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Principles of Transition to Knowledge Economy

Nature has granted the human being with unique features that include consciousness, ability to think and create, capacity to carry out purposeful activity. The human being, who at the dawn of existence, did not differ much from other representatives of the surrounding world and satisfied his/her biological needs exclusively through nature's goods, nevertheless, managed to use effectively this unique feature and satisfy the most of his/her increasing needs by carrying out multifaceted activities. It helped the mankind to develop and gradually make its existence and activities increasingly more effective and conscious through building them on knowledge.

This historical reality is an undeniable evidence of the *Economic law on the steady development of human society*¹ which has been instrumental during the entire period of mankind's survival. Certain temporary deviations from that conformity were attributed to diverse, often unpredictable reasons, including elements, large-scale wars, epidemics of dangerous contagious diseases, lack of knowledge or its wrong implementation. Though in the majority they are of regional nature, they have had their negative impact on development of the entire mankind. One of the most important tasks of humanity is to predict and prevent such deviations or at least minimize their impact on the general conformity of mankind's development as well as create conducive conditions for a wider implementation of the economic law. Naturally, it would be possible to carry it out if it is based on knowledge and its effective implementation.

Human activity and its knowledge basis in different historic periods, dependent on conditions, have had different levels and intensiveness. It is assumed that now mankind is in the formation period of *knowledge economy*, performing a transition to an economy, where knowledge should have a decisive role. While realizing and evaluating the importance and justification of such a purposefulness goal, as well as perceiving the radical changes and various potential difficulties, we would like to note that an activity of an individual or a group (public) should always be conscious if a man is considered a conscious creature (though many consider the human being to be irrational) and be carried out with the use of knowledge, that is, knowledge-based.

On the other hand, the realization of mankind's global goals - survival and development, imply that development of a man, which in turn, brings about enhancement and deepening of knowledge as basis of mankind's activity, i.e. development of knowledge-based activity. It is presumed to be a permanent process, and should continue in the future periods of mankind's survival and development even in case of deviations due to possible various reasons. Hence, the idea, essence, characteristics, implementation approaches and forms of knowledge economy should also change permanently. It means that they should be revised periodically (though frequency depends on the conditions), resulting in a) re-establishment if they comply with the requirements and needs of the current period; b) replenishment and development if the demand is evident and implementation is useful; c) substitution by new approaches and theories if such have been developed and are applicable, and the application results have been predicted with appropriate accuracy.

The necessity for the implementation of the above mentioned changes can also be reasoned by the existence and functioning of the *economic law on the development of*

¹ See the definition of the law and the justification of its existence in the [1, page 48]. We assume that the term of economic law used in literature does not correctly reflect the nature of formulations that explain conformities of economic changes. The latter relate to the identification of conformities and theoretical formulation from the economic viewpoint, therefore it would be expedient and logical to call them economic laws.

knowledge economy, viewing it as a particular demonstration of the *law on the development of human society*. It is these conditions that make *knowledge-based development* of the society (and economy as its component) necessary, prove the usefulness if not to say, the need for the revision of formerly accepted and implemented approaches. From this viewpoint, the idea of transition to a more enhanced knowledge economy, as a new and natural phase of economy's development with the formation of its specific knowledge basis is seen as the best direction for the creation of more conducive conditions for the functioning of this law. From this viewpoint, transition to knowledge economy is seen as a reasonable idea as well.

As the same time, it should not be neglected that formation of knowledge economy is a radical transition, it cannot be realized only through quantitative changes. Considerable changes are required, which could cause serious difficulties for that formation. We believe that large-scale revisions (including those related to theories of economic development) and adjustment to the conditions of knowledge-based developments are required, including extensive works related to scientific & practical application of the new knowledge, preparation of high quality personnel and participation, considerable technical and financial investments, changes in people's mentality and work-style, and long transition period.

It is clear that enumerated changes, the list of which can be yet enlarged, will not take place sporadically. To efficiently carry out the goals of transition to knowledge economy, they should be predicted, designed, delegated, directed, planned and managed by responsible bodies within required framework. Active professional participation of society in all those processes should be secured as well. The role, participation, multi-faceted support and monitoring activity of state bodies should be very important in the realization of all this.

Clarification and definition of the essence (concept) of knowledge economy, means of formation, appropriateness, existence of the necessary pre-conditions, presumed target characteristics, functional approaches and timetable for their realization, the list of preparatory and activity works and program provision as well as many related problems need thorough scientific & practical research, i.e, elaboration of *knowledge-based* solutions and their realization. Unfortunately, detailed and reliable information in economic literature on the above mentioned is not largely accessible so far, so it is difficult to make any conclusions on how much the issue has been covered.

The volume of one article evidently would not suffice to reflect on the overall complex of issues related to the realization of the composite and multifarious idea such as transition to knowledge economy. We believe that identification, explanation and formulation of a detailed list of all those issues that require deliberation or revision should become a continuous and important management function for the development of to-be established knowledge economy and transition processes. Issues that require elaboration in the first place should be identified based on the estimation of their priorities. We believe that there are numerous and able specialists in economy in the county and abroad who should be involved in their research. In form of conclusions, we will try to present our perceptions of conceptual – logical nature on some of those issues, based on the above said,

1. Formation of knowledge economy, which emerges from the priority of knowledge and the principle of building any human activity on knowledge, is the most prevailing and primary idea of the current time. We think that from this very viewpoint should the essence of this concept be formulated; *economy is considered knowledge-based if each conscious activity (action) regardless of entity's nature and scale, is carried out based on knowledge and with the use of knowledge.*

This definition follows the reality of a man being a conscious creature, which already assumes that human activity should be conditioned by the implementation of inborn or acquired knowledge. The result of the activity, of course, will depend on the quality of knowledge, however, it cannot serve as a basis to consider a given activity not knowledge-based. This also means that knowledge basis is not a principle that functions in a short period,

it has accompanied mankind during the entire period of its existence as an action paradigm, has been applied to mankind's mentality and impacted its behaviour. It is general for mankind, be that a group or individual, for all generations, varying only in volume, level, demonstration form, bringing about various results of similar activities.

Hence, the knowledge basis of activity for a man, as a conscious being, is a natural reality. However, it is not sufficient to comprehend univocally the concept of knowledge economy since knowledge, dependent on the specificities of entities which bear that knowledge can considerably vary in its scope, coverage, direction and level.

The level of knowledge basis among those entities that carry out any activity (the scope of knowledge and skills to practice it, creativity, the ability to make grounded decisions) as well as the nature of deeds (static situation or dynamic work) affect the overall level of knowledge basis. As a whole, they can be considered as the *contents of knowledge-based activity*, according to which differences in knowledge-based activity cases are determined, thus securing different outcomes. It is necessary to make a clarifying addition to the name of the concept or formulation of the definition regarding the nature of applied knowledge. As the term "knowledge economy" has already been acknowledged by international community, we think the second approach would be more acceptable, that is to delineate in the definition what type of knowledge basis is envisioned to have for economy. For instance, it is expedient to note, that the knowledge acceptable and applicable for society in a given period and area should be taken into consideration. Such an addition would enable the society entities and governing bodies to determine the type of knowledge and knowledge basis of activity.

2. The reality of human activity being knowledge-based on the whole shows that the characteristics of knowledge basis are applicable for any human society (ranging from individual to the entire mankind) and any of its carried out activity. That allows considerably expanding the application area of knowledge basis towards any form of demonstration of human activity or behaviour.

Hence, along with the concept of knowledge (based) economy we can introduce a number of similar terms-concepts, including "*knowledge-based activity, era of knowledge-based behaviour, knowledge (based) society, knowledge based development*, etc. In this context, the expression-concept of *knowledge economy* (referring only to economy) can be considered a part of a more general concept of *knowledge society*. By using the approach of hierarchic structuring, we could identify other knowledge-based components of the abovementioned general (macro-level) concepts, including those in terms of sphere, time, region, etc. It would be logical to put into circulation *knowledge-based governance, knowledge-based management, knowledge-based lifestyle, knowledge-based security*, and many other concepts.

With the same logic, various modern qualifications can be viewed as particular cases of *era of knowledge-based behaviour* or *knowledge society* concepts. Among them are "era" names qualified with *innovation, high technologies, information technologies* and other characteristics. The used characteristics (technology, innovation, etc), in fact are types of knowledge, hence the framework of the priorities with *era* name often is presented in a very restricted manner and characteristics become a particular case. The said does not mean that we suggest replacing all the definitions with "knowledge-based" characteristics, however, it should be taken into account that their frequent and inappropriate use could cause misunderstanding.

3. The two previous conclusions imply that in order to achieve an efficient transition to knowledge economy (as well as transition to any of the above listed knowledge-based activities) it is necessary to reveal, clearly and univocally explain and define concepts regarding the transition to such an economy and related processes, point out their important characteristics which will ensure a knowledge basis for their structuring and quantitative evaluation. The above said relates to the concept of *knowledge-based activity* with its various

demonstrations, as well as to its entities, objects, knowledge basis, transition processes, factors impacting them, various necessary or supporting provisions required for its implementation, etc. It is clear, that such elaborations would require targeted scientific research and presentation of their results in a form that would be applicable for practical use.

4. As already mentioned, formulation, existence and implementation of knowledge society should be placed on a knowledge-based system which ensures realization of mankind's global goals. We could name it knowledge-based system of human society. Its formation is an important precondition for the successful realization of the mentioned transition. We believe, it should include the following subsystems;

Creation of knowledge (science and innovation), development, systematization, evaluation, establishment and maintenance of scientific information databanks.

Transfer of knowledge, exchange, expansion, provision of wide access, consulting on knowledge search and selection.

Acquirement of knowledge, tutoring (in different age groups, provision of continuity), work experience and formation of knowledge on that basis, testing, specialization, standardization of knowledge threshold.

Implementation of knowledge, existence of demand and formulation of the field, ability, formation of capacity and skills for its use among entities, (including adaptation to conditions and demonstrating creative approach).

Motivation and encouragement (including the evaluation of results) to carry out work aimed at knowledge application.

Provision of knowledge security (from the viewpoint of knowledge essence and application), elaboration of measures, application, monitoring.

Creation and maintenance of conditions for the normal implementation of subsystems of knowledge-based system and realization of functions (including legislative provision and sub-structures).

The existence of all enlisted subsystems and normal activity plays an important role in the establishment, survival and development of knowledge society. Hence, they should be planned, formulated and act in an inter-related manner and with necessary detailing of measures. This universal (macro-level) activity should clearly be designed, managed, while its implementation should be supported by the state. It requires existence of respective bodies as well as active and continuous participation of society in the work. Without listed subsystems, the high quality realization of works aimed at the formulation of knowledge society would be merely wishful thinking, despite the usefulness and progressiveness of the idea and hardly can be realized in the near future.

5. The formulation of knowledge society, as already mentioned, is a transition to another social system with a qualitatively different level. By its essence and partially its importance, it reminds the transition of socialistic countries to market economy, which was named *new transition*. The knowledge basis of the latter mostly related to a deeper embedding of market relations. The scope of countries and difference in their development levels were much smaller, processes were more intensive, objectives were not always clear or acceptable for everyone. In case of knowledge society, transition is universal and will include all countries and all spheres of activities. The differences are significant in development levels and especially in the characteristics of knowledge basis and human development. The transition period is long lasting, functions are complex and multifarious, the preconditions of transition are very different. In addition, there are other specifics that complicate the preparation and implementation of transition to knowledge society, require implementation of targeted programmatic approach, elaboration of scientifically grounded programs, expertise, formation of legislation, organization of efficient implementation and controlling.

In these conditions, we think, that the *transitional development method* is the most expedient and applicable approach for the formulation of programmatic provision for the

transition to knowledge society since the preconditions envisioned there, particularly purposefulness of transition, definition of the characteristics for the initial and final situations, the requirements for elaboration of targeted programs, expertise through participation of the society, adoption of legislation, phasing of implementation and its time-line fully comply with the characteristics of knowledge society. More concrete adaptation of its general propositions to the above noted specifics of transition to knowledge society would help to ensure highly efficient implementation of that method. Given that the transition functions and processes will not be the same in different regions, we think it is possible to apply the method used during the introduction of market relations in the countries of socialistic bloc. At that time, taking into consideration the novelty of the process, the lack of respective theory and experience, international organizations came up with general propositions for “new transition” as well as provided technical assistance and consultancy for their implementation, given the specifics of some countries.

It is evident that transition process to knowledge society will have its general propositions and approaches, which will acquire respective demonstration given the specific conditions of some countries. If international organizations elaborate the mentioned general propositions and approaches by using the positive experience of “new transition” as well as considering negative results, we believe the main transition to knowledge society will take place efficiently and in a shorter period of time as opposed to the scenario when the planning of processes and their implementation are left to the discretion of each country. The implementation of the suggested approach will clearly require joint and interrelated work of the World Bank, United Nations and other organizations. The latter will be fully justified given the great importance of the knowledge society formation for the survival and development of mankind.

6. Planning and implementing the processes of transition to knowledge society, even if they are internationally elaborated, should be mainly carried out by a given country itself. Purposefulness and priority of transition should be substantiated, the goals and expected results should be clearly formulated, the contents of processes, scale, inclusion and realization time-line be planned, the capacities of resource provision should be defined as well. The specifics of a given country and their conditions in a longer period should be taken into consideration in all this since transition is not a short term activity, while the new knowledge society is assumed to survive and continuously develop in the observable future. This circumstance makes it necessary to elaborate and use substantiated prognoses of anticipated changes in a long time span for a given country.

It is evident that the implementation of these large-scale processes should also be knowledge-based, hence it will require realization of large scale scientific & practical and targeted research. The latter should be initiated as soon as possible not to be left behind the universal processes of transition. Given the time necessary for research, any delays can bring about respective socio-economic losses in the future development of society.

The process of bringing mankind to a qualitatively new level through a formation of knowledge society as well as any other large-scale and comprehensive arrangement, in line with the requirements of the transitional development method, should be carried out in the following consecutive phases; a) programmatic provision and clarification of the idea and its realization means and opportunities; b) introduction of the elaborated program also by implementing continuous monitoring, result analysis, elimination of deviations, improvement of program (if it enhances efficiency of the program), c) provision of uninterrupted and effective work of the developed system. Shortfalls in them or incoherence between solutions envisioned for phases could cause significant problems, therefore, it is necessary to elaborate and largely test the issues of the mentioned three phases in the transition program.

7. The situational and development specifics of transition towards market economy for the Republic of Armenia (RoA) have been enlisted and described in literature, especially in

the last decade. Those directly relating to the formation of knowledge economy are worth mentioning, particularly, the small territory of the republic and relatively small proportion of suitable lands for agricultural industry, high density of population, not very close economic relations with some of neighbours, and limited hopes on their improvement in the near future, restricted energy resources and dependency on other countries, low level of employment, territorial isolation from main partners, current blockage, nation's inclination towards education and creative work, considerable potential formed during the USSR regime, successful cases of research given the crisis situation in country's science sphere (including those carried out in conjunction with foreign countries and international organizations or through their order) the existence of numerous Diaspora and support to country's development.

The existence of these specifics points at the usefulness of knowledge-based activity for the RoA as well as the opportunities of considerable impact to make this activity more effective if transition to knowledge economy is expedited and the solution to related issues is viewed as a priority direction in the country.

Directions related to spheres that are internationally viewed as priority and promising as well as branches (agriculture, industry, construction, health, tourism, ecology and rational use of nature) that are significantly developed in Armenia can be considered as macroeconomic main directions for Armenia's scientific specialization in knowledge economy; knowledge-based activity (including theoretical research, innovation, development of new technique and high technologies, investment instructions and consulting, commercialization of results, scientific & practical provision for the development of country's economy); preparation of highly skilled personnel, continuous education, provision of measures for the rational utilization of human capital.

Effective specialization in the mentioned directions will require intensive and multifarious continuous development of knowledge basis and its applied spheres for scientific and educational spheres of the country. That specifically relates to scientific elaboration of issues related to literacy, pedagogies and re-training of adults.

The above elaborated conceptual reflections include only a small portion of issues that relate to the transition to knowledge society. The formation of that society and various knowledge-based activities, as its component, requires provision of new grounded solutions that should be applied in the transition program through revision of previously accepted but now arguable solutions to very important issues of society's socio-economic life. We hope that the ideas reflected in this article would be considered useful in the elaboration of transition measures.