GEO-FUSION: AGE OF "TECH-KNOWLED (GE)-OGRAPHY" THE NEW MAPPING OF THE 21ST CENTURY AND REDISCOVERY OF THE WORLD

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Abstract - The study is based on a thorough investigation regarding the recent global, social and geographical processes. Geo fusion guides the reader with the help of maps in the global world of the 21st century through the quest for the winning nations, communities, leaders and powers of this age. The findings of the study include a significant recognition that the scientists who are taken as explorers geostrategists of this century, are expected to present guidelines of our connected world full of global social and economic challenges. In 2017 the author issued his book titled Geofusion: Mapping of the 21st Century. This paper presents the basic message of his book involving the following statements: We have to redraw our conventional maps replacing them with maps of questions making up objectives. Creativity and geo-knowledge is the pledge of a winning position in global economic competition. In future's economic competition, like in a race, creativity is the fuel, networks and knowledge represent the safety belt. Local resources help us to go international. We can enter international geo-fusion networks only via our local community's values. According to various research and forecasts, the main economic concentration will be in 40 megacities and global centres. Based on various competitiveness analyses and indices, global city centres and city networks are outlined, but if we look at other aspects of urban development like complexity, connectivity, creativity, technological development, viability, green cities, pedestrian and child friendly cities, creative and cultural centres, cultural spaces and knowledge centres, we get a city competitiveness index with quite new complex indicators. The research shows this result. The methodology contains the survey and analysis of many recent publications worldwide, regarding geostrategic, cultural, geographical, social and economic surveys structured into global networks. In conclusion the author presents the result of the study which is a collage of the global map of the 21st century as mentioned above.

Index Terms - Future's economic Competition,Geographic Trends, Global Urban Networks, Management, Megacities, Sustainable growth,

I. INTRODUCTION

We are part of a special geo-moment

We are part of a special "geo-moment", where unsurpassable human values and technological innovations are redrawing the map. The global world intertwined by a thousand threads is looking for new inspirations in individual creativity, and for new partners in local networks – so forms the new centres of the future from the border areas of the past. Behind the century of the dynamic, personal maps, a dynamic and personal world is hiding, of which we can create different force fields and interest networks, and as well as idea and knowledge maps. Therefore, the explorers and geostrategists of the 21st century get directions not from the Pole Star anymore but from the innovation clusters, instead of globes they draw university hot-spot globose and beside geomorphology they measure the "curvature" of local cultures or the "projection" of global trends.

All of this is needed, because all signs point to the unipolar world once again developing to a multipolar one and a new world order being born in the 21st century. Everyone investigates in their own professional field, who will be the winner nations, communities, leaders and powers of this century. The big ones or the small ones?
The strong ones or the fast ones? The centres, or the peripheries? The economic borderlines have moved from the former centres to the peripheries, thus the border areas of the past become the new centres of the future. The global strategies are replaced by "regional" co-operations.

The fight for the energy and at the same time for energy independence is happening simultaneously both abroad and inland. It is based on the new technologies, and thanks to the global 24/7 economy, talent cannot be suppressed or kept at bay: the gates of the new world are open for everyone. And as the (economic or other) mobility of the individuals has grown with the appearance of the internet, public transportation and new industries, so the mobility of nations, communities and countries has grown.
The same way today a Chinese economist, an Argentinian lawyer and a Hungarian engineer can start a joint undertaking, the countries even thousands of kilometres away are connected to each other. The currency of the localized, but thousand-thread-intertwined 21st century is the unique idea, the creativity and knowledge, which easily inflates away, if we do not keep up with our competitors. In time and space, we are part of a special "geo-moment": where the global space is fragmenting, where the countries small in size have to become great in knowledge, where creativity and well-skilled labour force become values, and where the countries situated in the former peripheries with knowledge-intensive economies could be the new points of reference.

The increasing importance of geography in the economy

By today, as a result of globalization processes, the functioning of the societies, and so that of the economies has changed significantly, it can be observed that factors, previously unknown or deemed less important, have strengthened. In the past decades we have experienced more and more accelerated that a sort of global economic integration and networking is happening. In the organization of the economy and society the role of the geographical space has also radically changed. With the decreased transportation costs and through the physical space spanning technologies, space shortens, but also "thickens".

O'Brien was not right

Richard O'Brien in the beginning of the '90s published his book analysing the international financial system with the title "Global Financial Integration: The End of Geography" (O' Brien 1992). According to O'Brien even in our age tens of billions of dollars turn daily on the international financial markets, and thanks to the modern information technology, in seconds also tens of billions of dollars can be sent from one corner of the Earth to another. Even more – as O'Brien predicts – the future is not so far away, when "from an economic development standpoint, geographical location is no longer a factor". Well, today we can now safely state O'Brien was wrong. Namely, the experience is that in the past decades in the professional-scientific and the economic policy discussion regarding the global realignment, localization has become more significant. Numerous "bestseller" thinkers examining the global economic-social questions of the world write about the increasing significance of spatiality and e.g. that of cities. Today the experience is that although localization appears in more and more popular disciplines in the mainstream, in all kinds of social science areas the engaging in the geography of the world and smaller regions is becoming more significant. The so called new economic geography, introduced by the 2008 Nobel laureate in economics, Paul Krugman, which created the spatial equilibrium model of growth, brought the importance of geography to the mainstream of economics.

What is really happening in the global economic space?

What we can certainly state is that with globalization, transportation costs decrease, areas far apart link up with each other, and the spatial systems of ever greater proportions of production interweave the Earth. In the knowledge-based economy at first it seems that information defying the physical space is able reach almost any point of Earth immediately thanks to the incessant development of digital technologies. However, we see that in the economy at the same time strong locational concentration tendencies prevail, and the role of cities becomes incredibly important. The economic role of spatial concentration becomes more important, while long-term relations between distant business partners could also become stronger. The companies of global industries plan in country-groups regarding the product market and sales, while organizing the input markets and production they think in subnational regions, usually cities and their agglomerations. The globally competing companies realized that the sources of their competitive advantages are spatially concentrated, therefore they have to act locally to strengthen these advantages. As a result of the above processes, several initial assumptions of economic science certainly have to be re-evaluated, the understanding of both the regional competition and the closely related economic growth and development, and as well as the economic policy and developmental concepts as a response to new challenges.

Where does science grow?

The ideal medium of innovation is the space of large cities densely woven by interactions, where the varied creative labour force can be found and where innovation is ensured by the presence of different types of activities, of companies with different profiles but which complement or even inspire and "fecundate" each other. In fact, knowledge economy becoming dominant is itself of dual nature regarding the role of geography.

Glaeser in his work "Triumph of the City", regarding the progress (and often overvaluation) of the internet and information technology (IT), emphasises the importance of personal meetings, citing several researches which have shown that the groups which only keep contact by electronic measures dissolve sooner than those who also include personal meetings. Therefore, communication through IT tools merely complements personal meetings and makes them more effective, but does not substitute them. Since personal relationships lead to more trust, appreciation and more effective co-operation. Regarding patents, geographical proximity is also a significant factor, as it has been shown that regarding patent references, the number of patents referencing and quoting each other is twice as high in a metropolis area.

In the age of information technology and society, in contrast to the previously predicted visions, the significance of geography is not disappearing, the formation of new ideas and knowledge, their circumstances are still geographically determined, the geographical space (the geographical configuration of the developmental actors) still significantly affects innovation and productivity (Glaeser 2012).

Geopolitics and the new world order – Geography has not disappeared

Geography increasingly fuels endless chaos and old-school conflicts in the 21st century – writes Robert D. Kaplan in his article Geopolitics and the new world order, published in Time magazine. The global elite – professors, intellectuals, foreign policy analysts and Western leaders – readily forget about that. However, we are currently living the vengeance of geography. Technological development has not eliminated geographical location, even more, it made it almost more suffocating.
While the West only views international relations according to simple laws and international agreements, the rest of the world is still only able to think in deserts, mountains, ports and freshwater. The world is yet again at primary school map reading, when it tries to understand history, culture, religion and ethnicity – not even mentioning the fight for the natural resources and trade routes.
The 21st century should not look like this. As John Kerry said: "19th century behaviour in the 21st century". For that matter, the "19th century" lives on, and will live on. The world is not flat. The modern age existence of Europe in principle should be about the triumph of the European Union above nations, ethnicities, enacting a legal system from the Iberian Peninsula to the Black Sea. The drawn out financial crisis however was accompanied with the loss of its political influence, especially in the Eastern European region. The democratic line appealed to many Ukrainians, but the geographical factors are impossible to ignore, this is why the orientation toward the West is so difficult.

If one looks anywhere, geography is dominant. In a world, where geography is appreciated, and not ignored, they understand what territorial limits the political leaders have. There are unbridgeable obstacles. The best head of state always acts on the border of possible. Only the human leadership paying attention to geographical limits can be successful. If there is any good news is that most of the redrawn borderlines lie within states and not between states. The great human cataclysm of the 20th century will not be repeated soon. But a world spanning civil society can only be realized taking into account the geographical capabilities. Foreign policy must be based on morals, but the analysis behind it must be made with sangfroid, placing geography in the centre. In geopolitics the past never dies, and also there is no modern world.

Age of Geo-economy
Who will be the winner nations, communities, leaders of the 21st century? Let us ask, who will be the winner nations, communities, leaders of the 21st century? The unipolar world develops into a multipolar one and in the 21st century a new world order is born. The phenomenon can be traced back to several well observable causes: The ageing and the migration come with different economic and social effects in the developing and the developed countries (state of refugees, new consumer strata, pensions systems, illnesses, unemployment, radicalism, terrorism). Connected to this, maritime hegemony becomes important again. The fight for the energy and at the same time for energy independence happens simultaneously both abroad and inland, while certain resources become cheaper and cheaper. Germany and Italy become renewable energy great powers, meanwhile it is e.g. Russia's and the Middle East's own best interest, to not put all eggs in one basket economy wise. Behind the struggles for markets and energy, and as well as competitiveness, knowledge, there are geo-economic interests and economic warfare (embargoes, new international development and financial funds, e.g. China).
Between East and West an economic and ideological (value based) test of strength could commence. In the global and new technology based world, the gates of the new world are open for everyone. The knowledge flow between the developed economies and the rapidly developing ones is a dual process: it simultaneously creates relationships (new alliances, catalysts), but also the employer country more and more becomes the provider and not the producer of knowledge.

The global strategies are replaced with "regional" co-operations. Between the several alliance systems of the multipolar world, often the smaller countries are the ones who can tip the scales. If the most important condition of successful economic growth will be the well-skilled labour force, the balancing between regional co-operations, crisis tolerance, then the countries located at the peripheries, with flexible and knowledge intensive economies could be the new guidance points for the world economy. After the crisis, new value systems form, where the short maximization of profit will be to secondary to the long term value creation and value preservation. The circles of responsibility will also transform and in parallel new industries will remake the markets.

The currency of the localized, but thousand-thread-intertwined 21st century is the unique idea, the creativity and knowledge, which easily inflates away, if we do not keep up with our competitors. Those countries which are not able to produce knowledge will be forced to purchase it, will fall behind in the international competition, and will be excluded to the periphery of development, which comes together with the persistence of vulnerability. Therefore, the countries need a vision and long term strategy which puts their own local strengths into the service of the lasting economic growth, employment and improving living standards in the global geopolitical and geoeconomical competition.

Multipolar world order

Globalization made it possible for the great powers to create a strategy incorporating the whole world, however this did not mean that they renounced their regional hegemon status. In the last years the smaller powers also group around the regional hegemons. The overdependence on each other however can as much be a sustainer of a fragile security than a cause of an outbreak of war: the too close relations, especially if they are unbalanced, can easily snap. Currently, we are witnessing the rise of geoeconomy, which can be defined as a competition, which happens in the language of commerce, but with the logic of war.

The geopolitical competition changes the global economy, global power relations and government. Before the financial-economic crisis geopolitics rather played a role only in a local level, nowadays however conflicts have erupted again between great powers as well. The most prominent of these are the conflicts between the West and Russia, China and its neighbours, and also the more and more complex crisis of the Middle East. Even though several wars are taking place today around the world from Damascus to Ukraine, economy is regarded as the most important battlefield today. The place of military strikes is taken by economic sanctions; the place of military alliances is taken by commercial systems competing with each other. Today the chance of currency wars is much higher, than that of occupation of territories, or the manipulation of the price of certain resources (e.g. oil) is much more effective, than conventional arms race. From all this it can be seen that we are witnessingthe rise of geoeconomy, which can be defined as a competition, which happens in the language of commerce, but with the logic of war.

World Military Expenditure. Source: Stockholm International Peace Research Institute (2012)

The shift of the direction of the strategic competition is shown well by the ramping up of the Indian and Chinese relations of the USA, and as well as the worldwide infrastructural investments of China, which are all motivated by obtaining markets. The winners of the process will be the countries, where the income per capita grows, and where the population is also large and is growing. Those countries and companies, which, through controlling the social economic and communication networks, are able to obtain markets, are definitely can be viewed as winners. At the same time the resource producing countries have to face the decrease of their power and economic strength (e.g. Russia, Saudi Arabia, Iran).

The moderately skilled residents of developed countries also end up worse in the process, as more and more they have to compete with the similarly skilled, but much cheaper labour force. Those countries, who are not able to create political and economic stability for the companies and foreign capital, will also lose.

We are living in an age of fusion – behind the fusions there is complexity

"When the East joins forces with the West, the sweet nuzzles to the salty, the bitter collaborates with the sour, the traditional starts talks with the futuristic, the conventional gets into a sensual relationship with the extreme. This is fusion"

Cesar Hidalgo (MIT) and Ricardo Hausmann (Harvard University) put the interpretation of economic development on new grounds, where in the centre of development, there is the average level of complexity of the products made in a certain country. According to the theoretical bases, the characteristics of a complex economy, apart from greater stability, is that varied (gained on a tacit, and implicit or objective basis) knowledge is available to produce various types of products, which are then able to interconnect with each other also, and with it, fuse within the frames of a person or an organization. The basis for the research of this model was first published in 2007 in the journal Science, which study was made with the collaboration of Albert–László Barabási and Bailey Klinger (Barabási 2016).

The new Cambrian moment – entrepreneurial revolution

Nearly 540 million years ago (in the so-called Cambrian period of geological history) on Earth the conditions for life changed radically, the life forms, the organizations found in the wild started to differentiate. (Regarding the evolution of the biosphere, the Cambrian is usually referred to as Cambrian explosion.) Ludwig Siegele in his article published in the Economist in 2014, compares the explosive spread of the companies (start-ups) operating in the digital sphere to this Cambrian explosion. Because these companies with their novel services and products can refashion whole industries. The "digital madness" is happening on a global scale.Further explanation of the usage of the Cambrian explosion expression is that by that time the most important fundamental conditions of life had already developed, the basic elements needed for the further development of organizations, which made it possible for new organizations to form and to form faster.

Based on this, a similarity is that, says Josh Lerner (Harvard Business School), the basic elements of digital services and products (internet, web language, the possibility of real time sharing of different contents and services) have already formed and become developed, and also cheap and available everywhere to such a degree, that they have become combinable and continuously re-combinable (Lerner et al.2014). The leading economist of Google also views this phenomenon as "combinational

innovation", with which the start-ups employ already existing technologies to solve new problems. The start-ups furthermore form a significant part of the new movement of flowing to the cities, leaving the suburban, agglomeration areas. Instead, the varied city centres provide location and space for these emerging, new types of enterprises.

Geomanifest – explorers of the 21st century

"If your life hits the bottom because of geopolitics, then geopolitics will be the one to drag you out of it." In this century for every leader the famous quote of George Friedman becomes a maxim to follow (Fiedman 2015). The decision makers of the 21st century will be the ones who can view the world from a geopolitical perspective, and who dare to redraw the maps.

Philippe Zimbardo, father of the Stanford prison experiment said: "if one man stands against the world, then he is a madman, but if three-four do this, then that is a standpoint." If our map is wrong, useless, and perhaps misleading, then that is not an intrinsic failure, but three-four of them is the first sign of the paradigm shift (Zimbardo 2007). The leaders of the fastest developing multinational companies, the professors of the most successful universities and the politicians with widespread international relations have already thrown away their wrong maps, and on a clean sheet, they draw a new, own interpretation and system of goals.

The leading companies of the world are building a more and more tight network with Eastern Europe, India and South-East Asia, to refresh their portfolios with the creativity of small start-ups. Meanwhile from the east, China builds the modern Silk Road through the Asian continent. The technological company giants pay more and more attention to global social issues, therefore they put pressure on international political decisions as well, such as the space race, global warming or migration.

Science has also turned towards geopolitics: in the economic and leader course of the University College London, urbanism, territoriality, sustainability and social geography all appears. Stanford launched its 700-million-dollar global leader training program in 2015, in which they are looking for answers for economic-social questions, globalization and technological challenges. At the best university of Asia, at the Faculty of Social Sciences of the National University of Singapore, economics is complemented by geography, communications theory, psychology and political sciences, and similar processes have started in Hungary at Corvinus University.

The leading economic, political and knowledge centres of the world try to redraw the maps of the world, marking them with own interpretational tools and legends. These metropolises and regions (Boston, San Francisco, Bangalore, Singapore) want to become such hubs which are inseparable from the world-influencing networks of data, knowledge and innovation.

Behind the geopolitical turning points in the end there are always people and decisions made by people. The decision-makers, economic, political, scientific and technological leaders of the 21st century, will be the ones who can overview the global contexts and gather around them the hubs of creativity and information flow. Who are brave, curious and creative enough to draw strength from the crises, and to rethink the role of spatiality in the global decision-making. Those, who are looking for fusion, new border areas, let them be physical, natural or scientific. Who build personal networks with the other creative hubs and draw strength from the exchange of experiences between cultures. They are the real explorers, the global leaders, the wanderers of dynamic maps, who, armed with the geopolitical perspective, will reform the world.

NOTES

1. Of course everyone according to their respective own interests, which could become one of the sources of different economic – social – environmental problems and foreign policy or armed conflicts.
2. From an environmental standpoint, it has always been like this. Let us just think about such global problems, as the formation of the ozone hole or the global warming, which are the combined results of more serious interferences, in spite of being at different locations from a geographical standpoint (e.g.: elimination of rainforests – South America; increased pollution of the environment – China etc.), they still influence the life of everybody.
3. The existence of the borders between different scientific areas is an example of this. Initially knowledge, that is the knowledge available for humans, was comprehendible even for a single person (polyhistors), however due to its expansion, science started to fraction into parts, and areas formed, separate within a sphere, but still closely connected; among which it was not possible to draw a sharp line (disciplinary disputes), as they were interlinked since their origins.
4. e.g.: Visualization, Journey Mapping, Value Chain Analysis, Mind mapping, Brainstorming, Concept Development, Assumption Testing, Road Prototyping, Costumer co-creation, Learning Launch (Liedtka et al. 2013).
5. The expression used by the author: "True North"

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