Avatar-Based Intellectual Managing for Innovation Technologies Transfer in Nationals Entrepreneurships of Armenia

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INTRODUCTION

The economy of the digital age is an economy, based on collection and use of knowledge. Significant gains, the necessary breakthroughs over the past decades, is understanding of the relationship between knowledge and growth, on the one hand, and entrepreneurship and growth, on the other one. Also one can find research results shown how entrepreneurship, innovation and knowledge are interrelated. In the same time, deep understanding of a connection between all these variables - knowledge, innovation, entrepreneurship and growth - does not exist. The relationship between the variables is very complex and depends on forces that can simultaneously influence all of them; at least, partially. Therefore, the relationship between the microeconomic origin of growth and the macroeconomic state is still too unobvious to cover the entire width of these complex and overlapping variables.

The state support of entrepreneurship acquires special features in the digital economy and should be based on several principles.

1. More does not mean better. Financing (investing, subsidizing, etc.) should have a strictly adjusted focus and volume. Naturally, firms, focused on innovation, on deepening existing knowledge and their practical application, should be in the priority. However, their "overfinancing" may be, in the best case, senseless. *The relationship between investments and results is not linear; it must be considered carefully and taken into account*.
2. The digital age is characterized by the availability of huge amounts of information (so called "big data"), its storage, searching and analytic tools (Chang et al., 2008; Ramzan et al., 2018). Any effective management decision should be based on analysis of *all* available data on the subject. In the case of innovation economic activity, such data includes the history of the field in aspects both of innovative ideas (previous successful/unsuccessful similar business projects) and of project performers (open personal data of participating people/firms their economic success in the past,

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etc.) *Collection of sufficiently complete information, related to the specific business project, is one of the critical components of the decision-making process concerning the project support.*

3. Analysis of large amounts of information that have become available only recently has been one of the challenges of our time. The human brain, in general, is not capable of solving such problems and needs substantial "algorithmic" support. As a minimal basement, these are the standard data mining and graphical data representation methods. However, for effective management, this is usually not enough. Algorithms of "artificial intelligence" can come to the rescue; first of all, it is methods of machine learning (neural networks, genetic algorithms, etc.). *Without computer algorithms of "artificial intelligence", appropriately "trained", effective processing big data is impossible.*
4. The task of "training" of artificial intelligence systems is a special problem. The most natural and "economising" way is the creation of universal "avatars", focused on solving a wide range of business plan evaluation tasks and trained gradually during the step-by-step use for a number projects. *Avatars should become the core of "intelligent expert systems", which should replace the traditional expert systems.*
5. "Intelligent" avatars, working with large data sets, face the problem of composing used information, which is constantly growing set (Deissenberg et al., 2008; Kohler et al., 2009). In addition, if there is a "population" of avatars, which are focused on solving slightly different tasks, they can "exchange" by their individual "experience". The solution of both the problems can be based on the blockchain technologies. *The blockchain organization of distributed data storage creates a flexible and efficient knowledge base about business projects, used by the avatars.*
6. Considering the "intellectual expert system" as a dynamic, constantly developing system, one can speak of the underlying computer "imitation model", which has a special theoretical and practical value. External information sources, the blockchain-based knowledge base, the avatar population, external actors (people-users) and a software environment, uniting all these elements, are in constant nontrivial interaction, the result of which cannot be predicted theoretically, but can be obtained in a course of computer simulation. *In addition to being used directly for the project evaluation, the simulation model can be used to solve a much wider range of tasks: forecasting (of final budgets of projects, their possible profit, etc.); risk assessment; determining projects' and their performers' rating; calculating parameters of an "ideal" project, etc.*
7. There is a significant variation of conditions, prevailing at the time, in different countries and even regions of the same country. There is an ontological problem of distinguishing "common" and "individual" features of environment, when analyzing projects and making decisions. Probably, *each avatar should be targeted to a specific region; at the same time, the entire avatar population should use a joint blockchain base.*

Below these principles are considered in more detail. Mainly, it will be discussed about a single avatar; study of avatar populations is planned as a next step of the research. When this is essential, the Republic of Armenia will be used as a "model" region.

The authors in this chapter show the essence, dignity, current state and development prospects of avatar-based management using blockchain technology for improving implementation of economic solutions in the framework as help system of entrepreneurs of sharing economy. The authors of the chapter set out to avoid examining the avatars-based model for policy advice, but to try to assess the merits, identify the model as a new basis for policy advice based mainly on work and experience as part of a recently completed project "Triple H Avatar an Avatar-based Software Platform for HHH University, Sydney,