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Economic development of the Russian Arctic 2.0: major results from the three-year research project (Russian Foundation for Basic Research grant № 18-05-00600a «A new theory of the development of the Arctic and the North: a multi-scale interdisciplinary synthesis»)






Transformations of the North and the Arctic in Russia

1. Geographically the North is absorbed by the Arctic
2. However, the Arctic is being absorbed by the North conceptually: in 2020, benefits for economic agents operating in the Arctic was introduced. In other words, the territory of the Arctic is reinterpreted as requiring special attention, or something beyond the «norm»

[Note: from the point of view of the ethics of supporting businesses, especially small ones, this is certainly a useful action, because the Arctic benefits compensate for the difficulties that the northern benefits create for businesses. However, the ideal option for setting up a system of benefits is different: by agent, not by territory]

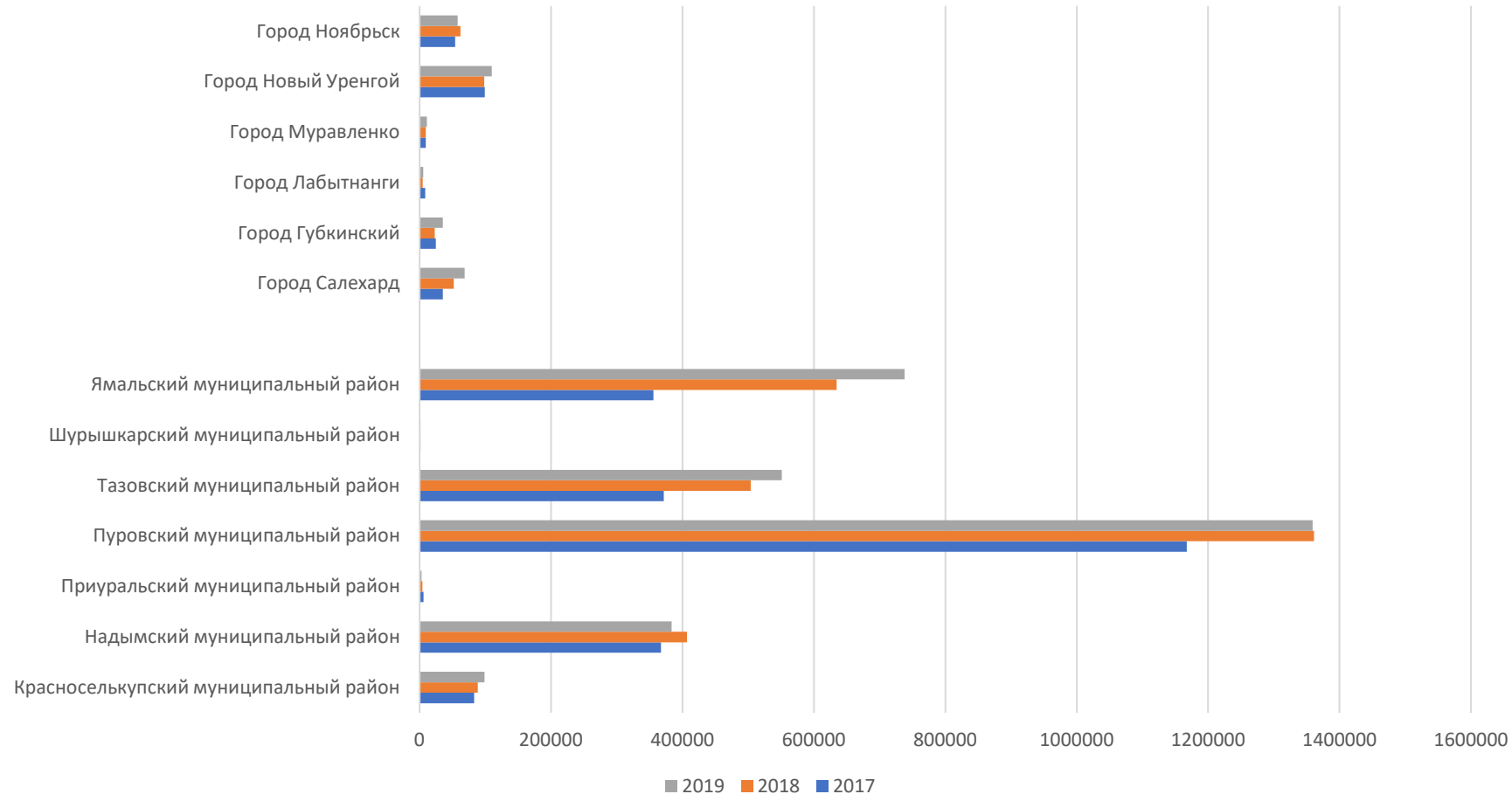


Муниципальные образования Арктической зоны Российской Федерации согласно принятым НПА

 Указ Президента РФ от 02.05.2014 N 296 «О сухопутных территориях Арктической зоны Российской Федерации»	 Федеральный закон от 13.07.2020 N 193-ФЗ «О государственной поддержке предпринимательской деятельности в Арктической зоне Российской Федерации»; Федеральный закон от 13.07.2020 г. N 195-ФЗ «О внесении изменений в часть вторую Налогового кодекса Российской Федерации в связи с принятием Федерального закона «О государственной поддержке предпринимательской деятельности в Арктической зоне Российской Федерации»
 Указ Президента РФ от 27.06.2017 N 287 «О сухопутных территориях Арктической зоны Российской Федерации»	 В состав Арктической зоны согласно ФЗ N 193-ФЗ и N 195-ФЗ вошли отдельные сельские поселения
 Указ Президента РФ от 13.05.2019 N 220 «О сухопутных территориях Арктической зоны Российской Федерации»	

Arctic most important economic development result: cities followed by districts

Production, mln roubles, Jan-Dec



Comparison of three historical models of the Arctic development process

	The scheme of mastering the model of integrated plants (1930-1950s) early industrial	The scheme of the development of the Soviet departments (1960-1980s) late industrial	Corporate Development Scheme(1990-2010s) postindustrial
The main areas of development of the Russian North and the Arctic	<p>Магаданская область</p> <p>Мурманская область</p> <p>Республика Коми</p> <p>Норильский промрайон</p> <p>Архангельская область</p>	<p>Чукотский автономный округ</p> <p>Ханты-Мансийский автономный округ</p> <p>Ямало-Ненецкий автономный округ</p> <p>Республика Саха-Якутия</p>	<p>Ненецкий автономный округ</p> <p>Север Ямало-Ненецкого автономного округа</p> <p>Арктика и центр Республики Саха-Якутия</p> <p>Шельф Печорского моря</p>
The nature of the development	All industrial development is pioneering, from scratch, to the layer of agro-industrial development of the indigenous small-numbered peoples of the North	Mainly industrial development from scratch, to the layer of agricultural development of the indigenous small-numbered peoples of the North	Distinguishing between post-industrial ("smart") and industrial (standard) development, including from scratch and to the previously created industrial layer
Territorial development structures	Finely dispersed settlement networkIntegral transport network	Linear-node frame "Sectional" transport network	Center-periphery network Network of temporary seasonal roads and river trassas
Dominant type of development	Mining	Oil and gas, mining	Oil and gas, mining
Key Actor of Exploration and the Principles of Its Spatial Behavior	Integral plant, maximum possible self-sufficiency in energy, building materials and food	Branch departments, trusts, central administrations. Delivery of all the necessary nomenclature of material and technical, construction cargo and part of food from the outside	Resource corporationsCost savings and therefore reliance on temporary, seasonal life support and resettlement schemes. Localization of the spatial contour of economic development
Key management institution	Forced Labor Camp Administration Action Plan	State program of development (development)	Investment project

Comparison of two different algorithms for the process of new (localized) economic development

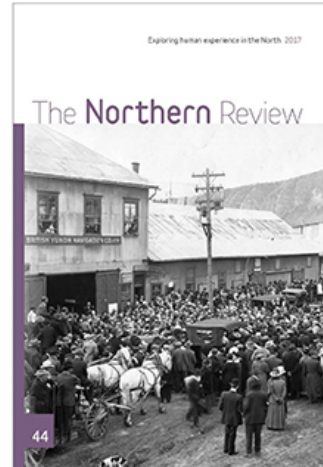
	Algorithm "from scratch"	Algorithm "on the infrastructure of the previous development"
Example	Sabetta: Yamal LNG	Development of hydrocarbon resources in the territories along the gas pipeline route of the Komi Republic
Major effect	Pioneer infrastructure development - effects of localized clustering (integration of production, processing, energy, transport)	The Jack London Effect: Past Economic Activity Affects Current Investment Decisions and Business Structure (TNCs)
Path-dependency	Does not work	It is important in which economic era the initial infrastructure framework for development was laid
Territorial structures	Confined to winter roads, seasonal river and sea routes	Attachment to single-industry cities and districts - local bases of new development

Alaska's Economy: The First World War, Frontier Fragility, and Jack London

Lee Huskey

University of Alaska Anchorage

«The essence of this effect is that, during the boom phase of resource extraction and accompanying growth of the economy of the frontier city, it is possible to accumulate a critical volume of local population and local demand. When the volume of local demand surpasses the critical point (considering economies of scale), local production of certain goods and services becomes more profitable than importing them. As a result, the local economy becomes more diversified and, consequently, more stable.» (Huskey Lee, 2017).



The Economics of the Klondike Gold Rush

by: Jack London

past, one may contemplate with sober vision its promises and their fulfillment. Who has profited? Who has lost? How much gold has been taken out will be the ultimate outcome of this great shifting of energy, this intense concentration of capital and labor upon one of the hitherto unexploited

«In short, though many of its individuals have lost, the world will have lost nothing by the Klondike. The new Klondike, the Klondike of the future, will present remarkable contrasts with the Klondike of the past. Natural obstacles will be cleared away or surmounted, primitive methods abandoned, and hardship of toil and travel reduced to the smallest possible minimum. Exploration and transportation will be systematized. There will be no waste energy, no harum-scarum carrying on of industry. The frontiersman will yield to the laborer, the prospector to the mining engineer, the dog-driver to the engine-driver, the trader and speculator to the steady-going modern man of business; for these are the men in whose hands the destiny of the Klondike will be entrusted.» (London Jack, 1900)

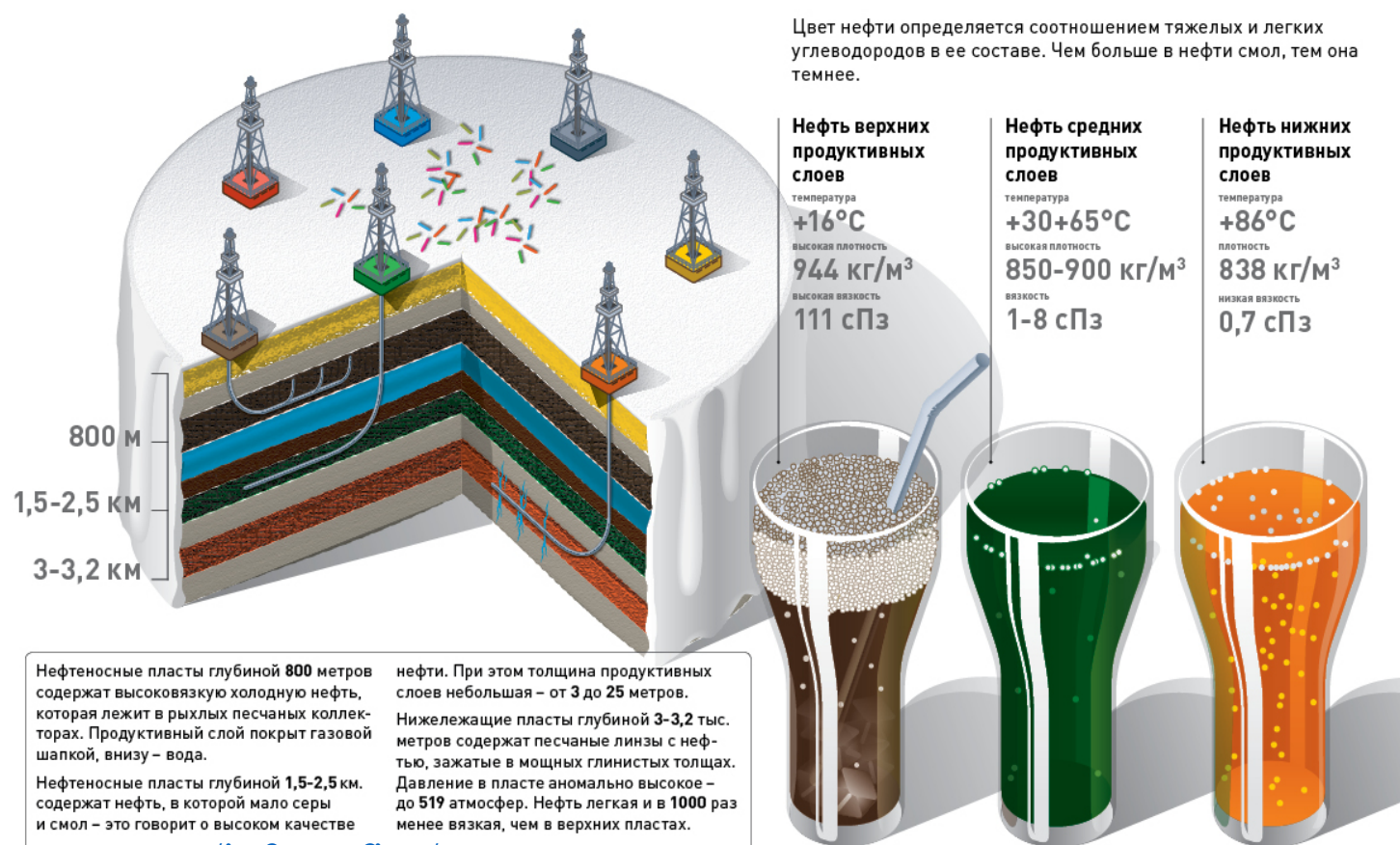
The power of new technologies: drilling in Soviet times and today



Work comfort, contraction of the number of employees in the immediate production process, platform cut-out and alienation from the territory of deployment

Projects discovered in Soviet times but delayed due to heterogeneity of natural assets: Vostochno-Messoyakhskoye field

Мессояха: арктический «десерт»



Types of situations in the deployment of a resource project in the Arctic

Resource project	Space	
	New place of location	Old place of location
New activities	1. Greenfield: exploring new space and new resources	3. Diversification of the local production system through new types of mining activities
Old activities	2. New industrial areas. Mastering a new space of familiar / traditional resources	4. Brownfield (old industrial districts): a) greenfield inside brownfield b) innovative modernization

Inertia of old logistics solutions - Gazprom



The beginning of the development of the Yamburgskoye field. The first tractor-sled train. January 1982

<https://gazovik.info/archives/23518>

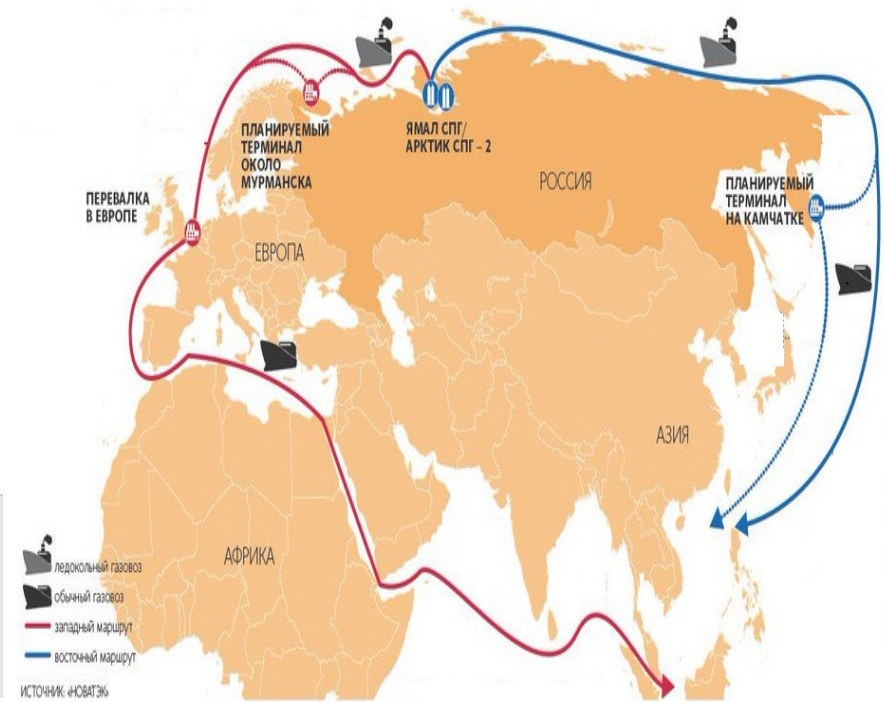
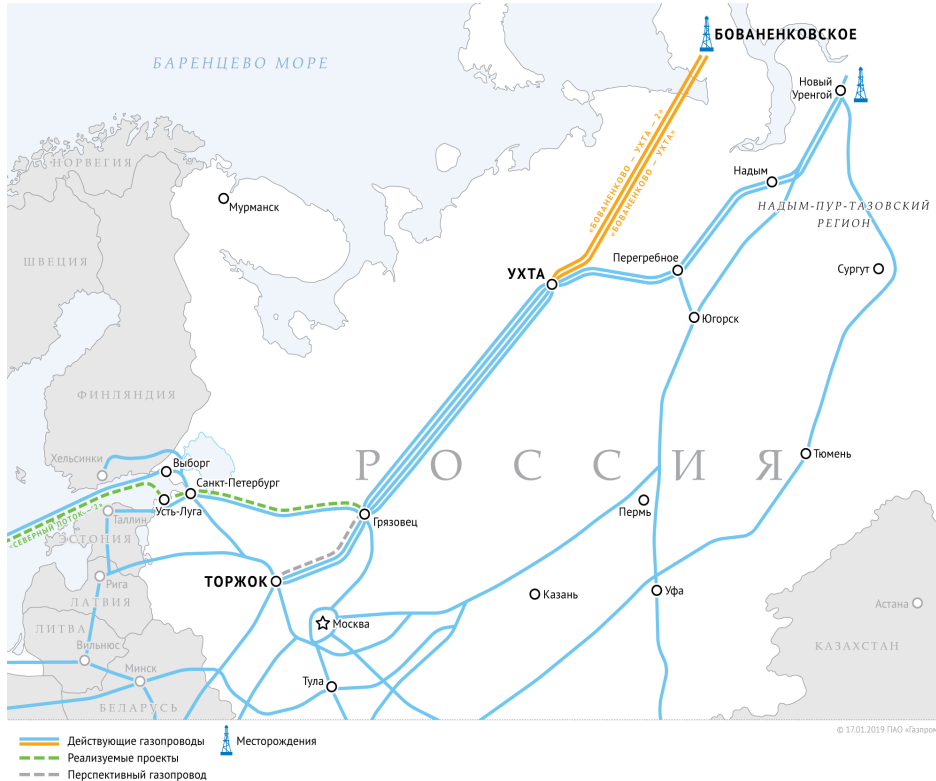


The beginning of the development of the Kharasaveyskoye field. The first convoy with construction and auxiliary equipment. March 2019

<https://www.gazprom.ru/press/news/2019/march/article477111/>

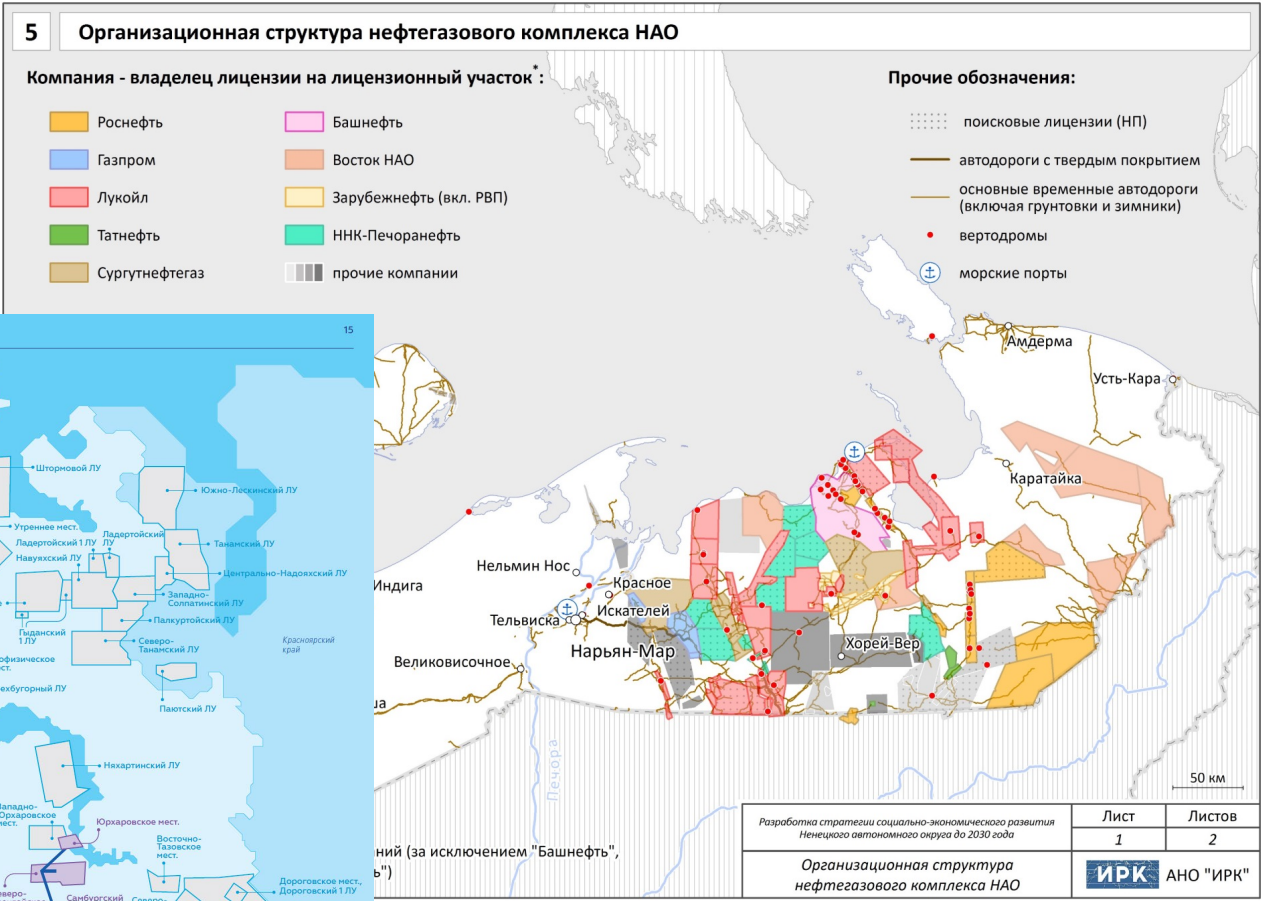
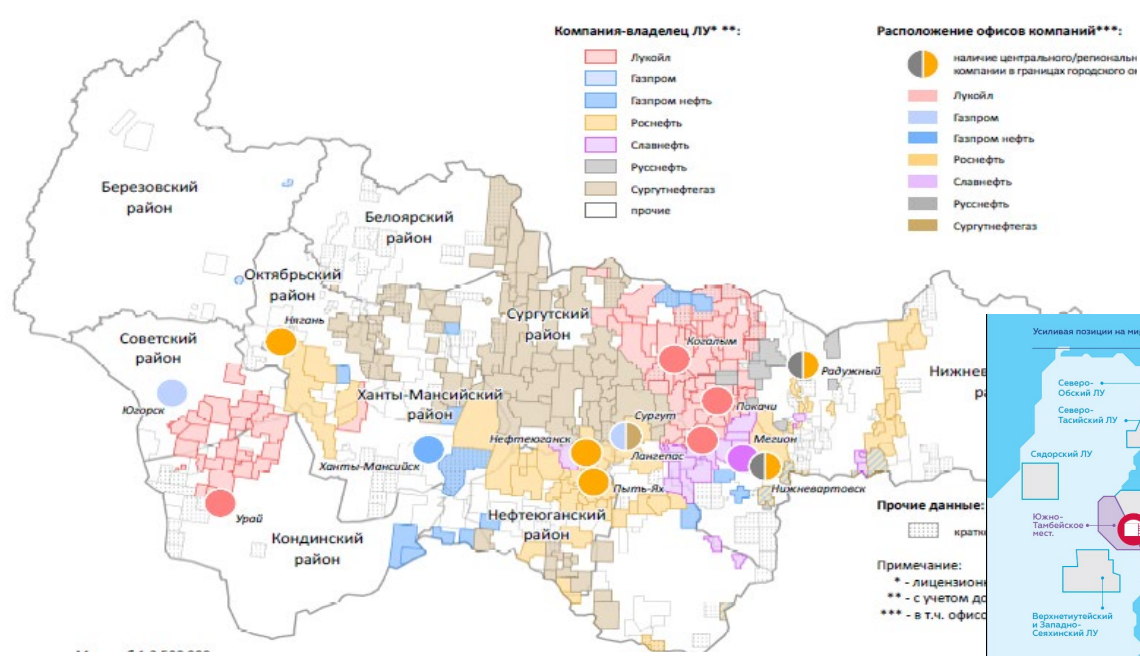
Almost 30 years later - the same scheme for the development of Gazprom's fields

Contrast of old and new: differences in logistic schemes of Gazprom and NovaTEK



Feature of the current moment: the former, land, southern scheme of export of hydrocarbons coexists with new, sea, "allowed" by climate change and new technological solutions

«Corporate» areas of development areas...



And district effect

Settlement system in the Arctic: how much stationary, how much temporary?



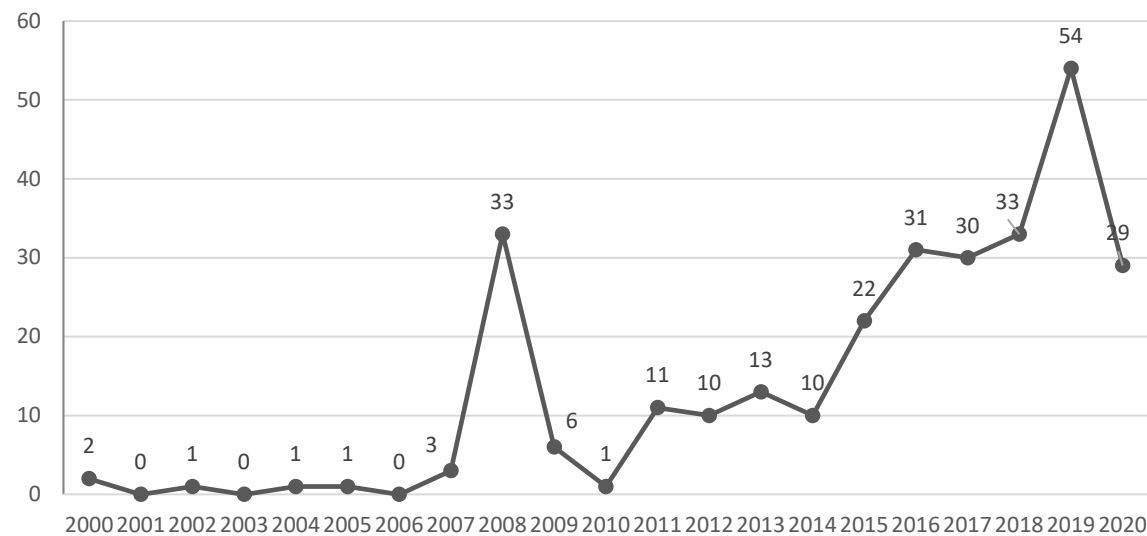
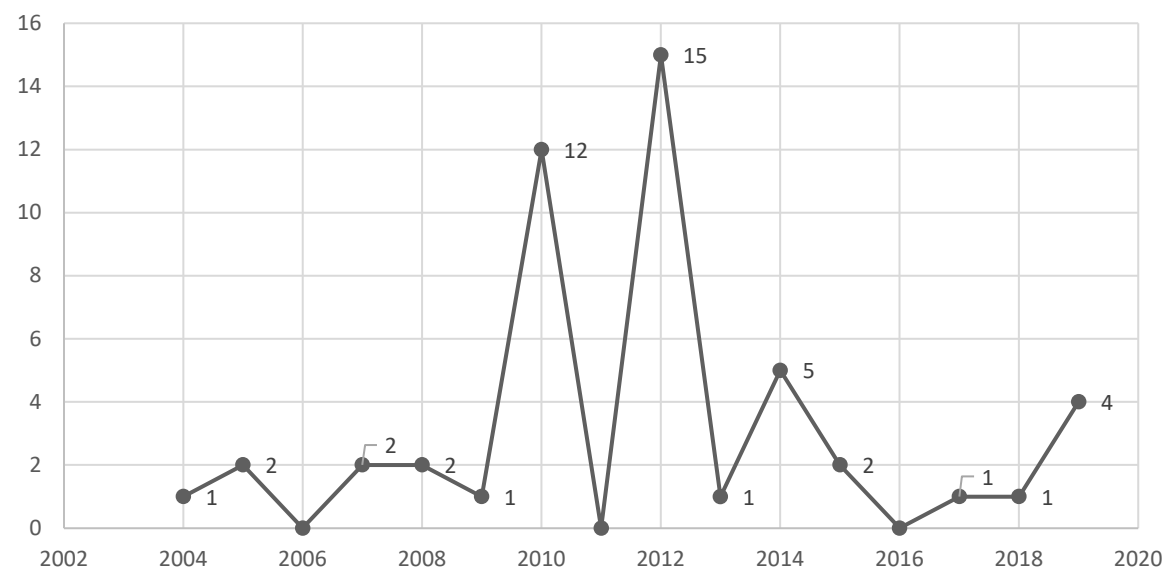
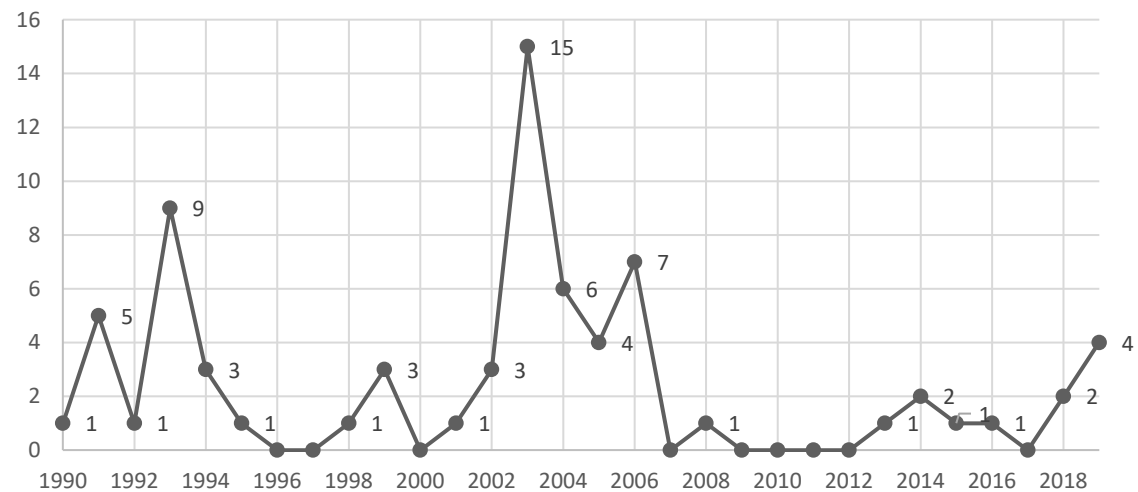
Temporarily



Constantly

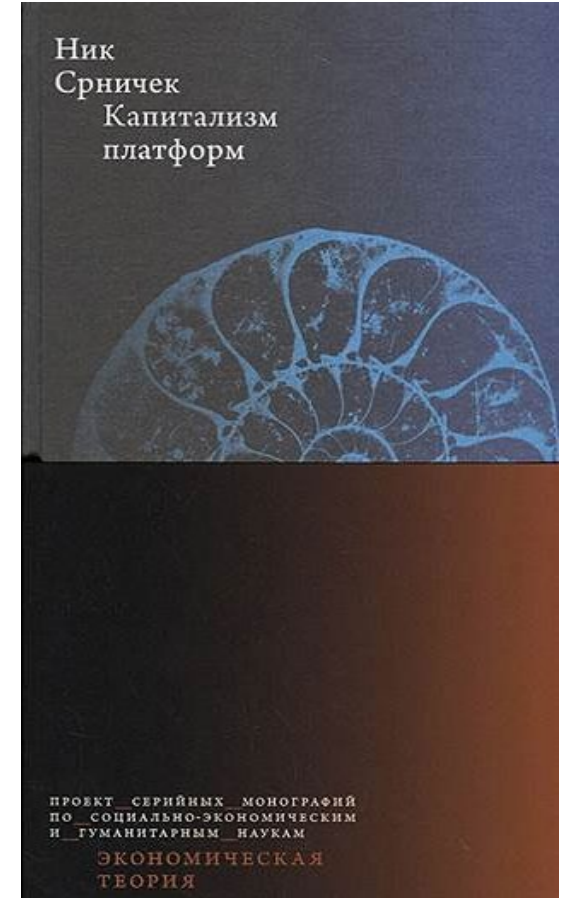


Comparative analysis of patent activity: NovaTEK, Norilsk Nickel, Gazpromneft



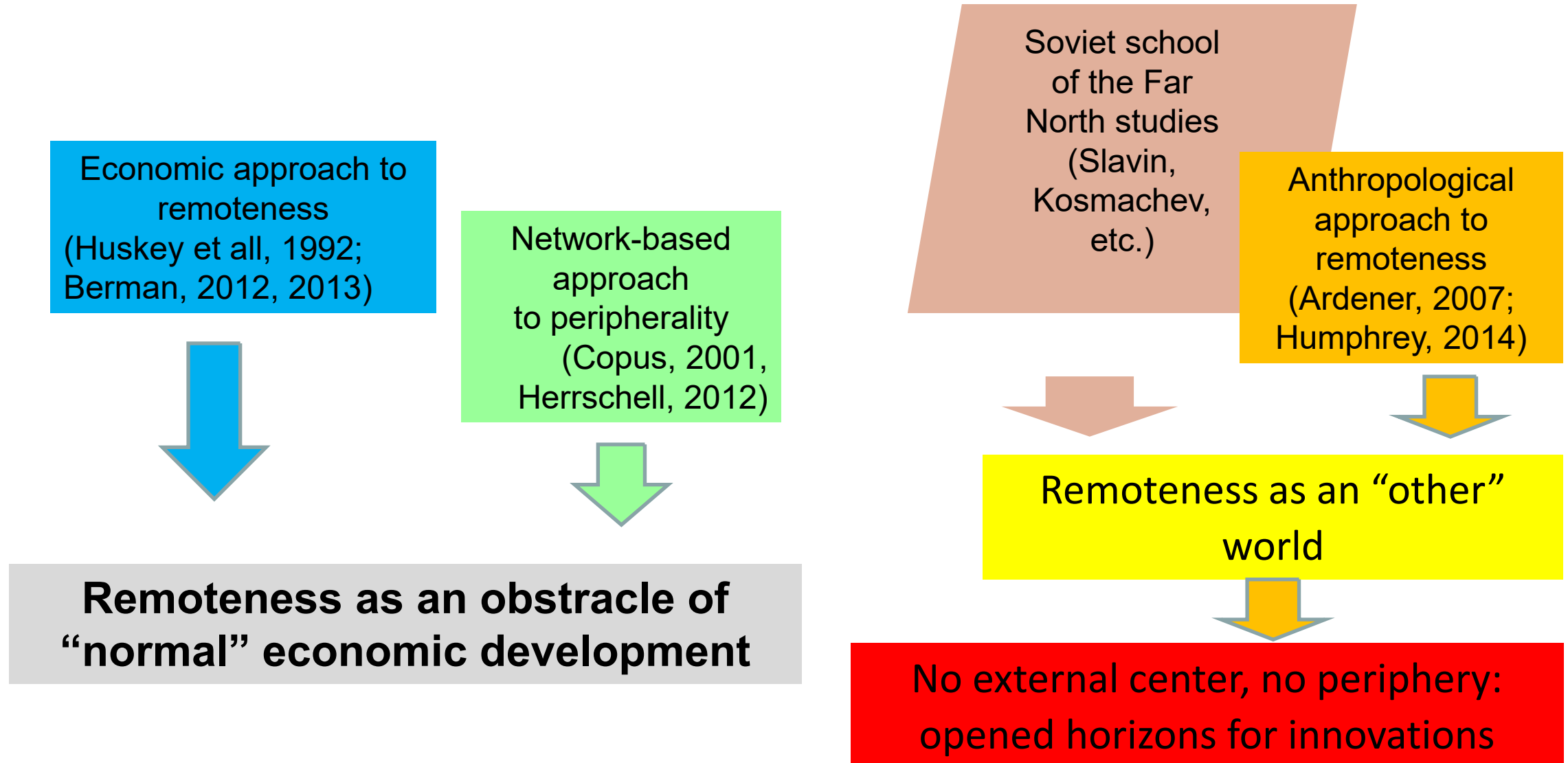
Platform capitalism and Arctic development

- Monopoly on information
- Platform - digital infrastructure that allows two actors to interact
- Network effect: the more participants, the greater the effect
- Rising inequality



Применительно к Арктике см.: Пилясов А.Н., Путилова Е.С. Периферийная инновационная система и ее место в процессе освоения ресурсов российской Арктики. В сб.: Российская Арктика сегодня. РФФИ. 2020; Пилясов А.Н., Путилова Е.С. Современный ресурсный проект Арктики для промышленной политики России: полюс роста национальной экономики или "собор в пустыне"? Север и рынок: формирование экономического порядка, 2020, том 3, с. 4-17

Theoretical considerations: combining different dimensions of remoteness studies



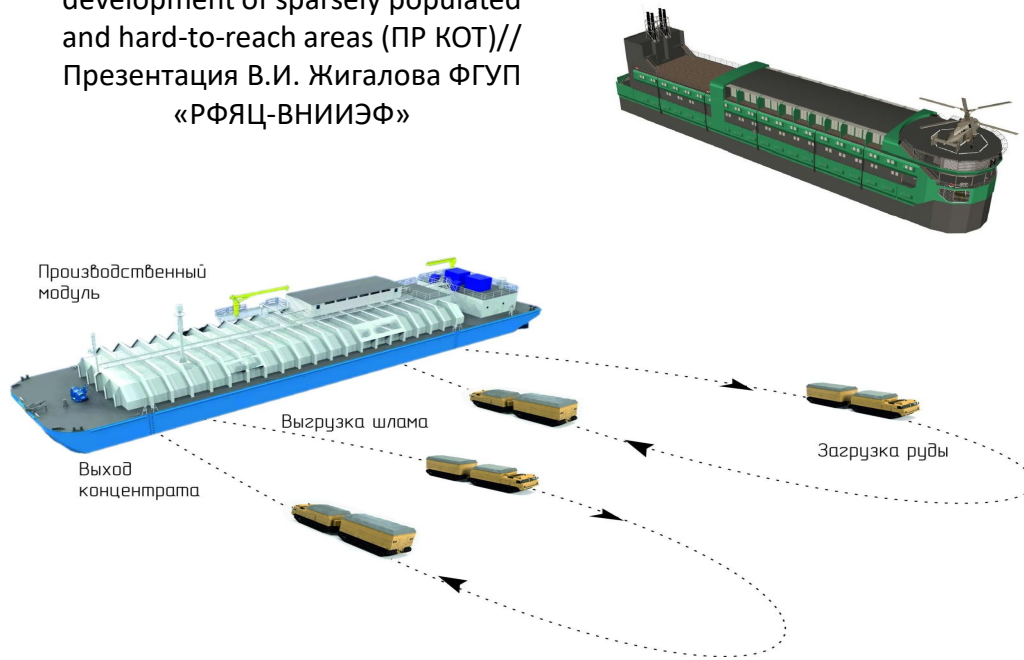
Comparison of traditional and "platform" solutions for the development of Arctic resources

Indicator	Traditional solutions	Platform solutions
Industrial relations	Vertically integrated production-processing-sales structure. Some or all of the service divisions are within the company	A network structure of autonomous production centers linked into a single digital network. Cross-subsidization financially binds business units to one another. Most of the service divisions are outside the company (outsourcing to external contractors)
Logistics	The southern overland route for the export of the extracted natural resource through pipelines, railways, etc.	Northern sea route for the export of natural resources along the NSR to European and Asian markets.
Labor relations	"Employment contract": permanent employment of workers, the formation of workers at all levels from local personnel (the phenomenon of working dynasties)	"Sale and purchase contract": reliance on temporary contract workers in low-skilled personnel (outsourcing of employees), the company's labor market for recruiting management personnel, local personnel and company personnel for recruiting middle managers
Relations with territory of presence	The division of the company is the city-forming enterprise of the monotown. Strong ties with the local community. Active use of local personnel, including the indigenous small-numbered peoples of the North	The division of the company is a rotational production camp. Weak interaction with the local community and poor use of its human resource potential. Corporate social responsibility programs of the company within the framework of agreements on social and economic partnership with the territory of presence
Model of industrial development	From scratch, creation of a hierarchical system of external and internal bases and development routes (linear-nodal territorial framework), district (inter-district) TPK	Reliance on the previously created infrastructure and settlement network, a polycentric network of equivalent development bases, localized production clusters (TOP, SEZ, etc.)
Degree of social embeddedness	High	Minimum

<https://www.gazprom-neft.ru/press-center/sibneft-online/archive/2019-march/2628800/>

«Platform capitalism in the Arctic and its social contradictions: the power of monopolies and inequality»

Platform solutions for the integrated development of sparsely populated and hard-to-reach areas (ПР КОТ)//
Презентация В.И. Жигалова ФГУП
«РФЯЦ-ВНИИЭФ»



Profit centers in corporate headquarters, social and environmental cost centers in mining areas
Growing social inequality within Arctic communities
The benefits of new projects are poorly "spilled" into the regional and local economies.

Пилясов А.Н., Путилова Е.С. Периферийная инновационная система и ее место в процессе освоения ресурсов российской Арктики. В сб.: Российская Арктика сегодня. РФФИ. 2020; Пилясов А.Н., Путилова Е.С. Современный ресурсный проект Арктики для промышленной политики России: полюс роста национальной экономики или "собор в пустыне"? Север и рынок: формирование экономического порядка, 2020, том 3, с. 4-17

Division of the municipal areas of the Arctic into rotational (growth poles) and non-rotational (traditional) territories (2019)

Municipal district	The ratio of the average payroll number of employees of organizations (excluding SMEs) and the population as of 01.01.2020) Average across the Russian Arctic 37.9% RF 21.7%	Products and services produced, RUB bln	Private investments for 1 person thousand rubles. (average 2015-2019)	Salary fund for 1 employee thousand roubles. in year	Average payroll number of employees of organizations (without small business) Thousand. people	% urbanization	women per 1000 men	Migration: Percentage of internal entry (average 2015-2019)%	Migration: Internal share at the exit
Districts – poles of growth									
Пуровский	112,2	1359,0	3970,1	1242,1	58,0	60,9	949/993	27,3	37,6
Ямальский	194,1	738,2	25746,6	1234,2	33,0	0	1048/1027	49,0	56,2
Тазовский	146,3	551,1	6325,5	1186,5	25,6	0	1039/986	34,4	40,9
Заполярный	82,6	332,1	3526	1154,2	15,7	39,0	975/806	56,0	61,3
Надымский	63,2	383,4	455,4	1488,2	40,8	88,0	1039/1061	15,1	18,3
Districts of traditional specialization									
Чукотский	30,0	0,5	2,3	973,7	1,2	0	?		
Аллаиховский	37,0	0,8	0,9	838,8	1,0	77,0	1022/1130	77,5	78,5
Усть-Янский	31,4	3,3	17,5	844,3	2,2	55,4	1020/886	70,3	65,1
Булунский	38,8	7,9	143,4	1000,7	3,3	56,3	901/1000	52,4	56,5
Мезенский	38,6	23,0	73,0	800,7	3,2	61,7	1094/910	81,2	79,4

Conclusions

1. A new theory of economic development of the Russian Arctic is created as a result of a constructive synthesis of the achievements of the Soviet developmental school, the American school of the frontier, concepts and paradigms of modern regional science (growth poles, peripheral innovation system, regional clusters / industrial areas, etc.).
2. The modern high-tech process of developing Arctic resources is based on a platform model of business organization, the key features of which are compactness, isolation, rotation, water logistics of projects for the development of the shelf and the Arctic coast.
3. An analysis of new projects that are being deployed in the Russian Arctic revealed the presence of greenfield projects "from scratch" and brownfield projects on the foundation of the infrastructure created during the Soviet development. They fundamentally differ in the degree of spatial localization, "seawardness", and social rootedness. Within greenfield projects, post-industrial projects can be distinguished, which largely rely on artificial intelligence technologies, and more traditional ones, based on a network of stationary settlements and a southern overland scheme for the export of extracted resources.
4. The realities of the modern development of the Arctic demonstrate, on the one hand, a previously unattainable level of efficiency of intelligent production processes; on the other hand, there are numerous social costs for the production area from new technological solutions. In this regard, the main direction of state policy should be a more active impact on the economic behavior of resource corporations in the Arctic, ideally - the formation of state regulations for the behavior of public and private companies, which will spell out measures and mechanisms that compensate and neutralize the costs of social exclusion and extraterritoriality.