LEADING ROLE OF INNOVATION FOR SUSTAINABLE ECONOMIC DEVELOPMENT

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Abstract

The aim of this paper is to increase role of innovation and specification of its functions under the modern challenges, as the key factor for the sustainable political-economic and social development of countries, as well as the rational use of resources and sustainable environmental protection; As well as introducing new approaches as an opportunity to accelerate expanding the role of innovation.

In the definition of economic space of innovation, the objectives of sustainable development are also considered, as the implementation of the requirements of sustainable development objectives necessarily has both a spatial dimension of action and the dimension of environmental impact as a result of human activity. This implies both qualitative and quantitative spatial dimensions and an integral combination. In such approaches, direct economic interests change and it becomes clear who can create the hidden forces of contrary action that oppose targeted positive action.

At the same time, the set and agreed global standards of economic area will become an authentic tool to overcome such overt or covert opposite forces that have only a consumer attitude towards the economic space.

In the paper, the increase of innovation utilization index is presented as a proportion to the growth of socio-economic and political development and inverse dimension to poverty and environmental imbalances.

In addition, the leading role of innovation, socio-economic environment and sustainable economic development are discussed in the three-dimensional model of the systems' life cycle.

Keywords: *Innovation, Life cycle, Economic space*

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Introduction

There are many researches and data on a huge role of innovations in terms of competitiveness of the companies, also general development of their production as well regional, state political-economic and social improvement. It's also crucial to reconcile scientific researches and opinions with the fact that innovative economic development scale and vector must be in line with the requirements of sustainable development, as even partial disregard of this inevitability resists with the opportunity to improve living environment.

Simultaneously in the light of these researches and evidence, the negative impact of human on the environment is increasing (The Economics of Climate, Report of Finance and Development, 2019).

Discussion

Precising the role of innovations and its expansion.

It's evident that there is indeed consensus in the world media, educational-scientific literature, civil and political circles, that innovations positively affects on the development of the countries, manufacturing and specific fields in long-term perspective (Cirera, Sabetti, 2016).

M. Dodgson believed that innovative process encompasses scientific, technological, organizational and financial activities that leads it to the implementation of new or improved product, or process to commercialization (Dodgson, 2000).

It's also noteworthy that the potential of invention is driven by market demand (Schmookler, 1966).

Due to the modern challenges, its worth considering and clarifying what other driving factors are needed to accelerate and strengthen the demand for innovation. Only the consumer value attitude towards the product is outdated and inhumane.

Developed countries not so rarely, export environmental polluting products from their own countries or realize them in the third countries. Though these productions influences the development of the countries, but in terms of moving environmental pollution from one to another country doesn't change anything, but the bad thing is that developed countries had more opportunity to replace these technologies with innovative ones, that will be hampered in the law developed countries without any special activities.

It's true that innovations, as a product of creative work should be evaluated comprehensively and not viewed as any segment of creative achievement. It's important important for everyone as an actual achievement and simultaneously profitable at global level.

Innovation along with economics must be motivated by increasingly humane common social goals, that is "More advance ratio to humanism and common interests''.

According to Peter Drucker it's impossible to manage changes, though it's quite possible to anticipate them. He believed that in XXI century viable will be those who is able to recognize tendency of changes and quickly adapt to it. He also indicated that „First, a consumer is an initiator of any change" (Drucker, 2012).

Entirely opposite opinion is suggested by the work of IBM, that not only made some of the crucial changes and their management, but also created an irreversible process, an entire era of change, and forced other

entities to adapt this reality. A similar case is for Microsoft history. Due to 2020 data the number of employees reached 163, 000 people in 105 countries throughout the world (Statista, 2020). In both cases product caused the change. It's good when an organization or an entiry has an ability for a quick feedback, flexible and painless adaptation to the change, but much more important is the ability to create its own processes, clearly proved by the examples of IBM and Microsoft Corporation. Such kind of cases shows that it's possible to be most flexible in such processes, as well as initiator of other (new) pcocesses, precisely those naturly followed by others' reactions.

Today, everyone realizes that in a broad sense (with the perception of a unified living environment), there is no longer any kind of closed political-economic space. Any change in a single point of earth affects its entire space (living or economic environment, ovjects, systems, processes) and this pattern is well decribed in the laws of thermodynamics (Guggenheim, 1985).

Perhaps, the first thing to be agreed is that the trend of political-conomic and social development in the XXI century should be assested positively/advancement only in case three of the components are simultaneously in progress towards achievement of sustainable development and not to damage each other. It's necessary to "*move from the private interest of innovative advantage towards public, social and global innovative advantage*".

On the basis of the applied research conducted through interviews with the people addicted to innovative/new products, it was found that consumers have a **need-driven** demand, **general/unclear** demand and **compulsory/forced demand**.

1150 respondents and 100 organizations participated in the study. The research was conducted in the form of interviews, in all age groups, if one factor was met, the question – "Do you like news and buying innovative products?" – should have a positive answer.

The interviewer explained that:

- Need-driven demand – is consumer type and is motivated only by the consumer's needs (as it is known there are different types of need, is characterized by diversity and is motivated by functional or emotional factors);
- General/unclear demand is triggered by the possible need for a product/service and such a customer has a difficulty in making a decision. Accordingly, after hesitation, he/she makes a positive or negative decision, but in case of purchase, he/she does not have a clear answer as to why it was purchased;
- Compulsory/forced demand is conditioned by compulsory need, mainly by the security or mandatory need and appropriate decisions are made based on compulsory type requirements.

The respondents grouped the innovative products purchased in recent years according to the described criteria. The means obtained as a result were distributed in the following proportions:

In 62.5% of cases, the desire to purchase an innovative product was driven by need, 34.6% by general/unclear demand, and 2.9% by compulsory/foreced demand. Out of them 75% of innovative products were purchased for health purposes, 18% for safety, and only 15% for energy conservation or environmental protection.

In the responses of the 100 organizations surveyed, 97% was dominated only by the interest in competitive prices.

Considering the results obtained, innovations in the future should meet compulsory/forced requirements (due to the maintenance of a unified living environment), ie the need + obligation (responsibility).

Local/global ecological and economic environment, as an asset for innovations

If for global survival innovative advancement is one of the key objective, it's crucial how modern world sees (both supplier and consumer) the essence of economics, what content it provides for it and how it will reflected in economic calculations and scientific literature.

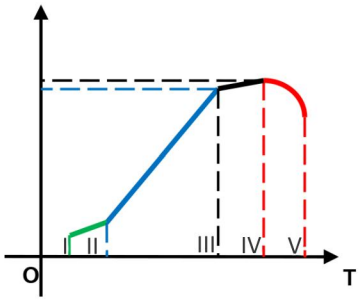
It is also a fact that an existing two-dimensional life cycle systems/processes does not reflect the spatial vision without which political, economic and social progress cannot be achieved in the long-term.

Despite the variety of graphs, the product life cycle is always represented in a two-dimensional system.

For instance: on the axis of applications are marked the main indicators of the system (price, quantity, value indicators, etc.), and on the axis of ordinates – time. One such example is shown in Figure 1.

Figure 1

Life sycle



I-II – Implementation phase; II-III – Development phase;
III-IV- Mature phase; IV-V- Death (aging) phase.

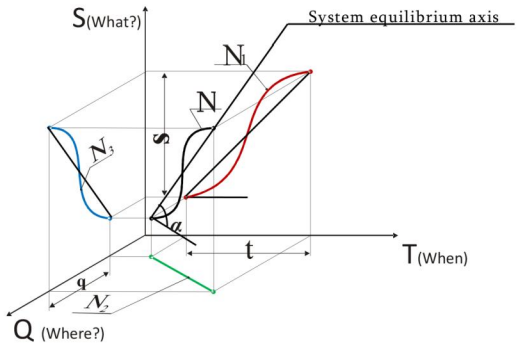
No matter what kind of geometric table represents the life cycle, the axiom is that the life cycle of any object, value, system, or process is at least three-dimensional. Any functional system does not exist without time-space dimension (space itself is a three-dimensional quantity) (Einstein, 1926).

The economic process always has a space for action, therefore the measurement characteristics should take this into account.

Figure 2 shows three-dimensional life cyle. Due to our definition, any system (Physical, Biological, Technical, Political, Economical, Social or other.), developes on the basis of some objective preconditions. It passes some phases in time and space, and it itself becomes the ground for emerging new system/s. Through the definition there is shown that any new system is developed on some kind of system/s. For artificial systems, in the soil, there exists the combination of charachteristics of prior systems, accumulated kwnoledge, information, experience, negative combination existed in previous systems and newly emerged meahanism of requirements. Depending on the purpose of the figure, the spatial dimension can be a political-economic and social, as well as a subsistence ecological environment, or a parameter reflecting the importance of another environment (physical, chemical, biological, etc.) (Maisuradze, 2016).

Figure 2

System/Process of three-dimensional life-cycle



T – Time;

S – System/Process key index

Q – Space

The figure shows the complete development cycle of the S-main parameters of the N-system, in T-time and Q-space.

SQ – Development dynamics of S at the local as well as global environment;

TQ – The entire cycle of S in time and space.

As we have explained, Q-space is not just a location indicator in which a process, object or system are operating. It is an environment of systems interaction in which this or that process takes place.

For instance: in the literature, economic space is given A. Granberg's classical definition: *Economic space* – is a saturated territory, comprising of multiple objects, and links, settlements, industrial areas, utilized agricultural and recreational areas, transport and engineering networks, and so on (Granberg, 2009).

In the economic schools of the Russian Federation – economic space as an independent category was introduced by V. Chekmarev. It highlighted the dual nature of economic space. On the one hand, the economic environment is developed by individuals and legal entities creating economic requirements and economic relations, and on the other hand, it is created by non-physical objects around which economic interests and economic relations are elaborated (Chermarev, 2001). The main indicators in determining the dimensions of economic space and quality are:

- Density (population, regional GDP, natural resources, fixed capital per unit area, etc.);
- Placement and connections with a number of features.

The economic environment is an integral part of the living environment, and the axiom is that any economic activity has an inevitable impact on the environment, which means that this value must be reflected in the overall economic balance in the form of assets or liabilities. It seems that the environment is not yet considered a value to be included in the economic report, but for extraordinary reasons, the determinant is price, and cheapness has become a major problem for ecology (the cheaper the raw material, the more it is mined). It is always considered isolated. Today, everyone has an access to new technologies, but if you want cheapness, you have to show "flexibility" and first of all at the expense of the environment. If this approach is not changed, we should not expect effective and significant change only through international requests. If we consider that economic space – is the common indicator that determines the location of entities, objects, processes and systems and all the circumstances affecting it, ie the total material, process, micro and macro-climatic combination (combination of economic and ecological spaces), ie. The objectives of sustainable development should be considered in it already, because the implementation of the requirements of the objectives of sustainable development necessarily has both a spatial dimension of action, as well as the dimension of environmental impact as a result of human activity.

This refers to both qualitative and quantitative spatial dimensions and their integral combination. In such approaches, direct economic interests change unequivocally and it becomes clear who can create the hidden forces of repulsion that oppose targeted positive action. At the same time, the set and agreed global economic space standards will become an unmistakable tool to overcome such overt or covert repulsive forces that have only a consumer attitude towards the economic space.

It means that it's needed to increase actions towards achieving the real goal. The following stipulative approach must be used:

Innovations = Development of science and education + Ecological safety + Development of techniques and technologies and + Socio-economic growth.

It can be said that the growth of the Innovation Utilization Index should be seen as proportional to the growth of socio-economic and political development, and inversely proportional to poverty and ecological imbalance.

Conclusion

Studies show that despite the consensus in civil and political circles that innovation has a positive impact on the development of countries and despite many economic problems in the world, there is still not enough demand to accelerate the process and more international efforts are needed to ensure real perception and demand.

It has been revealed that only consumer attitudes lead humanity to a competitively priced economy detached from general moral, social, and universal values, leading to the ruthless depletion of the earth's resources. Such an economic environment is in conflict with the global living environment, of which the economic environment is an integral part.

The essence of the approach is that the benefits of competing resource-extracting entities are correlated with the extraction costs, which, under equal technological access, is possible only through inhuman treatment on the environment.

The latter has a negative impact on all participants. If the focus will be on matching the interests (energy efficiency, environment and sustainable development), which will already will be considered by the interests of the consumer, it's quite clear that it will open up way to the new need and a relevant demand as well). The same kind of demand is also met for instance by the increasing of product's viability (minimizing the disposal products) if in other equal conditions there exists this kind of choice. At the same time, the equal commitment and necessity of caring for the environment is becoming increasingly clear to the public. It is necessary to go beyond the boundaries of the local environment (e.g., think only within a family, organization, region, or state, and not with a single global common environmental influence). Under such conditions, it will already be possible to solve the problem (here the consumer is ready to pay more for the benefit of the environment and ecology. Low price will lose the unequivocal advantage).

Paper suggests an idea that *an increase in the innovation utilization index is directly proportional to the growth of socio-economic and political development and inversely proportional to poverty and ecological imbalance.*

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