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Developing Russian Far East:
A Model of International Medical Education Cluster

Master's Thesis

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Abstract

Undeniable geopolitical significance of the Russian Far East renders development of the region a matter of national priority for the entire 21st century.

Enormous untapped potential of the region is not limited to the range of possibilities offered by export of its natural resources. Developing a non-resource export potential of the Russian Far East offers a way of ensuring sustainable economic growth – a key component of regional, and national, competitive capabilities.

At the core of Michael E. Porter's book "The Competitive Advantage of Nations" is a model of national competitive advantage that introduces the concept of business clusters as drivers of economy. Applying Porter's analytical framework and building on recent experience of government-driven innovative cluster development in Russia, the thesis seeks to propose an economically sound model of International Medical Education Cluster for the Russian Far Eastern Federal District.

The cluster will support Russia's engagement with Asia and complement one of the world's largest and fastest growing industries – that of healthcare - by addressing one of its most acute needs, namely the growing worldwide shortage of healthcare personnel. The proposed model capitalizes on federal policy of internationalisation of Russian higher education, unprecedented federal commitment to the accelerated socio-economic development of the Far Eastern Federal District as well as on long tradition of medical education and relevant infrastructure in the region.

As a model of a medical education cluster to be potentially emulated, a case study of the Caribbean offshore medical schools cluster is analyzed.

Along with a model of International Medical Education Cluster, the thesis includes analysis of diverse factors that are likely to impact its practical implementation, such as domestic and international political, organizational and cultural forces, as well as forecast of cluster's profitability and sustainability. Brief discussion of ideational aspects behind Far Eastern development in the context of Russian turn to Asia concludes the thesis.

Keywords

Russian Far East, regional development, cluster, national competitiveness, international medical education, healthcare, export-oriented service economy

Range of Thesis

38 070 words

Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.
2. The author hereby declares that all the sources and literature used have been properly cited.
3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague 2021 Faina Kulak _____

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LIST OF ABBREVIATIONS

APR	Asia-Pacific Region
ASEZs	Advanced Special Economic Zones
FEFD	Far Eastern Federal District
FEFU	Far Eastern Federal University
GRP	Gross Regional Product
GDP	Gross Domestic Product
IMEC	International Medical Education Cluster
OMUs	Offshore Medical Universities

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INTRODUCTION

Objective of the study

This study seeks to propose a novel approach to developing non-resource export potential of the Russian Far East. The analysis suggests that the region has the potential of securing competitive advantage in the industry of international medical education through the mechanism of clustering of existing medical universities and by scaling up and expanding their services. The initiative will require policy engagement with government at all levels, as well as local political support.

The research demonstrates that particular aspects of Russia's domestic and foreign policy – namely, reorientation towards Asia-Pacific Region, unprecedented in scale federal commitment to the accelerated socio-economic development of the Far Eastern Federal District and endorsement of cluster-based strategy of innovative development as means to achieving that end and federal programmes directed at internationalisation of Russian higher education, combined with specific international trends - such as global growth of healthcare industry, increasing worldwide shortage of public health workforce and a surge in demand for international higher education, present Russian Far East with unique opportunity. The region is well-positioned to capitalize on the above-mentioned internal and external factors and to develop the capacity for provision of cluster-based export-oriented services in the field of international medical educational. The proposed model of International Medical Education Cluster, therefore, offers a sustainable pathway to aligning Russia's national development priorities with international macro trends and to achieving consensus between local, national, and global development goals.

Methodology of the study

The study is ogranized along the five key areas. These are: contemporary situation in the Russian Far East; notions of the national competitive advantage and business clustering; state of the global healthcare industry and shortfalls in health workers; internalisation of Russian higher education; operations of the offshore medical education cluster. By considering the implications of the above trends and their interrelations, the study sets out to model a structure and key aspects of functioning of International Medical Education Cluster in the Russian Far Eastern Federal District.

In developing the arguments, the study has drawn on published literature and data. The analysis relies on data available from various Ministries of the Russian Federation, Federal

State Statistics Service, Embassies in Russia, reports of the WHO and global business consulting companies. Academic, government and news publications covering Russian Far East, regional development programmes and cluster initiatives in the in the Russian Federation, global healthcare and educational trends are examined. Application of Michael E. Porter's methodological framework of national competitiveness is used to develop the logic of the argument.

The cluster modeling that underpins this study provides example of practical application of discussed ideas and is indicative of what is possible to achieve in the region, rather than the best possible. The model is analytical and assumption-driven and involves no empirical analysis.

Structure of the study

Chapter One presents overview of the Far Eastern Federal District and traces regional development policies from 1991 to the present.

Chapter Two introduces Michael E. Porter's Theory of National Advantage and situates his notion of clustering within the context of Russian economic development initiatives.

Chapter Three explores global trend of increasing shortage of healthcare workers in both developed and developing countries and applies Porter's National Diamond Framework to assess competitive advantages of the Far Eastern Federal District.

Chapter Four analyses the case study of the Caribbean Offshore Medical Universities cluster.

Chapter Five proposes an economically sound model of export-oriented International Medical Education Cluster in the Russian Far Eastern Federal District. Seven key aspects of the model are discussed in this section.

Chapter Six concludes the study with the summary of key findings and their relevance to development of the Russian Far East, limitations of the study and suggestions for further research.

Chapter 1. RUSSIAN FAR EASTERN FEDERAL DISTRICT (FEFD) BRIEF

1.1 FEFD in national and international contexts

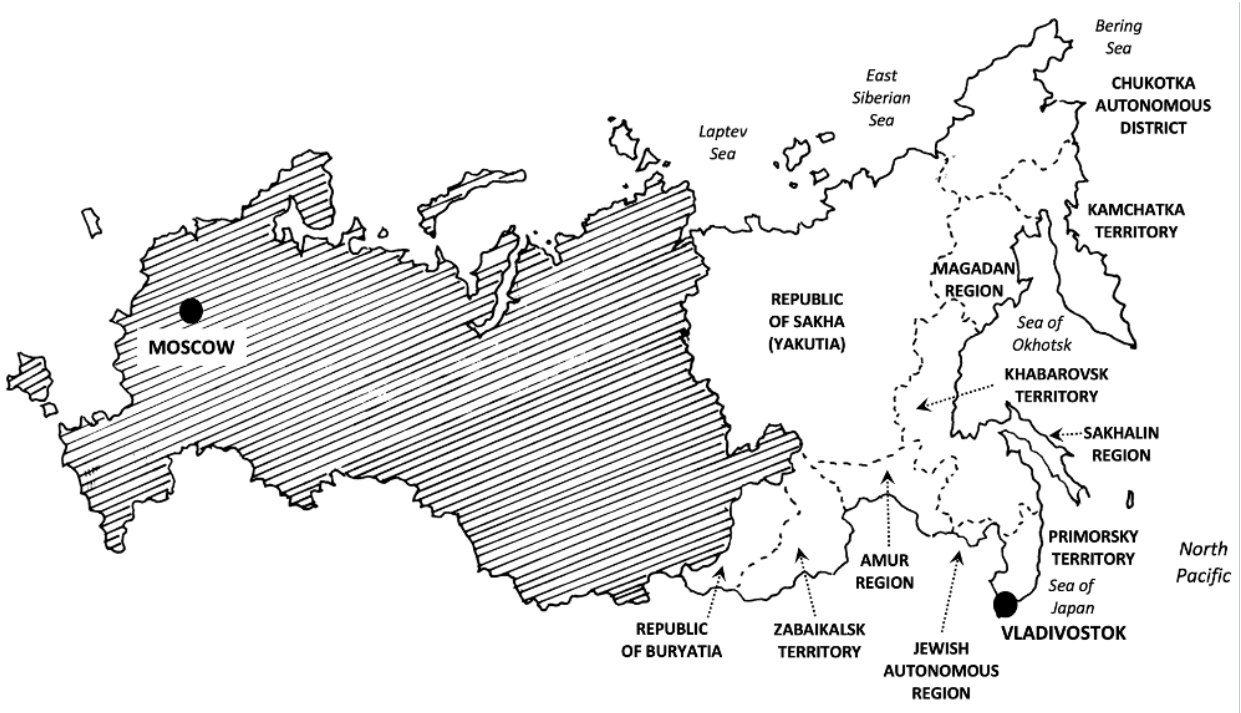
Commonly referred to as the Russian Far East, the Far Eastern Federal District (FEFD) is the largest macro-region and one of the eight federal districts of the Russian Federation [1]. It is located in the Asiatic, easternmost part of the country and borders the total of 5 states - Mongolia, China, North Korea on land and the United States and Japan and on sea. The city of Vladivostok is its regional center. [2]

Figure 1: Federal Districts of the Russian Federation[3]

[1] Added as 9th federal district in 2014 and merged with the Southern Federal District in 2016, Crimea is not recognised internationally as part of Russia.
European Parliament. (2015). *Russia's constitutional structure.*
https://www.europarl.europa.eu/RegData/etudes/IDAN/2015/569035/EPRS_IDA(2015)569035_EN.pdf
[2] Eastern Economic Forum. (n.d.). *About the Far East*. https://forumvostok.ru/en/about/
[3] Produced by author

The FEFD is divided into 11 administrative units, incorporating 7 administrative regions – Kamchatka Territory, Magadan Region, Khabarovsk Territory, Sakhalin Region, Primorsky Territory, Amur Region and Zabaikalsk Territory, and 4 ethnic republics - Chukotka Autonomous District, Republic of Sakha (Yakutia), Republic of Buryatia and Jewish Autonomous Region.[4]

Figure 2: Far Eastern Federal District [5]

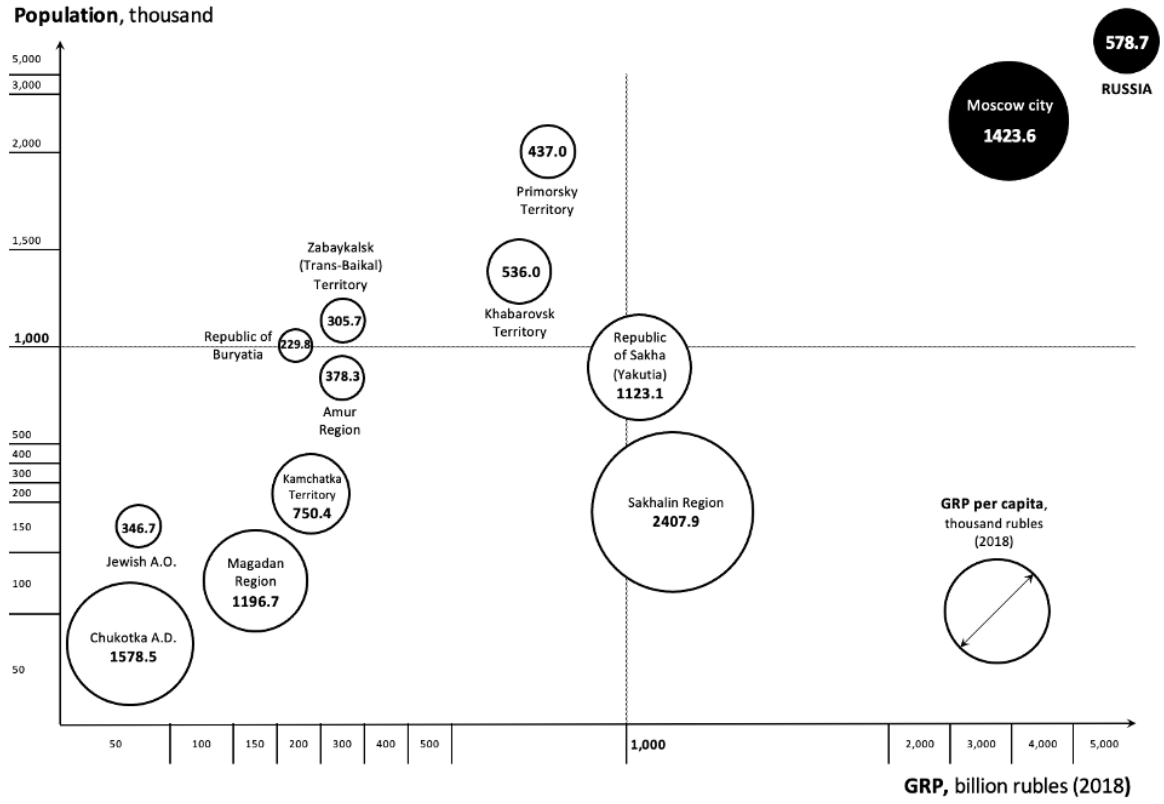


The constitutive entities of the FEFD vary substantially in size, as *Figure 2* attests. The spread in their populations, figures of Gross Regional Product and of GRP per capita, as well as in other socio-economic indicators, is also substantial.

Figure 3 maps administrative units' population[6] along the vertical axis, their GRP[7] along the horizontal axis, with the circle denoting each unit and the size of the circle representing its GRP per capita[8] (with the GRP per capita figure indicated in the circle). Table with exact figures is available in *Annex 1*.

[4] Eastern Economic Forum. (n.d.). *About the Far East*. https://forumvostok.ru/en/about/
[5] Produced by author
[6] Ministry for the Development of the Russian Far East and Arctic (n.d.). https://minvr.gov.ru
[7] Fedorov, G., Kuzentsova, T. (2020). *Datasets on the GRP of Russian regions, GRP sectoral composition and growth rates in 2013–2018*. *Data Sets*. PubMed Central. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7718172/
[8] Ibid., Table 3.

Figure 3: Population, GRP and GRP per capita of 11 administrative units of the FEFD [9]



Primorsky, Khabarovsk and Zabaykalsk Territories stand out by being the most populous, with 1.3, 1.9 and 1.06 million residents, respectively. Chukotka, Magadan and Jewish A.R., with population of 50 000, 140 000, 158 000, respectively, are the least populated.

Sakhalin Region and Republic of Sakha (Yakutia) are clearly in the lead on the GRP indicator due to large presence of natural resources, namely offshore oil and gas deposits in case of the former, and diamonds and gold in case of the latter. Khabarovsk and Primorsky Territories are not far behind these two leading regions, with their high GRP being attributed to fish and forest resources.

Low population numbers and huge resource base result in high GRP per capita in majority of the administrative units of the Far East, with six entities exceeding or almost exceeding the Russian average. GRP per capita of 2 entities - Sakhalin and Chukotka – overtake even Moscow City, the richest in the country. Republic of Sakha (Yakutia) and Magadan are close to Moscow city's high GRP per capita figure.

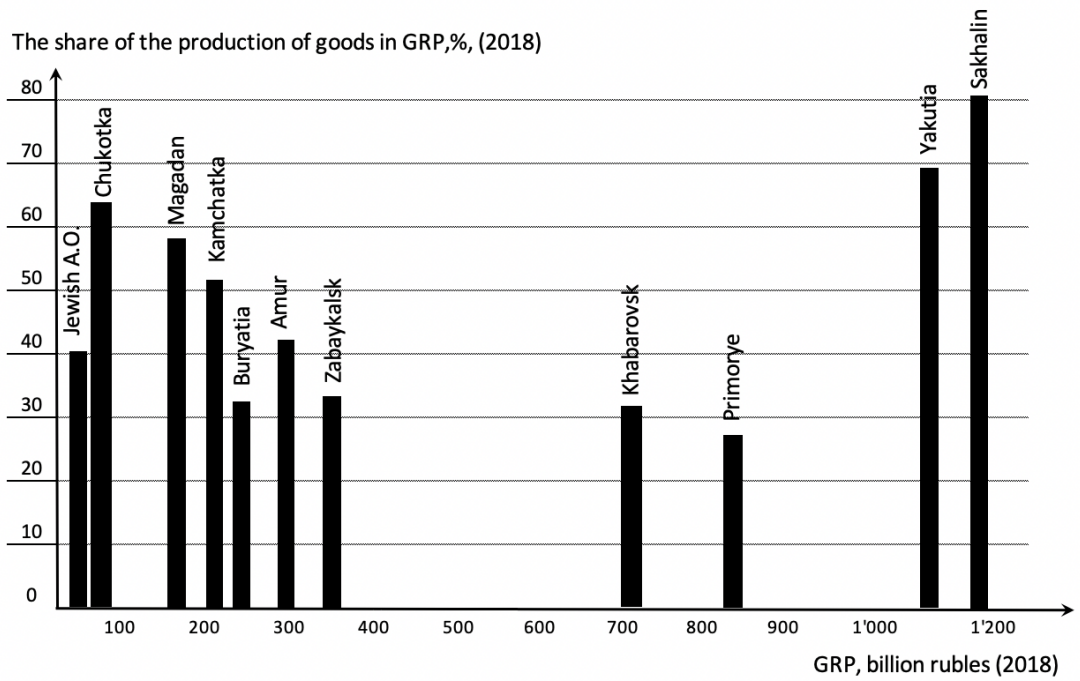
Based on 2015 GRP per capita figures, Sakhalin, Chukotka and Magadan belong to the list of top 5 regions of Russia. In fact, Sakhalin is comparable to Singapore and Chukotka - to

[9] Complied by the author based on the following source:
Fedorov, G., Kuzentsova, T. (2020). *Datasets on the GRP of Russian regions, GRP sectoral composition and growth rates in 2013–2018. Data Sets*. PubMed Central. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7718172/

Hong Kong SAR by the measure of their GDP per capita.[10] Noteworthy is the fact that of all federal districts of Russia over five years, between 2013 and 2018, the only the regions of Russia that witnessed an increase in GRP per capita were the Far Eastern ones.[11] As of 2019, the indicator of GDP growth in the Far East has exceeded Russian national average by a facrtor of three.[12]

Indicator of GRP sectoral composition[13] that breaks down regional economic activity into production of goods and production of services demonstrates variance among that constitutive entities of the FEFD, as shown in *Figure 4*.

Figure 4: The share of production of good in FEFD's 11 administrative units[14]



Here again Sakhalin Region and Republic of Sakha (Yakutia) are in the lead on the share of the production of goods: 80.4% and 68.6% of their GRP, respectively, as the regions' economy relies primarily on natural resources extraction. In three other regions, Chukotka, Magadan and Kamchatka, the share of productions of goods exceeds 50%. Regions where

[10] The World Bank (2018). *Rolling back Russia's spatial disparities. Re-assembling the Soviet Jigsaw under a market economy*, p.11. http://documents1.worldbank.org/curated/en/283561528098640490/pdf/126805-WP-REVISED-PUBLIC.pdf
[11] Fedorov, G., Kuzentsova, T. (2020). *Datasets on the GRP of Russian regions, GRP sectoral composition and growth rates in 2013–2018*. *Data Sets*. PubMed Central. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7718172/
[12] Russia Briefing News. (2019). *Vladivostok & Russian Far East to be developed as significant north-east Asian resource & trade hub*. https://www.russia-briefing.com/news/vladivostok-russian-far-east-developed-significant-north-east-asian-resource-trade-hub.html/
[13] Fedorov, G., Kuzentsova, T. (2020). *Datasets on the GRP of Russian regions, GRP sectoral composition and growth rates in 2013–2018*. *Data Sets*, Figure 5. PubMed Central https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7718172/
[14] Complied by author based on referenced date

market services dominate over the production of goods are also present, with Primorsky Territory being a notable example.

The sheer expanse of the Russian Far East, as *Figure 5* depicts, implies its paramount national importance. The land area of the FEFD is 6.953 million km² - to illustrate its size in perspective, it is equivalent of two-thirds the size of China or 88 times the land area of the Czech Republic. The region is not only massive but also very diverse, spreading over several climatic zones from the polar to the subtropical areas.[15]

Figure 5: The Russian Far East [16]

The statement from 2017 World Bank Report succinctly describes challenging situation in the region: it is "the least developed region of Russia: (with) the smallest Gross Regional Product and the biggest territory."[17] Covering a vast expanse that amounts to 41% of Russia's entire area, the FEFD, with its 8.1 million residents, [18] accounts for only 5,6% of Russian

[15] Buznik V.M. (n.d.). *16 Russian Far East environmental problems.* The National Academies Press. https://www.nap.edu/read/10240/chapter/17

[16] Produced by author

[17] World Bank. (2017). *The Russian Federation: An Exploratory Assessment of Transport Connectivity*, p.44 https://openknowledge.worldbank.org/bitstream/handle/10986/30046/116499.pdf?sequence=1&isAllowed=y
The World Bank report relies on SUST-RUS database consisting of seven regional matrices or schemes, with each region corresponding to the administrative division of the Russian Federation prior to 2010 when North Caucasus still formed part of the Southern Federal District.
Details on the SUST-RUS database can be found at https://cordis.europa.eu/project/id/213091/reporting
North Caucasian Federal District, as an independent federal district, has the lowest GRP among all federal districts of Russia, with the figure eing equal to less than half of the GRP of the FEFD in 2019.
Ranking of Russia's federal districts by GDP measurescan be found at https://mrd.gks.ru/folder/27963, *Валовой региональный продукт по субъектам Российской Федерации в 1998-2019гг. [Gross regional product by constituent entities of the Russian Federation in 1998-2019]*
Under the new administrative division and as of 2020, models for forecasting GRP still used seven Russian federal districs, excluding of North Caucasian District. Details can be found at https://rjmf.econs.online/en/2020/3/estimating-gross-regional-product-leading-indicator/

[18] Federal State Statistics Service of the Russian Federation. (2021. *Оценка численности постоянного населения на 1 января 2021 г. и в среднем за 2020 г. [Estimated resident population as of January 1, 2021 and on average for 2020.]*

population. Despite being abundantly endowed with great mineral and energy wealth in form of strategic reserves of coal deposits (1/3 of country's total), oil and natural gas (mostly in and around Sakhalin), mineral resources such as diamonds and gold (98% and 50% of country's total extraction, respectively), iron ore, copper, silver, zinc, in addition to resources in the forests and seas (30% of country's total forest area is enclosed by the region and 40% of country's total seafood extraction is carried our within its territory)[19], the largest region of Russia, accounts for staggering 5% of Russia's GDP.

With "total of 81% of all diamonds of the Asia-Pacific region, 51% of forests, 37% of fresh water, 33% of aquatic biological resources, 32% of gold, 27% of gas, and 17% of oil… concentrated in the Far East of Russia",[20] its contribution to the APR's economy remains negligible.

This paradoxical situation is explained by a variety factors that have historically contributed to region's backwardness. These factors are said to be numerous, complex and of chronic nature, encompassing social, economic, demographic and security issue, all of which have been exacerbated in the immediate aftermath of the collapse of the USSR and during subsequent transition to an open market economy. [21]

Domestically, the territories in the FEFD have traditionally supplied natural resources for the entire country, with the coastal areas being of great military importance. Today, the Far East is said to hold valuable geopolitical and economic assets for Russia, as region's immediate neighborhood represents access to additional reserves and potential markets. Russia's attempts to maintain warm relations with China in the recent years make the territories especially significant as Russia establishes itself as an Asia-Pacific power.[22]

Internationally, after decades of the Soviet-era isolation of the Russian Far East from the outside world, the course was set at deepening economic interdependence and non-politicized interaction with major Pacific powers in order to bring to life the notion of Pacific Russia.[23] Post-2014, Russian engagement with Asia has gained new momentum in light of Western economic sanctions due to standoff in Ukraine.

Notwithstanding numerous challenges, the FEFD's clear advantage is its unbeatable

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https://rosstat.gov.ru/search?q=+19.03.2021+%22Оценка+численности+постоянного+населения+на+1+января+2021+г.+и+в+среднем+за+2020

[19] Ibid.

[20] Krutakov, L. (2018). *Advanced special economic zones in the Russian Far East: a secret resource for Asian market growth.* https://roscongress.org/en/materials/tor-rossiyskogo-dalnego-vostoka-sekretnyy-resurs-rosta-rynka-azii/

[21] Shkuropat, A. (2016). *Round Table on Russia as an economic power in the Pacific*. https://www.brookings.edu/articles/round-table-on-russia-as-an-economic-power-in-the-pacific/

[22] Nijman, J., Shin, M., Muller, P. *Regions: Realms, Regions and Concepts*, p.226. Wiley, 2020.

[23] Shkuropat, A. (2016). *Round Table on Russia as an economic power in the Pacific*. https://www.brookings.edu/articles/round-table-on-russia-as-an-economic-power-in-the-pacific/

location - being at the heart of the booming Asia-Pacific region and neighboring world's three most powerful economies, that of the US, China and Japan. Until now, however, the region has failed to capitalize on its geographic position to develop its economic potential and is still very far from becoming a significant economic actor in the Asia-Pacific. The urgency of the accelerated development of the Far Eastern regions was recognized as one of the main national interests for Russia and has been raised to the level of "the national priority for the entire 21st century".[24]

1.2 Development challenges

Due to its many vulnerabilities, the Russian Far East has been referred to as "a region of troubles" – both in terms of difficult natural and bureaucratic environments.[25] Inhospitable climate, some of the world's harshest weather conditions, difficult terrain and lack of infrastructure make the territory unattractive for settlement and challenging for exploitation of natural resources.

One issue appears to stand above all else. In three decades after 1991, the FEFD has lost over 20% of its population.[26] Dire depopulation due to migration outflow of residents and high mortality is considered the most acute regional problem. Poor social indicators, such as life expectancy and birth rate that are among lowest in the country and crime poverty rates that are among the highest, reinforce demographic decline in this undeveloped region.[27] Apart from having alarming socio-economic implications, the trend has raised national security concerns due to region's long border with China and the growth of Chinese influence in the region.

Encouraging immigration, particularly from China, to offset depopulation in the region is said to be an unavoidable measure, if economic isolation of the region and its labour shortage are to be addressed. Such policy, however, enjoys little popularity among Russians who fear uncontrolled immigration and provokes conflicting sentiments among local population that regard influx of Chinese nationals with suspicion if not outright opposition.[28] The sentiment is

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[24] Ministry for the Development of the Russian Far East and Arctic (n.d.). https://eng.minvr.ru
[25] Lee, R., Lukin, A. (2015). Russia's Far East. New Dynamics in Asia-Pacific and Beyond. Excerpt. Lynne Rienner Publishers. https://www.rienner.com/uploads/56254393e739b.pdf
[26]Government of the Russian Federation. (2020). National Program of socio-economic development of the Far Eastt for the period up to 2024 and until 2035.
https://portnews.ru/upload/basefiles/2342_ppchrpopgchrpapmpmpa%20chrpapzpvpichtpichja%20pDpaplchpnpepgpo%20pVpochschtpopkpa.pdf
[27] Kuhrt, N. (2012). *The Russian Far East in Russia's Asia policy: Dual integration or double periphery?*, p.11 Europe-Asia Studies.
https://www.researchgate.net/publication/254247857_The_Russian_Far_East_in_Russia%27s_Asia_Policy_Dual_Integration_or_Double_Periphery
[28] Ibid., p.12.

not unfounded - 8 million of the Far Eastern residents are matched by over 100 million in Chinese provinces across the border.[29]

Attracting foreign investment, essential for the development of the vast region disadvantaged by climatic conditions, has been a major challenge for the FEFD. In 2017, a mere 7.5% of its investments were received from foreign sources, with almost all being concentrated in the natural resources sector, and the number of local enterprises with foreign investment stood at mere 2.5%. This exposes the difficulties the region experiences in attempts to diversify into other than raw materials products for exports.[30]

Over-reliance on exploitation of non-renewable resources has long become a concern. Natural resources used as a primary factors of competitive advantage of the Russian Far East, yielding high returns, solving immediate economic problems and placing the region among centers of economic growth. Sustainability of this industrial development model, however, continues to be questioned, as it fails to take climate change and adverse effects on nature into account.[31]

Attention has been attracted to the natural endowments of the region that act as both blessing and a curse in relations with the Asia-Pacific. While creating easily exploitable opportunities for economic growth, "the resource superiority…embodies a key risk (of) becoming nothing more than a raw materials supplier to Asia. "[32]

Not to be omitted is the fact that domestically, managing relations between Kremlin and the Russian Far East have never been an easy task for the federal government. With 9000 km separating Moscow from Vladivostok, consolidating the enormous territory of the FEFD and ensuring its integrity has always been and remains an important concern in light of secessionist forces seeking political and economic independence for the region. The issue is often raised that integration into the Asia-Pacific must not come at a price of weakening the ties of the region to Moscow and undermining the ongoing efforts of intrinsically bringing the peripheral Far Eastern areas closer to the core area of European Russia. Economic revival of the FEFD is thus said to be faced with the dual challenge of integrating the region with the rest

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[29] RadioFreeEurope/RadioLiberty. (2020). *On Russia's Far Eastern frontier, vast stretches of free land, but little interest*.https://www.rferl.org/a/on-russia-s-far-eastern-frontier-acres-of-free-land-but-little-interest/30848156.html https://www.rferl.org/a/on-russia-s-far-eastern-frontier-acres-of-free-land-but-little-interest/30848156.html

[30] Kapoor, N. (2019). *The long road ahead: Russia and its ambitions in the Far East*. Observer Research Foundation. https://www.orfonline.org/expert-speak/the-long-road-ahead-russia-and-its-ambitions-in-the-far-east-55378/

[31] Stepanova, N., Gritsenko, D., Gavrilyeva, T., Belokur, A. (2020). *Sustainable Development in Sparsely Populated Territories: Case of the Russian Arctic and Far East.* p.17 https://www.researchgate.net/publication/340029028_Sustainable_Development_in_Sparsely_Populated_Territories_Case_of_the_Russian_Arctic_and_Far_East

[32] Krutakov, L. (2018). *Advanced special economic zones in the Russian Far East: a secret resource for Asian market growth.* https://roscongress.org/en/materials/tor-rossiyskogo-dalnego-vostoka-sekretnyy-resurs-rosta-rynka-azii/

of Russia while maintaining centralized policy formulation, and simultaneously integrating the region into the Asia-Pacific markets and world economy while allowing for sufficient regional autonomy[33] - not an easy task to accomplish given the current international and domestic climate.

Under the impact of the new rounds of regime of Western sanctions and in light of national but also of global economic slowdown and resulting uncertainty, the issues plaguing the FEFD are likely to become more pronounced, making ambitious regional development goals difficult, in for impossible, to attain.

1.3 Growth Opportunities

The full potential the Russian Far East clearly remains underutilized, and the benefits of its location are still unexplored.

Regional economic cooperation has been seen as key to securing benefits for the region. "Pacific Strategy", published in 2010, signalled a change in Russian policy, presenting "a new view of Russia as a Euro-Pacific country, not merely European or Eurasian".[34] Policy document highlights the similarities between states of the Asia-Pacific and Russia in that they all fall into a category of non-Western type of democracies combining democratic elements with particularities of their own political and religious culture, thus presenting a potential for successful integration between theses states on continental scale.

Apart from political considerations, rapid economic and technological transformation of the lucrative Asia-Pacific region that "accounts for 59% of the world's GDP and 50% of foreign direct investment (and)…is the world's largest importer of goods and services, with total revenue of more than USD 8 trillion",[35] dictates Russia's presence in Asia and shapes special programmes being launched in the Far East.

Efforts to promote Far Eastern integration into Asia-Pacific economies have been focused primarily on China. Despite being region's main trading partner, Chinese investments in the area were negligible, though not for the lack of interest from Chinese side. Only recently, as a reflection of Russia's growing economic interest in increasing cooperation with China, the

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[33] Kuhrt, N. (2012). *The Russian Far East in Russia's Asia policy: Dual integration or double periphery?,* p.10. Europe-Asia Studies.
https://www.researchgate.net/publication/254247857_The_Russian_Far_East_in_Russia%27s_Asia_Policy_Dual_Integration_or_Double_Periphery
[34] Ibid., p.21.
[35] Krutakov, L. (2018). *Advanced special economic zones in the Russian Far East: a secret resource for Asian market growth.* https://roscongress.org/en/materials/tor-rossiyskogo-dalnego-vostoka-sekretnyy-resurs-rosta-rynka-azii/

Chinese companies have been given a permission to acquire stakes in major projects, such as those in shipping and energy sectors.[36]

China is but one many important actors in the Russian Far East and observers suggest that integration with the APR calls for cooperation with other partners than China. Closer ties with both the US and Japan in the Pacific may present the region with multiple opportunities, assuming that the political climate would allow for the negative aspects of the relations to be mitigated or better yet, resolved, such as the case of Japan's 60-year-old territorial dispute with Russia over the southernmost Kuril Islands that continues to compromise bilateral relations. Securing Japanese investments in technologies is said to be crucial for carrying programs envisioned in the Russian Far East and would necessitate strengthening ties with Japan.[37]

Prospects for mutually beneficial long-term partnership are abundant in case of Indian companies, whose current operations extend to the areas of coal mining, oil and gas, as well as diamond cutting. Analysts suggest that future partnerships may develop in the areas of tourism, pharmaceuticals and healthcare. [38]

Potential positive aspects of internal dimension of linking Russia to Asia through the Far Far East are being noted: "the new interest in turning the Russian Far East into an Asia-Pacific gateway may still have the side-effect of integrating the Far Eastern federal subjects more closely with the rest of the country, providing for more balanced development throughout the Federation." [39]

Competitiveness of the FEFD, currently tied to natural resources, leaves the region with few options for its development. Observers warn that in key Asian markets, the demand for Russian raw materials exports is steadily decreasing. The future growth trend is said to lie in development of consumer- and service-oriented sectors of economy.[40] While the service sector forms the largest sector of the economy in advanced, developed nations, in Russia in general, and in the Far East in particular, service-related industries are poorly developed and have limited potential for export. Along with Moscow region, the cities of Moscow and St.

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[36] Gould-Davies, N. (2016). *Book Review: Russia's Far East: new dynamics in Asia Pacific and beyond by Rensselaer Lee and Artyom Lukin.* https://www.researchgate.net/publication/304630760_Russia%27s_Far_East_new_dynamics_in_Asia_Pacific_and_beyond_By_Rensselaer_Lee_and_Artyom_Lukin

[37] Kuhrt, N. (2012). *The Russian Far East in Russia's Asia policy: Dual integration or double periphery?,* p.20. Europe-Asia Studies. https://www.researchgate.net/publication/254247857_The_Russian_Far_East_in_Russia%27s_Asia_Policy_Dual_Integration_or_Double_Periphery

[38] Kapoor, N. (2019). *The long road ahead: Russia and its ambitions in the Far East*. Observer Research Foundation. https://www.orfonline.org/expert-speak/the-long-road-ahead-russia-and-its-ambitions-in-the-far-east-55378/

[39] Ibid.

[40] Blakkisrud, H. (2017). An Asian Pivot Starts at Home: The Russian Far East in Russian Regional Policy. https://link.springer.com/chapter/10.1007/978-3-319-69790-1_2

Petersburg are the only regions with services accounting for a high share in GRP, the so-called "postindustrial regions". Unsurprisingly, the two cities are also "the most economically developed subjects of the Russian Federation, (with) the lowest share of goods in GRP, 22.9% and 25.6% respectively".[41] Should sustainable ways of developing services with export potential be found in the FEFD, region's competitiveness is likely to be improved.

1.4 Government policy in the FEFD

When it comes to policies of regional development in post-1991 Russia, the approach of the federal government has undergone many changes, oscillating between initiated and then reversed decentralization of power and resources. Diverse regional programs were primarily aimed at addressing and equalizing startling spatial disparities between the regions of Russia that are unparalleled in the world in their scale, scope, and starkness. [42]

During the centrally planned Soviet system, the Far East was incorporated into closed domestic distribution of industry, receiving substantial financial assistance from the center. Collapse of economic linkages in the post-1991 resulted in a severe economic recession in the region. As the first signs of improvement of the Russian economy became apparent in years that followed, the situation in the Far East kept worsening.[43]

Federal programmes, implemented in the FEFD over the past 25 years, have achieved significant success in generating positive economic tendencies, but the region continues to struggle in transforming them into social infrastructure that would improve population conditions. Quality of life of Far East residents that remains poor.

In 1996, a much-needed programme for the development of the Russian Far East has been adopted but failed to yield results.[44] In 2002 and 2006, new programmes were targeted at not only industrial but also socio-economic development of the region, delivering mixed results.[45]

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[41] Fedorov, G., Kuzentsova, T. (2020). *Datasets on the GRP of Russian regions, GRP sectoral composition and growth rates in 2013–2018*. *Data Sets,* Table 3. PubMed Central. https://www.sciencedirect.com/science/article/pii/S2352340920314335
[42] World Bank. (2028). *Rolling back Russia's spacial disparities. Re-assembling the Soveit Jigsaw under a market economy*, pp.12,33. http://documents1.worldbank.org/curated/en/283561528098640490/pdf/126805-WP-REVISED-PUBLIC.pdf
[43] Cabinet Office, Government of Japan. (n.d.). C*hapter 2. The present state of the Russian Far East and its future direction*. https://www5.cao.go.jp/e-e/doc/russia2-e-e.html
[44] Kuhrt, N. (2012). *The Russian Far East in Russia's Asia policy: Dual integration or double periphery?* p.13. Europe-Asia Studies.
https://www.researchgate.net/publication/254247857_The_Russian_Far_East_in_Russia%27s_Asia_Policy_Dual_Integration_or_Double_Periphery
[45] Blakkisrud, H. (2017). *Russia's turn to the East: The Ministry for the Development of the Far East, and the domestic dimension*, p.1. Norwegian Institute of International Affairs.
https://www.jstor.org/stable/resrep08015?seq=1#metadata_info_tab_contents

To materialize an ambitious agenda of "Pacific Strategy" in which the Russian Far East were to play a key role of a "springboard, or gateway"[46] to Asia, complex modernization of the Far East and creation of a whole new economy in the region were required. The long-term development strategy for the Russian Far East was subsequently adopted. It envisioned aiding the development of the region by providing energy and natural resources supplies to neighbors like Japan, China and South Korea. To implement the vision, the Ministry for the Development of the Far East (MDFE) was created in 2012, tasked with overseeing efficient regional development. Progress in its work was limited due to conflicts over the overlap of responsibilities with with the Ministry of Regional Development that was eventually abolished in 2014.[47] Reflecting the growing importance of the Arctic with its resource potential and the economic potential of the Northern Sea Route, Arctic issues have been incorporated in the existing Ministry of the Far East, resulting in creation of the Ministry for the Development of the Russian Far East and Arctic in 2019.[48]

Along with the MDFE, created to oversee the implementation of federal programmes, additional agencies were established in 2015. The Agency for the Development of Human Capital in the Far East,[49] the Far East Investment and Export Agency and the joint stock company Far East Development Corporation were tasked with staffing the enterprises in the region, attracting new residents, national and foreign investments and operating advanced special economic zones.[50]

It has been estimated that more than 1 trillion US dollar worth of investments would be needed for FEFD to match the level of economic development of Central Russia [51], and attracting capital to the region, particularly large foreign investments, became the main priority of the federal government. Among key mechanisms put in place to incentivize private investors and encourage migration was the operation of Advanced Special Economic Zones (ASEZs) as territories characterized by preferential tax conditions and simplified regulation, operation of

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[46] Blakkisrud, H. (2017). *An Asian Pivot Starts at Home: The Russian Far East in Russian Regional Policy*. https://link.springer.com/chapter/10.1007/978-3-319-69790-1_2

[47] Blakkisrud, H. (2017). *Russia's turn to the East: The Ministry for the Development of the Far East, and the domestic dimension*. Norwegian Institute of International Affairs. https://www.jstor.org/stable/resrep08015?seq=1#metadata_info_tab_contents

[48] Staalesen, A. (2018). *Russia gets ministry of the Far East and Arctic*. https://thebarentsobserver.com/en/arctic/2019/01/russia-gets-ministry-far-east-and-arctic

[49] Ministry for the Development of the Russian Far East. (2018). *Agency for human capital development in the Russian Far East.* http://wapes.org/en/system/files/03_prezentaciya_timakov_v.v._vagsz_angl.pdf

[50] Blakkisrud, H. (2017). *Russia's turn to the East: The Ministry for the Development of the Far East, and the domestic dimension*. Norwegian Institute of International Affairs. https://www.jstor.org/stable/resrep08015?seq=1#metadata_info_tab_contents

[51] Volynchuk, A., Pestsov, S., Kozlov, L., Volynchuk., Y. (2018). *Regional Policy of Russia in the Far East: Why Does It Go Wrong and What Is Apparently Seceded,* p.4. Journal of Politics and Law. https://pdfs.semanticscholar.org/777b/aab24e9cdb953852d869ca56f3e62aa943ae.pdf?_ga=2.136999920.1513565651.1615551815-1289974801.1615551815

special regime in the Free Port of Vladivostok with customs and tax benefits, provisions of concessional loans, administrative preferences, tax breaks and support from the state development institutions given as incentives to large companies as well as small and medium-sized businesses.[52] The concept of Priority Development Areas (PDAs) was introduced to designate economic areas with even more favorable business conditions of deregulation and tax incentives, with 18 PDAs created in the FEFD by 2018. Plans were made for creation of no less than 10 globally competitive PDAs in the Far East. Formation of these areas was based on the so-called clustering approach that relies on grouping together of interconnected enterprises, leading to an increased competitive advantage of the business.[53]

In 2013, the milestone moment in the history of the Russian Far East occurred, when the region was declared a national priority for the 21st century.

Comprehensive programme "Strategy for the Socioeconomic Development of the Far East and Baikal Region until 2025" was adopted in 2013, aiming to make regional economies more competitive and diversified with the outlook of improving social and demographic situation in the regions. [54] Among the goals of the programme was implementation of regional cluster policy and increasing the share of products with high added value.

Since 2015 annual international Eastern Economic Forum has been held in Vladivostok, with a specific mission of encouraging foreign investments from countries of Asia-Pacific, developing business ties and creating opportunities for further cooperation. 5 years after its initiation, the following results are reported: over 40 legislative initiatives have been adopted, 20 ASEZs and 5 free ports are being operated, resulting in over 1,780 new investment projects and 230 new enterprises. As of today, 17 different countries, from China to New Zealand, invest in the Far East. Economic growth in the region, exceeding 4%, is a double of the the Russian national average.[55]

The objective has been set by the presidential administration to further increase economic growth in the FEFD, up to 6% per year, and to achieve quality of life indicators that would also comes to exceed the Russian national average. [56]

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[52] Blakkisrud, H. (2017). *Russia's turn to the East: The Ministry for the Development of the Far East, and the domestic dimension*, p.2. Norwegian Institute of International Affairs. https://www.jstor.org/stable/resrep08015?seq=1#metadata_info_tab_contents

[53] Volynchuk, A., Pestsov, S., Kozlov, L., Volynchuk., Y. (2018). *Regional Policy of Russia in the Far East: Why Does It Go Wrong and What Is Apparently Seceded,* p.5. Journal of Politics and Law. https://pdfs.semanticscholar.org/777b/aab24e9cdb953852d869ca56f3e62aa943ae.pdf?_ga=2.136999920.1513565651.1615551815-1289974801.1615551815

[54]Government of the Russian Federation. (20213*). State programme: Socioeconomic development of the Russian Far East and the Baikal region*. https://government.ru/en/docs/1158/

[55] Interfax. (2020). *Program for socio-economic development of Far East through 2035 to be approved shortly - Mishustin*. https://interfax.com/newsroom/top-stories/69575/

[56] The Eastern Economic Forum. (n.d.). *About the Eastern Economic Forum*. https://forumvostok.ru/en/about-the-forum/

Overall, the complex of measures aimed to support the economic development through foreign funding of the FEFD macro-region proved to be highly beneficial. In the past 6 years, the region has managed to attract 33% of all FDI received by Russia, and industrial growth has in the Far East has been reported as being three times the national average. Over two thousand investment projects and more than 180,000 jobs have resulted from the state initiatives. [57]

On the other hand, observers note that in social sphere only limited results have been secured. A substantial increase in investments and financing of the FEFFD did take place but it failed to translate into the growth of local economy or in improved the quality of life of the local population.[58]

Numerous attempts have been made to address the most pressing issue, that of regional depopulation, with its myriad implications. Unique social programmes have been developed to support residents and businesses in the Far East. In 2016, demographic strategy, the "State Program to Assist Voluntary Resettlement of Compatriots Living Abroad", was put in place to encourage migration. The focus was placed on settling the FEFD with attracting young, skilled and qualified ethnic Russians from Central Asia, CIS countries and with those returning from abroad. [59] Until now, however, the number of interested applicants was in the range of several hundreds – a figure that is clearly unable to forestall sliding demographics in the region.

To stimulate the development of unused territory and to assist resettlement, the "Far Eastern Hectare" [60] and the "Far Eastern Mortgage" [61] programs of state subsidies were launched in 2016, allowing Russian citizens to receive up to one hectare of free land for settlement in area in the Far East to use for any purposes and enabling the Far Easterners to obtain a 2% mortgage loan. So far, over 70 thousand people have been given free land to build houses and farms.

In the aftermath of Russian Prime Minister's completion of the Far East tour, the National Program for the Far East Development has been approved in September 2020, becoming a milestone in region's development.[62] It lays down long-term plans for development

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[57] Interfax. (2020). *Program for socio-economic development of Far East through 2035 to be approved shortly - Mishustin*. https://interfax.com/newsroom/top-stories/69575/

[58] Aganbegyan, A. (2019). *Development of the Far East: A national program in the context of national projects*. Economic Research Institute, Far Eastern Branch, Russian Academy of Sciences. https://ideas.repec.org/a/far/spaeco/y2019i3p165-181.html

[59] Liou, S. (2018). *Chinese Immigration to the Russian Far East*, p.7. Russian Analytical Digest, no. 230. https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/pdfs/RAD230.pdf.

[60] *Far Eastern hectare*. (2016). Ministry for the Development of the Russian Far East and Artcic. https://eng.minvr.ru/activity/razvitie-msp-i-konkurentsii/dalnevostochnyy-gektar/

[61] Bank for Development and Foreign Economic Affairs (Vnesheconombank). (n.d.). *Far East residents will receive a mortgage at 2% per annum*. (n.d.). ВЭБ.ДВ. https://www.fondvostok.ru/en/press/publications/far-east-residents-will-receive-a-mortgage-at-2-per-annum/

[62] R*F government approves national programme for Far East development*. (n.d.). PortNews IAA. https://en.portnews.ru/news/302362/

of the macro-region through 2035, with particular attention being allocated to social aspects. The mission of the new state policy is "to create globally competitive conditions for investment and doing business in the Far East that will bring private investments necessary for the accelerated economic development of the region, followed by new jobs and a new quality of the social sphere, which will in turn create attractive conditions for people's lives while also increasing the number of economic ties within the region."[63]

The programme plays particular attention to analyzing competitive advantages of each of the 11 administrative units that make up FEFD, and envisions creation of recreational, medical and industrial clusters, with each of all 11 regions establishing new tourism industry clusters.[64]

To sum up, regional policy in the Far East is said to be achieving some results, albeit with difficulties and not within the timeframe planned. Among the major reasons impending the progress of implementation of federal programs, the following points are noted: the disproportional allocation of the economy into the sector of commodities; poor understanding of specifics of region's functioning at the federal level; instability of financial support for regional policy; strong state regulation wit little delegating authority to the local authorities, but also non-observance of the basics of the clustering theory.

Optimistic predictions are made for stabilization of demographic and economic situation in the Russian Far East. "The attention of the federal center to the Far East will continue, which will keep the demography and economy of the region from the further recession, the same will support the interest of business - both Russian and foreign - to search for new instruments for the regional development." [65]

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[63] Government of the Russian Federation. (2020). *National Program of socio-economic development of the Far Eastt for the period up to 2024 and until 2035,* p.5.
https://portnews.ru/upload/basefiles/2342_ppchrpopgchrpapmpmpa%20chrpapzpvpichtpichja%20pDpaplchpnpepgpo%20pVpochschtpopkpa.pdf

[64]Government of the Russian Federation. (2020). *National Program of socio-economic development of the Far Eastt for the period up to 2024 and until 2035.*
https://portnews.ru/upload/basefiles/2342_ppchrpopgchrpapmpmpa%20chrpapzpvpichtpichja%20pDpaplchpnpepgpo%20pVpochschtpopkpa.pdf

[65] Volynchuk, A., Pestsov, S., Kozlov, L., Volynchuk., Y. (2018). *Regional Policy of Russia in the Far East: Why Does It Go Wrong and What Is Apparently Seceded,* p.8. Journal of Politics and Law.
https://pdfs.semanticscholar.org/777b/aab24e9cdb953852d869ca56f3e62aa943ae.pdf?_ga=2.136999920.1513565651.1615551815-1289974801.1615551815

1.5 Summary

The Far Eastern Federal District is one of the biggest yet on of the least developed macro-regions of Russia with extremely small contribution to the country's GDP. Nature-given advantages of the region, such as substantial area, geographic location that favors Asia-Pacific integration and richness in natural resources go hand in hand with economic underdevelopment, alarming demographic decline, poor social and living standards and resulting national security concerns due to region's remoteness from Russia's capital.

Ongoing efforts have been dedicated to strengthening the role of the Russian Far East in national and international context. Improving the life of Far Eastern territories is seen as a must in contemporary Russia, so much so that their development has become a national policy priority for the century ahead. The region is to become the key to an ambitious policy of reorienting Russian economy towards Asia.

Federal initiatives aimed at helping the region to reach its potential have clearly bore fruits, and investment climate in the FEFD is said to having been revived. Nevertheless, it is evident that contribution of the Russian Far East to Pacific Rim's business activity remains insufficient and the benefits that the region could potentially secure for its development are far from being explored.

The most recent government strategy of fast-paced reorientation of economic and foreign policy towards the East presupposes accelerated economic development of the FEFD. Creation of globally competitive conditions for investments and business activity is seen a vital component of this strategy and have merited a national program devoted to the issue, where the direction towards diversification of region's economy away from natural resources exports is prominently featured.

To tackle development challenges that the Russian Far East continues to face and in hope of benefiting from lucrative opportunities presented by the fast-growing Asian markets, the Asia-Pacific-oriented geo-economic strategy should focus on serving economically promising areas and directions in promising markets.

Chapter 2. ENHANCING COMPETITIVE ADVANTAGE OF THE FEFD

2.1 Michael E. Porter's Theory of National Advantage and examples of its application in service-oriented developed economies

Michael E. Porter is a classical author who has pioneered novel concepts of business competitiveness and corporate strategy formulation. His later work, entitled "The Competitive Advantage of Nations" and published in 1990, builds on his unique perspective on competitiveness and applies it to nation states, with a potent conclusion: "that must be the goal, for both nations and companies: not just surviving, but achieving international competitiveness".[66]

Departing from traditional economic theories that are often unable to account for forces shaping global economy of today, the model designed by Porter offers government leaders and policy makers conceptual tools for building competitive advantages of a country or a region.

Porter's work has become one of the most cited economics books and, three decades after its conception, is said to remain ever more relevant as it holds a great potential in view of drawbacks of globalization, challenges of ensuring sustainable economic development and increasing pressure on companies to continuously improve their productivity and capacity to innovate. [67]

Competitiveness is paramount for Porter because it has profound implications for national economy. Competitiveness is directly linked to national or regional successful economic development, as the latter occurs only by improving the former. According to Porter, companies, not governments, are the only entities capable of creating and sustaining national or regional competitive advantage in any particular industry through innovation and successive upgrading. "A nation or region is competitive to the extent that the companies operating in it are able to compete successfully in the global and local economy while maintaining or increasing the salaries and standard of living of the citizens, creating an integrated area, duly aligned around a unique and distinctive strategy".[68]

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[66] Porter, Michael E. (1990). *The Competitive Advantage of Nations*, p.91. Harvard Business Review. https://pdfs.semanticscholar.org/4ec2/6dc5b0d082c0890707c487e8fc4aa6144752.pdf

[67] Ketels, C., Keller, M. (2015). *25 Years of "The Competitive Advantage of Nations"*. Competitiveness Review. https://www.researchgate.net/publication/283761077_25_Years_of_The_Competitive_Advantage_of_Nations

[68] Porter, Michael E. (2013). *Key Drivers for Inner City Growth*. https://www.hbs.edu/ris/Publication%20Files/2013-1024---ICIC_Economic_Summit---Michael_Porter_b2c4d06f-c383-4a4f-a87b-7258301814b3.pdf

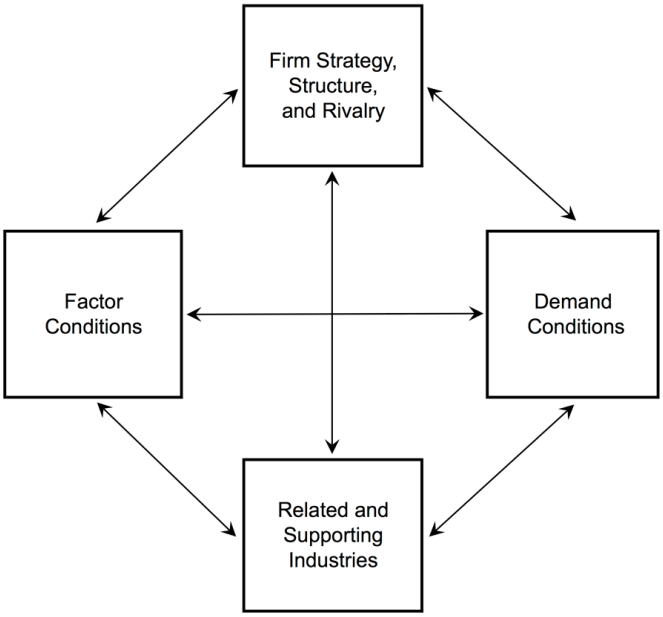
Porter further adds that "competitive advantage of place can be best understood in terms of the comparative advantages of specific industries within that place's borders." [69] International success of particular industries, as nurtured in particular places - be it banking and pharmaceuticals in Switzerland, textiles in Italy, motion pictures and commercial aircrafts in the US, consumer electronics in Japan and South Korea or automaking in Germany - is directly attributable to unique environment created in that particular area. [70] Competitive advantage, once secured, translates into sustainable national prosperity, that in turn means tangible benefits of job growth, improved wages and raised standard of living - the principal goal of any government.

What are then the determinants of competitiveness? Porter suggests that a variety of factors matter for competitiveness and proposes a 4-factor Diamond model that identifies sources of competitive advantages of a particular country or region.[71] His main argument is that, although undeniably being the important components of state power, the "inherited" factors, or "natural endowments", such as country's location, deposits of natural resources, arable land, territory and population size do not determine either nation's ability to achieve sustainable growth in the medium and long term or its ability remain competitive.

Porter identifies four interlinked factors that determine national or regional competitive advantage, as shown in *Figure 6*. These are "four broad attributes of a nation, attributes that individually and as a system constitute the diamond of national advantage, the playing field that each nation establishes and operates for its industries." [72]

[69] Rosenfeld, S. (2002). *Creating Smart Systems. A guide to cluster strategies in less favoured regions*. European Union-Regional Innovation Strategies.
https://ec.europa.eu/regional_policy/archive/innovation/pdf/guide_rosenfeld_final.pdf
[70] Porter, Michael E. (1990). *The Competitive Advantage of Nations*, p.74. Harvard Business Review.
https://pdfs.semanticscholar.org/4ec2/6dc5b0d082c0890707c487e8fc4aa6144752.pdf
[71] Ibid., p.78.
[72] Ibid.

Figure 6. Determinants of National Competitive Advantage [73]



The four factors in the Diamond model are:

Firm Strategy, Structure and Rivalry – describing how companies are created, organized and managed in national context, and how competitive and easy for entry of rival firms the nation's market is;

Demand Conditions – with reference to how large and dynamic the domestic customer base of a nation is and to how sophisticated and demanding local customers are;

Related and Supporting Industries – reflecting the availability of companies in all stages of production that are able to compete internationally (mainly in reference to suppliers), and presence of clusters instead of isolated industries;

and finally, and most importantly, *Factor Conditions* - relating to the elements of nation's economy that can be actively created through government actions and policies, such as skilled labor, advanced technological base or cutting edge technological innovation;

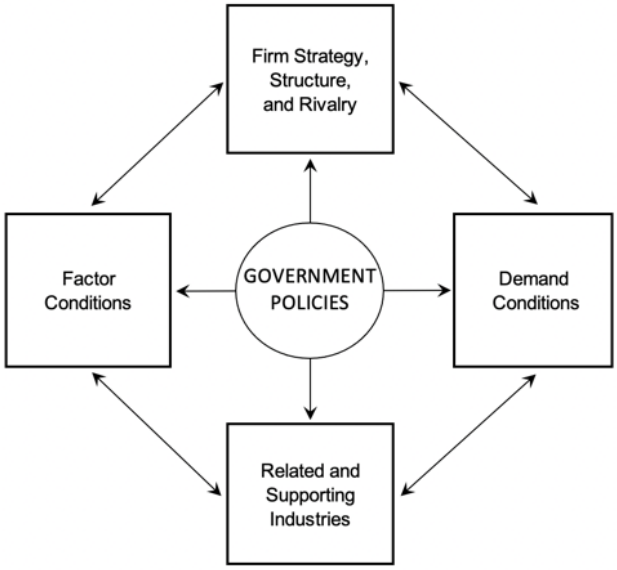
The *Factor Conditions*, according to the Porter, are the key determinants of country's competitive advantage as they can be moulded in national or regional interests to enable them to surpass its nature-given limitation in geography, demography or resource base, as examples

[73] Ibid., p. 77

of Japan, Taiwan, Singapore, Germany and Switzerland attest. [74]

Porter pays particular attention to the role of the government in forming quality business national environment and in the process of enhancing national or regional competitiveness, as shown in *Figure 7.*

Figure 7. Role of the government in shaping National Competitive Advantage[75]



He highlights importance of concrete government policies in each of the 4 aspects of the Diamond – incentives for capital investments and productivity, corporate governance standards, intellectual property protection that shape local context for *Firm Strategy, Structure and Rivalry*; quality, safety, environmental standards and consumer protection laws that shape local *Demand Conditions*; competition laws and openness of local market to foreign competition that shape local *Related and Supporting Industries*; education policies that prepare human resources and physical, information, scientific and technological infrastructure that become high quality business inputs and shape local *Factor Conditions* - but emphasizes that these factors alone rarely produce competitive advantage.

[74] Ibid., p. 78.

[75] Produced by the author based on Porter's original Diamond diagram.
Porter, Michael E. (1990). *The Competitive Advantage of Nations*, p.77. Harvard Business Review.
https://pdfs.semanticscholar.org/4ec2/6dc5b0d082c0890707c487e8fc4aa6144752.pdf

Porter believes that indirect government initiative in the form of rules and incentives, rather than direct involvement of the government, is crucial in creating conditions conducive to the development of environment in which companies are enabled to gain competitive advantage. "Government's proper role is as a catalyst and challenger; it is to encourage - or even push - companies to raise their aspirations and move to higher levels of competitive performance, even though this process may be inherently unpleasant and difficult" because "when the national environment pressures companies to innovate and invest, companies both gain a competitive advantage and upgrade those advantages over time."[76]

Porter's model also introduces the concept of clusters and defines them as "geographic concentrations of interconnected companies and institutions in a particular field" that are related by knowledge, skills, inputs, demand and other linkages[77]. Such entities are crucial for competition as they drive economy and wealth creation. In practice clusters unite geographically proximate business, universities and many other types of mutually supporting participants whose cooperation results in innovation, knowledge transfer and increased productivity.

Here again the role of the government is vital. Clusters necessitate special legislation and initial state support programmes that would enable them to form and to function in an optimal manner. Once established, they become self-sustaining entities that do not necessitate any state support. As clusters develop and gain competitive advantage, they and turn into regional innovation systems that drive economic growth.

The concept of clusters has spread globally over the recent decades, leading to extraordinary rise in technological innovations. Silicon Valley, the benchmark in high-tech clusters, is one of the most well-known examples of this phenomenon. "In the world's most successful and dynamic economies, competitiveness and innovation are concentrated in clusters."[78]

Regions, according to the Porter, are essential economic units of competitiveness, and specialisation of regional economies holds a key to securing competitive advantage. "The Competitive Advantage of Nations, States and Regions"[79] identifies key factors of regional competitiveness, as shown in *Figure 8.*

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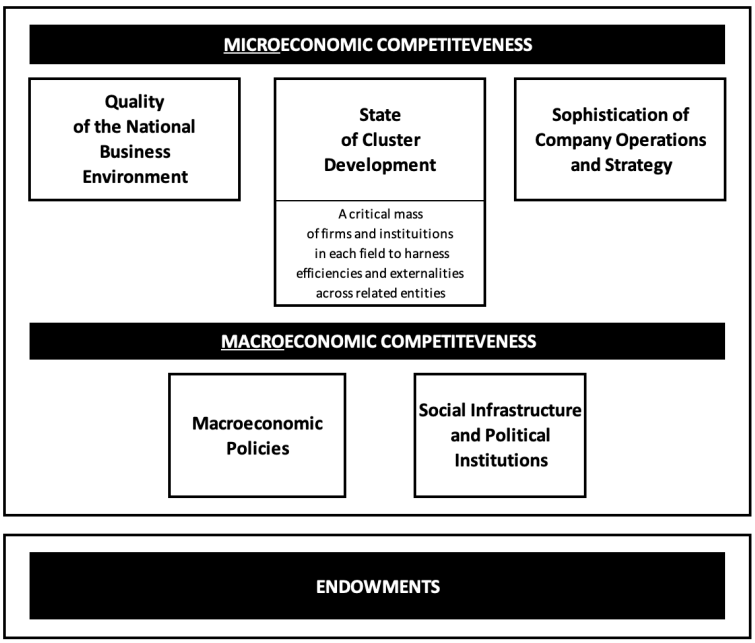
[76] Porter, Michael E. (1990). *The Competitive Advantage of Nations*, p. 87. Harvard Business Review. https://pdfs.semanticscholar.org/4ec2/6dc5b0d082c0890707c487e8fc4aa6144752.pdf

[77] Porter, Michael E. (1998). *Clusters and the new economics of competition*, p.78. *Harvard Business Review*. http://backonline.apswiss.ch/6001/porter_clusters_and_the_new_economics_of_competition.pdf

[78] United Arab Emirates Federal Competitiveness & Statistics Authority. (2017). *UAE and the 2030 Agenda for Sustainable Development,* p.90. https://sustainabledevelopment.un.org/content/documents/20161UAE_SDGs_Report_Full_English.pdf

[79] Porter, Michael E. (2011).*The Competitive Advantage of Nations, States and Regions,* p.13. https://www.hbs.edu/ris/Publication%20Files/2011-0707_Malaysia_vcon_b3574e10-758b-483f-b6c5-f7439d7c58e9.pdf

Figure 8. Determinants of competitiveness at regional level.[80]



State of cluster development is what is seen as directly impacting performance at regional level. It relies on harnessing each region's distinctive competitive characteristics and on effective policy collaboration between regional and the national government.

Additional valuable findings made by Porter relate to the role of universities in competitiveness. Due to the increasingly knowledge-driven nature of global economy, universities are at said to be at the very heart of the competitiveness agenda. Universities have the potential to significantly impact cluster development and performance by conducting joint R&D programs with companies and by potentially specializing in areas in which the local economy has an established position.[81]

Porter's analytical framework has been applied in practice to various industries in a range of countries. The Basque Country have been the first to apply Porter's principles to design strategy for economic revival of the region, with much success.[82] Portugal, Norway as

[80] Produced by the autor based on Porter's diagram. Porter, Michael E. (2011). *The Competitive Advantage of Nations, States and Regions.* p.13. https://www.hbs.edu/ris/Publication%20Files/2011-0707_Malaysia_vcon_b3574e10-758b-483f-b6c5-f7439d7c58e9.pdf

[81] Ibid, p.31.

[82] Azua, J.(2015). *The Competitive Advantage of Nations. A Successful Experience, Realigning the Strategy to Transform the Economic and Social Development of the Basque Country*.
https://enovatinglab.com/wp-content/uploads/2015/12/Competitive_Advantage_2017_04_20_13_50_21.pdf

well as Central American states have reported both successful experiences as well as difficulties and challenges in the practical implementation of Porter's framework. [83]

Diamond Model has also been successfully applied in many service-oriented developed economies seeking to raise their competitiveness.

"The Competitive Advantage of Singapore: Transition to the Innovation Stage"[84] addressed changes in Singapore's regional environment and suggested that, despite unprecedented levels of prosperity achieved by the country, the future necessitated transition beyond as efficiency-driven economy. Cluster upgrading, widening the base of clusters in the economy as well as strengthening of domestic competition were recommended as part of transitioning to innovation-led economy that would provide unique value by capitalizing on Singapore's distinctive advantages in the region. 20 years later, Singapore is regarded as a global hub for innovation[85] and a business hub for Asia.

"UAE Competitiveness for the Third Millennium: The Role of Government" [86] addressed country's entering the new stage of competitiveness. Compared to other oil-driven economies, the UAE has made a progress in economic diversification. To build on the economic success and to surpass the level of development reached, facilitating cluster development and upgrading the existing clusters (such as the Dubai Logistics Cluster and Financial Cluster) were seen as the key elements in ensuring UAE's future growth. Building a broader portfolio of dynamic, sustainable clusters were to remain major priority on country's competitiveness agenda. Today Dubai boasts a variety of clusters, ranging from renewable clean technology to media clusters[87] and positions itself as a modern competitive economy driven by knowledge and innovation.

"National Competitiveness: Issues for Vietnam"[88] looked at enhancing Vietnam's competitiveness. With corruption, poor physical infrastructure and low skill base as country's main weaknesses at the time, increasing labour productivity and strengthening business environment were recommended. The key suggestions were focused on mobilizing domestic

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[83] Ketels, C., Keller, M. (2015). *25 Years of "The Competitive Advantage of Nations".* Competitiveness Review. https://www.researchgate.net/publication/283761077_25_Years_of_The_Competitive_Advantage_of_Nations
[84] Porter, Michael E. (2001). *The Competitive Advantage of Singapore: Transition to the Innovation Stage*. https://www.hbs.edu/ris/Publication%20Files/caonsingapore08-02-01ck_3477b03a-fcf2-4f91-825a-5dc593197998.pdf
[85] Forbes (2018). *Singapore: A Global Hub For Innovation*. https://www.forbes.com/custom/2018/08/13/singapore-a-global-hub-for-innovation/
[86] Porter, Michael E. (2010). *UAE Competitiveness for the Third Millennium: The Role of Government*. https://www.hbs.edu/ris/Publication%20Files/2010-0124_UAE_SessionONE_8e52d2bd-16c0-463e-865e-443e62922e66.pdf
[87] United Arab Emirates Federal Competitiveness & Statistics Authority. (2017). *UAE and the 2030 Agenda for Sustainable Development,* pp. 20, 90. https://sustainabledevelopment.un.org/content/documents/20161UAE_SDGs_Report_Full_English.pdf
[88] Porter, Michael E. (2005). *National Competitiveness: Issues for Vietnam.* https://www.hbs.edu/ris/Publication%20Files/Vietnam_2005.06.24_5f2535dc-57c5-4df6-bfcb-78cab9cbcf19.pdf

clusters that were at the stage of emerging in the areas of tourism, textiles, fishing products, oil and gas sector.

International practice shows that Porter's clustering approach serves not only as means of achieving the primary objectives, such as increased competitiveness and strengthened innovative orientation, but it also serves a powerful tool to stimulate regional development, leading to the improvement in the trade balance in the region, increasing employment and wages, payments to the local budget and enhancing the stability of the regional industry.

2.2 Cluster initiatives in the Russian Federation

Since the early 2000s, the notion of clustering has become increasingly popular in Russian economy, with cluster policy undergoing several stages of development.

Concept of Long-term Social and Economic Development strategy of the Russian Federation until 2020, adopted in 2008, brought up the notion of enhancing Russian global competitive advantages by developing sectors of the economy considered traditional for the country, namely natural resources, energy, transport and agriculture.[89] The direction was also set towards spatial development of the national economy and transition to an innovative development path[90]. Creation of business clusters of different specialization, located in various regions all across Russia, has become key measure in transitioning towards the innovation economy.

Starting in 2008, the initial cluster policy has been adopted to propel regional economic growth, with over 220 clusters announced in 64 Russian regions. The initiatives, nonetheless, have failed to produce the desired result, with only a small part of projects reaching the phase of implementation as most of the clusters were never created.[91]

The most recent cluster policy in Russia is focused on innovative clusters that are to lead diversification of Russian economy. In 2012, pilot project to develop innovative territorial clusters has been launched. 25 clusters with the best development programmes were selected as a result of a competitive tender and received federal subsidies in subsequent years to become

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[89] STIP Compass: International Database on Science, Technology and Innovation Policy. *Concept for long-term soical and economic development of the Russian Federation 2020.* OECD. https://stip.oecd.org/stip/policy-initiatives/2017%2Fdata%2FpolicyInitiatives%2F15162

[90] Ibid. https://stip.oecd.org/stip/policy-initiatives/2017%2Fdata%2FpolicyInitiatives%2F15162

[91] Rodionova, I., Krejdenko, T., Mądry, C. (2018). *Cluster Policy in the Russian Federation: A Case Study of Industrial Clusters*, p. 69.https://www.researchgate.net/publication/324477183_Cluster_Policy_in_the_Russian_Federation_A_Case_Study_of_Industrial_Clusters

potential growth points in their respective regions.[92]

By 2017, Russian Cluster Observatory registered 113 functioning clusters, with 3,442 cluster participants, located in 43 regions of the country and employing over one million people. In the Russian Far East, only three clusters were developed in the areas of coal processing and biopharmaceutics.[93]

A fairly recent development has been a focus on creation of innovative start-ups within pilot clusters, owning to the allocation of growing importance to nurturing of local innovation systems and creation of favorable conditions for operation of start-ups. Examples include engineering centers in the Kaluga, Novosibirsk, and Krasnoyarsk regions, BioBusiness Incubator within the Northern Biopharmcluster and Phystech XXI cluster in the Moscow Region, as well Nanotechnology Regional Cluster in Dubna.[94]

An example of the innovative cluster in service sector of economy is the Moscow's Skolkovo Innovation Centre, a high technology business complex. The aim of this research and development project is to capitalize on traditional Russian strengths in the field of science, technology and engineering by encouraging entrepreneurial spirit, proliferation of start-ups of Russian tech companies and of their global outreach, in essence attempting to create a location resembling Silicon Valley type.[95]

By the Order of the Ministry of Health of the Russian Federation from 2015, "On the organization of work on the formation of scientific and educational medical clusters", clustering initiatives have been extended to the sphere of medical services, in line with the federal strategy for the development of medical science and medical education in Russia. The measures dealt with the creation of cluster systems around the exemplary medical universities in each federal district. The goal was to create a modern and effective corporate system of training of qualified healthcare professionals and of provision of continuous professional education. By early 2016, 46 medical universities formed 11 clusters.[96] Scientific and educational medical cluster of the Far Eastern Federal District and the Baikal region – called "Vostochny" – has been created to unite 5 leading medical universities of the region as cluster

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[92] Kutsenko E. (2015). *Pilot Innovative Territorial Clusters in Russia: A Sustainable Development Model*, p.32. https://www.researchgate.net/publication/279274292_Pilot_Innovative_Territorial_Clusters_in_Russia_A_Sustainable_Development_Model

[93] Rodionova, I., Krejdenko, T., Mądry, C. (2018). *Cluster Policy in the Russian Federation: A Case Study of Industrial Clusters*, p. 69.https://www.researchgate.net/publication/324477183_Cluster_Policy_in_the_Russian_Federation_A_Case_Study_of_Industrial_Clusters

[94] Ibid., p. 51.

[95] Skolkovo (n.d.). *What is Skolkovo?* https://old.sk.ru/foundation/about/

[96] Ministry of Health of the Russian Federation. (2015). *Order N 844. On the organisation of work of the formation of scientific and educational medical clusters.* http://www.fesmu.ru/SITE/files/editor/file/582/kl_prik844.pdf

members. [97] Program of the cluster development until 2025 has been adopted and included such strategic priorities as improving the quality and international competitiveness of the medical education provided by the medical universities and colleges of FEFD.[98]

An example of another innovative service cluster in the medical industry is the Moscow International Medical Cluster (MIMC). The project went from the stage of concept in 2012 to implementation in 2018, bringing together branches of leading international clinics, education centres and research institutions to develop healthcare in Russia and to promote international cooperation in medicine. [99]

Under modern conditions, innovative territorial clusters have proven to be one of the key tools in shaping regional development. Experts, however, highlight the following weaknesses in operations of clusters in Russia, outlining the main reasons for the ambitious plans not being implemented to the expected extent. Too often, Russian attempts to organize highly functioning clusters appear to have been rather declarative in nature - carried out with appropriate style, form and symbolism, but with little substance. With agreements on the creation of the cluster signed by the participants and the program of its development adopted, the nominal Russian clusters, despite having little resemblance to the notion of a cluster as a profit-earning enterprise that pushes all members to the new level of performance and innovation, are said to have obtained new role, advanced status and extended capacity but having registered little practical change in their functioning or in quality of their output. Regional scientific and educational medical clusters appear provide an example of this unfortunate trend.

Key issue appears to lie in the fact that clusters are set up on the federal government's initiative and at the government's expense, not on bottom-up the demand of cluster participants for further integration. Even though the infrastructure for innovative projects might have been established, the efficiency of these investments is very low as regional institutes have grown used to simply "absorbing" the budgets without accountability for their efficient appropriation, resulting in low quality of the institutional environment in the regions.[100]

A vital prerequisite for innovation flourishing in cluster environment is said to be

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[97] Ministry of Health of the Russian Federation. (2015*). Agreement on creation of scientific and educational medical cluster in the Far Eastern Federal District and Baikal Region*. http://www.fesmu.ru/SITE/files/editor/file/582/kl_sogl.PDF

[98] Ministry of Health of the Russian Federation. (2016). *Development program of the scientific and educational medical cluster of the Far Eastern Federal District and the Baikal region - "Eastern"* - for 2016-2025. http://www.fesmu.ru/SITE/files/editor/file/582/kl_prog.pdf

[99] Moscow International Medical Cluster. (n.d.). *About IMC*. https://www.mimc.global/en/about/

[100] Khayrullina, M. (2014). *Innovative Territorial Clusters as Instruments of Russian Regions Development in Global Economy.* https://www.sciencedirect.com/science/article/pii/S2212567114007783

geographical concentration of companies and specialists. It aids speedy distribution and exchange of knowledge and information, leading to intensive collaboration and emergence of new, innovative combinations of the ideas and projects. 2012 global cluster survey suggested that a single cluster united, on average, 80 participants, and European experience proves that in order to achieve full cluster potential at least 30-50 organizations or, according to some estimates, as many as 100, need to be included in a cluster. Clusters in Russia are far from reaching the global benchmark - only two, out of 25 pilot clusters, had more than 100 member organizations and ten clusters had less than twenty. Extremely low number of core companies in majority of existing Russian clusters results in lack of internal competition and greatly diminishes their potential and chances of achieving stable self-sustaining growth.[101]

"Private initiative is a decisive factor in the success of a cluster" [102]. Deficit of private sector initiatives and domination of publicly owned companies and state institutions in the management of clusters are seen as another aspect disadvantaging Russian clusters. The situation is partially explained by the fact that some market institutes are still poorly developed in Russia and the state not only plays an active role in organizing clusters but is the main source of their funding. Major state companies therefore are predominant in Russian clusters. Along with suggestions to increase the share of private sources of funding, recommendation has been made to engage regional authorities into the development of clusters and to strengthen the role of regions in shaping cluster structures.[103]

With the key role that the Russian state plays in cluster formation, major decisions are often taken by officials and managers at state companies, a practice that is said to be harmful to development of innovative entrepreneurial culture. Small and medium enterprises that have participated in pilot clusters did not influence the decision-making process or get representation in clusters' administrative bodies. [104]

Yet another significant shortcoming is the fact that thriving small business entrepreneurship is not a feature of Russian economy, with state preference given to big business, leaving small enterprises underdeveloped. At the time of initiation of pilot clusters, share of innovative business accounted for just 2–2.5% of all small firms, with the figure being

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[101] Kutsenko E. (2015). *Pilot Innovative Territorial Clusters in Russia: A Sustainable Development Model*, p. 58. https://www.researchgate.net/publication/279274292_Pilot_Innovative_Territorial_Clusters_in_Russia_A_Sustainable_Development_Model

[102] Ibid., p. 38.

[103] Ibid.

[104] Kutsenko E. (2015). *Pilot Innovative Territorial Clusters in Russia: A Sustainable Development Model*, p. 46. https://www.researchgate.net/publication/279274292_Pilot_Innovative_Territorial_Clusters_in_Russia_A_Sustainable_Development_Model

50% for the United States.[105]

The above poses a serious impediment to innovative entrepreneurial activity in general and to clustering of country's industries in particular. The importance of incentivizing and stimulating the growth of small and medium businesses has been recognized by the government and has been reflected in the already mentioned strategy of the socio-economic development until 2020. The policy envisioned doubling the share of the small business in the service sector and increase it fivefold in the innovation sector.[106]

Moreover, there appears to be a need to increase the role and influence of regional authorities on management of pilot clusters. Effectiveness of cluster enterprises is reduced by excessive bureaucracy and the creation of layers of specialist regional organizations on top of already existing administrative bodies.[107]

Further on, in comparison to European clusters where the priority is given to collaboration between companies in clusters, the emphasis in Russia is placed on maintaining a close relationship between businesses and the state. Intensifying collaboration with the authorities has been traditionally seen as a guarantee of future state support. It is suggested that policies aimed at encouraging participants to build business-to-business relations would accelerate development of pilot clusters.

It has also been noted that to attract and retain qualified scientific and business personnel in clusters located in remote areas, cluster policy needs to be supplemented by such measures as introduction of higher wages and broader career opportunities for cluster workers, establishment of preferential mortgages and lease mechanisms, development of leisure and cultural infrastructure in the area, and promotion of such local advantages as closeness to nature, healthy and family-friendly lifestyle.[108]

Despite numerous studies conducted on shortcomings of Russian clusters, comprehensive measures to remedy the situation are yet unclear. Overall, one of the main problems has been seen in an attempt to replicate the best foreign practices by copying the proposed measures directly, without them being adapted to Russian conditions and realities.

The main recommendations for effective cluster development in Russia include developing entrepreneurial talent, ensuring involvement of all cluster participants, however

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[105] Lenchuk, E., Vlaskin, G. (2010). *A Cluster-based Strategy for Russia's Innovative Development*, p.607. Studies on Russian Economic Development. https://www.researchgate.net/publication/251306722_A_cluster-based_strategy_for_Russia%27s_innovative_development

[106] Ibid.

[107] Kutsenko E. (2015). *Pilot Innovative Territorial Clusters in Russia: A Sustainable Development Model*, p. 46. https://www.researchgate.net/publication/279274292_Pilot_Innovative_Territorial_Clusters_in_Russia_A_Sustainable_Development_Model

[108] Ibid., p. 34.

small and seemingly insignificant, in decision making and management process, representation of all cluster enterprises in clusters' administrative bodies, introduction of annual reports for timely and accurately disclosure of information on functioning of the cluster. Such measures are likely to maintain high level of motivation, enthusiasm and satisfaction among cluster member regarding the various aspects of cluster functioning - a factor that is are crucial for success of any cluster organization.[109]

2.3 Potential for creation of export-oriented service clusters in the FEFD

Development of national innovation system in Russia is to rely heavily on successful clusters as generators of innovative projects. While pilot cluster programmes have received substantial support from the government, the lack of attractive investment projects with unique proposition has been identified as a serious issue,[110] especially in remote regions such as the FEFD. Analysts point out a complete lack of clusters in services and value-added enterprises in the region.

Traditionally for the FEFD, the developmental priority has been placed on mineral and energy sectors as on areas of primary economic activity in the region.[111] Clustering efforts have been focused on mining in the Magadan and Sakhalin Regions, Chukotka and Yakutia. Two clusters in "electric power, gas and water production and distribution" were present in the Primorsk and Amur Regions.[112]

The Russian Far East, however, presents unique possibilities for diversifying clustering efforts into other industries. Several clustering initiatives underway in the FEFD demonstrate new ways of looking at regional opportunities in service sectors that have clear export potential. In an attempt to preserve and spread artistic and cultural regional heritage, the issue of creating large cultural clusters in the regions of Russia was dealt with by the head of state himself. Under the "Culture" national project, one of the first such cultural clusters to appear was identified in the FEFD. The city of Vladivostok will bring together creative universities, museums, theatres and exhibitions in serving residents of the regions as well as foreign visitors, contributing to the development of international tourism in the region. [113] Hermitage Museum

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[109] Kutsenko E. (2015). *Pilot Innovative Territorial Clusters in Russia: A Sustainable Development Model*, pp. 46-47. https://www.researchgate.net/publication/279274292_Pilot_Innovative_Territorial_Clusters_in_Russia_A_Sustainable_Development_Model

[110] Ibid., pp. 51-52.

[111] Titova, N., Pervuhin, M., Baturin., G. (2017). *Identification of Regional Clusters in the Russian Far East*, p. 353. European Research Studies Journal.

[112] Ibid., p. 354.

[113] Mena Report. (2018). *Vladimir Putin: one of the first cultural clusters in the country will be created in the Far East.* . Gale Academic OneFile.

and the Tretyakov Gallery are being built there as part of the multi-purpose cultural and educational complex.[114]

A study undertaken to identify possibilities for creation of regional clusters in the Russian Far East provide insights into ways of developing service sector of the Far Eastern economy. Potential of Amur and the Primorsk regions are highlighted in this regard. Based on public health development, growth of investment and the highest rates of labor productivity in healthcare industry in these two regions, prospects of cluster creation are suggested for "healthcare and social services".[115] "Vostochny" scientific and educational medical cluster in the FEFD, mentioned above, attests to the potential of the region to serve as a provider of medical education services with export orientation.

2.4 Summary

Framework proposed by M. Porter presents a method for assessing competitive capabilities and advantages of nations. Among four key factors influencing competitive standing of a country or a region, the nature-given characteristic are said to play secondary role. Rather, aspects that lend themselves to being shaped and influenced by the government policies, referred to as Factor Conditions, have been highlighted as main determinants in securing competitive advantage of one economy over another. Porter's strategic framework has been widely employed in practice in all corners of the world to assess ways in which governments can proactively improve country's global competitive standing.

Business clusters, being a grouping of locally proximal and interdependent firms and other actors that operate in synergy, bring numerous advantages to domestic economy, such as rapid innovation and increased productivity, but they also increase nation's chances to compete internationally. Globally, clusters are driving regional economic growth, raising livelihoods and standard of living.

Lessons from global practice suggest that the following conditions determine cluster success: a sufficient number of companies that form the core of the cluster, the predominance of private, not state, initiatives, equal participation and representation of all cluster members in the decision-making processes.

Cluster initiatives in Russia are considered to be at an early stage of development. State

[114] Stroytransgaz. (2020). STG builds the Hermitage Museum and the Tretyakov Gallery in the capital of the Far East. http://www.stroytransgaz.ru/en/pressroom/news/2020/02/12902/

[115] Titova, N., Pervuhin, M., Baturin., G. (2017). *Identification of Regional Clusters in the Russian Far East*, p. 355. European Research Studies Journal

support programmes and policy initiatives were designed to encourage firms to form innovative clusters. A decade later, results indicate that Russian clusters present shortcomings in all of the above-mentioned conditions critical for their success, suggesting that future development strategy requires some adjustments.

Cluster initiatives in the FEFD have been aimed at raise competitiveness of both the region and of Russia's economy at large. Until recently, the path to ensure economic growth and to obtain competitive advantage for the FEFD has been seen in developing clusters in industries traditional for the region. Many opportunities, however, lie in developing service sector of regional economy, with attempts already being made in the sphere of tourism and medical education.

A potential for creating an innovative service cluster in healthcare industry, with unique value proposition and export orientation, presents itself in the FEFD. Such a project is likely positively to contribute to the economic and social development of the region. It may also make it more attractive and accessible to both local and international investors, thus developing the region further and enhancing its competitive advantage.

Chapter 3. INTERNATIONAL MEDICAL EDUCATION AS A POTENTIAL NICHE MARKET FOR SERVICE CLUSTER IN THE FEFD

3.1 Healthcare as one of the world's largest and fastest growing industries

While many industries have become redundant due to dynamic technological developments and increasing pace of innovation, presence and growth of certain industries is guaranteed by the essential nature of the services they provide.

The healthcare is an example of such an industry. Being labor-intensive and local in nature, healthcare field has been generally unimpacted by the forces of automation and globalization that have decimated other traditional industries.[116]

Hospitals, nursing facilities, ambulance and healthcare services, laboratories, medical devices and equipment, hospital supplies, pharmaceutical drugs, health insurance companies, doctors, nurses, healthcare professionals, medical lecturers are all elements of healthcare industry that has become truly global.

[116] The Atlantic. (2018). *Health Care Just Became the U.S.'s Largest Employer.* https://www.theatlantic.com/business/archive/2018/01/health-care-america-jobs/550079/

Healthcare has been growing at an impressive rate in both developed and developing countries and has become not only one of the largest but also one of the fastest growing industries in the world. As developed nations experience ageing populations, increased life expectancy and a surge in chronic diseases, governments have increasingly come up with initiatives to ensure high-quality and economically sustainable healthcare solutions. Developing nations with growing economies are faced with growing populations, rising disposable incomes and increased access to healthcare facilities, and their governments are looking for ways to satisfy growing demand for healthcare services without compromising on quality of care.[117]

The above trends propel global spending on health-related matters. The global healthcare market is predicted to reach $10 trillion by 2022 [118] - an astonishing figure even in comparison with global refining market for one of the world's most sought-after commodities, crude oil, that is expected to be worth $7 trillion.[119] The rate of annual growth in the healthcare industry has been 7.3% since 2014, and the figure is expected to reach 8.9% by 2022.[120]

The growing role of healthcare is best confirmed by the following statistics: in 2019, developed nations devoted between 10% to 17% of their GDP to healthcare.[121]

The example of the United States is particularly apt in demonstrating the increasing importance of healthcare industry in developed nations, as the country tops the list in both overall healthcare expenditure and in healthcare costs. The US healthcare industry accounts for almost half of what is spent on healthcare globally, and it is expected to take up up to 20% of the national GDP by 2024, reaching the figure of $5.4 trillion – equivalent to the GDP of the United Kingdom and France combined. The US spends twice what other countries do on healthcare, with healthcare consumption expenditure per capita being $10,224 (other top

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[117] Bajpai, P. (2020*). Industries That Will Never Go Away.* https://www.investopedia.com/articles/personal-finance/040515/industries-will-never-go-away.asp
[118] Smijanich, S. (2021). *The State of Healthcare Industry – Statistics for 2021.* https://policyadvice.net/insurance/insights/healthcare-statistics/
[119] Globe Newswire. *Oil Refining Market worth over $7 trillion by 2024: Global Market Insights, Inc.* https://www.globenewswire.com/news-release/2018/07/12/1536385/0/en/Oil-Refining-Market-worth-over-7-trillion-by-2024-Global-Market-Insights-Inc.html
[120] Business Wire. (2019). *The $11.9 trillion global healthcare market: Key opportunities & strategies (2014-2022).* https://www.businesswire.com/news/home/20190625005862/en/The-11.9-Trillion-Global-Healthcare-Market-Key-Opportunities-Strategies-2014-2022---ResearchAndMarkets.com
[121] Ksamal R., Rqamirez, G., Cox, S. (2020). *How does health spending in the U.S. compare to other countries?* https://www.healthsystemtracker.org/chart-collection/health-spending-u-s-compare-countries/#item-spendingcomparison_1980s-average-annual-growth-rate-in-health-consumption-expenditures-per-capita https://policyadvice.net/insurance/insights/healthcare-statistics/

spenders on health are Switzerland, Germany and Austria, with the figures of $8,009, $5,728 and $5,440, respectively).[122]

In 2017 and for the first time in history, healthcare sector has become the largest employer in the US, overtaking even retail and manufacturing. Already the largest source of work in the country, healthcare employs one in every eight US citizens. In the next decade, the entire US healthcare sector is estimated to be absorbing a third of all new employment.[123] Ageing population - one-quarter of the US workforce will exceed 55 years of age by 2025 – coupled with an epidemic of obesity and chronic diseases will inevitably lead to the need for more care, larger medical spending and more healthcare workers. [124]

Governments in both developed and developing nations are being forced to devote greater resources to the development of healthcare sector and to making advances in providing healthcare services that are available, accessible and affordable.

3.2 Global shortage of healthcare workers

"Health systems can only function with health workers".[125] Health workforce is known to be central to the provision of health services and improvement of populations' state of health.

According to a 2017 Global Burden of Disease Study only half of the countries in the world have the workforce - doctors, nurses and other health professionals - required to deliver quality healthcare services. [126]

The world has been short of millions of health workers for years.[127] By 2030, 40 million additional health workers will be required globally – a figure that would require doubling the current health workforce in less than 10 years. Analysts warn that unless urgent measures are taken, a global shortfall of 15 to 18 million health workers will become a reality by 2030.[128]

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[122] Vitalari, Nicholas P. (2016). *Prospects for the future of the U.S. healthcare industry: a speculative analysis*, p. 4. American Journal of Medical Research, vol. 3, no. 2.
https://search.proquest.com/docview/1857705022?pq-origsite=gscholar&fromopenview=true
[123] The Atlantic. (2018). *Health Care Just Became the U.S.'s Largest Employer.*
https://www.theatlantic.com/business/archive/2018/01/health-care-america-jobs/550079/
[124] Ibid.
[125] World Health Organisation. (2016). *Global strategy on human resources for health: workforce 2030,* p. 10.
https://apps.who.int/iris/bitstream/handle/10665/250368/9789241511131-eng.pdf?sequence=1
[126] Kamineni, S. (2019). *5 ways to bridge the global health worker shortage.* World Economic Forum.
https://www.weforum.org/agenda/2019/07/5-ways-to-bridge-the-global-health-worker-shortage/
[127] World Health Organisation. (2013). *Global health workforce shortage to reach 12.9 million in coming decades.*
https://www.who.int/mediacentre/news/releases/2013/health-workforce-shortage/en/
[128] Kamineni, S. (2019). *5 ways to bridge the global health worker shortage.* World Economic Forum.
https://www.weforum.org/agenda/2019/07/5-ways-to-bridge-the-global-health-worker-shortage/

Inaccessible health care is usually associated with the countries in sub-Saharan Africa, Southeast and South Asia. Half of the world population still lacks access to basic, essential health services[129] and among the 83 countries that do not meet the required threshold of 23 skilled health care workers per 10,000 people, majority are indeed from the above-mentioned regions.[130] Renewed commitment of the WHO to the Universal Health Coverage initiatives, aimed at ensuring that all individuals have access to needed healthcare, targets states that do not meet the above standard.[131]

But the issue of inadequate number of heath practitioners is not limited to just several countries or world regions. Acute shortages pose challenges to governments in all corners of the globe, with the upper-middle income countries experiencing the highest need for health workers.

In the US the shortage of 500 000 nurses (with some estimates being as high as 1 000 000) and of 44 000 family physicians is forecasted for 2025. Japan is experiencing shortages of physicians that are unlikely to meet by domestic demands until 2036 and that will require 2.5 million nurses by 2025. China's ratio of 3 nurses for every 1,000 people makes it impossible to meet the growing demand. India is short of 3.9 million doctors and nurses. Australia forecasts shortage of up to 109,000 nurses by 2025.[132]

Among key factors contributing to the global shortage of medical professionals are a growing, ageing population, ageing health workers (700,000 nurses will retire by 2024 in the US, with two of every five American doctors reaching the retirement age in the next decade[133]), unprecedented rise in chronic non-communicable diseases (responsible for 71% of all deaths worldwide), but also the limited capacity of health education programs to prepare medical professionals.

Nursing- and physician-education system has long been identified as a bottleneck of the system, failing to fulfil an ever-growing demand for healthcare workers. With over a million nursing vacancies waiting to be filled in the U.S., country's nursing schools have

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[129] World Health Organisation. (2017). *World Bank and WHO: Half the world lacks access to essential health services, 100 million still pushed into extreme poverty because of health expenses.* https://www.who.int/news/item/13-12-2017-world-bank-and-who-half-the-world-lacks-access-to-essential-health-services-100-million-still-pushed-into-extreme-poverty-because-of-health-expenses

[130] Keck School of Medicine of USC. (2020). *A Closer Look at the Public Health Workforce Shortage.* https://mphdegree.usc.edu/blog/a-closer-look-at-the-public-health-workforce-crisis/

[131] World Health Organisation. (2016). *Global strategy on human resources for health: workforce 2030.* https://apps.who.int/iris/bitstream/handle/10665/250368/9789241511131-eng.pdf?sequence=1

[132] Global Health Workforce Alliance and World Health Organization. (2013). *A Universal Truth: No Health Without a Workforce,* p. 24. Third Global Forum on Human Resources for Health Report. https://www.who.int/workforcealliance/knowledge/resources/hrhreport2013/en/

[133] Schwartz, E. (2020). *The Global Health Care Worker Shortage: 7 Numbers to Note.* https://www.projecthope.org/the-global-health-worker-shortage-7-numbers-to-note/02/2020/

rejected almost 80,000 qualified applicants due to insufficient resources in 2012.[134] Apart from an obvious issue of limited supply of new health personnel, the need for the existing personnel to continuously acquire new or additional skills, prompted by new disease patterns and emerging technologies, further contributes to the challenges that institutions of medical education face in supplying sufficient number of skilled professionals.

Global health inequalities are persistent and challenging to eradicate. Health workers are known to be extremely unevenly distributed – for example, only 10% of the world's disease burden falls on the America and yet the region has 37% of global health workforce, while sub-Saharan Africa bears over 24% of the world's disease burden and is home to only 3% of the global health workers.[135]

Many factors impact availability of health professionals, with international mobility being one of them. Several high-income countries rely on foreign workers to address domestic shortages of qualified health workers. Up to 35% of registered physicians are foreign-trained in England, over 80% - in countries such as Saudi Arabia and the United Arab Emirates. Australia is another country that is highly reliant on the immigration of both doctors and nurses. Recruitment of health workforce from abroad, however, is not carried out only by high-income nations. Brazil launched a programme to recruit 6,000 physicians and other health professionals in 2013.[136] International migration of those employed in health sector has been identified as a contributing factor to a widening global health inequality and attention has been drawn to the responsibility of destination countries to observe ethical recruitment practices.[137]

Inequities in healthcare workforce are not limited to the issue of uneven geographic distribution. WHO points out gender wage gap and gender imbalance in employment and system of medical education, to which global statistics attest - more than 70% of nurses, but only 30% of doctors, are females. In specific cases, like that of India, healthcare workforce is even more imbalanced, with only 16.8% of doctors being females.[138]

Taking into account the magnitude of the global projected shortfalls, addressing the shortage of health workers will require a multifaceted approach, with training of hundreds of

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[134] Ibid.
[135] Anyagwe, S., Mtonga, S. (2007). *Inequities in the Global Health Workforce: The Greatest Impediment to Health in Sub-Saharan Africa.* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3728573/
[136] Global Health Workforce Alliance and World Health Organization. (2013). *A Universal Truth: No Health Without a Workforce,* p. 24. Third Global Forum on Human Resources for Health Report. https://www.who.int/workforcealliance/knowledge/resources/hrhreport2013/en/
[137] Jensen, N. (2013). *The Health Worker Crisis: an analysis of the issues and main international responses,* p. 24. https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-health-worker-crisis-102714.pdf
[138] Kamineni, S. (2019). *5 ways to bridge the global health worker shortage.* World Economic Forum. https://www.weforum.org/agenda/2019/07/5-ways-to-bridge-the-global-health-worker-shortage/

thousands of new doctors and nurses becoming the most challenging aspect. The length of physician training, which can take up to a decade, aggravates the issue and makes the need to address it urgent.

Government policy is said to be the crucial aspect in dealing with the lack of trained health workers. Calls have been made for an updated governance framework to direct medical education, employment and migration of health workers, international exchange of medical services, and innovative partnership models, including sustainable public-private partnerships. Globally, the attention is being drawn to the need to promote collaborations in the filed of medical education and in exchange programs between countries, overcoming cultural and linguistic barriers. [139]

The global coronavirus pandemic has clearly attested to the fact that "there is no alternative to investing in human resources for health… Addressing the global health workforce shortage has to be a key priority area in national development agendas." [140]

3.3. Development of Russian education export

Past few decades have witnessed a massive increase in the number of internationally mobile students seeking global education. From 2 million in 2000, the number of higher education students studying outside their country of citizenship nearly doubled between 2000 and 2010, reaching 5.3 million in 2017. The predictions for the number of foreign students attending in programmes of higher education abroad range between 6.9 million by 2030[141] and 8 million by 2025[142] - with the latter figure representing an increase of over 50 % from 2017.

English-speaking countries remain the most attractive and sought-after choices for international students, with Australia, Canada, the United Kingdom and the United States combined receiving over 40% of all international students[143], with France and Germany also being main destination areas. Russia belongs to top 10 countries for foreign student enrolment

[139] Ibid.
[140] Ibid.
[141] Migration Data Portal. (2020). *International students.*
https://migrationdataportal.org/themes/international-students
[142] OECD Library (2017). *Internationalisation and higher education in Kazakhstan.*
https://www.oecd-ilibrary.org/sites/9789264268531-8-en/index.html?itemId=/content/component/9789264268531-8-en
[143] OECD Library. (2019). *What is the profile of internationally mobile students?*
https://www.oecd-ilibrary.org/sites/17d19cd9-en/index.html?itemId=/content/component/17d19cd9-en

in tertiary education, ranking 7th.[144] 92% of all higher education institutions in Russia accept foreign students.

Soviet Russia has had extensive experience in training students from Latin America, North Africa and the Middle East. In early 2000s, however, Russia was not considered an attractive study destinations. In the 20 years that followed, the trend has been reversed and Russia has managed to earn a significant market share.

According to the Organization for Economic Cooperation and Development (OECD), Russia is one of the most educated countries in the world, with over 60% of Russians having completed the highest level of education. The country overtakes Israel, the United States, the United Kingdom and Japan in this ranking.[145]

The number of international students in Russia has rapidly grown, tripling in the period of 2004-2015, with the related export revenues growing to $1.5 billion in 2015. [146] Russia's 2019/20 foreign student enrolment stood at almost 298,000, with the most important non-CIS source countries being China, India and Vietnam.

According to the Ministry of Education and Science's "Development of the export potential of the Russian education system"[147] programme adopted in 2017, the long-term target for the international student population in Russian higher education institutions was set at 310,000 students by 2020 and at 710,000 students by 2025 [148] - an ambitious strategy that, based on toady's figure, calls for more than twofold increase in international recruitment. It is expected that export revenues would accordingly triple and reach $6.3 billion by 2025. [149] The key goal of the project is to improve both attractiveness and global competitiveness of Russian higher education, thus contributing to increased share of non-resource exports in Russian economy.

To significantly increase international student base in such a short time, the strategy relies on and is backed by concrete measures to support inbound student mobility. Academic Excellence Project 5-100 seeks to enhance global competitiveness of key Russian universities by improving their global rankings (with the Far Eastern Federal University being one of such

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[144] Studee. (2020). *10 most popular countries for international students.* https://studee.com/guides/10-most-popular-countries-for-international-students/
[145] OECD Data. (2019). *Population with tertiary education.* https://data.oecd.org/eduatt/population-with-tertiary-education.htm
[146] ICEF Monitor. (2016). *Foreign enrolment in Russia triples over past decade.* https://monitor.icef.com/2016/12/foreign-enrolment-russia-triples-past-decade/
[147] Government of the Russian Federation. (2017). *Priority project "Development of the export potential of the Russian education system" was approved.* http://government.ru/projects/selection/653/28013/
[148] ICEF Monitor. (2021). *Russia reopens to international students.* https://monitor.icef.com/2021/02/russia-reopens-to-international-students/
[149] ICEF Monitor. (2017). *Russia aims to triple international enrolment by 2025.* https://monitor.icef.com/2017/06/russia-aims-triple-international-enrolment-by-2025/

institutions), an expansion of scholarship support and allocation of larger number of budget-funded places in Russian universities for foreign students (15,000 places were allocated in 2020)[150], as well as new visa legislation for international students (initial three-month visa and regular one-year renewals of student visas were replaced by a 3-year study visa). The offer of English-taught academic programs is being expanded every year. While many duplicate Russian-language curriculum, the number of unique programs in English is growing.[151]

Population of foreign students is extremely unevenly distributed across the Russian territory, with universities in Moscow and St. Petersburg combined receiving almost half of all incoming international students.[152] It has been noted, however that prestigious higher education institutions with specialized profile attract international students despite their location, with example of small city of Dolgoprudny (69,000 residents) drawing more international students than urban agglomerations of more than 1 million, such as Samar or Ufa, due to the presence of a single sought-after university, Moscow Institute of Physics and Technology, that is attended by over 700 foreign students.[153]

After the technical and engineering specialties that have traditionally been in greatest demand, medicine is the second most popular field of study among international students in Russia. Favorable aspects include very affordable, compared to the European and North American medical colleges, tuition fee for Russian medical programs as well as relatively low cost of living in Russia. More than 60% of foreign medical students at Russian universities attend paid programs with cost ranging between $3,015 to $9,500 per year. In the 2017/2018 academic year, 53,500 foreign nationals have received Russian education in medical sciences, accounting for over 20% of all foreigners studying in Russia.[154]

The Russian Far East has experienced the trend of growing number of international students seeking medical degree. The enrolment of Indian applicants for the General Medicine study programme taught in English in the Far Eastern Federal University, Vladivostok, has tripled in a 2017, from 40 to 124 freshmen.[155]

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[150] Official website about higher education in Russia for international students. (n.d.). *Advantages of Education in Russia*. https://studyinrussia.ru/en/why-russia/advantages/

[151] Official website about higher education in Russia for international students. (n.d.). *English-taught courses and programmes.* https://studyinrussia.ru/en/study-in-russia/study-in-english/

[152] Arefiev, A., Sheregi, F. (2014). *International students in Russian institutions of higher education*. p.34 https://5top100.ru/upload/iblock/be8/inostrannye_stydenty.pdf

[153] Rybakovsky, L. (2008). *Regional features of migrstion processes in Russia.* Ch *4.3. Differentiation of educational migration by constituent entities of the Russian Federation.* http://rybakovsky.ru/demografia1a16.html

[154] Official website about higher education in Russia for international students. (2019). *International Students at Russian Universities.*https://studyinrussia.ru/en/actual/articles/international-students-at-russian-universities/

[155]Far Eastern Federal University (2017). *Foreign students from 67 countries of the world were admitted to study in FEFU in 2017.*

International students are known to provide a host country with a range of benefits. Growing number of foreign students not only helps to raise international profile of a country, but it also provides an important source of income to local economy through students' tuition and living expenses, and has an impact on economic and innovation systems through attraction of human talent.[156]

The notion of higher education as a geopolitically valuable asset has been addressed by Harvard political scientist Joseph Nye, who authored the concept of soft power. He defined it as "co-optive power—the ability to shape *what others want*" that rests on attractiveness of one's culture, political values and foreign policy, as opposed to hard power that relies on coercion or inducement.[157] Prestigious higher education institutions and intellectual excellence they represent, according to Nye, are powerful elements of producing soft power, with academic exchanges leading to assimilation of host culture and to making the country more attractive globally. Higher education institutions have the potential to become potent tools of diplomacy as they enable a state to exert more influence.[158] The Soft Power 30 index indicates that Russian soft power has been deteriorating during the past years and in 2019 the country has received the lowest ranking of the states surveyed. [159] Actively promoting international education in Russia is likely to aid the country to pursue its national interests through soft power component.

Despite the substantial growth of international student population in Russia in the past years, a great potential remains. In 2017, international students represented a mere 5.6% of all higher education enrolment in Russia.[160] For comparison, the figures for Australia, Canada and the UK in 2019 were 28%, 21.4% and 20.9%, respectively.[161]

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https://www.dvfu.ru/news/international_cooperation/foreign_students_from_67_countries_of_the_world_took_over_the_training_of_the_university_in_2017/

[156] OECD Library. (2019). *What is the profile of internationally mobile students?* https://www.oecd-ilibrary.org/sites/17d19cd9-en/index.html?itemId=/content/component/17d19cd9-en

[157] Nye. J. (n.d.) *Soft Power and Higher Education,* p.12. https://cdn.mashreghnews.ir/old/files/fa/news/1393/4/11/637473_515.pdf

[158] Rachman, A. (2020). *Why countries should leverage universities as a new force in global diplomacy.* https://theconversation.com/why-countries-should-leverage-universities-as-a-new-force-in-global-diplomacy-138717

[159] USC Center on Public Diplomacy. (2019). Soft Power 30. A Global Ranking of Soft Power 2019, pp. 38, 40. https://softpower30.com/wp-content/uploads/2019/10/The-Soft-Power-30-Report-2019-1.pdf

[160] Civinini, C. (2018). *Russia's international student enrolment on the up.* https://thepienews.com/news/russias-intl-student-enrolment-growing/

[161] Statista. (2019*). Countries with the largest amount of international students as a share of the total higher education population in 2019.*https://www.statista.com/statistics/788155/international-student-share-of-higher-education-worldwide/

3.4 Porter's National Diamond Framework as applied to the export-oriented medical education cluster in the FEFD

The ongoing efforts of the Russian government to facilitate operation of the innovative regional clusters to achieve sustainable economic development have been discussed earlier. It has also been noted that projects initiated as part of clustering initiatives have often failed to bring the envisioned results. The Russian Far East was not an exception. The attempts to reach the milestones in the areas of modernization and economic diversification of the region were often rated as poor or unsatisfactory.[162] This has raised doubts as to whether the clustering approach can be successfully applied in the FEFD.

The region, however, is uniquely distinct from other regions of Russia and defies traditional approaches. Geographic isolation, weak regional economy, scarcity of available human resources, weather constraints, resulting high operational costs and the need to reorient the region from overdependence on the revenues from natural resources present a formidable challenge for designing and launching standard projects that offer mass market products or services.

Such region, however, is capable of developing and serving specialty, or niche, market with an advanced service that has a unique value proposition. Gaming industry in Macau and Las Vegas provide examples of export-oriented niche services capable of successfully competing on international markets despite being located in seemingly disadvantaged regions. Targeting specialty segments, however, require the creation of a more complex, tailored, integrated products and in remote regions, such services cannot be launched without wider resource mobilization and facilitation from the central government. Only a comprehensive federal strategy can align the national priorities with local needs, resources, activities of regional institutions and businesses, as well as with international neighbours and demands of global clientele.

Given the potential for creation of export-oriented service cluster in the FEFD, the growth of the global healthcare industry, the global shortage of healthcare workers that can be resolved only by training armies of new medical personnel, the creation of a cluster offering educational services for the international medical students is seen as a feasible project that would align with the federal vision of accelerated socio-economic development of the region, innovative regional cluster formation and integration of the region into the Asia-Pacific.

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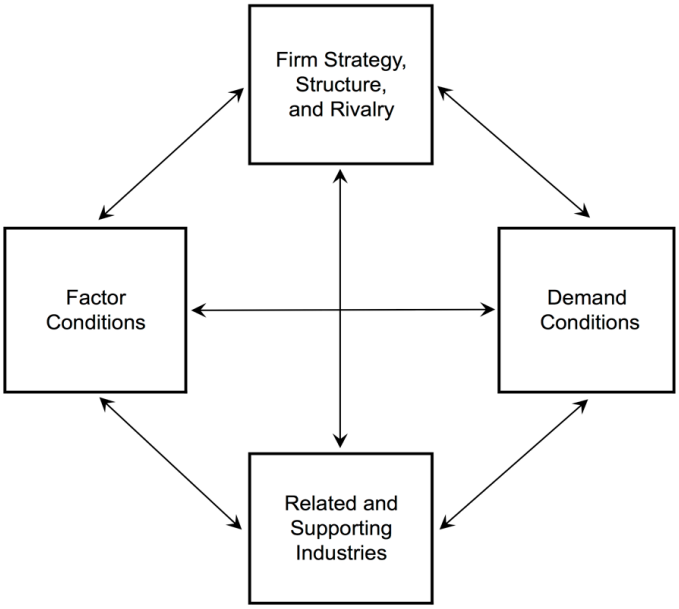
[162] Malle, S. (2013). *Economic modernisation and diversification in Russia. Constraints and challenges.* https://www.sciencedirect.com/science/article/pii/S1879366512000279

International Medical Educational Cluster (IMEC) is proposed as a prototype of such a cluster.

Porter's Diamond model is applied below to identify competitive advantages of the FEFD in general and in relevance to the creation of the IMEC in particular.

Figure 6. Determinants of National Competitive Advantage[163]



Factor conditions

Factor conditions are the key elements of production that can be deployed to create products or services for export. Such factors as availability of labour and raw materials do not constitute a sustainable competitive advantage in modern competitive conditions and are referred to as basic or generalized factors by Porter. "The factors that translate into competitive advantage are advanced, specialized, and tied to specific industries or industry groups"[164]. Inherited industries, infrastructure, scientific organizations and skilled human resources are examples of specialized factors that are seen as key to securing sustainable competitive edge. They are rare, challenging to imitate for competitors and require substantial investment for building and maintaining. Moreover, the main determinant of competitiveness is not the stock of factors at any particular time, but the ability to deploy, upgrade them and to create new favorable factors.[165]

[163] Porter, Michael E. (1990). *The Competitive Advantage of Nations*, p. 77. Harvard Business Review. https://pdfs.semanticscholar.org/4ec2/6dc5b0d082c0890707c487e8fc4aa6144752.pdf
[164] Ibid., p.88.
[165] Ibid., p.79.

The most important factors of production in the FEFD are the following:

Positive factors

- Abundance of land/territory
- Relatively inexpensive labour
- Rich reserves of fossil and biological natural resources
- Advantageous geographic location that favors integration with the of the Asia-Pacific region[166]
- Transit corridors[167]
- Presence of extended coastline on the Pacific coast
- Port of Vladivostok, country's largest along the Pacific, is to be developed into a trade hub
- 5 other principal ports
-7 international airports with direct flights to Beijing, Shanghai, Hong Kong, Tokyo, Osaka, Busan, Seoul, Bangkok[168]
- Large industrial and urban centers – Vladivostok (pop. 605,000), Khabarovsk (pop. 578,000)
- Influx of federal funds for infrastructure projects due to the region's priority on federal development agenda
- Infrastructure for medical education – four large specialized medical universities and research centres with modern campuses and an innovative research base: Far Eastern State Medical University (Khabarovsk, 3 400 students), Pacific State Medical University (Vladivostok, student population 15 000), Amur State Medical Academy (Blagoveshchensk, student population 2 200), Chita State Academy of Medicine (student population 3 000).

Two federal universities with Institutes of Medicine: Far Eastern Federal University (Vladivostok, student population 20 000 of which 3,000 are foreign nationals), Ammonosov North-Eastern Federal University (Yakutsk, student population 16 000). Many medical colleges.

- Over 100 years of tradition of medical education in the region
- Beautiful nature, hunting, fishing, leisure activities
- Low cost of housing and foodstuffs
- Simplified e-visa procedure enabling foreigners in general and foreign lecturers in particular to visit territory of the Far East for short stays to teach module classes as part of the system of

[166] Makarov, I. (2018). *Accelerated development of the Russian Far East*. https://eng.globalaffairs.ru/articles/accelerated-development-of-the-russian-far-east/
[167] Krutakov, L. (2018). *Advanced special economic zones in the Russian Far East: a secret resource for Asian market growth.* https://roscongress.org/en/materials/tor-rossiyskogo-dalnego-vostoka-sekretnyy-resurs-rosta-rynka-azii/
[168] Flight Connections. (n.d.). *From Valdivostok*. https://www.flightconnections.com/flights-from-vladivostok-vvo

cooperation in the educational sphere.[169]

- Established partnerships and trade relations with China, South Korea, Japan and the US

Negative factors

- Largely cold climate and inhospitable mountainous terrain
- A significant part of the territory is located in the regions of the Far North and permafrost
- Logistical challenges due to the size of the region
- Over-dependence on mineral extraction and related environmental deterioration
- Small domestic market
- Highly unequal population distribution, few agglomerations[170]
- Level of urbanization is about 72.2%[171]
- Scarcity of human resources, with many desolate areas
- Low living standards, difficulties in securing employment
- Almost nonexistent transport infrastructure, absence of continuous overland routes from remote areas to largest cities
- Very small percentage of population speaks or understands English

The abundance of land and natural resources, coastline, cargo ports may be considered as basic factors of production. Established relations with Japan, China and South Korea, medical universities' infrastructure, long tradition of medical education, being a priority region for the federal development programmes may be seen as specialized factors of production, central to establishing competitive advantage in medical education industry.

Demand conditions

Demand conditions reflect the situation in home market. A country or a region can derive competitive advantages from the sectors in which local demand is strong and the nature of domestic buyers compels companies to innovate and to outperform foreign competitors. The size of the home market and availability of resources, according to Porter, are of no major importance when it comes to international competitiveness. Dynamics of home demand and scarcity of resources, according to Porter, may be considered as factors that drive

[169] Interfax. (2018). *FEFU Rector Nikita Anisimov: "FEFU is a special university*". https://academia.interfax.ru/ru/interview/articles/1039/

[170] Makarov, I. (2018). *Accelerated development of the Russian Far East*. https://eng.globalaffairs.ru/articles/accelerated-development-of-the-russian-far-east/

[171] Statista. (2020). *Degree of urbanization in Russia as of January 1, 2020, by federal district.* https://www.statista.com/statistics/1089745/urbanization-in-russia-by-federal-district/

competitiveness because they force companies to innovate. [172]

Local demand that is relevant in our case lies in the area of medical services. The composition of the local demand may be said to be determined by two large consumer segments, namely the residents of the region that seek medical services and the students that seek medical education in local medical universities and colleges.

The following factors will play a key role in driving local demand for medical service in Russia and in the Far East. Presidential Healthcare National Project of 2018 allocates the equivalent of $20.5 billion to extension of life expectancy in Russia, reduction of mortality and elimination of shortages in personnel.[173] In line with this strategy, the task was set at increasing the lifespan of residents of the FEFD by 5 years to make it equal to the average in Russia, with the region receiving substantial subsidies from the federal budget for the development of its medical services. Primary care that encompasses prevention and early detection is very poor in the FEFD and unprecedented emphasis has been placed on these areas. Medical centers would be open for foreign investment, medical professionals and doctors in the Far East will receive doubled salaries.

Improved housing projects, education facilities, air connectivity and transport facilities, special conditions on mortgages, opening of new cultural centers, museums, theatres and art galleries, upgrading of 40 regional airports are factors that are likely to attract new residents to the Far East, driving demand for medical services further.[174]

Russia has one of the highest instances of hypertension, cardiovascular diseases and oncology in the world. This unfortunate situation inevitably puts additional demands on the healthcare sector and is a major factor that contributes to the innovation in medical sphere. Russia, for example, is a known pioneer in the development of blood pressure measurement technology that is used as a worldwide standard.[175]

In general, profession of a doctor is among the most prestigious in Russia, attracting growing number of applicants each year and necessitating additional educational facilities to accommodate the demand. The higher medical educational institutions in the FEFD offer medical training for all existing specialties.

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[172] Porter, Michael E. (1990). *The Competitive Advantage of Nations*, p. 82. Harvard Business Review. https://pdfs.semanticscholar.org/4ec2/6dc5b0d082c0890707c487e8fc4aa6144752.pdf

[173] Tass. (2019). *Funds allocated for national healthcare project should be spent wisely — Putin.* https://tass.com/politics/1074315

[174] Devonshire-Ellis, C. (2019). *Vladivostok & Russian Far East To Be Developed As Significant North-East Asian Resource & Trade Hub.* https://www.russia-briefing.com/news/vladivostok-russian-far-east-developed-significant-north-east-asian-resource-trade-hub.html/

[175] Paskalev, D., Kircheva, A., Krivoshiev, S. (2005). *A centenary of auscultatory blood pressure measurement: a tribute to Nikolai Korotkoff.* https://pubmed.ncbi.nlm.nih.gov/16340219/

Aspects that negatively impact local demand for healthcare services are undemanding residents who are used to poor availability of medical services in the region, as well as low retention of medical graduates who receive their education in the FEFD but opt to work elsewhere in Russia or abroad.

Related and supporting industries

Domestic companies, related to or supportive of the main local industry in question and capable of competing internationally, are another source of competitive advantage. Suppliers are considered to be key actors here. Accelerated efficiency, flow of information, pace of innovation and upgrading are guaranteed if globally competitive suppliers are located in geographical proximity to the end-user industry.[176]

Russian Far East is an area where many international companies conduct their operations, primarily in the sectors dealing with extraction of natural resources, fishing and wood industries, with key export categories being oil, precious stones and seafood. 5% of all Russian volume of oil and gas accrue to the Far East and the region plays a key role in transporting them to Asia.[177] As the region is increasingly moving from extraction to refinery, the internationally competitive segments of the local economy contribute primarily to international companies that operate as joint companies in the FEFD and carry out most of the high value-added services. The locally provided services that hold potential export value are very limited, with tourism appearing to be the only example.

Public institutions that provide medical education are reliant on suppliers of human resources (faculty, administrators), physical resources (infrastructure - labs, classrooms, accommodation facilities; teaching materials) and financial resources. Provision of all the above is highly regulated as it is dispensed by the Russian state that trains medical faculty, ensures adequacy and sufficiency of infrastructure for the teaching process, and finances the public institutions of higher education.

Firm Strategy, Structure, and Rivalry

The national, or regional, circumstances provide a context that affects country's or region's competitiveness. Porter argues that how companies are created and managed are of paramount importance and that the practices are often predetermined by regulations, history,

[176] Porter, Michael E. (1990). *The Competitive Advantage of Nations,* pp. 82-83. Harvard Business Review. https://pdfs.semanticscholar.org/4ec2/6dc5b0d082c0890707c487e8fc4aa6144752.pdf
[177] East Russia Agency. (2017). *The Russian Far East passes from extraction to refinery.* https://www.eastrussia.ru/material/the-russian-far-east-passes-from-extraction-to-refinery/

culture and social norms. Established managerial system, management practices and compensation, goals set by companies and goals set by national values for the individuals, prestige attached to certain industries are some of the aspects that come to determine national business environment, aiding or hindering performance and competitiveness of certain industries.[178] The nature of domestic competition, according to Porter, is another stimulus of competitive advantage. Strong local rivalry pushes businesses to innovate, improve and reach out to global markets.

FEFD's business context in still defined by the legacy of historical circumstances. During the Soviet era, the largest cities in the FEFD have been closed to public and to foreign visitors due to their strategic location and presence of military facilities.[179] With changes in global geopolitical climate, Russia has announced its shift to Asia and started searching for partners to develop the region.[180]

Russia is known for a peculiar fusion of public and private economic power that shapes the business environment. A mixed public-private Corporation for the Development of the Far East and the Arctic has been created to supervise the economy of the region.[181] The large public sector still maintains its dominant role in the regional economy as the government keeps full control over its key sectors. Rosneft, the second-largest state-owned company in Russia, contributes 25% into the GDP of the Russian Far East. Investments planned for the nearest years are to increase the company's contribution of the regional GDP growth up to 50%.[182] Middle-size local enterprises operate under public sector control and private-sector-led growth in the region remains low. The current economic model in the region demands primarily poorly qualified jobs and disregards the sectors of local economy that require highly skilled human capital. There are still very few knowledge-based businesses that promote development of human resources.

To sum up, the Diamond model, as applied to the analysis of the factors of production relevant to the operation of the International Medical Educational Cluster in the FEFD, demonstrates that the region has the potential to succeed in a segment of the global service

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[178] Porter, Michael E. (1990). *The Competitive Advantage of Nations*. pp. 83-85 Harvard Business Review. https://pdfs.semanticscholar.org/4ec2/6dc5b0d082c0890707c487e8fc4aa6144752.pdf

[179] Sneider, D. (1990). *Vladivostok and the Soviet Far East: Still Closed, or Open for Business?* https://www.csmonitor.com/1990/0927/o1sea.html

[180] Devonshire-Ellis, C. (2019). *Vladivostok & Russian Far East To Be Developed As Significant North-East Asian Resource & Trade Hub.* https://www.russia-briefing.com/news/vladivostok-russian-far-east-developed-significant-north-east-asian-resource-trade-hub.html/

[181] Far East Development Corporation. (n.d). *About Corporation.* https://erdc.ru/en/about/

[182] East Russia Agency. (2017). *The Russian Far East passes from extraction to refinery.* https://www.eastrussia.ru/material/the-russian-far-east-passes-from-extraction-to-refinery/

economy, namely in the field of international medical education.

Specialized factors of production attest to the potential of developing education services for export, based on the existing infrastructure of medical universities and colleges. Such a project would help ameliorate certain negative factors of production by reducing dependency on finite natural resources, diversifying local economy into value-added services and developing human capital that is likely to be retained in the Far East.

Demand conditions will be positively impacted by the healthcare development initiatives that are underway in the region. Capitalizing on the commitment of the federal government to radically improve healthcare situation in the FEFD, the region can derive competitive advantages by upgrading, developing and customizing its offer of medical education services to suit the needs of international students. With developed medical education infrastructure already in place, the region is well-suited to attract and accommodate greater number of international students that seek affordable, quality medical education abroad. Greater presence of international students in the region will in turn contribute to region's competitiveness as local businesses will strive to meet demand for a wide variety of products and services tailored for foreigners, be it in leisure, entertainment, transportation, delivery of goods. International Medical Education Cluster is also likely to open new perspective for healthcare development in the region in years to come, for example in the field of medical tourism.

The analysis of the factors of production has revealed the underdevelopment of the attributes that are important for competitiveness of the region in service sector, namely the absence of internationally competitive service businesses and of conducive regional business environment with fully developed private sector and availability of skilled human resources. The region is yet to establish the essential competitiveness attributes and conditions in these spheres. Development of the education sector would require strengthening of the human resource base in order to meet the demands of the dynamic market for international medical education.

Empirical studies conducted to determine the most and the least important aspects of Porter's Diamond model speak in favor of the cluster. They point to the paramount importance of proper location, infrastructure and facilities, and of low cost of entry and operation – being the areas of strengths for the IMEC. Less importance is allocated to presence of related and supporting industries, regional presence of collaborators/competitors and demand conditions[183]

[183] Kamath, S. (n.d.). *Ingredients for Cluster Success: Attracting the Right Companies for Cluster Development*. https://www.fora.org/Reports/Colloq/Panel_1_ShyamKamath_121213.pdf

- being exactly the areas where shortcomings of local context for IMEC were identified.

3.4. Summary

In light of growing world population, ageing demographics and rise in non-communicable disease, healthcare has become one of the largest and fastest growing global industries. Increased demand for healthcare services is projected to grow much faster than supply. Shortages in supply of healthcare professionals create shortfalls that threaten both developed and developing nations, with consequences for billions around the world unless the trend is reversed.

While countries vary greatly in severity of shortages and in capacity to prepare human resources for healthcare, some aspects are identified as being common for most high-income countries. The forecasts are made for increasing shortages of certain categories of health workers, for challenges in replacement of ageing health workforce that is about to retire and in adapting and optimizing education strategies in pre-service medical education.

Increased political leadership in supporting human resource development in the healthcare sector of individual nations, as well as facilitation of greater collaboration between countries on the level of medical education and exchange programs, are seen as key to scaling up training of additional workforce and aiding greater balancing of the geographical distribution of health professionals.

The analysis exposed a need to address, among other things, the issue of limited capacity of existing institutions of medical education. Training of new doctors and nurses, in the quantities and within the timeframe required if the impending crisis is to be averted, exceeds their capacity. There is, therefore, an enormous market for education and training of medical professionals on a global scale.

The rise of international student mobility in the past two decades has become a global trend. The market for international higher education is large and is predicted to grow. Russia has emerged as an important player in the field of international education, attracting students from CIS and Asia. Going forward, Russia is poised for further gains in the number of international students' recruitment and has a capacity to accommodate them. The government is taking steps to actively promote Russian higher education market abroad with an aim of attracting over twice as many international students in five years' time.

Medicine is among the most popular study fields among foreign students in Russia due to its affordability and good quality. Upscaling medical education capacity in Russia appears to be both desirable and feasible. Greater numbers of incoming international students benefit

host country economically through their tuition and expense. By leveraging the power of higher education institutions to shape the image and attractiveness of culture and country of the receiving state, increasing population of foreign students is likely to play a role in enhancing Russian soft power component.

Porter's Diamond model of factors that determine national competitive advantage, applied to the FEFD, has demonstrated that despite being a region plagued by underdevelopment, remoteness, small market size, limited human resources and the need to establish attributes and conditions important for competitiveness in service sector – such as presence of internationally competitive service businesses and of conducive regional business environment – the region is well-equipped to enter a segment of global service industry and to achieve sustainable competitive advantage in the niche of provision of international medical education. Existing advanced medical education infrastructure and the unprecedented government support and subsidies given to the development of the healthcare sector in the FEFD will facilitate the creation of an International Medical Education Cluster in the region.

While enhancing competitive advantage of the region in non-commodity exports, operation of such a cluster is likely to contribute to improvement of regional business context and to positively contribute to resolution of many of the issues the region grapples with – depopulation, economic underdevelopment and poor quality of life.

Chapter 4. CASE STUDY OF THE CARIBBEAN OFFSHORE MEDICAL UNIVERSITIES (OMUs) CLUSTER

4.1 Cluster brief

The Caribbean islands, often referred to as West Indies, are generally associated with beautiful scenery, year round warm temperatures and tourist attractions. To experts in financial services, they are known for provision of offshore banking. While tourism and banking generate considerable income for these communities, so does another offshore industry – that of education that specializes in medicine.

The last two decades have witnessed an explosive growth of private, for-profit medical schools in the Caribbean that provide medical education to international students, with 40 per cent of all the region's universities starting operation since 2000. With a single University of the West Indies providing medical education to students in Jamaica in 1962, the Caribbean

region now boasts over 100 medical schools that offer advanced medical degrees.[184] Geographical grouping of medical schools on the Caribbean islands lends itself to an analysis as a prime example of clustering phenomenon in export-oriented services that is thriving despite the region being disadvantaged by its size, topography and shortage of resources.

A unique constellation of factors has accounted for the development of this cluster. As medical education in the US grew in popularity in 1970s, so did the number of students who failed to gain admission to medical universities due to stringent entrance requirements in a highly competitive field of study. Unmet domestic demand was the key factor that led to the emergence of private medical universities established outside of the US, as a a substitute for the American medical universities. Such institutions are commonly referred to as "offshore" medical schools and the emphasis is made on these universities' crucial role in training physicians that are in shortage in the US. [185]

Close geographic proximity and language similarity have made the Caribbean a choice location for outsourcing US medical education. Low requirements for establishment of medical schools and low regulatory oversight of their operation are among the key factors what allowed the cluster of medical schools in the Caribbean to grow this rapidly. [186]

Operation of the offshore medical universities (OMUs) in the Caribbean provides a range of benefits to the regional economy, international students, lecturers and owners of such institutions.

There are clear advantages to the islands in the Caribbean hosting such universities. Small, undiversified economies of the developing islands stand to benefit from contribution to the local economy made through corporate and student taxes, expenditures incurred by faculty, staff, students and visiting families on accommodation, food, transport, entertainment, leisure and recreational activities. For example, St. George's University School of Medicine is estimated to contribute 19% to the Gross Domestic Product (GDP) of Grenada through the taxes and expenses of faculty, staff and students. Opportunities for citizens of the host country to gain employment at the university in various capacities is considered to be another benefit.[187]

The owners and managers of the OMUs are foreign-owned large corporations and small organizations, but also individuals that benefit not only from income-generating opportunity

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[184] McLean, S., Charles, D. (2018). *A global value chain analysis of offshore medical universities in the Carribean*, p.9. Economic Commission for Latin America and the Caribbean (ECLAC). https://www.cepal.org/en/publications/43311-global-value-chain-analysis-offshore-medical-universities-caribbean
[185] Ibid., 7
[186] Ibid., 22
[187] Ibid., 21

but also from tax and other incentives that allow for transfer of all profits, dividends and capital from the Caribbean countries back to their home country by means of repatriation.[188]

Caribbean OMUs are attractive to international students who gain an alternative way to obtain medical degree and benefit from English-taught medical programmes, convenience of living on English speaking Caribbean islands, low tuition costs, living expenses and relatively low cost of travel between the US and the Caribbean. [189]

Most of the lecturers, employed to teach courses both as full-time and visiting lecturers, are retired foreign professors. Despite their average annual salary being only half of what their counterparts with similar qualifications receive in the US, lecturers appreciate quality of life in the Caribbean and flexibility that their employment provides. [190]

Operations of the Caribbean OMUs cluster is based on the global value chain with 3 segments: student recruitment (pre-education), teaching and evaluation (education), and graduate placement and alumni support (post-education). [191]

In the stage of student recruitment, OMUs position themselves as a substitute for traditional US medical universities. They target North American students who have failed to gain acceptance into a medical university programme at home due to low grades or poor exam scores. Enrolment in OMUs is seen as a less challenging route leading towards legitimate practice of medicine in the North America.

In teaching and evaluation, medical degree programmes are constructed based on the curriculum of US medical universities. Most programmes consist of theoretical aspect of basic science (pre-clinical training), lasting 2-3 years and completed in the Caribbean, followed by a two-year clinical internship, completed at teaching hospitals in the US, finalized by a year-long medical residency training in the specialty area that must be completed in the US hospital. At the end of each stage an exam is passed and a certification is obtained.

In graduate placement, the process of employment is carried out through highly competitive system of gaining residency placement. Residency training positions in US teaching institutions are allocated on annual basis to both US and international medical graduates. The number of applicants greatly exceeds the number of positions offered, and the selection is made based on grades, scores and letters of recommendation from medical practitioners. [192]

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[188] Ibid., 23
[189] Ibid.
[190] Ibid., 11
[191] Ibid., 15
[192] Ibid., 16-17

Reputation-wise and compared to traditional medical universities, Caribbean OMUs are not given a strong ranking. The concerns are often raised about the overall quality of education provided and performance level of students.[193]

The thorough assessment is made difficult by the lack of uniform data on the Caribbean OMUs and the lack of transparency on the reporting by individual schools that tend to provide only favorable statistics. While some reporting is done on a key measure that assesses performance of OMUs - the percentage of graduates to receive a residency placement at the end of studies - no mention is made of the residency success rate or of students' performance in certification exams.

Despite the above limitations, Caribbean medical schools remain the preferred choice for US and Canadian students who fail to enter medical universities at home.

4.2 Future outlook

Unlike medical universities in the US that must comply with standards covering academics, finances, and operations in order to gain accreditation, nothing but a business license is required to open a medical university in the Caribbean, with no additional requirements imposed. Such institutions are under no WHO promoted social obligation to focus their activities on addressing local health priorities.[194]

Further on, the question of formal accreditation of such institutions is yet be addressed. In certain Caribbean locations, accreditation is done by a local governmental agency, yet in other cases universities may decide on accreditation by a foreign agency. Only four Caribbean offshore medical universities are recognized by the National Committee on Foreign Medical Education and Accreditation (NCFMEA) within the The US Department of Education as providing equivalent to the US medical education. In 2003, Caribbean Community (CARICOM) formed the Caribbean Accreditation Authority for Education in Medicine and other Health Professions (CAAMHP) to accredit medical tertiary level institutions, obliging them to comply with a number of requirements. But with the process being non-compulsory in nature, some Caribbean OMUs have never undergone formal accreditation and a small number

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[193] Morgan, J., Crooks, V., Snyder, J., Pickering, J. (2018). "*They don't have the history and the stature": examining perceptions of Caribbean offshore medical schools held by Canadian medical education stakehold*ers. Canadian Medical Education Journal.
https://www.researchgate.net/publication/327226941_They_don%27t_have_the_history_and_the_stature_examining_perceptions_of_Caribbean_offshore_medical_schools_held_by_Canadian_medical_education_stakeholders

[194] McLean, S., Charles, D. (2018). *A global value chain analysis of offshore medical universities in the Carribean*, p.24. Economic Commission for Latin America and the Caribbean (ECLAC).
https://www.cepal.org/en/publications/43311-global-value-chain-analysis-offshore-medical-universities-caribbean

of medical schools that were assessed received partial, provisional, conditional accreditation or have not been accredited at all. Should this accreditation be made a mandatory prerequisite for the operation of all private medical universities in the Caribbean region, such measure is likely to alleviate concerns over the quality of education and preparedness of future medical practitioners. [195]

Being admitted into the residency program in the US is the only pathway that enables international medical graduates to practice as licensed physician in the US. In order to apply for residency programs in the US, a certification from US-based Educational Commission for Foreign Medical Graduates (ECFMG) must be obtained. Starting in 2023, the Commission will require that all physicians applying for their certification are the graduates of an appropriately accredited medical university.[196] This measure would require OMUs to be formally accredited or face the consequences of their graduates being unable to secure a place in residency program.

Another cause for concern revolves around the lack of transparency in the success rate of the the students of the Caribbean OMUs in obtaining placement in the all-important residency programs in the US. Most Caribbean schools provide no reporting on the issue. Students may end up committing time, resources and loans to pursue medical education in an offshore university, only to fail to secure a residency in the US hospital at the end of their studies, effectively rending their medical education in the Caribbean void.[197]

Quality of education in the medical universities in the Caribbean is the issue that raises most concerns. The student population in the Caribbean OMUs on average greatly exceeds that of the medical schools of the US, with the former's student bodies averaging thousands and the latter – hundreds of students. Unlike the U.S. medical schools that enrol 50 to 250 students per class per year, admissions into the Caribbean OMUs run several times per year, accepting 300 students per class.[198]

Compared to U.S. medical school standards, high dropout rates, poor students' performance on examinations and poor graduation statistics have been observed in the Caribbean medical schools, with 20-30% of the students failing to graduate on time. Moreover, with teaching frequently taking place through distance learning programmes, it is argued that teaching at offshore medical universities is designed specifically to train students to pass tests and obtain certifications, rather than to prepare them for the actual practice of medicine. [199]

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[195] Ibid., 28, 29
[196] Ibid., 35
[197] Ibid., 19, 31
[198] Ibid., 27
[199] Ibid.

In contrast to the US medical schools, Caribbean OMUs often do not have an associated teaching hospital where practical training is carried out, with payments being made to the US teaching hospitals to accommodate Caribbean students for the obligatory clinical rotations. [200] Failure of the Caribbean offshore medical universities to conduct and engage in research, to collaborate with local hospitals and to contribute to dissemination of scientific knowledge is pointed out as another shortcoming.[201]

Finally, the ease of setup of the offshore medical school in the Caribbean attracts eager entrepreneurs from abroad. Foreign investors' leading motivation for opening and running medical university in the Caribbean is the profit motive with little intention of contributing to social and economic development of the local community. [202]

Additional challenges to the OMUs in the Caribbean have to do with local context and include concerns regarding road safety and lack of standards of off-campus housing and food quality.

4.3 Implications for the service cluster in the FEFD

The findings above reveal important factors that need to be considered in the initial stages of the formation of the IMEC in the Russian Far East, with practical implications becoming the need to pay much attention to the indicators of high quality of medical education, and of its perception, as well as to the factors impacting good institutional reputation.

The poor reputation for the IMEC in the FEFD is likely to result from absence of accreditation and lack of disclosure of international students' success rates in passing exams and most importantly, in graduate employability. The cluster may be perceived as offering low overall quality of education should its teaching process be characterized by low admission standards, poor teacher-to-student ratio, low exam pass rates and absence of research programs.

Table 1 lists largest medical universities in the FEFD and highlights some of their advantages compared to the OMUs cluster in the Caribbean. The biggest difference lies in the fact that Russian medical universities are large, public institutions. They conduct extensive collaboration with their counterparts abroad, engage in international research, publish specialized journals and provide medical services to residents of their region – aspects that are entirely absent in Caribbean medical schools. Moreover, unlike Caribbean medical school that

[200] Ibid., 24
[201] Ibid., 36
[202] Ibid., 22

are greatly disadvantaged by the need to outsource practical training due to lack of facilities, each medical university in the FEFD has its own clinical base and access to various regional educational and medical bases, offering ample opportunities for clinical rotations in all specialties - without the need to travel abroad to secure and complete them.

Table 1: Key features differentiating medical universities in the FEFD from Caribbean OMUs[203]

Medical university	International cooperation, research activities	Clinical base
Far Eastern Federal University (FEFU) (Vladivostok)	* 80 partnership projects with universities across Pacific Rim, Europe, USA, Japan, China and Korea * operates double degree programmes with American, Australian and other international educational organizations in the specialities of clinical medicine, pharmacy, clinical psychology, medical biochemistry and biophysics	* General Medicine as one of the medical programmes offered * FEFU Medical Center, that meets the standards of international clinical rotations, was recently established
Pacific State Medical University (Vladivostok)	* maintains close relations with universities, clinics, medical centers and international organizations in China, Japan, Singapore, South Korea, France, Germany, Great Britain and the USA within the framework of 15 agreements and memorandums of understanding	* own clinical base: Center for Reproductive Health of Adolescents and Youth, Dental Clinic, and Center for Psychological Assistance * contracts for students' training with 66 largest national medical, pharmaceutical, dental health organizations
The Far Eastern State Medical University (Khabarovsk)	* agreements on cooperation with universities in Japan, Korea, Canada, China, joint activities conducted in main scientific areas * publishes a journal	* clinical bases: 43 medical and preventive institutions in the city of Khabarovsk and the Khabarovsk Territory (of which 15 polyclinics and 28 hospitals) with a bed capacity of 6334 beds
Amur State Medical Academy (Blagoveshchensk)	* annual student exchanges with Osaka Medical College (Japan) * cooperation with the Heilongjiang University of Traditional Chinese Medicine (Harbin, China). Annual joint biomedical and pharmaceutical forums are held alternately in Harbin and Blagoveshchensk * exchange of scientific information, joint conferences are held with the Qiqihar Medical University (Qiqihar, China) * publishes a journal	* own clinical base: Cardiac Surgery Clinic and the Scientific and Practical Treatment Center "Family Doctor" * educational and medical bases: 19 medical organizations, including 4 polyclinics and 4 dispensaries, with the bed fund of more than 4000 beds
Chita State Academy of Medicine	* agreement on cooperation in the field of scientific and educational activities with the Qiqihar Medical University (Qiqihar, China). Within the framework of this agreement, a program of academic mobility of teachers and research staff is being implemented * publishes two journals	* own clinic: the Clinic of the Chita State Medical Academy, provides high-tech medical care within the framework of federal quotas to the residents of the Trans-Baikal Territory and neighboring regions in maxillofacial surgery and ophthalmology * contracts for the practical training of students with 19 largest clinical bases in the region

[203] Complied by author based on data from following sources:

With research and publications already being carried out by the medical universities in the FEFD, personal or professional relationships that have been formed through scientific collaboration will add to positive reputation of the cluster and may be leveraged to improve the perception of quality.

Stringent requirements for operation of medical universities within the cluster will ensure high quality of medical education offered in the FEFD, and the medical schools' integration into and service to the local communities will demonstrate high degree of commitment to social accountability.

Evidently, the IMEC, as based on the infrastructure and training facilities of existing and reputable medical universities and colleges in the FEFD, will not have to face the main limitations that challenge reputation of the OMUs in the Caribbean, namely their short history of operation and lack of international stature due to the ever-increasing number of medical schools being opened in the region.

4.4 Summary

Offshore model of medical training has enjoyed steady growth and is said to be transforming the landscape of international medical education. Offshore medical schools are unique as they are focused exclusively on serving international students who are unable to gain admission into medical schools at home.

Caribbean region, with its established cluster of offshore medical education institutions, provides an example of operation of this model. Dissimilarly to traditional medical universities that teach students from the own country or region and need to follow a local study curriculum, OMUs in the Caribbean serve exclusively international students, primarily from the US and Canada, who aim to become certified medical practitioners in the US. Despite the growing number and popularity of medical schools in the Caribbean, accreditation issues and infrastructure limitations are compounded by the issue of quality of the medical training offered, leading to the Caribbean OMUs cluster being perceived as having one of the lowest

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The World University Rankings. (2021). *Far Eastern Federsal University*. https://www.timeshighereducation.com/world-university-rankings/far-eastern-federal-university

RusEducation. (n.d.). *Far Eastern Federal University*. https://www.mbbsinrussia.org/universities/far-eastern-federal-university

Official website about higher education in Russia for international students. (n.d*.). Medical Education in Russia.* https://studyinrussia.ru/en/study-in-russia/medical-education-in-russia/

Ministry of Health of the Russian Federation. (2016). *Development program of the scientific and educational medical cluster of the Far Eastern Federal District and the Baikal region - "Eastern"* - for 2016-2025. http://www.fesmu.ru/SITE/files/editor/file/582/kl_prog.pdf

quality medical schools in global hierarchy of medical education.

The case study of the Caribbean OMUs cluster has provided important insights into the workings of the offshore education model. It has demonstrated benefits gained by cluster's stakeholders and exposed challenges of operating medical institutions catered to foreign students.

Issues of proper accreditation, quality of education and professional reputation appear to particularly relevant for the operation of the IMEC in the Russian Far East that will enter the market for offshore medical education. FEFD medical universities have a clear advantage of established reputation for quality education and international collaboration, engagement in international research and abundant availability clinical bases for practical medical training.

Despite the many shortcomings of the medical schools in the Caribbean, they continue to attract thousands of students annually. It is not unreasonable to assume that should an alternative offshore medical university cluster appear, offering affordable, high quality education with English as a medium of instruction, and should it be positively perceived by the international medical education community, international students' decision-making with regard to the choice of location for studying medicine abroad is likely to be impacted by availability of this alternative option.

Chapter 5. MODEL OF THE INTERNATIONAL MEDICAL EDUCATION CLUSTER IN THE FEFD

5.1 Seven aspects of IMEC formation

There is little disagreement on the fact that clustering approach holds multiple benefits for regional development. There is, however, a lack of consensus among policy makers, academics and business leaders as to how to create successful clusters. With theories and models abound, complexity and diversity of each individual cluster and the historical and cultural context in which it is nested renders generalized prescriptions of limited value. Understanding regional specifics, such as economic landscape, core competences and distinctive advantages of the region are suggested to be important starting points. [204]

While developing a complete business plan for the IMEC is beyond the scope of this

[204] Manickam, A., van Berkel, K. (n.d). *Clusters and how to make it work: Cluster Strategy Toolkit.* Policy Brief. https://core.ac.uk/download/pdf/250638681.pdf

work, the discussion below proposes a simplified model for internationalisation of Russian medical education through creation of specialized medical education cluster located in Russian Far East.

The proposed model also serves the purpose of concretizing discussion of the preceding chapters, giving it a more practical orientation. It also highlights key political and economic aspects that deserve consideration at the preliminary stage of the planning process.

The seven aspects below are thought to be key in the process of creation of the IMEC in the FEFD:

1. Deciding on structure of the cluster
2. Promoting national integration and international collaboration
3. Assessing political and organizational challenges and risks
4. Eliminating or mitigating destructive forces
5. Deciding on management and leadership strategy for the cluster
6. Ensuring profitability
7. Ensuring sustainability

5.2 Aspect 1. Deciding on structure of the cluster

As the initial step of planning for creation of a cluster, the question of its structure needs to be considered. Decision on the organisational elements of the IMEC is likely to be impacted by a variety factors, but recruitment of international students appears to be the main issue to consider.

In general, there is little active recruitment of the international students conducted by the Russian medical universities themselves. The recruitment of foreign students into the medical institutions in Russia is currently carried out through external parties - the so-called agents, brokers, contractors, facilitators, liaison officers, student placement service providers or educational consultants and their sub-agents. Theses are private companies in various locations in foreign countries that not only recruit students but are often responsible for their housing, general welfare while on a study programme in Russia, and in some cases even for collection of study fees for the duration of the programme. Such admission practices appear to be mutually beneficial for both the contractors, who get commissions for recruiting students, and for the Russian medical schools who outsource potentially cumbersome process of recruiting foreign students.

The practice, however, is not without its problems, as the contractors in foreign countries are appointed without a mechanism in place that would require them to be recognized by the Ministry of Science and Higher Education of the Russian Federation. The issue is best illustrated by the case of Indian students who are among the most numerous international medical students in Russia. The Education Wing in Embassy of India in Moscow alerts prospective Indian students to the dangers of dealing with agents who routinely make false promises and give misleading information about tuition, facilities, curriculum, language of instruction, availability of accommodation and the cost of living expenses. The embassy strongly recommends students to make enquiries directly with Russian medical institutions before signing any contract with agents to avoid being financially cheated. Embassy also reports cases of students having been denied admission after arrival to Russia due to lack of proper documentation and cases of termination of enrolment due to contractors collecting money but not depositing it with the university.[205]

It should come as no surprise that despite a great number of Indian agents operating in the field of facilitation of admission into medical universities in Russia, none is appointed or authorized by the Indian authorities for admission of students into any medical course abroad.[206] Moreover, an unusual practice has developed whereby entrepreneurial senior Indian students themselves function as contractors and agents for newcomers.[207]

It is clear that transparent, efficient and well-regulated system of recruitment and admissions of international medical students should form the core of the IMEC's structure.

Importantly for the cluster's structure, research indicates that "private initiative is a decisive factor in the success of a cluster"[208] and that private, commercial enterprises must play a key role even in clusters created on the basis of universities or research centers, with suggestions made for the top levels of cluster's administration to consist primarily of members of business community.

Taking into the account the above aspects, proposed organizational structure of the International Medical Education Cluster in the FEFD is presented below. The value of the structure lies, primarily, in combination of private and public initiative. The concept revolves

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[205] Ibid.

[206] National Medical Commission of India. (n.d.) *For students to study abroad.* https://www.nmc.org.in/information-desk/for-students-to-study-in-abroad

[207] Embassy of India in the Russian Federation. (2021). *Admission process in Russia medcial indstitutions*. https://indianembassy-moscow.gov.in/admission-process-in-russian-medical-institutions.php

[208] Kutsenko E. (2015). *Pilot Innovative Territorial Clusters in Russia: A Sustainable Development Model*, pp. 32–55. https://www.researchgate.net/publication/279274292_Pilot_Innovative_Territorial_Clusters_in_Russia_A_Sustainable_Development_Model

around using private enterprise to bring together academia, business and state around the core made up by the medical universities and colleges in the FEFD, and streamlining their operations towards the common goal of developing a medical education ecosystem that would offer top-quality international medical education. Development of such ecosystems is said to be key to sustainable development of sparsely populated Russian regions. [209]

The proposed structure is based on a notion that the main parameter of assessing cluster's business activity is profitability - ability to yield profit and dividends to both public and private investors. Low profitability sentences any business activity to failure. In Russian realities even state corporations are known for not carrying out priority government decisions, such as gasification of the Far East, if their implementation does not result in profits deemed "normal" in the industry.[210]

The proposed structure is based on understanding of the importance of technologies - both in provision of education services and in management. It takes into account region's limited experience in realizing cluster policy and addresses the issue of insufficient capacity that the FEFD has at its disposal, be it in the sphere of finances, administration, management or human resources. It incorporates financial and organizational instruments that are the main tools for the creation of the cluster and proposes participation of specific units capable of working out cluster's economic, legal and organizational issues. The structure seeks to avoid the downside of traditional Russian tendency to vertical approval and suggests collaboration within a cluster that is horizontal in nature, with equal involvement of all members in decision making.

The structure envisions involvement of state authorities at all levels (federal, regional, municipal). Involvement on the federal level will support cluster initiatives by providing policy support, creating a valid regulatory and legislative base, promoting infrastructure development, supporting entrepreneurship, assisting in eliminating barriers to international cooperation in the sphere of higher education and by mitigating challenging aspects that are bound to arise in the process of cluster's functioning. Involvement of regional authorities will provide the cluster with politically important information and

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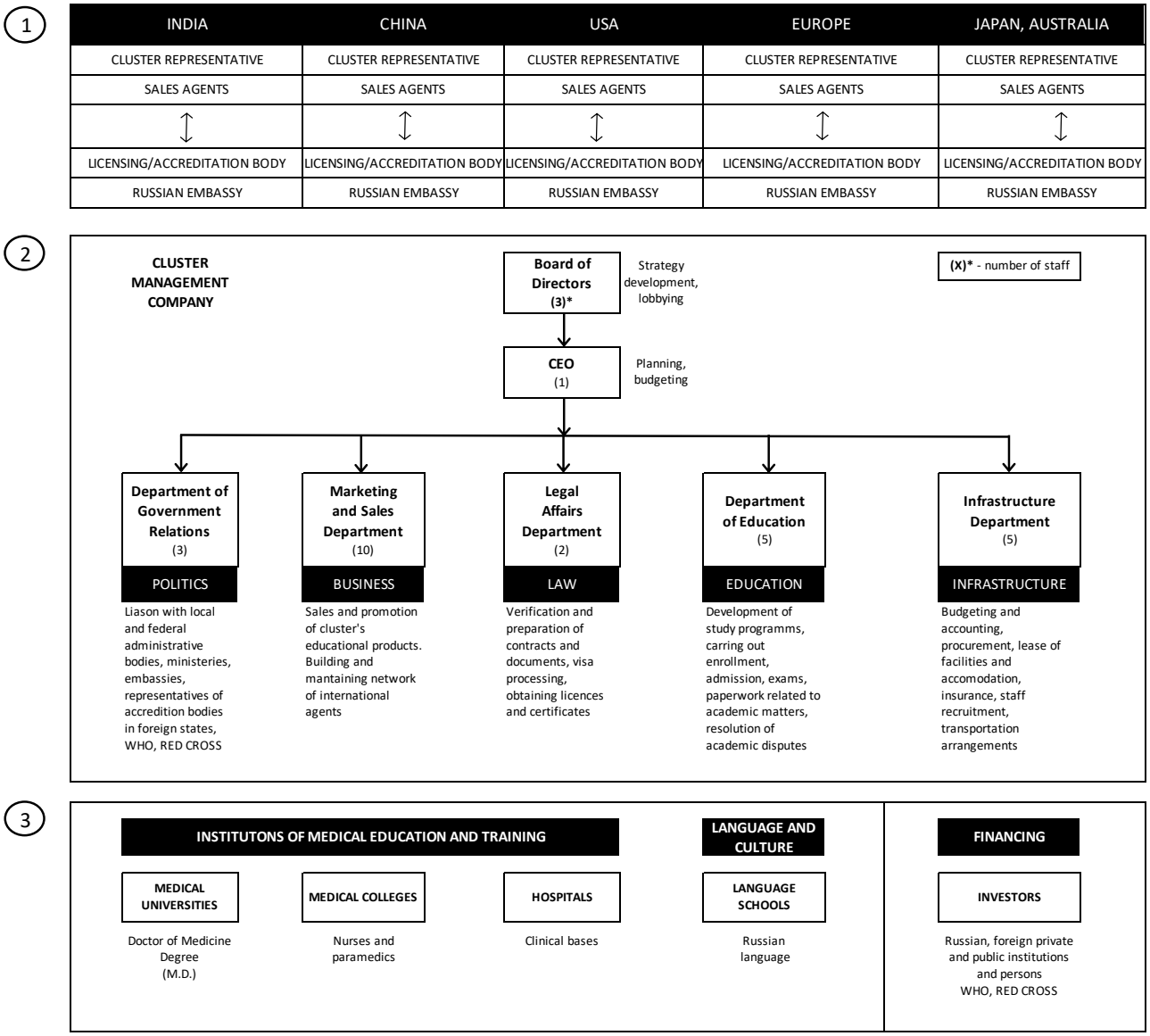
[209] Stepanova, N., Gritsenko, D., Gavrilyeva, T., Belokur, A. (2020). *Sustainable Development in Sparsely Populated Territories: Case of the Russian Arctic and Far East.* p.11 https://www.researchgate.net/publication/340029028_Sustainable_Development_in_Sparsely_Populated_Territories_Case_of_the_Russian_Arctic_and_Far_East

[210] Volynchuk, A., Pestsov, S., Kozlov, L., Volynchuk., Y. (2018). *Regional Policy of Russia in the Far East: Why Does It Go Wrong and What Is Apparently Seceded,* p. 8. Journal of Politics and Law. https://pdfs.semanticscholar.org/777b/aab24e9cdb953852d869ca56f3e62aa943ae.pdf?_ga=2.136999920.1513565651.1615551815-1289974801.1615551815

organizational support needed for engagement with the central government, such as in drafting and adjustment of regulations and specific programmes.

Figure 9: Model of the IMEC in the FEFD[211]



Functionally, International Medical Education Cluster is to consist of 3 levels, as shown in *Figure 9*.

Organisations on level 1 are to be responsible for the recruitment of international students in selected foreign countries; organisation on level 2 is to be represented a Cluster

[211] Produced by author

Management Company (CMC), overseeing functioning of the entire cluster; and organisations of level 3 are to include educational organisations responsible for medical students' training. Investors will assure cluster's financing and are separated in category of their own.

Below is the description of each level of cluster structure in detail, along with the basic definition of the enterprises and their specific priorities.

On Level 1, companies located in India and China (potentially in the US, Europe, Japan and Australia), referred to as agents in the chart, will play a role of key partners and a source of credible information for international students seeking to obtain medical degree in Russia. These companies will be tasked with recruitment of international students, verification of the necessary documents required for admission into cluster universities or colleges, and cooperation with local administrative bodies in their respective countries to facilitate recruitment process.

Level 2 is reserved for the Cluster Management Company. In this aspect the structure is similar to that of Moscow International Medical Cluster, where the central role is played by the management company, called Foundation, responsible for implementation of the entire project.[212]

The need for such a company is apparent. Already at the stage of formation the IMEC will consists of a dozen of local and international organizations and will require a management company to serve as its core. CMC will therefore play a leading role, being responsible for day-to-day functioning (uniting a large number of diverse entities within the cluster and accommodating the interests of all the participants) as well as for strategic direction (ensuring profitability and sustainability of the cluster and orienting it towards greater efficiency and competitiveness, as based on market mechanisms). CMC will also identify and support innovative joint projects in the international education sector and professionally organize and maintain collaboration between relevant parties.

It is planned that the company will be governed by the Board of Directors that decides on matters of strategic planning, resource allocation and amount of dividend payments to the investors. The company will also include government representatives from administrative or political structures. The Board will appoint CEO for effective management of the cluster company.

CMC may consist of the following five structural divisions or departments: Marketing and Sales, Legal Affairs, Education, Infrastructure and Department of Government Relations.

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[212] Moscow Ineternational Medcial Cluster. (n.d.). *IMC Foundation.* https://www.mimc.global/en/foundation

Marketing and Sales Department will work with international agents to attract prospective students in priority markets and to oversee their admission. Shaping university policies and procedures to enhance attractiveness for foreign students will be another of the department's competencies.

Legal Affairs Department will be tasked with preparation of cluster's contracts with various organisations within the cluster, but also with investors and students. Additionally, it will deal with processing immigration documents and visas.

Education department will work closely with universities in preparation of study plans for accreditation of English-taught degree programmes. It will also be responsible for organisation of open days for prospective students as well as of graduation ceremonies. Problems of social and psychological adaptation of foreign students will be addressed by this department as well.

Department of Government Relations will deal with the issues of immigration, education and healthcare spheres pertaining to the prerogative of the Russian government. Recognition of foreign certificates, accreditation of new programs, obtainment of numerous licenses necessary for cluster's functioning within FEFD's legal formwork, preparation of visits for accreditation bodies, cooperation with embassies in students' native countries will require close cooperation with federal and regional administrative and legislative bodies. The department will also work on shaping public policies directly associated with the development of the service sector in the FEFD and with socio-economic development of the region.

Infrastructure department will deal with accountancy, HR management, staff recruitment, housing, insurance, travel issues and other areas of students' lives that require priority focus.

Level 3 groups organisations - medical universities, medical colleges and hospitals of the FEFD - will deal with the actual provision of medical education.

The following six universities may be included in the cluster. Two federal universities - Far Eastern Federal University (FEFU) (Vladivostok) and Ammonosov North Eastern Federal University (Yakutsk) - offer a variety of medical degree programmes. FEFU is one of the leading federal universities in Russia and a member of the priority project for the export of Russian education and, at the same time, is the center for the integration of the Russian Federation into the Asia-Pacific region. [213] It is also exemplary due to the fact that it carries out

[213] Far Eastern Federal University (2017). *Foreign students from 67 countries of the world were admitted to study in FEFU in 2017.* https://www.dvfu.ru/news/international_cooperation/foreign_students_from_67_countries_of_the_world_took_over_the_training_of_the_university_in_2017/

dynamic promotion of the university on the international educational market through participation in major exhibitions, cooperation with recruiting agencies, direct recruitment in China and CIS countries, attraction of foreign applicants through Olympiads and summer schools. [214] Also, it was the first Russian university to launch master's degree programs in English.[215]

Pacific State Medical University (Vladivostok), The Far Eastern State Medical University (Khabarovsk), Amur State Medical Academy (Blagoveshchensk), Chita State Academy of Medicine may also become members of the cluster.

As another component of education and an additional way to develop regional resources, language schools providing Russian language training are added. They will enable foreign students to learn the language for the ease of adaptability to and maximum benefit from the experience of living in Russia. Mastering the language, for those interested in doing so, will give an opportunity to practice medicine in Russian-speaking countries.

Finally, investors are separated into a special category. The group is likely to include private domestic and international investors such as investment funds, international organisations such as WHO and Red Cross that might be interested in increasing numbers of qualified medical practitioners for their global programmes, and public investors such as government of the Russian Federation and local administration.

It is envisioned that investors will become the main source of initial funding for the cluster organization. State support programs are unlikely to fully fund the cluster due to budgetary constraints provoked by challenging international situation and continuing economic sanctions. Moreover, mechanisms for obtaining federal support for the development of new clusters are based on competition, making the support challenging to secure. Additionally, transferring grater part of investment costs from the state to the private business is said to have become the common feature of Moscow's new approach to the development projects in the Far East[216] and is the trend that speaks in favor of investor-driven cluster funding.

A key element in investor relations would include attracting the Russian Direct Investment Fund (RDIF), Russia's wealth fund that co-invests into Russian economy alongside the world's largest institutional investors and that have been very effective in forging strategic

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[214] Ibid.

[215] The World University Rankings .(2021). *Far Eastern Federsal University*. https://www.timeshighereducation.com/world-university-rankings/far-eastern-federal-university

[216]Volynchuk, A., Pestsov, S., Kozlov, L., Volynchuk., Y. (2018). *Regional Policy of Russia in the Far East: Why Does It Go Wrong and What Is Apparently Seceded,* p. 6. Journal of Politics and Law. https://pdfs.semanticscholar.org/777b/aab24e9cdb953852d869ca56f3e62aa943ae.pdf?_ga=2.136999920.1513565651.1615551815-1289974801.1615551815

partnerships to secure inflow of foreign capital into Russian economy. “Regional development” and “Improving quality of life” are two of the six areas which the RDIF investments are focused on and that IMEC falls within. What is of particular benefit to the cluster is that the fund has created the mechanisms that allows leading global investors to access Russian regional projects and to attract foreign investments into social sphere, in areas such as healthcare and education. Of interest here are two particular initiatives. For example, RDIF and Indian National Investment and Infrastructure Fund (NIIF) have created a $1 billion Russia-India Investment Fund to co-invest in economic and trade projects. RDIF and China Investment Corporation (CIC) have set up a $2 billion Russia-China Investment Fund, with 70% of the amount to be invested in projects in Russia.[217]

5.3 Aspect 2. Promoting national integration and international collaboration

The international medical education cluster in the FEFD is created with an overreaching aim of contributing to and promoting regional development, national integration and international collaboration.

Cluster’s benefits to the regional development of the Russian Far East have been covered in detail earlier. The revenue generated from cluster operation is likely to contribute towards normalizing the demographic and economic situation in the region.

When it comes to national integration, facilitation of knowledge exchange and cooperation between medical universities, research centres and medical clusters in European Russia with their counterparts in the Far East is envisioned, as well as strengthening social and economic links between the two.

When it comes to international collaboration, deepening relationships in economic and educational spheres with the selected co-members of such international organisations as Shanghai Cooperation Organisation (SCO) and BRICS, namely with India and China, but also with Japan, potentially with the U.S. and Australia is envisioned. By preparing sufficient numbers of well-trained medical professionals from the above-mentioned states in the FEFD in cost-effective way and within a reasonable for medical education timeframe, the issue of the shortage of the healthcare workforce in these countries might be successfully addressed.

Of crucial importance is the fact that medical education received by international students in the FEFD should result not only in them obtaining Russian medical

[217] Russian Direct Investment Fund. (2021). *Overview*. https://rdif.ru/Eng_Index/

degrees, but it must enable them to practise medicine in their home countries. Since medical licensing examinations are country-specific and systems of recognition of foreign medical qualifications varies greatly, the issue deserves to be addressed in detail.

Two countries, India and China, are considered to be priority markets for the IMEC, and the specifics of cooperation with these two states in the issues of foreign diplomas recognition is discussed below.

INDIA

Since the time of the Soviet Union, Russia has been the preferred destination for students from India who aspired to become doctors. According to the Culture Department of Embassy of the Russian Federation in India, nearly 6,000 Indian students come to Russia every year, with over 70% of them deciding to study medicine. The decision to seek foreign medical education is driven by limited seats available in public medical colleges in India and by prohibitive tuition fees in country's private medical schools.[218]

Medical Council of India (MCI), the body responsible for promotion and maintenance of excellence in medical education, lists 54 medical universities in the Russian Federation (with three - Far Eastern Federal University, North-Eastern Federal University named after MK Ammosov and Pacific State Medical University - located in the FEFD) as foreign institutions recognized by the Indian Embassy and High Commission of India that confer degree of MBBS (Bachelor of Medicine and Bachelor of Surgery) or its equivalent course. MMBS duration is 6 years, followed by 1 year of internship that may be completed either in Russia or in India.[219]

Prior to enrolment in a medical school abroad, according to the Indian Medical Council Act, any Indian student seeking to join an undergraduate medical course in a foreign medical institution must first obtain Eligibility Certificate issued by the MCI. [220] Upon completion of the medical program abroad, Indian students with foreign medical qualification are required to pass a licensure exam to obtain a license to practice medicine in India – the Foreign Medical Graduate Examination (FMGE) Screening Test. The exam is held biannually in form of a computer-based test at various test centers across India, with candidate having to score a minimum of 50% marks in order to pass the exam and each candidate getting only three

[218]Kumari, J. (2019). *Why Russia is a huge draw among foreign students.* The Times of India. http://timesofindia.indiatimes.com/articleshow/72124909.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

[219] National Medical Commission of India. (n.d.) *For students to study abroad* . https://www.nmc.org.in/information-desk/for-students-to-study-in-abroad

[220] Embassy of India in the Russian Federation. (2021). *Advisory for prospective Indian students for studying in Russia.* https://indianembassy-moscow.gov.in/education.php

attempts to seat the exam. If successful, a student is required to register with a State Medical Council (SMC) to obtain medical license. Graduates from the US, UK, Australia, Canada and New Zealand are exempted from the exam and are qualified to become doctors in India without having to take it.[221]

The second highest number of medical graduates appearing for the FMGE every year are the Indian graduates of Russian medical institutions. According to the NBE's ranking of institutions based on performance of candidates in FMGE Screening Test for the period of 2015-2018, the average pass rate of Indian students with Russian medical degrees was 12.9% – compared to 18.4% in 2012-2014. [222] Overall, only a fraction of Indian students who pursue medical degree abroad qualify to practice in India - only 14% pass the licensing exam. The greatest number of Indian students who qualify the FMGE have done their studies in Bangladesh, Philippines or Nepal. [223]

The reasons for such poor results are numerous and the consequences vary. In case of Russian medical universities, it has been noted that the approach of teaching the first three years of curriculum in English but switching to Russian language of instruction in the fourth year leads to failure in the exam. Many dissimilarities in practice of medicine between Russia and India that Russian curriculum does not take into account are also noted. Unsuccessful Indian graduates of foreign medical schools who have exhausted all the attempts to pass the licensing exam usually opt for an employment with pharmaceutical companies or as consultants in private hospitals, but some end up practicing medicine illegally and endangering lives. [224]

Indian government, in search of solutions to such a dismal situation, has introduced the National Eligibility Entrance Test (NEET) for medical education in 2018, informing embassies across the world that only students with the minimum NEET pass marks of 119 are to be given admission to the foreign medical programs, thus eliminating students deemed unfit to study and practice medicine right from the start.[225]

Indian embassies advice students seeking medical training abroad to exercise caution in selecting foreign medical institutions, making sure that the education provided is in line with

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[221] Embassy of India in the Russian Federation. (n.d.). *Guidelines for Indian students seeking graduate medical qualifications (MMBS or equivalent) from foreign countries.* https://indianembassy-moscow.gov.in/pdf/GUIDELINES%20FOR%20INDIAN%20STUDENTS%20SEEKING%20GRADUATE%20.pdf

[222] Shivangi, M. (2019). *Only 14% Indian students with foreign medical degrees passed FMGE in 2015-18.* https://timesofindia.indiatimes.com/home/education/news/only-14-indian-students-with-foreign-medical-degrees-passed-fmge-in-2015-18/articleshow/72938234.cms

[223] Ibid.

[224] Kritika, S. (2019). *Less than 20% with foreign MBBS degrees eligible to work as doctors in India.* https://theprint.in/india/less-than-20-with-foreign-mbbs-degrees-eligible-to-work-as-doctors-in-india/233946/

[225] Ibid.

the requirements of clearing FMGE. For training in Russian medical institution, it is advised that prospective students obtain a copy of the Indian MBBS curriculum and refer to it in the context of their training in Russia for comparison purposes.[226] While the advice is clearly valid, it is hardly feasible or realistic for any student to implement.

The above analysis shows that Russia has emerged as a hub for Indian students looking for affordable medical education abroad, with yearly influx of thousands of students who opt to obtain primary medical qualification in Russia – in spite of the bureaucratic difficulties and hurdles, unclear and costly admission process, language barrier and assimilation difficulties, and a very low rate of passing the licensing exam giving eligibility to practice medicine in their home country.

By finding the effective solution to the issues above the number of Indian students coming to obtain a graduate medical degree in Russia, the quality of education they receive and the pass percentage for FMGE may be increased tremendously.

Regulating and streamlining admissions while take into account the requirements of Indian Eligibility Entrance Test, adjusting the curriculum to make it comparable to the curriculum followed in India and in line with the requirements for passing the licensure Foreign Medical Graduate Examination, ensuring that clinical competencies acquired at undergraduate level reflect Indian medical practices and medical convention, introducing English as a sole medium of instruction, allowing unrestricted access of Indian medical students to local patients, making qualified counsellors available to Indian students in Russia - all while working closely with with Indian Mission in Russia to prepare and inspect medical institutions and with the Government of India to assist Indian students seeking admissions into Russian medical courses - will help Indian students to succeed in eventually becoming licensed to practice medicine in India. These suggestions are not new, being already provided by the Indian Missions to medical institutions abroad.[227] What will be new is that IMEC in the FEFD will be able to fully implement them in a regulated, coordinated and transparent way.

In future, the effort may be directed at securing exemption from passing a licensure Foreign Medical Graduate Examination Screening Test for Indian students with medical qualification from the IMEC. As the second-best option, completion of this computer-based test in Russia itself, as supervised by the representatives from the Indian National Board of

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[226] Embassy of India in the Russian Federation. (2021). *Admission process in Russia medical institutions*. https://indianembassy-moscow.gov.in/admission-process-in-russian-medical-institutions.php

[227] Embassy of India in the Russian Federation. (n.d.). *Guidelines for Indian students seeking graduate medical qualifications (MMBS or equivalent) from foreign countries.* https://indianembassy-moscow.gov.in/pdf/GUIDELINES%20FOR%20INDIAN%20STUDENTS%20SEEKING%20GRADUATE%20.pdf

Examination, could also be secured. These efforts would require diplomatic initiatives as well as support of the federal government.

CHINA

If international students, in general, have a clear preference for universities located in the European part of Russia, Chinese students from border provinces have traditionally opted for studies in leading universities of Siberia and the Far East. Bilateral relations, economic cooperation and intentions of governments to deepen partnership facilitate student exchange, with growing student flows in both directions. The number of Chinese students in Russian universities has more than doubled over the past five years.[228]

In 2012, China and Russia signed the "Action Program for Sino-Russian Cultural and Humanitarian Cooperation", with parties planning to increase the mutual exchange of students to 100,000 by 2020.[229] As of 2019, the number of exchange students between China and Russia has already reached 90,000. [230]

Intensive cooperation in the sphere of education goes beyond student exchanges. According to the PRC Ministry of Education, diplomas of 542 of Russian universities, including 48 medical universities, are fully recognized in China, ranking Russia third only to the United States and Japan.[231]

2016/17 academic year has shown a record increase of 4,500 students in comparison with the previous year, with the number of Chinese students in Russia reaching over 26,000. To date, there are more than 30,000. Educational migration from China to Russia is actively supported by the Chinese government, and the number of students predicted to increase to 35-40 thousand annually.[232]

Far Eastern universities have registered annual increase in the enrolment of Chinese students by several hundred.[233] According to the sociological study conducted among Chinese students in the Far East, the key motivation of their coming to Russia is interest in language

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[228] Russkiy Mir Foundation. (2020). *Number of Chinese students in Russian Universities more than doubled in five years*. https://russkiymir.ru/en/news/277542/
[229] NTV News. (2014). *Diplomas of 542 Russian universities were recognized in China.* https://www.ntv.ru/novosti/830332/
[230] Tass. (2018). *Russian-Chinese educational exchange programs to have 100,000 participants by 2020.* https://tass.com/society/1028551
[231] NTV News. (2014). *Diplomas of 542 Russian universities were recognized in China.* https://www.ntv.ru/novosti/830332/
[232] St. Petersburg Polytechnic University. (2016).*Why do Students from China Come to Study in Russia.* https://english.spbstu.ru/media/news/studencheskaya_zhizn/why-students-china-study-russia/
[233] Leontyeva, E. (2019). *Chinese students in Russia and Russian students in China: rthe experience of comparative study.* http://regionalistica.org/images/2019/5/2019-05.79.pdf

and culture, followed by prestige of education. What plays significant role in the choice of a particular study location in Russia are, in order of importance, proximity to home, the prestige of education, and affordability of studies. Reliance on good reviews as the primary source of information plays a determining role in choice of the particular university in Russia. Chinese students perceive educational training in Russia as a temporary stay providing useful experience and knowledge as well as a diploma that has value at their home. Education in Russia is not associated with strategies of permanent relocation.[234]

The above shows that Russia represents a popular destination for Chinese students of higher education, with the trend expected to grow due to active support of governments from both sides.

In addition to India and China, separate medical study programs, such as training of nurses, therapists and specialists, may be created for the developed countries that have been experiencing shortage of healthcare workers and have used international recruitment of medical stuff to address it. Cross-border programs and offshore campuses to medically train either nationals of these states or international workers aiming to secure employment in these countries may be opened and hosted in the FEFD. Japan, the United Kingdom, Australia and the United States are potential markets for such training services.

Unable to cope with demand, Japan has long opened the doors to foreign nurses. Bilateral agreements have been signed with Indonesia, the Philippines and Vietnam through the program of Economic Partnership Agreement (EPA).[235] Between 2008 and 2018, however, only 1,300 people have come to work as nurses. Japanese language acquisition by the foreign nurses has been identified as one of the biggest challenges impeding the program, as well as stringent qualification requirements. Two years of working experience in a home country and a successful pass of the national nursing test, conducted in Japanese language and to be completed within the four years of residency in Japan, is required to be able to be employed as a nurse, with only 17.7% of applicants succeeding in passing the national tests and thus remaining in Japan.[236] The situation creates opportunities for training foreign nurses for the health services in Japan.

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[234] Ibid.
[235] Hirano, Y., Tsuboita, K., Ohno, S. (2020). *Factors associated with the recruitment of foreign nurses in Japan: a nationwide study of hospitals.*
https://human-resources-health.biomedcentral.com/articles/10.1186/s12960-020-00532-5
[236] Manichi Japan's Daily.(2019). *Japan's foreign nurses: disinformation, lack of support shows struggle for new arrivals.*
https://mainichi.jp/english/articles/20191211/p2a/00m/0na/023000c

Among participants of recently created Japan-Russian G-MedEx Project, a project for globalization of education and exchange of medical students from both countries, is the Far Eastern State Medical University in Khabarovsk.[237]

Analysts highlight staff shortages facing the health service in the UK, with 41,000 nurse vacancies being unfilled. International recruitment is said to be the only measure to address the issue. The practice has been very effective in the past, attracting 8,000 international full-time nurses in 2001/02 alone[238]. Analysts suggest that coping with current shortages in the UK will require 5,000 international nurses a year. This presents opportunities for training nurses for the UK health services.

Overseas nurses are in demand in Australia, and it is estimated that the country will need more than 100,00 nurses by 2025.[239] Training nursing personnel for Australia provides further opportunities for the cluster.

Opportunities to train medical stuff for the U.S., where the shortages are severe and growing, are also worth exploring, should political climate allow for it. With Russian medical degree, a graduate may take US licensing exams, so-called USMLEs (USMLE steps 1, 2, and 3), and apply for the Residency training in the USA. Adjusting the teaching curriculum to accommodate demands of USMLEs will ensure supply of students fit to secure the residency and practice medicine in the US. Separate programme preparing nurses for the US may also be created within the cluster.

State of relations between Russia and some of the above-mentioned countries presents a cause for concern. Foreign governments, however, are known to remain cooperative on some issues while being competitive, or outright confrontational, in other areas. It is reasonable to assume that with diplomatic facilitation, the question of cluster activities will fall under the former category.

5.4 Aspect 3. Assessing political and organizational challenges and risks

The process of creation of the IMEC in the FEFD will inevitably involve a myriad of political and organisational difficulties. The challenges are likely to arise both on national and international levels.

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[237] Niigata Univesity, Japan. *Globalization and Medical Exchange Project for Career Development of Young Students in Japan and Russia.* https://www.med.niigata-u.ac.jp/g-medex/index_r.html

[238] Beech., J et al. (2019). *Closing the Gap. Key areas for action on the health and care workforce,* p. 98. https://www.kingsfund.org.uk/sites/default/files/2019-03/closing-the-gap-health-care-workforce-full-report.pdf

[239] Australia Nursing Agency. (2021). *In-demand nursing jobs in Australia for overseas nurses.* https://australiannursingagency.com/blog/nursing-jobs-australia-overseas-nurses/

When it comes domestic dimension of political issues, local context of the FEFD need to be taken into consideration. Russian government has traditionally had limited ability to control remote regions and exert influence over them. Regional representatives often openly sabotage Kremlin's instructions and delay their implementation indefinitely, so that implementation of orders has to be carried out through "manual control" that necessitates direct involvement of most senior figures themselves. For example, 80 per cent of the initiatives as part of the state programme "Socioeconomic Development of the Russian Far East and the Baikal Region to 2018", have not been implemented by the time of the president's visit to the region, resulting in his personal reprimand.[240] Federal development strategies are said to represent the unlikely ideals that are attainable only in theory, with their execution being rated as far from normal. Realistic estimates put the figure of completion of all the events on development agenda planned by the central government for the next 10 years at mere 30%.[241]

Each federal subject, FEFD included, has its own centre of political power and while the expectation is that the governors will function as part of the executive "vertical of power", this is often not the case, with some projects being initiated that compete or overlap with the federal programs for the region. [242] Challenges of managing remote FEFD often culminate in political wars between federal and regional levels of government, with decisions adopted on the former being only partially implemented on the latter, if implemented at all.

Another issue, specific to the innovative development of the Russian Far East that presupposes greater international involvement, is a psychological factor that manifests itself as an inhospitable attitude of the local residents towards the influx of foreigners, especially from Asia. Continuously growing numbers of Chinese settlers who engage in entrepreneurial activities in the FEFD have led to concerns over potentially uncontrolled immigration and occupation of vast, poorly inhabited territories. In the past the issue has been used by local politicians to fuel tensions and mobilize right-wing tendencies in population, with foreigners facing problems and injustices.[243] It has also been noted that Russian society is not ready to accept innovative economy, especially the sectors oriented towards serving Asian markets, and

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[240] Press service of Ministry of Finance of the Russian Ferderation. Meida Materials. (2013). *Putin stumbled over his vertical*. p. 27. https://www.minfin.ru/common/upload/library/2013/07/Materialy_SMI_18.07.13.pdf

[241] Volynchuk, A., Pestsov, S., Kozlov, L., Volynchuk., Y. (2018). *Regional Policy of Russia in the Far East: Why Does It Go Wrong and What Is Apparently Seceded,* p. 8. Journal of Politics and Law. https://pdfs.semanticscholar.org/777b/aab24e9cdb953852d869ca56f3e62aa943ae.pdf?_ga=2.136999920.1513565651.1615551815-1289974801.1615551815

[242] Blakkisrud, H. (2017). *Russia's turn to the East: The Ministry for the Development of the Far East, and the domestic dimension.* https://www.researchgate.net/publication/318110357_Russia%27s_turn_to_the_East_The_Ministry_for_the_Development_of_the_Far_East_and_the_domestic_dimension

[243] Tselichtcchev, I. (2017). *Chinese in the Russian Far East: a geopolitical time bomb?* https://www.scmp.com/week-asia/geopolitics/article/2100228/chinese-russian-far-east-geopolitical-time-bomb

that the change the mentality, modification in the system of education and science would need to take place before innovative economy and Asian reorientation are embraced.[244]

Domestic bureaucratic issues that are likely to impede development of the cluster are also numerous. High level of corruption is said to be one of the key reasons why results of Russia's regional policy has been much less than expected. [245] Widespread public sector corruption is a pervasive problem on all levels of government, with facilitation payments and outright bribery requests still being a common practice. Systemic misappropriation of federal funds is a phenomenon that is yet to be eradicated. According to the former presidential envoy to Russia's FEFD and as the Far East's development minister, Viktor Ishaev, the economy of the Far East lost some 300 billion roubles in 2012 as a result of 'disorder and corruption'[246] - a statement of a man who himself was arrested in 2019 on charges of fraud, embezzlement and of abuse of power, attesting to the severity of the problem.[247] On the other hand, the fact that big cases of corruption are at least being investigated is noted a positive development.

Local political elite, faced with the task of innovative development of their region by means of creation of an international medical education cluster, is likely to show little enthusiasm for the concept, preferring the status quo and political expediency to the potential benefits that long-term investment of efforts into cluster building might yield. Many obstacles are likely to be artificially created on the level of local administration with reference to the lack of funds, facilities, lecturers, language difficulties, issues with recognition of foreign high school certificates, etc. Professionalism and diligence of the local administrations in implementing cluster initiatives and directives will present another challenge.

Against the backdrop of these challenges, securing needed permits, gaining accreditation for the English-taught medical programs, raising quota for foreign students in the medical universities in the FEFD and performing other steps vital for cluster creation and operation might become difficult if not impossible.

When it comes to potential political issues on the international level, much would depend on the effectiveness of Russia's foreign policy in reduction of tensions with the US and

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[244] Khayrullina, M. (2014). *Innovative Territorial Clusters as Instruments of Russian Regions Development in Global Economy.* p.93. https://www.sciencedirect.com/science/article/pii/S2212567114007783

[245] Volynchuk, A., Pestsov, S., Kozlov, L., Volynchuk., Y. (2018). *Regional Policy of Russia in the Far East: Why Does It Go Wrong and What Is Apparently Seceded,* p. 8. Journal of Politics and Law. https://pdfs.semanticscholar.org/777b/aab24e9cdb953852d869ca56f3e62aa943ae.pdf?_ga=2.136999920.1513565651.1615551815-1289974801.1615551815

[246] Monaghan, A. (2014). *Defibrillating the Vertikal? Putin and Russian Grand Strategy*, p. 14. Chatham House. https://nllp.jallc.nato.int/IKS/Sharing%20Public/Defibrillating%20the%20Vertikal%20Putin%20and%20Russian%20Grand%20Strategy.pdf

[247] The Moscow Times. (2019). *Ex-Putin Aide Detained in Rosneft Fraud Case.* https://www.themoscowtimes.com/2019/03/28/ex-putin-aide-detained-in-rosneft-fraud-case-a64987

on strengthening of economic ties and diplomatic relations with Asian neighbors, namely China and Japan. Effectiveness of economic policy, improved dynamics of investment and development of business climate within Russia itself would also play an important role.

It is not unreasonable to assume that the IMEC might face difficulties with international recognition of the issued medical degrees or with deliberate slowing down the process of their recognition, especially in case of countries where mutual perceptions remain negative. Trust and political goodwill are the basis of stable economic relations between the states and it is exactly what is being eroded by the current political climate of confrontations. A potential ban on travel of international students to Russia, imposed in selected countries, as well as regime of economic sanctions prohibiting financing of or collaboration with certain cluster members, might endanger operation of the IMEC.

Bureaucratic challenges on the international level might include corruption in countries that the cluster will work with primarily. China ranks higher than Russia in Global Corruption Index, being 131st, with Russia being 124th and India – 100th.[248]

When it comes to organisational challenges, the main issue may lie in bringing together public medical universities in the FEFD under one umbrella of a cluster. It has been established that cluster functions effectively only when enterprises themselves understand the need to be united by a cluster and fully appreciate the benefits of such union, be it improved quality of service, increased productivity or improved profitability. [249] Non-for-profit public organisations with established tradition of operation, such as medical universities and colleges, are, at the very least, unlikely to agree upon a shared vision of operating as a cluster formation, to understand the regional and national benefits that offering one-of-a-kind educational services tailor-made for international medical students might bring and to appreciate the contribution that such services would make towards raising competitiveness of the region. At worst, the initiatives might be actively opposed. The clustering effort might be viewed by the participants as a Moscow-imposed federal campaign, with efforts being directed towards prompt reporting that the status of a functioning cluster has been reached, with little regard given to the attainment of tangible results, quality of the process, efficiency of the cluster or to its future outlook.

[248] Global Corruption Index. (2021). *Ranking and Scores*. https://risk-indexes.com/global-corruption-index/
[249] Lenchuk, E., Vlaskin, G. (2010). *A Cluster-based Strategy for Russia's Innovative Development*, pp. 603-11. Studies on Russian Economic Development. https://www.researchgate.net/publication/251306722_A_cluster-based_strategy_for_Russia%27s_innovative_development

5.5 Aspect 4. Eliminating or mitigating destructive forces

A multitude of both internal and external factors are likely to influence creation and development of the IMEC in the FEFD, as discussed above.

Ways of addressing two potentially destructive forces – difference in cluster members' priorities and rivalry for international education market share – are briefly addressed.

Internally, human factor is likely to negatively impact efficiency of cluster's operations. At the core of the issue is the fact that different organisations within the cluster will have different interests and priorities. For example, international recruitment agencies will seek to raise price of their services and to maximise the number of enrolled students, while minimising the time and resources allocated to the process of recruitment. Medical universities and colleges in the FEFD will be looking to maximise profit element and minimise expenses on each student, such as hours spent on lectures, lecture halls used, etc. The role of cluster management (topic addressed in the next chapter) is to tie together diverse interests of actors and to provide adequate motivation for them to work for a common purpose of training foreign medical students.

One of the ways to ensure such an outcome is to incorporate a system of speedy assessment in which international students' complaints are registered and addressed in a timely fashion. This might be carried out by means of a hot line registering complaints and directing them to relevant departments, with particular attention being paid to complaints of students about the quality of teaching provided. Statistics will be regularly collected and workshop for staff will be organised to deal with relevant issues. An annual team-building events would take place to connect employees from different departments, regions and countries and to raise their motivation. To ensure full transparency, regular reports will be published and made available. International auditors will be invited to ensure compliance with international norms and procedures.

Externally, competition in the field of international education might lead to rivalry with the IMEC as no country readily gives up its place to another in the world market. The rivalry may manifest itself as a deliberate spread of disinformation about the cluster and as deliberate discreditation of Russian medical education in general.

Securing recognitions for world-class quality would counter this development. Reaching international standard of excellence by participating in international audits, competitions, fairs and obtaining awards would aid status building and strengthening of the IMEC brand. Improving ranking position of the largest medical universities of the cluster will

positively impact their academic reputation, a factor known to give educational institutions clear competitive advantage.[250] Building credibility and respected identity by being a trustful source of information about the cluster's activities and results will aid its good reputation, as well as publishing success stories and testimonials. Recruiting agents abroad should be expected to take an active position in supporting and promoting stature of the cluster. Finally, investors from China and India should be encouraged in maintaining good reputation of the cluster in their home countries. Finally, immediate legal action must be taken in case of misinformation that leads to damaging reputation of medical institutions within the cluster.

5.6 Aspect 5. Deciding on management and leadership strategy for the cluster

Practice has established that the success of world-class, knowledge-intensive clusters is attributable, in large part, to excellence in cluster management. This is due to the fact the quality of the management of any organization is a key factor behind its performance, as management system comes to define particular organizational culture through practices that work towards supporting and promoting it. This is doubly true in case of clusters that by definition are composed of multiple members. Unlike management of individual company, cluster's leadership faces a task of cluster governance that involves mediating and facilitating collaboration between members with different agendas – governments, public institutions, private companies, both large and small – and aligning them towards common goals and objectives. Without proactive management and leadership that take responsibility for collective competitiveness of the cluster and are willing to work toward a collective vision for their region, the initiative is doomed to fail. [251]

The prime importance of regional cluster management is understood in Russia, but the vital role of management is often underestimated. Most problems in Russian state companies and universities are said to be caused by inefficient management, making managerial and human resource training essential. [252]

Management of human resources is an area that deserves special consideration in case of the international cluster located in the region disadvantaged by human capital where many outmoded attitudes and stereotypes may persist.

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[250] QS World Universitxy Ranking. (2018). *Why Reputation is Critically Important for Universities.* https://www.qs.com/what-makes-reputation-important-in-higher-education/

[251] PWC. (2011). *Uncovering excellence in cluster management*, p. 3. https://www.pwc.com/gx/en/psrc/pdf/cluster_management.pdf

[252] Khayrullina, M. (2014). *Innovative Territorial Clusters as Instruments of Russian Regions Development in Global Economy. p.93.* https://www.sciencedirect.com/science/article/pii/S2212567114007783

Provision of medical education for international students belongs to service, or tertiary, sector of economy and as such is a labor-intensive enterprise with people as its main productive factor. Service industry relies primarily on human element, with quality of workforce being of paramount importance and high level of staff motivation becoming a must in any service enterprise that aspires to compete internationally. It is therefore imperative to understand difficulties that the IMEC might encounter in this area not only because the problem of skilled personnel remains on the greatest problem in the FEFD, but also because operation of an international service cluster involving members with diverse national and cultural backgrounds is bound to present organisational and human resource management challenges.

The vulnerability of the IMEC, aiming to provide what is called international, transnational, cross-border or offshore medical education, is that it relies entirely on people-based services and that the resulting educational product will represent a combination of inputs from of many diverse service providers, such as international recruiting agencies, medical universities and colleges, hospitals, housing providers, etc. Coordination between these actors is likely to pose a serious challenge to cluster operators.

Prestige and reputation for quality of any educational institution are some of its greatest assets as they are known to be directly linked to influencing prospective decisions of students and the number of admissions. As critical and as difficult it is to maintain this aspect for established educational institutions, it is even more challenging to acquire for the newcomers to the market who strive to establish a strong international profile. A service failure or a poor service rendered to an international student by any member of the IMEC is likely to lead to a plethora of complaints, which directly and indirectly affect the reputation of the cluster as a whole.

Unsatisfactory student experience might occur in cases of irresponsible or incompetent actions of any of the cluster members that comes to be in direct contact with international students. Such human-related failures might cause dissatisfaction and frustration among the students and yet remain indivisible to and undetectable by the management, as the majority of students do not complain openly, immediately or to the university itself. The service failures, however, will produce negative word-of-mouth reviews that are instantly distributed among the fellow students or on social media platforms that are consulted by prospective applicants for reviews and information. Negative reviews might prove to be most damaging for a provider of an international medical education as they will translate into a downward trend of reduced admissions.

Quality of cluster operations will be associated primarily with the quality of study experience as lived through by its students, or the perception of that quality. The ultimate goal of the IMEC is to provide superior educational experience to international students and fostering a customer-centered organizational culture on all levels is a vital component on the way of achieving this goal.

Building an organizational culture geared towards customer service, therefore, will require effective leadership strategy from the management of the IMEC.

A great many managerial approaches exist to address the issue. While management of challenges in the field of human resources in large organisations is often carried out based on intuition, such approach is subjective and yields uncertain result. Alternative approach is based on the premise that it is essential to use quantitative methods that allow to assess the state of the organisational culture and staff motivation and allow for the regular HR assessment that is easily realizable, affordable and conductible by means of the cluster itself is clear.

Method developed by Heike Bruch and Bernd Vogel measures the state of human forces and suggest ways to mobilize human potential within an organization. They specialize on organizational energy and define it as "the extent to which a company…has collectively mobilized ist emotional, cognitive and behavioural potentials in pursuits of its goals". [253]

They map organizational energy along its quality (negative or positive) and intensity (high or low), resulting in four different states of organizational energy that act to propel performance – productive energy, or to destroy it – corrosive energy. Productive energy, resulting in high alertness, high level of activity and effort on part of the employees, has been found to improve overall performance (by 14%), productivity (by 17%), customer loyalty (by 12%) and to decrease turnover rate (by 8%).[254] Corrosive energy within an organization, on the other hand negatively impacts the above parameters, reducing overall performance (by 27%) and increasing turnover rate (by 21%).

Using the results of extensive research, the authors demonstrate that proactive management of organizational energy by means of regular surveys of key organisational parameters assessed along the benchmarks, is the key component of an effective leadership strategy. Because human resource development poses a major challenge to sustainable growth of the IMEC in the FEFD, the Bruch and Vogel's framework is chosen as the core element of the leadership strategy for the cluster.

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[253] Bruch, H., Vogel, B. (2011). *Fully Charged: How Great Leaders Boost Their Organization's Energy and Ignite High Performance,* slide 12. Harvard Business Review Webinar. https://hbr.org/2012/07/fully-charged-how-great-leader.html?registration=success

[254] Ibid., Slide 15

As another aspect of human resource management, shared vision for the future has been identified as an important benchmark for cluster development. This includes businesses within the cluster thinking of themselves as a "system" and planning for and sharing common goals.[255]

Confirming this view from the corporate perspective, Bruch and Vogel's research shows that two elements - strong shared vision about the future of an organization and organizational pride - are crucial for creating a strong organizational identity. The research gives evidence that, if employees show more pride in the company, the level of corrosive, negative energy lowers by 19 percent and the level of productive energy rises by 14 percent compared with organizations where people take less pride in the work they are part of.[256]

Entrepreneurial energy has also been identified as essential element driving expansion of the cluster. "Clusters live or die with the entrepreneurial and innovative abilities of local employees and companies."[257] Indeed, one of the key aspects of an organizational culture in the service industry involves creativity and a proactive personal position, with individuals seeking win-win solutions to arising problems. Bruch and Vogel have demonstrated that organizations that promote entrepreneurial culture in which employees can be proactive show an increase of productive energy (12 percent), a reduction of negative energy (-20 percent) and resigned inertia (-13 percent). [258]

In summary, three key constituents of the leadership strategy, aimed at developing local human resources in the FEFD, are:

- Developing a growth-oriented customer-centered organizational culture and aligning management processes with it
- Building organizational identity through strong shared vision and organizational pride
- Increasing the level of entrepreneurial energy

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[255] Rosenfeld, S. (2002). *Creating Smart Systems. A guide to cluster strategies in less favoured regions.* p.19 European Union-Regional Innovation Strategies.
https://ec.europa.eu/regional_policy/archive/innovation/pdf/guide_rosenfeld_final.pdf

[256] Bruch, H., Vogel, B. (2011). *Fully Charged: How Great Leaders Boost Their Organization's Energy and Ignite High Performance.* p.129. Google Books.
https://books.google.pt/books?id=3c4jt9ob-3QC&pg=PA201&lpg=PA201&dq=Bruch+and+Vogel+customer+touch+points&source=bl&ots=J_zTM265tS&sig=ACfU3U33_JqRbBk0zDMgaPYoQcbpaK1WCg&hl=en&sa=X&ved=2ahUKEwir4a-937nvAhXzQUEAHeGEClwQ6AEwDHoECBgQAw#v=onepage&q=shared%20vision%20&f=false

[257] Rosenfeld, S. (2002). *Creating Smart Systems. A guide to cluster strategies in less favoured regions.* ch.7, 10. European Union-Regional Innovation Strategies
https://ec.europa.eu/regional_policy/archive/innovation/pdf/guide_rosenfeld_final.pdf

[258] Bruch, H., Vogel, B. (2011). *Fully Charged: How Great Leaders Boost Their Organization's Energy and Ignite High Performance.* p. 214. Google Books.
https://books.google.pt/books?id=3c4jt9ob-3QC&pg=PA201&lpg=PA201&dq=Bruch+and+Vogel+customer+touch+points&source=bl&ots=J_zTM265tS&sig=ACfU3U33_JqRbBk0zDMgaPYoQcbpaK1WCg&hl=en&sa=X&ved=2ahUKEwir4a-937nvAhXzQUEAHeGEClwQ6AEwDHoECBgQAw#v=snippet&q=entrepreneurial%20culture%20&f=false

One the foremost tasks of cluster management and is formulation of strategic goals of an organizations. The strategic goals for the International Medical Education Cluster in the FEFD may be set as being the following:

- establishing significant presence in global medical education market by 2033 through:
1) doubling number of current international medical students in the FEFD medical universities by 2023 and 2) progressive increase in recruitment numbers up to 5 500 students by 2033
- targeting revenue of $290 million during first 10 years of operations through progressive increase tuition to reach tuition of European and US medical programs by 2033
- acquiring needed certifications and programs' accreditation
- implementing an internationally recognized quality management system
- achieving sustainability

5.7 Aspect 6. Ensuring profitability

Economic performance is one of the key outcome indicators of cluster functioning and the discussion below briefly sketches the approximation of degree to which a cluster activity will be able to yield profit and financial gain for the region. The timeframe of 10 years of future projection is used as basis for calculations.

The number of international medical students in Russia, the length of study, average tuition charged for Russian medical education and associated student expenses are examined below.

According to the Institute of International Education that tracks country-specific inbound and outbound students, there were over 353,000 international students enrolled in both full- and part-time undergraduate or postgraduate courses in Russia in 2020. Training in Health Professions were given to more than 38,000 foreign students in the academic year 2019/2020.[259]

Table 2 below lists universities in the FEFD that are to become members of the IMEC and their current capacity in provision of medical training to international students. With some estimations, the current capacity of the Far Eastern medical universities to prepare foreign medical graduates is estimated at 400 students per year.

[259] IIE. (2020). *Russia*. https://www.iie.org/Research-and-Insights/Project-Atlas/Explore-Data/Russia

Table 2: International students in the medical and federal universities of the FEFD[260]

Medical university	Number of students	Number of international students	% of international students out of total student population
Far Eastern Federal University (FEFU) (Vladivostok)	20,000	3,500	23%
Ammonosov North Eastern Federal University (Yakutsk)	18,000	9,000	5%
Pacific State Medical University (Vladivostok)	15,000	300	2%
The Far Eastern State Medical University (Khabarovsk)	3,400	68 (estimate of 2%)	No data
Chita State Academy of Medicine	3,000	60 (estimate of 2%)	No data
Amur State Medical Academy (Blagoveshchensk)	2,200	44 (estimate of 2%)	No data

Table 3 below estimates the number of international medical students that IMEC will be able to accommodate, separating them by the country of origin and type of degree, either Doctor of Medicine (MD) or Nursing (NUR).

[260] Complied by author based on from the following sources:
UArctic. (2021) *North-Eastern Federal Univesity*. https://www.uarctic.org/member-profiles/russia/8640/north-eastern-federal-university
Official website about higher education in Russia for international students. (n.d.) *Far Eastern Federal Univesity*. https://studyinrussia.ru/en/study-in-russia/universities/fefu/
The World University Rankings. (2021). *Far Eastern Federsal University*. https://www.timeshighereducation.com/world-university-rankings/far-eastern-federal-university
Ministry of Health of the Russian Federation. (2016). *Development program of the scientific and educational medical cluster of the Far Eastern Federal District and the Baikal region - "Eastern"* - for 2016-2025. http://www.fesmu.ru/SITE/files/editor/file/582/kl_prog.pdf
Ministry of Health of the Russian Federation. *The Pacific State Medical University of the Ministry of Health of Russia summed up the results of the last year*. https://minzdrav.gov.ru/regional_news/11144-v-fgbou-vo-tgmu-minzdrava-rossii-podveli-itogi-deyatelnosti-za-proshlyy-god

Table 3: 10-year estimation of the number of international students in the IMEC

Market	Number of students	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
INDIA	GROWTH,%	0%	5%	10%	15%	20%	50%	50%	50%	50%	50%
	MD	200	210	231	266	319	478	717	1,076	1,614	2,421
	NUR	100	105	116	133	159	239	359	538	807	1,210
CHINA	GROWTH,%	0%	3%	5%	7%	10%	15%	20%	25%	30%	35%
	MD	100	103	108	116	127	146	176	220	285	385
	NUR	50	52	54	58	64	73	88	110	143	193
USA	GROWTH,%	0%	3%	5%	7%	10%	15%	20%	25%	30%	35%
	MD	50	52	54	58	64	73	88	110	143	193
	NUR	100	103	108	116	127	146	176	220	285	385
EUROPE	GROWTH,%	0%	3%	5%	7%	10%	15%	20%	25%	30%	35%
	MD	30	31	32	35	38	44	53	66	86	116
	NUR	50	52	54	58	64	73	88	110	143	193
JAPAN, AUSTRALIA	GROWTH,%	0%	3%	5%	7%	10%	15%	20%	25%	30%	35%
	MD	20	21	22	23	25	29	35	44	57	77
	NUR	100	103	108	116	127	146	176	220	285	385
TOTAL	GROWTH,%	**0%**	**4%**	**8%**	**11%**	**15%**	**34%**	**39%**	**42%**	**44%**	**46%**
	MD	400	416	447	497	573	771	1,069	1,515	2,185	3,191
	NUR	400	414	440	480	541	678	886	1,197	1,663	2,366
GRAND TOTAL		**800**	**830**	**887**	**977**	**1,115**	**1,449**	**1,954**	**2,712**	**3,848**	**5,558**

It is estimated that clustering efforts will double the current capacity of medical universities in the FEFD by 2023. Starting with 800 international students in the first year of operation, a 10-year estimate is proposed that accounts for yearly increase in recruitment from each of the source country (with India presented as the most optimistic scenario, starting with 5% increase in the second year, reaching 50% increase in the sixth's year of operation). In 2032, therefore, IMEC will be able to prepare 4,284 international medical graduates – over 10 times the current capacity of medical unvisited in the FEFD.

A variety of medical programs is available in over 70 Russian medical universities. *Table 4* below summarizes the range of tuition fees for international medical students.

Table 4: Cost of medical degree programmes in Russian universities[261]

Degree programme	Tuition, per year of students	Duration of study, years
Bachelor's degree in Nursing (nurses and paramedics)	$3,230	4
Specialist degree in General Medicine, Paediatrics Dentistry	$3,015 - $9,500	5 - 6
Residency (subspecialty)	$3,800 - $10,000	2 - 4
Residency (Dentistry)	$6,920	2
Pharmacology	$3,080 - $4,200	5-6
Medical Biophysics/Medical Biochemistry Medical Cybernetics/Medical Physics Nuclear Medicine	$3,160 - $3,835	5-6
Preventive Medicine (Bacteriology, Virology, Nutrition Hygiene and Epidemiology)	$4,200 to $5,890	4-5

On average, the cost of pursuing a Specialist degree in Russian medical university is in the range of $4,143-4,571 per year, and the figure of $4,000 will be used as basis for the revenue calculation for Doctor of Medicine degree and the figure of $3,000 - for Nursing degree.

For comparison, the yearly tuition fee of the Caribbean medical schools ranges from $9,800 to as high as $50,000.[262] For international students, Charles University in Prague offers degree in Medicine at the cost of $14,100 per year.[263]

Table 5 below proposes a 10-year estimation of revenue per student generated by the operation of the IMEC, taking into account international students' tuition, living expenses, travelling (annual flights home) and leisure expenditures - categories that are to become

[261] Complied by author based on from the following source:
Official wenbsite about higher education in Russia for international students. (n.d.). *Medical Programmes Offered by Russian Universities.*
http://resproperty.com/en/study-in-russia/medical-education-in-russia/

[262] Carribean Medicine. (2018). *Carribean Medical School Tuition*. https://caribbeanmedicine.com/tuition/
[263] MCV Vermittlung. (n.d.). *First Faculty of Medicine Charles University Prague, Czech Republic.*
https://www.eu-medstudy.com/study-medicine-in-czech-republic#first-faculty-of-medicine-charles-university-prague

primary sources of revenue for the cluster. The cost of living for an international student in Russia, for cities like Moscow and St. Petersburg, is said to be about 300 – 400 USD per month,[264] with the expenses estimated to be half of that in the Far East.

The figures are adjusted by annual inflation in all categories and by progressive increase in the cost of the tuition fee to make it competitive yet comparable to the tuition fees charged in European and American medical universities. Assumption is made that such progression would be feasible once the cluster is established on the market and its recruitment practices are advanced.

Table 5: 10-year estimation of revenue per student produced by the IMEC[265]

Expense category	Degree	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
TUITION FEE	GROWTH,%	0%	3%	5%	7%	10%	15%	20%	25%	30%	35%
	MD	$4,000	$4,120	$4,326	$4,629	$5,092	$5,855	$7,027	$8,783	$11,418	$15,414
	NUR	$3,000	$3,090	$3,245	$3,472	$3,819	$4,392	$5,270	$6,587	$8,564	$11,561
LIVING EXPENCES	GROWTH,%	0%	3%	3%	3%	3%	3%	3%	3%	3%	3%
	MD	$2,500	$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262
	NUR	$2,500	$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262
TRAVELING	GROWTH,%	0%	3%	3%	3%	3%	3%	3%	3%	3%	3%
	MD	$1,500	$1,545	$1,591	$1,639	$1,688	$1,739	$1,791	$1,845	$1,900	$1,957
	NUR	$1,500	$1,545	$1,591	$1,639	$1,688	$1,739	$1,791	$1,845	$1,900	$1,957
LEASURE	GROWTH,%	0%	3%	3%	3%	3%	3%	3%	3%	3%	3%
	MD	$1,000	$1,030	$1,061	$1,093	$1,126	$1,159	$1,194	$1,230	$1,267	$1,305
	NUR	$1,000	$1,030	$1,061	$1,093	$1,126	$1,159	$1,194	$1,230	$1,267	$1,305
TOTAL	GROWTH,%	**0%**	**3%**	**4%**	**5%**	**6%**	**9%**	**12%**	**15%**	**19%**	**24%**
	MD	**$9,000**	**$9,270**	**$9,631**	**$10,092**	**$10,719**	**$11,652**	**$12,997**	**$14,933**	**$17,752**	**$21,938**
	NUR	**$8,000**	**$8,240**	**$8,549**	**$8,935**	**$9,446**	**$10,188**	**$11,240**	**$12,737**	**$14,897**	**$18,085**

Table 6 below shows 10-year calculation of total revenue, as based on the number of students and revenue per student calculated above. An estimate of progressive growth of all categories of expenses is applied. Under these condition, cluster's revenue for 10-year period is estimated as being almost $300 million.

[264] Study Portals. (2020). *The International Student's Guide to Surviving in Russia.* https://www.mastersportal.com/articles/2446/the-international-students-guide-to-surviving-in-russia.html

[265] Produced by author

Table 6: 10-year estimation of total revenue produced by the IMEC[266]

Expense category	Degree	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
TUITION FEE	GROWTH,%	0%	7%	12%	18%	26%	50%	62%	74%	85%	95%
	MD	$1,600,000	$1,713,920	$1,935,020	$2,300,945	$2,919,404	$4,514,223	$7,508,447	$13,306,894	$24,945,566	$49,194,736
	NUR	$1,200,000	$1,279,260	$1,427,418	$1,666,328	$2,066,980	$2,978,573	$4,667,132	$7,882,999	$14,243,611	$27,358,271
LIVING EXPENCES	GROWTH,%	0%	7%	10%	13%	18%	34%	39%	43%	46%	49%
	MD	$1,000,000	$1,071,200	$1,186,351	$1,357,962	$1,613,319	$2,234,335	$3,189,858	$4,658,276	$6,918,879	$10,410,329
	NUR	$1,000,000	$1,066,050	$1,166,857	$1,311,236	$1,523,004	$1,965,678	$2,643,687	$3,679,414	$5,267,460	$7,719,216
TRAVELING	GROWTH,%	0%	7%	10%	13%	18%	34%	39%	43%	46%	49%
	MD	$600,000	$642,720	$711,811	$814,777	$967,991	$1,340,601	$1,913,915	$2,794,965	$4,151,327	$6,246,198
	NUR	$600,000	$639,630	$700,114	$786,741	$913,802	$1,179,407	$1,586,212	$2,207,649	$3,160,476	$4,631,530
LEASURE	GROWTH,%	0%	7%	10%	13%	18%	34%	39%	43%	46%	49%
	MD	$400,000	$428,480	$474,541	$543,185	$645,327	$893,734	$1,275,943	$1,863,310	$2,767,552	$4,164,132
	NUR	$400,000	$426,420	$466,743	$524,494	$609,202	$786,271	$1,057,475	$1,471,766	$2,106,984	$3,087,687
TOTAL	GROWTH,%	0%	7%	11%	15%	21%	41%	50%	59%	68%	77%
	MD	$3,600,000	$3,856,320	$4,307,723	$5,016,869	$6,146,042	$8,982,893	$13,888,163	$22,623,445	$38,783,325	$70,015,394
	NUR	$3,200,000	$3,411,360	$3,761,133	$4,288,799	$5,112,988	$6,909,928	$9,954,507	$15,241,827	$24,778,530	$42,796,704
GRAND TOTAL		$6,800,000	$7,267,680	$8,068,855	$9,305,668	$11,259,029	$15,892,821	$23,842,670	$37,865,272	$63,561,855	$112,812,098
TOTAL 10 YEARS		$296,675,949									

5.8 Aspect 7. Ensuring sustainability

Reaching the level of sustainable development of the cluster is one of the fundamental and most important objectives of clustering initiatives.

One of the key factors vital to achievement of sustainability of the IMEC in the FEFD is quality of its operations. Implementing a quality management system, maintaining high level of productivity and securing long-term intergovernmental agreements are proposed as means to securing that goal.

The existence of a quality management system would give a clear competitive advantage to the cluster. Although there are plenty of national certification standards, most of the countries recognize the guidelines established by the International Organization for Standardization. The most commonly used is the ISO 9000 standards for quality management systems. [267] The formalization of the main business processes, required by ISO 9000, results in clear description of procedures and job instructions, better understanding of individual responsibilities, raises alertness and awareness of quality issues, and improving communication and coordination across the organization. Studies have found that the ISO 9000 certification initiates positive cultural changes, improves overall customer experience, employees' motivation and productivity, and reduces inefficiencies.[268]

[266] Produced by author
[267] Clarke, I. (2018). *What is ISO 9000?* https://linfordco.com/blog/what-is-iso-9000/
[268] Keen, R. (2019). *ISO 9001- 5 benefits for employees*. https://www.iso-9001-checklist.co.uk/ISO-9001-5-benefits-for-employees.htm

The biggest obstacle in putting the ISO 9000 system into operation in the FEFD is its complexity and relatively high initial cost, as the implementation of the system requires the development of a large number of mandatory instructions, standards and requirements. Fortunately, the largest medical universities in the Far East have already undergone certification audit and have been licensed according to the ISO quality management system.[269] The implementation of this internationally recognized system in the IMEC will facilitate sustainable development of the cluster by making real and continuous improvements to its business practices.

It has been identified that a sustainable cluster presupposes intensive communications between and within its organizations. Designing feedback systems is said to be an effective instrument in developing internal communications in clusters,[270] as it leads to accumulated and shared collaboration experience, including potential instances of dishonest practices, with investors, agents in various global locations and the governments. Pages on social networks are cited as examples of this approach.[271]

Capacity to to obtain feedback by instilling the mechanism of dealing with complaints and proving timely customer feedback is also an important element of customer-centered organizational culture, and students of the cluster should be enabled and encouraged to provide immediate feedback on services received.

For this purpose, Bruch and Vogel recommend embedding a net of what they call customer touch points in order to capture the customer responses to the services provided and diverse customer demands. [272] One might assume that a typical university consists of only one tangible touch point, namely the students' engagement with the lecturers during the hours of direct instruction. In case of the IMEC, however, there are many other less obvious interactions that combined come to create perception of study experience and influence the level of overall student satisfaction. A variety of customer touch points may be created within the cluster, such as its main website where students can easily post reviews and complaints, a hotline for

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[269] Ministry of Health of the Russian Federation. (2016). *Development program of the scientific and educational medical cluster of the Far Eastern Federal District and the Baikal region - "Eastern"* - for 2016-2025. p.6, 12, 20. http://www.fesmu.ru/SITE/files/editor/file/582/kl_prog.pdf

[270] Kutsenko E. (2015). *Pilot Innovative Territorial Clusters in Russia: A Sustainable Development Model*, p. 42. https://www.researchgate.net/publication/279274292_Pilot_Innovative_Territorial_Clusters_in_Russia_A_Sustainable_Development_Model

[271] Ibid., p. 46.

[272] Bruch, H., Vogel, B. (2011). *Fully Charged: How Great Leaders Boost Their Organization's Energy and Ignite High Performance.* pp. 201, 203. Google Books. https://books.google.pt/books?id=3c4jt9ob-3QC&pg=PA201&lpg=PA201&dq=Bruch+and+Vogel+customer+touch+points&source=bl&ots=J_zTM265tS&sig=ACfU3U33_JqRbBk0zDMgaPYoQcbpaK1WCg&hl=en&sa=X&ved=2ahUKEwir4a-937nvAhXzQUEAHeGEClwQ6AEwDHoECBgQAw#v=snippet&q=customer%20touch%20points&f=false

registering and resolving student issues, a visitor center where in-person inquiries are handled. Effectively designing and managing the customer touch points at every stage of students' interaction with the IMEC is likely to lead to improvement of all business processes and to strengthening the cluster's brand image as that of a responsive and responsible institution.

Enhancing productivity of a cluster organization is another important element of sustainable growth. One of the important tasks of the cluster leadership is therefore to maintain high level of productivity among all its members.

Bruch and Vogel's argues for increasing productive energy in the organisation as crucial component of improving productivity. Achieved high level of productive energy should be then exploited for improving the quality of service, fostering innovations and establishing a synergetic cooperation between the cluster members. The approach consists of process of removing the negative aspects before attempting to create a new, positive productive energy, with its levels being measured at each stage of the process and the result being remodelling of the attitudes, behaviors and processes in order to create growth-oriented organizational culture. Bruch and Vogel model offers a variety of innovative approaches to address the issue of sustained productivity and a more effective deployment of resources. To name some that appear feasible to be implemented in the FEFD, management-by-objective and limiting strategic planning objectives to only three top-priority goals can be mentioned. [273]

When the creation of quality management certification, customer touch points and initiatives to sustain productivity are successfully completed, the management of the cluster would then need to to anchor the new practices in the organizational culture to escape the complacency.

Securing long-term intergovernmental agreements to ensure regular and predictable supply of medical students to the IMEC if the final component on the road to cluster's sustainability. Cooperation with government bodies in foreign countries will play indispensable role in this aspect, requiring support from federal, regional, municipal levels of the Russian government. Existing agreements on student exchanges may be revised or supplemented and new arrangements would need to be elaborated to pave the way for thousands of international medical students into the leading universities of the Russian Far East.

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[273]Bruch, H., Vogel, B. (2011). *Fully Charged: How Great Leaders Boost Their Organization's Energy and Ignite High Performance.* slide 21. Harvard Business Review Webinar. https://hbr.org/2012/07/fully-charged-how-great-leader.html?registration=success

5.9 Summary

Six key aspects, important for the process of creation of the IMEC in the FEFD, have been considered.

Model of the IMEC has been proposed. It involves organizational structure with Cluster Management Company at its core. Five structural divisions, or departments, are seen as essential to overseeing different aspects of cluster's functioning. Most importantly, transparent, efficient and well-regulated system of recruitment and admissions of international students would serve as basis of cluster's functioning and improve upon the current inefficient and poorly regulated practices of international recruitment into Russian medical universities. Government support would be required in creating new economic regime for the cluster, passing legislation and changing legal framework, and potentially putting new social infrastructure in place.

Operation of the IMEC is likely to foster national integration through strengthening of social and economic links between the Russian Far East and European Russia. International collaboration, vital for the functioning of the cluster, has been discussed on the examples of two priority markets - India and China – focusing on specifics of medical education, licensing and accreditation in these states and highlighting aspects that would need to be taken into account in setup of cluster's educational programs, so that holders of medical diplomas from the IMEC are enabled to practice medicine in their own countries. Potential for the development of separate medical study programs for such countries as Japan, the United Kingdom, Australia and the United States has also been addressed.

Internal political challenges for the IMEC are seen to lie in poor implementation of federal programs in the FEFD, political wars between federal and regional levels of government and in inhospitable attitude of the local residents towards the influx of foreigners from Asia. Corruption and uncooperative attitude of local political elite poses a serious domestic bureaucratic issue for the cluster. On the international level, difficulties with recognition of the medical degrees issued in the FEFD or a range of economic sanctions against the cluster might compromise its operations. High levels of corruption in India and China, cluster's main partners, appears to be another issue for concern.

Organizational challenges for the cluster may include overcoming resistance in bringing together public medical universities in the FEFD under one umbrella of a profit-making, efficient cluster.

Two potentially destructive forces – lack of unity in cluster members' priorities, resulting in inefficiencies and poor quality of service provided to international students, and rivalry for international education market share – have been identified. The former may be mitigated by incorporating system of registering and resolution of complaints and ensuring full transparency of cluster operations, the latter – by securing world-class recognitions for quality and building impeccable institutional reputation.

Excellence in cluster management and leadership is vital for the success of clustering initiatives. Management of human resources is one of the crucial elements of the management strategy of the IMEC as its operations rely entirely on human factor. Service failure may lead to costly or irreparable damage of reputation and prestige of the cluster.

Managing the delivery of people-based services, which constitute the majority of offshore medical education products, is likely to constitute greatest challenge for cluster leadership. Creating a growth-oriented customer-centered organizational culture therefore becomes a must. The method developed by Heike Bruch and Bernd Vogel offers practical survey tools to diagnose the state and use of an organization's human resources through regular measurement of key parameters. The model proposes ways to mobilize and develop are based on proactive management of organizational energy, by maximizing its productive component.

Building organizational identity through strong shared vision and organizational pride and increasing entrepreneurial energy have been identified as another important components of leadership strategy aimed at development of human resources in the cluster.

Finally, the issues of profitability and sustainability have been briefly considered. The 10-year revenue of the cluster was estimated as reaching almost UDS $300 million.

Implementing the ISO 9000 quality management system, maintaining high level of productivity using Bruch and Bernd framework and securing long-term intergovernmental agreements were proposed to achieve sustainability.

Chapter 6: CONCLUSION

6.1 Developing Russian Far East

Developing Russian Far East is undoubtedly a complex and multifaceted project that will extend well into this century. Of vital importance in itself, it is a key component not only of the Russian policy in Asia, but of a grander vision yet, the one that deals with the perennial search of Russian national identity and of Russia's belonging.

The notion of Russia as an architect of a Greater Eurasia - a new geo-economic, geopolitical, cultural and ideological community and a space for common development – has been proposed by the leading experts of the Valdai Discussion Club[274], in particular by Sergei Karaganov. Over the last decade, the think tank has published a series of analytical reports, entitled Toward the Great Ocean, that examine Russia's so-called Turn to the East from various perspectives and capture the evolution of perception as to the role of the Far East in modern Russia and the role of Russia in the modern world.

It was recognized that Russia's huge easternmost region, far from being a source of weakness and a mere "territorial curse" - a buffer against potential invaders or an appendage to country's prosperous west incessantly demanding subsidies – may become a vital source of strength and of new competitiveness, given the right economic strategy. Changes in the global markets and rapidly growing neighbours of the Far East has granted it potential for development and strong competitive advantages that are incomparable with any other Russian region. The Far East, much like Saint Petersburg in relation to Europe three centuries earlier, is to become Russia's window to Asia.

Accordingly with this evolution in perception, the concept of the Far East has shifted from that of militarised border space through transit region to the most intensively developing territory and the driver of national growth.

The last Valdai report, produced in 2018, summarizes the results achieved in the last decade of development of the region and the constraints that loom ahead.[275]

With the initial stage of Turn to the East accomplished, the Far East is now said to be moving forward twice as fast as the rest of Russia in terms of key economic growth indicators. The southern part of the Far East is being successfully transformed into a commercial and production space due to implementation of ambitious infrastructure projects; northern,

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[274] Valdai Discussion Club. (2021). *About Valdai Discussion Club.* https://valdaiclub.com/about/experts/282/

[275] Valdai Discussion Club. (2018). *Report: Toward the Great Ocean – 6: People, History, Ideology, Education. Rediscovering the Identity.* https://valdaiclub.com/a/reports/report-toward-the-great-ocean-6/

resource-rich part of the Russian Far East have seen improvement in logistics that will lower the otherwise prohibitive costs of extraction all the region's resources; the tools for developing the Russian Far East, such as Advanced Special Economic Zones (ASEZ) and free ports, were designed and implemented; governance system of Far Eastern territories, primed for their accelerated development, has taken shape during these years.

The next stage of Turn to the East, however, brings a new set of challenges. If the initiative is to succeed in scale and scope planned, it is being argued, it must be converted "from an economic and technical project into a political and civilizational" one – in other words, "from regional to all-Russian megaproject". At this stage of development of the Far East, it is ideological, psychological and cultural factors that are seen as being destined to play decisive role.

Asia in general and Russian Asia in particular still feel unfamiliar and unfashionable to many Russians, with many outdated myths, phobias and erroneous mental images deeply entrenched (Asia as backwards, Far East as abandoned). The concept of Turn to the East, in its turn, often appears to be neither cohesive not comprehensible nor advantageous to people and elites of both western and eastern parts of Russia.

Resentment at Moscow that is a lingering post-Soviet legacy, scepticism towards dubious Kremlin-imposed initiatives, resistance to novel, unfamiliar activities and to disruption of status quo in the region, failure to appreciate the long-term benefits of integration into international networks, misunderstanding the logic behind the initiatives, and a lack of local motivation among local population and elite for advancement towards set objectives have become apparent in the region. The prevalence of such unhelpful attitudes among population prevent the project from becoming accepted by the nation at large. And until all or most people in Russia comprehend and feel Russia's Asian destiny, the further success of the Turn to the East is seen as being in jeopardy.

The issue, authors conclude, calls for a monumental shift in mentality.

Russian society and elites are advised to accept and embrace the Asian origins of the state and to use it for its competitive advantage, resigning on outmoded Eurocentrism.

Doing away with the myth of dangers stemming from the east, the policy makers are counselled to incorporate mandatory classes on Asia and orientalism in schools and universities to address the lack of interest in Asia and lack of specialists on Asia. Producing engaging media content that would bring Asian history and uniqueness closer to every Russian, as well as increasing Far Eastern content in federal media, are advised.

Uniting country's central and eastern business and intellectual elites is also seen as essential, to be carried out through constantly operational clubs. Finally, promoting Russian language and culture in Asia and cooperating with Russian diasporas that exist in all countries of the APR would also aid integration efforts.

Developing the human capital in the Russian Far East is said to be a must and a strategy has to include engaging the residents of the Far East in developing the region, providing them with moral support and inspiration for pushing the whole of Russia towards new horizons. Utilisation of formal and informal networks developed by the local businesses, universities and residents with Asian partners and their experience in such interactions is seen as priority. Calls are made for drastic increase of investments in Far Eastern universities and for connecting them with other major universities of the country.

Finally, creation of Eurasian analytical and media complexes, akin to *Bloomberg* and *Stratfor*, would enable elites and intellectuals in Russia and other Asian countries to develop information independence and a common vision for world economy and politics.

Notably, Valdai reports also address the practical aspects of Russian policy. The importance of "transforming the Turn to the East into a series of concrete projects" for Russia's interaction with Asian countries is prominently featured.

This thesis, devoted to analysis of the Far East as a potential source of competitiveness for all of Russia, has presented such a project. Not disregarding the fact natural resources are to remain the basis of economy of the region, a path to tackling Far Eastern competitiveness from a different angle was suggested - a sustainable, non-commodity, export-oriented, investment-friendly path towards cluster-based, economically diversified regional economy. An idea of a novel service cluster has been proposed, with its target markets and specifics determined, and with presence of strong international demand for its services demonstrated.

Many issues and ideas raised in the latest Valdai reports are echoed in this thesis.
A large part of the discussion was devoted to potentially destructive cultural, psychological and motivational factors present in the Far East. Though appearing politically non-consequential, these factors must not be disregarded. Unless mitigated, they are likely to threaten however well-though-out and geopolitically significant project.

A need for the development and engagement of the human capital in the Far East has also been addressed in the thesis. The potential of Far Eastern universities to play a paramount role in enhancing competitiveness of region has been its focal point.

Supplementing and intensifying Far Eastern development with cultural, educational, and ideological aspects that would mobilise all-Russian effort and uplift national spirit is

undeniably important. The shift in Russian mentality towards greater openness to all things Asian, as well as the rapprochement with Asia, may also be aided by concrete, practical projects that make Russia and Asia immediately relevant to each other. Exceptionally profitable projects that reliably produce lucrative returns for both parties are bound to yield political dividends and to deepen social and cultural ties. Proximity in political values and principles of statehood between the states will clearly have a significant role in facilitating implementation of such projects, as today no issue of regional cooperation is purely political or purely economic. But entering the world of Asia through mutually beneficial business projects that would naturally forge connections, ties and networks and bring Russians and Asians in direct contact and close cooperation, is likely to become one of the surest ways of creating environment where Russia's interests may be advanced.

Similarly, the material aspect of the Turn to the East is essential in inducing Russians in European and Far Eastern parts of the country to take the project close to heart and to invigorate it with their involvement. Should opportunities and legal framework for engaging in profitable business activities with Asia be fostered and should proceeds of these activities be translated into an improved quality of life of an average Russian – with observable, tangible benefits of job growth, increased earnings and raised standard of living, the Turn to the East is likely occur in organic, bottom-up fashion at the grass-roots level, without much need for ideational prompting.

The quest for elusive national identity and for fitting ideology around it are sure to remain a topic of argumentation and conflicting views in modern Russia for decades to come, and perhaps ought to be confined to the expertise of political philosophers. History has demonstrated, time and again, the inherent dangers of devoting prime intellectual resources of a nation to inward-looking, myopic political soul searching at expense of ignoring crucial geopolitical shifts occurring at one's doorstep. Political pragmatism appears to be the ideology of choice when it comes to practice of International Relations, in general, and of foreign policy, in particular, by world's most powerful states, and if for the first time in history Russia indeed has competitive advantages in the Far East, it will do well to unreservedly use them to the fullest.

6.2 Outcome of the study

Harsh socio-economic and demographic situation has become a hallmark of the Russian Far East after the breakdown of the Soviet Union. Resource extraction and exports of non-renewables became primary drivers of economic growth in the region in the decades that followed, with accompanying underdevelopment, undiversified economy and population exodus. Measures to amend the situation involved progressively evolving federal programs, with the latest version addressing the urgency of accelerated socio-economic development of the region through creation of innovative regional business clusters. Focus on the regional integration into Asia-Pacific region has been reinforced.

The study has looked at publications covering the challenges and opportunities of carrying out development projects in the Russian Far East as well as trends in internalization of Russian higher education, especially in the field of medicine, and in addressing an alarming worldwide shortfall of healthcare personnel.

Strategic Diamond framework, proposed by Porter's to analyze competitiveness of a region or state, was applied to has assess the position of the Far Eastern Federal District in general and in relation to the delivery of exportable services in particular.

It was identified that the region has the potential to achieve sustainable competitive advantages in education-related segment of globalized economy, namely in provision of medical education for international students. Upgrading and scaling up services rendered by existing medical universities in the FEFD and extending them to international audience will enable these higher educational institutions to effectively exploit the increasing global demand for health workers and capitalize on growth of lucrative healthcare industry. It will also mitigate inefficiencies in Russian universities' current recruitment practices of foreign medical students and eliminate plethora of issues faced by them in the process of admission and studies.

The study was designed to propose a readily- and relatively easily implementable clustering model that will provide sustainable revenue growth for the cluster through students' tuition and to regional economy through students' living and associated study expenses. It also aimed to demonstrate the extent of government support that such initiative will require, ranging from domestic legislation to diplomatic assistance and international lobbying.

Range of domestic and international issues that may challenge creation and functioning of the cluster have been considered, along with limited suggestions on overcoming them.

The study has emphasized importance of management and leadership strategy due to labor-intensive nature of education industry and poor availability of qualified human capital in

the Russian Far East. Bruch and Vogel's methodology, combined with international quality management system were recommended for establishing customer-centered culture withing the cluster – a factor that preconditions success on any service organization.

Key aspects of creation of the International Medical Education cluster in the FEFD were considered and organizational structure was proposed. Range of domestic and international issues that may challenge creation and functioning of the cluster have been considered, along with limited suggestions on overcoming them. Six largest federal and specialized medical universities in the FEFD have been chosen for building the core of the International Medical Education cluster.

The study has reached the conclusion that a clustering approach of medical education institutions in the Far East will result in economies of scales and lead to creation of sustainable revenue from export-oriented services that is bound to translate into improved socio-economic regional situation and strengthened soft power component of Russia's foreign policy.

The designed model considered ensuring profitability and sustainability of the cluster, estimating 10-year revenue generated as being close to USD $300 million.

6.3 Limitations

The study has its limitations. These limitations are due to the lack of access to official state statistics on the number of foreign medical students in Russia and their distribution between regions, universities and specialties (doctors, nurses), as well as on the level and structure of region-specific expenses of foreign students in Russia.

The key quantitative parameters were therefore approximated and are not intended to act as a precise estimate. They were used for the purpose of projecting forward the potential supply in the number of international medical students and calculating a rough figure of 10-year revenue for the cluster.

Optimizing the proposed model of the International Medical Education Cluster and, more fundamentally, understanding the interplay between its many international components and political aspects of their functioning, is critical for adjusting the model to real-life conditions.

6.4 Suggestions for further research

The study has proposed a novel approach to the implementation of a cluster strategy to the export of medical education services produced in the Russian Far East.

Despite the fact that the work presents the detailed organizational structure of the cluster and functioning of the cluster management company, recommendation as to its exact location were deliberately left out, leaving it for other researchers. A detailed analysis of the structures of local government and budgets of each of the 11 administrative units of the Far Eastern Federal District will be required in order to choose a site where the conditions are deemed most favorable for the support of the local administration, cooperation with other Russian regions as well as with the federal authorities in Moscow to be maximized.

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APPENDICES

Annex 1.

Population, GRP and GRP per capita of FEFD's 11 administrative units

Constitutive entity	Capital city	Population [1]	GRP, billion rubles (2018) [2]	GRP, growth rates	GRP per capita, thousand rubles (2018) [3]	The share of the production of goods in GRP,% (2018) [4]
Chukotka A.D.	Anadyr	50,000	78	low	1578.5	64.50%
Magadan Region	Magadan	140,000	171	high	1196.7	58.30%
Kamchatka Territory	Petropavlovsk-Kamchatsky	312,000	237	high	750.4	51.20%
Republic of Sakha (Yakutia)	Yakutsk	970,000	1085	accelerating	1123.1	68.60%
Khabarovsk Territory	Khabarovsk	1.3 million	711	low	536.4	32.30%
Primorsky Territory	Vladivostok	1.9 million	834	n/a	437.1	27.50%
Amur Region	Blagoveshchensk	790,000	301	low	378.3	41.70%
Zabaykalsk Territory	Chita	1.06 million	327	n/a	305.7	32.60%
Republic of Buryatia	Ulan-Ude	986,000	226	n/a	229.8	32.10%
Jewish A.O.	Birobidzhan	158,000	56	n/a	346.7	40.00%
Sakhalin Region	Yuzhno-Sakhalinsk	488,000	1180	n/a	2407.9	80.40%
Moscow city					1423.6	22.90%
Moscow region			4202		556.4	31.20%
Russia					578.7	

[1] Ministry for the Development of the Russian Far East and Arctic (n.d.). https://minvr.gov.ru
[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7718172/
[3] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7718172/, Table 3
[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7718172/, Figure 5