum_{i=1-n} (X \times Y)$

There is an important detail of this method of planning; it is necessary for people who know the value of specific parameters required in a given problem to participate in the designing process. It implies that in practice, rank-and-file employees must take part in the designing including people who inhabit the region subjected to the planned changes.

## 5 Recapitulation

The author's views presented in the paper derive from research on effectiveness of management methods which are obligatory now. They are also based on experience acquired during operations dealing with restructuring companies in Poland. The author had an opportunity to compare his experience with the European institutions while he was employed in known consulting companies in Holland and Austria.

Views on practical problems of anticipation were confirmed in the paper "Anticipatory Viable Systems" by Maurice Yolles and Daniel Dubois, published in the International Journal of Computing Anticipatory Systems, Volume 9, 2001. Here is a significant citation from this paper: "...using anticipation to distinguish between living and non-living systems is not adequate...".

Confirmation of the presented views may also be found in the interviews for the magazine „Project Syndicate” by Professor Jeffrey Sachs from the Centre of International Development at Harvard University, Professor Joseph Stiglitz from Stanford University, the former V. President of the International Monetary Fund. The dismissals of people responsible for the global crisis in the International Monetary Fund in the years 1997-1998: Michael Camdessus - General Manager, Stanley Fischer - V. President, Michael Muss - R&D Manager, Robert Rubin and Larry Summers from the USA Treasury Department - controlling the International Monetary Fund from behind the official scene, all prove the correctness of the presented reasoning.

In this respect, the field of technical sciences has served as a very good example. The theory of control, automation and the theory of information have changed the shape of human civilization. It is high time for the humanities to make similar changes. It is extremely important for the needs of such transformation to treat the cybernetic and

system idea jointly. Both complementary ways of reasoning are the basis for solving interdisciplinary problems. The essence of the problem is to subordinate research process to system rules. We must start from determining the aim of research and the studied object according to system rules. Activities complying with the rules compulsory for a given science discipline should be undertaken after this preliminary stage. If the order of action is reversed we have no guarantee to obtain system approach results. It means that determining a real picture of synergy is impossible.

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