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# NORMALIZATION PROCEDURES AS A PATTERN FOR DIFFICULT CONTEMPORARY TIME

## POSTĘPOWANIE NORMALIZACYJNE JAKO WZÓR NA TRUDNE CZASY WSPÓŁCZESNE

**Summary:** *The problems of contemporary civilization included climatic changes, armed conflicts, destruction of ecological resources of the Earth and, also, threats coming from Cosmos, interior of the earth and artificial intelligence. The normalization procedure which allows recognizing the reasons and finding the methods for counteracting or preventing the threats may be suitable for the solution of the mentioned problems.*

**Keywords:** *threats, civilization, normalization*

**Streszczenie:** *Problemami współczesnej cywilizacji są zmiany klimatyczne, konflikty zbrojne, niszczenie zasobów ekologicznych Ziemi, a także zagrożenia z kosmosu, wnętrza ziemi oraz sztuczna inteligencja. Do Rozwiązania tych problemów może być przydatne postępowanie normalizacyjne, które pozwala poznać przyczyny i wynaleźć sposoby przeciwdziałania lub zapobiegania zagrożeniom.*

**Słowa kluczowe:** *zagrożenia, cywilizacja, normalizacja*

### Potential threats

We all perceive the increasing problems of the contemporary stage of civilization development and the most important of them are as follows:

- Climate changes, causing various consequences (migrations, increase in the number of catastrophic phenomena with growing costs, the accelerated death of the species, etc.) which may, in consequence, bring about to serious troubles and even to destruction of the contemporary civilization;
- Growth of various conflicts, and especially the increase in the number and effectiveness of the contemporary combat assets, the total application of which may lead to a violent self-destruction of civilization;
- Excessive and growing utilization of ecological and non-renewable resources of the planet, exceeding the possibilities of their reproduction, what – in the light of the growing population and increase of consumerism may result in serious global conflicts;
- There are also the threats with the unknown probability of occurrence to which we are not prepared as to counteract them affectively. The major ones include:
  - Threats coming from cosmos (near explosion of Supernova, ejection of solar plasma towards earth, impact with asteroid or small black hole etc.),
  - Threats coming from the interior of the Earth in a form of explosion of super-volcano or hyper-volcano, earth quacking which may radically change the conditions of vegetation on big areas and even on the whole Globe,
  - Difficult-to be -assessed threats, coming from development of artificial intelligence, the power of which may exceed the sum of the intelligence of the people as soon as after a few decades.
  - The above list may be considerably prolonged by specification of other threats such as epidemics, degenerations, particularisms and other ones, leading to crisis and conflicts having a local, regional or global range.

### The preventive measures

It is obvious that there is an urgent need to prepare to the anticipated threats and undertaking the counteracting measures against the already existing problems. There are many examples of such activity in a local or regional scale. Generally, they may be classified into three groups:

1. The measures having an organizational-social nature;
2. The measures having an organizational-technical nature;
3. The measures having a scientific-technical nature.

The first type of the activities could be most effective if the universal awareness of global threats and the need of cooperating of the politicians, entrepreneurs and consumers had been shaped. We may observe many initiatives and undertakings but they have a limited range and their results are not promising for the solution of the global problems.

The second type of the activities has also a local or regional extent and to a various, better or worse degree; it creates the conditions enabling the development of ecology-promoting awareness and the conditions favourable for perspective solution of the important cognitive and utilitarian problems concerning gaining the necessary resources and improvement of life conditions.

The perspectives for the solution of important contemporary local and global solutions are supported by the following examples:

- The advanced work on the control of the controlled reaction of nuclear synthesis, the positive result of which might solve the energy problems (ITER project);
- The planned development of Swiss accelerator of hadrons LHC from 20 km to 100 km what would facilitate the understanding the construction of matter (costs equal to ca. 40 billion EUR),
- The advanced work on start up of exploration of near cosmos and construction of cosmic laboratories (inter alia, for studies on gravitation waves what would facilitate the recognition of the nature of gravitation),

- The local initiatives include the preliminary plans for constructing the bridge between Gibraltar and Africa when the necessary materials reach the required resistance (probably in few years).

The rate of the implementation of the mentioned and similar undertakings and projects is limited by the accessible financial, material and personal resources.

On the other hand, a high potential of the possibilities of preventing the existing and anticipated threats is found in the third type of activities consisting in utilization of the possessed knowledge and familiarization with a new one which may radically change the present possibilities of corrective and preventive action. To utilize effectively the mentioned possibilities, it is necessary to fulfil few fundamental conditions:

- Creation of the common conditions, enabling early detection and recognition of especially and creatively talented persons and establishing the conditions for their development and creative utilization of their capacities in favour of creating a new knowledge. The discussed system could be partially based on the model of finding and developing the outstanding sportsmen, with consideration of the specificity of a given domain. Creation of such global system may be difficult due to differences in civilization, culture and income and due to the competing religious, terroristic, crime systems with the particular aims. Some people state that the epoch of genius units has passed but it lasts still and the genius unitary persons are less perceivable in the light of big teams, undertaking difficult tasks;
- The second indispensable condition is to create the material-infrastructure conditions for conducting the necessary basic, applied and developmental studies. It requires greater and greater outlays due to complexity of the undertaken problems in respect of matter, energy, cosmos, artificial intelligence, biotechnology, neurotechnology etc. Due to the limitation of the possessed means, it is necessary to distribute them and assign them to the particular tasks. It brings the specified danger that certain areas may be omitted, just those ones where the crucial necessary solutions might appear as we do not know what may be especially suitable /useful and where it may be discovered. As not to lose the mentioned potential profits, it is necessary to finance not only the domains being recognised as priorities but also some other ones which do not promise radical achievements, being possible for universal application.

## The choice of criteria

All areas of social activity include the important problem, i.e. the choice of criteria for distribution of the possessed resources for satisfaction of the particular needs, and especially those ones recognised as priorities, i.e. removal of the results of catastrophes and natural disasters, ensuring the possibilities of survival, health and safety of the citizens, liquidation of the effects of earlier destructive activities. From among the mentioned tasks, shaping of the ecological awareness of the societies and levelling of the differences resulting from different opinions, orientations, origin and, wealth etc., seems to become especially relevant. It would support a gradual liquidation of the sources of conflicts and lowering of high costs of safety assurance in favour of increasing the means for education, material protection and science and technology development, what could effectively protect from the existing and potential hazards.

The mentioned above needs are satisfied in a different degree by various social-political and economic systems according to therein established criteria. They prefer usually one group and marginalize the other ones what generates a hotbed for conflicts and usually excludes the

possibilities of common cooperation for ensuring the total prosperity. The existing differences in approach to satisfying the needs are caused by the opinions, mentality, traditions, and situations affecting the behaviour of groups which administrate the societies on different levels of development. The discussed groups are very much differentiated and often prefer their own aims over the aims of the groups which they are controlling. Under such



situation, it seems purposeful to indicate the advantages and principles which were elaborated in the past century in respect of shaping the aware normalization activity. A series of such principles and their gradual shaping may be also found in unaware evolutionary processes of biological systems where they occurred to be useful in practical applications. The adoption of the discussed, practically proven principles and methods as a suitable supplementation of the

developed methods of management of resources and other aspects would be advantageous for levelling of the differences, conflicts, barriers and viewpoints and would also favour the global terrestrial cooperation.

## The normalization procedures

The principles and rules of procedures as being developed in the previous century have been gradually improved with the aim to betterment of the quality of the developed standardization documents, destined for universal and voluntary application. The mentioned documents in a form of standards, specifications, reports, memoranda etc. contain the recommended guidelines for proceeding in the situation of manufacture of the products, implementation of processes, management of various aspects (e.g. quality, environment, safety, design, innovations, risk, and conflicts). The discussed guidelines and the recommendation destined for voluntary use contain the arrangements and rules with the practically proven suitability under different conditions. They consider the current state of the knowledge and technique (they are periodically updated (amended) gradually with the extent of the knowledge and technical solutions) and they are so established that they should satisfy all the interested and gain their approval (what often requires a considerable time period). The major aspects and principles when developing standards are as follows:

- Undertaking the collaborative development of the subjects which are a point of interest of a wide range of producers and consumers. Such teams consist of the representatives of the producers, consumers, experts and stakeholders of social organizations. Such team may be participated by any interested person (at his own cost) and the projects of documents under development are subjected to common survey (each stakeholder may express his opinion). Final edition of such document requires higher consensus of the team which developed it and avoiding decisive contras;
- Guidelines, requirements and rules, as contained in the discussed standardization documents are free from pressure of lobbyist groups and administration organs (the exceptions may occur as far as safety, defences matters or important social aspects in concerned). The development of the discussed documents takes place on a full public of the mentioned process and with a wide exchange of information between the particular states and standardization organizations (to avoid doubling of work). There is also a possibility to participate in their development for all stakeholders. Apart from the overriding standardization system, there are commercial organizations elaborating similar documents, which compete with the systemic ones in respect of the quality of development of the document of similar nature (they sell their standards to the users, being interested in quality and utility of the discussed elaborations);

- A wide applicability of the developed standardization documents, containing the best and practically tested solutions brings the profits to the producers (reduction in design work, the possibility of increasing production scale, avoiding quality claims) as well as to the consumers (better quality, lower prices, better reliability, safety guarantees);
- International cooperation in respect of standardization includes practically all regions of the earth. General guidelines concerning new standardization needs are formulated in the respective Economic Commissions of the Organization of the United Nations (UN) and then, they are developed by the international standardization organizations, possessing UN accreditation (ISO – International Standardization Organization, IEC – International Electrotechnical Commission and ITU – International Telecommunication Union). Their corresponding bodies in the European Union are CEN, CENELEC and ETSI and in other regions (Nordic, Arabian, Pan-American) there are also organizations having a similar nature. There also international branch organizations which – based upon the specified needs – elaborate guidelines helpful in the solution of the existing problems (e.g. IATF – motorization, CAC – food, WHO – health, WTO – trade, IGU – gas, IATA – aircraft). In each EU country, there is one leading institution which has accreditation of the government for conducting, supervising and coordinating the standardization activity in a given country. It is anticipated that in all the EU countries in the future, the consolidated European standards will be obligatory (they are often adopted international standards).



a standard: when a usable mutation, facilitating the survival appears, due to incidental, or environment-activated reason, it is replicated and becomes spread, and with the time being, it is gradually improved. The standard becomes to be developed when the discovered solution reveals its suitability and its applicability increases. Owing to periodical amendments it is constantly improved.

The contemporary knowledge shows that development of organisms has been improved owing to better and better energy utilization, avoiding threats, recognition of the environment etc. Similarly, the extended

applicability of good standardization elaborations facilitates saving of the resources, is applied in various configurations and is adopted by a wide circle of the users.

## Conclusions

1. The existing knowledge on the possible threats to civilization on the Earth should be favourable for shaping the awareness of the necessity to discard the quarrels and conflicts, and focus on the cooperation, on the agreed principles, with the aim to prevent the threats or minimize the damages, resulting from the mentioned threats;
2. The obtained level of science and technique has already liberated a huge developmental potential, enabling to solve many problems which should be identified, their reasons recognized and the methods for counteracting or preventing discovered. In spite of the discussed possibilities, global destructive factors still prevail and require global initiatives and a wide cooperation;
3. Diversity of viewpoints, interests and cultural and historical conditions make the elaboration of the effective cooperation systems difficult. In such situation, the experiences obtained during the period of improving the aware standardization activity, dating back to the end of 19th century and the whole 20th century, may occur to be useful; it is evidenced by the successes of standardization and its results;
4. The indirect proof of the usefulness of the standardization procedure rules may be well perceived in the recognized principles and effects of evolutionary development of organisms and biological systems, during which the optimality of many structural and developmental rules, similar to those ones, employed in standardization.

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## Biological evolution

The correctness and suitability of the developed standardisation system is indirectly reflected in certain characteristic rules, developed in an unaware way during the evolutionary development of biological systems. The following facts of evolution process indicate certain analogies:

- Common application of uniform, universal genetic code which regulates various life functions in all biological organisms. Well developed standards also will find common application among the users owing to globalization of production and trade;
- Similar popularization was also recorded in case of other discoveries of evolution which occurred to be especially suitable in adaptation of organisms to the specified conditions and survival in them in spite of various potential threats (chlorophyll utilizing solar energy, typical organs of senses, reproduction problems, care of progeny, utilization of environment constituents as food);
- In biological systems, we may easily observe the utilization of typical standardization methods, employed in standardization activity; it may include as follows:
  - simplification, consisting in multiple utilization of usable elements in various organisms and applications (photosynthesis, typical organs, tissues),
  - type classification, consisting in utilization of typical elements by various species (tree trunks, horns, claws, leaves, flowers, feathers),
  - modularization, consisting in utilization of typical systems in various configurations (wings, fins, heart, excretion).

Duration and development of particular species is an evidence of their functionality and a specified effectiveness, and the similarity of major systems is a proof of the optimality of their solutions (homeostasis, immunological systems, regeneration, and reproduction). It is an effect, confirming the suitability of evolutionary shaping of organisms, with the utilization of the specified standardization principles. The evolutionary process, to a certain degree, resembles the process of developing

*Article reviewed*

**Received: 20.02.2019/Accepted: 18.03.2019**