

The 2nd High North Dialogue Research Workshop
Business in the Arctic
Bodø, April 4-5, 2019

Abstracts

THURSDAY, April 4 2019 16.00-18.00

TRACK 1

Title	<i>Smart Societies in the Arctic: Shaping digital content/connectivity to support innovation</i>
Name	1) Rob McMahon 2) Andreas Raspotnik
Position and Affiliation	1) Associate Professor, Communications and Technology Graduate Program, University of Alberta 2) Senior Researcher, High North Center for Business and Governance

The diverse regions of the Arctic, like many regions of the world, are facing a variety of conditions associated with the development, deployment, and adoption of rapidly emerging digital technologies. Northern governments, companies and civil society organizations are all paying increased attention to the potential of digital content/connectivity. Decisions regarding these systems should refer to the unique circumstances and assets of northern societies and their potential for smart specialization - particularly since many northern regions belong to a system of economic and political relations that puts residents in uneasy tension with state and multinational influences. In this context, perhaps the most important issue moving forward is ensuring that Arctic residents are engaged in decisions regarding circumpolar connectivity. Building from examples of distinct local contexts – from remote Inuit communities of Nunavut to urban ‘smart city’ initiatives in Finland – we discuss the communities and factors shaping Northern connectivity. We argue that conditions must be put in place to identify development goals through structured planning and dialogue: leaders and administrators from urban, rural, remote and Indigenous regions must substantively engage in strategic planning regarding how digital connectivity is built, setup, owned, paid for, distributed, managed and used in and across their communities and regions. This engages a diversity of users to make decisions on how infrastructure and bandwidth delivers essential services and supports digital economies. This involves working with Arctic residents to develop northern-specific indicators that identify and capitalize on their unique assets, while working to mitigate digital inequalities and divides. We end with an open discussion of the potential of digital technologies, both good and bad, and raise questions to consider while moving forward in policy and practice.

Title	<i>Toward Smart Alaska Villages: Connectivity for Rural Development in Alaska</i>
Name	Heather E. Hudson
Position and Affiliation	Dr., Professor Institute of Social and Economic Research (ISER) University of Alaska Anchorage

Approximately two-thirds of Alaska’s indigenous population lives in more than 200 villages, most of which are remote settlements with fewer than 200 people. The concept of “rural” has a different connotation in Alaska than in many other regions; some 75 percent of Alaskan communities have no road access.

This presentation will provide an overview of how connectivity including broadband is being used in Alaska villages for health care, distance education, businesses, indigenous organizations, emergency services, and other applications. It will also identify policy issues that need to be addressed to improve broadband connectivity and affordability, and research topics on information technologies for smart rural development in Alaska.

Title	<i>Enabling interoperability-as-a-service for connected IoT infrastructures and Smart Objects</i>
Name	Asbjørn Hovstø
Position and Affiliation	<i>Project manager VICINITY</i> Hafenstrom, Svolveær, Norway.

The High North offers exciting opportunities for developing innovative services and processes. The region is recognized for its closeness to pristine nature, quality raw material as well as high level of education. Embedding awareness of such characteristics in products and services from this region, will benefit both local expertise and the business community as a whole.

USE CASE 1: ANIMAL WELFARE IN THE HIGH NORTH

The recipient apparatus and consumer market are interested in alternatives to strengthen a climate neutral profile and channels serving ethical production methods.

The cost of IoT are steadily dropping, the battery capacity is increasing, and the coverage is being extended through communication networks. This offers opportunities to track herd animals like reindeers, measure health and plan animal husbandry in respect to food supply and strain on vulnerable nature.

This information can provide further insight in migration routes while spreading awareness of quality goods and background for Sami delicacies.

USE CASE 2: PERSONLIZED INFORMATION ABOUT MARITIME PRODUCTS TO CONSUMER MARKET

The largest market in the high north comes from product within the maritime sector. Aquaculture with fish, shellfish - and upcoming products like seaweed offer new opportunities in the information age. Providing information about the products generates trust with the consumers.

Examples of information for the aquaculture industry and also the consumer market were:

- The specific area of the catch came from
- Migration route to the catch
- Climate conditions in the areas from which the catch has come from through the growth period/migration
- Energy and CO₂ profile for shipping of catch - which also includes profile compared to products from other markets

Websites linked to a QR code that is assigned the catch will include personalized information about the vessel, the unloading site, processing and shipping company and freight route. This will all be part of a larger communication strategy to strengthen the presence of products and services from the high north, and establish a relationship with the consumer market.

There are two main sets of consumers. The level of trust shown Nordic products is generally high, but an increased interest in the origins of the food you put on the table is growing among urban consumers and young adults. This is a trend that is more obvious among Swedish and Finnish recipients and consumers.

USE CASE 3: CONSUMPTION PATTERNS IN SMART CITIES, ENERGY AND LOGISTICS

New projects in Bodø are offering opportunities to create services based on open data and real time information. Knowledge based on metering data and energy grid capacity can be combined with information about settlement, most and least used travel patterns that is tied in with both person transport and deliveries.

Some of the most ambitious projects will provide Bodø with 15000 new homes and 20000 jobs. Additionally a new airport will establish Bodø as «the world's smartest city».

According to Siri Vasshaug, the project manager for "Smarter transport Bodø":

"- The project means that we get NOK 50 million over a period of five years to develop new solutions for mobility. We have established 14 subprojects where the intention is that we will change people's travel habits in the direction of zero emission solutions. We have a goal of getting people to stop using a private car, but it assumes that the alternatives must be at least as good or better. "

Furthermore she says:

"[...] for Avinor, transport to and from the airport is central, while Telenor's ambition is to develop new flexible payment solutions.

Identifying and tracking travel patterns will open for new services, such as identifying areas with little or no use where traffic can be led to more relevant areas. Electricity consumption can be reduced by dimming lights in areas not in use and lowering temperature in apartments that are left empty during the workday. Ice sensors can be combined with maintenance to facilitate sharing of parking space and vehicles, and car seats can be exchanged with bus seats using certified travel routes. Additionally bus fares can be personalised in a much larger degree alongside other support for local office rooms being made available to the public and thus reduce the traffic.

Realtime information presented on map with support for status report from commuters and incentives for reporting relevant data will further assist in changing the nature of the traffic in and around Bodø.

Title	<i>Smart city as one of innovation economy development directions</i>
Name	David Pfetser
Position and Affiliation	Professor School of Advanced Studies, University of Tyumen

The main research idea is to demonstrate the need to study the concept of smart cities in terms of their impact on the economy of regions and the whole country. This concept will help us rationalize the management of the country's natural and human resources and affect such aspects as the human and investment attractiveness of regions, innovation clusters, financial and social sustainability, performance and information technology management, risk management and digital literacy.

The methodological novelty of this research lies in the analysis of smart cities within the innovation economy. There are many courses about smart cities, but almost not one of them is interconnected with the economics of innovation.

In modern science, the concept of a smart city is usually considered as the interrelation of institutions and relations between them. Most often, sociological research methods are used for analysis, much less often this concept is viewed through from the economy's point, and there is no results analysis of implementing smart cities in terms of economic benefits.

In the course of this research, the following objectives are pursued:

1. To develop smart city performance indicators that will allow us to evaluate the progress of cities and regions (economic growth rates; assessing the life quality of the smart cities population, including life comfort and well-being; growth rates of innovation; environmental and social consequences);
2. To determine the general principles of creating smart cities in Russia;
3. To determine the main priorities of local urban development programs when creating smart cities;
4. To create strategies for economic growth and innovative development of smart cities in the regions of Russia, aimed at solving the main social, economic, environmental problems of regions and the whole country;
5. To study the methods that forms the sustainable development of the smart city environment.

Title	<i>Innovation Ecosystem Orchestration Activities: case of Positive Energy District project development</i>
Name	Sari Hirvonen-Kantola
Position and Affiliation	Postdoctoral researcher, Research coordinator University of Oulu / Oulu School of Architecture Urban Design and Planning

With growing importance of innovation ecosystems, integrated and interlinked competences, resources, spaces, and facilities between public and private stakeholders increasingly define an ecosystem's capacity. At the same time, the operations logics of the actors vary, which means orchestration activities that allow innovation to take place, need to be matched to the ecosystem and project at hand.

In this study, I build on the viewpoint that while cities are acknowledged as innovation drivers they can apply diverse orchestration activities. I examine how a city stimulates innovation development with land use planning activities. Urban planning departments are central players as ecosystem

orchestrators, since in many countries and regions they guard the gates to opportunities in the land use and built environment context.

Through an empirical case study on a Positive Energy District (PED) large scale demonstration project development in Oulu, Finland, this study sheds light on the innovation ecosystem orchestration activities conducted by the PED project stakeholders, in the project development phase. My study provides empirically based observations on the orchestration activities in innovation ecosystems, especially in public sector and land use planning context, deepening the understanding on managing smart cities and municipalities.

Keywords: Open innovation ecosystem, ecosystem orchestration, orchestration activities, land use planning, Positive Energy District

References:

- Adner, R. (2006) "Match your innovation strategy to your innovation ecosystem." *Harvard Business Review* Vol. 84, pp. 98-110.
- Adner, R. & Kapoor, R. (2010). Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations. *Strategic Management Journal*, 31(3): 306–333.
- Dhanaraj, C and Parkhe, A (2006). Orchestrating innovation networks, *Academy of Management Review*, 31 (3), 659-669.
- Hirvonen-Kantola, S., Iivari M. & Ahokangas, P. (2016). New Market Creation in Urban Area Development: an Ecosystemic Business Model Approach. *Proceedings of the CIB World Building Congress 2016. Volume III, Building up business operations and their logic.*
- Schaffers, H., Komninos, N., & Pallot, M. (2012). *Smart Cities as Innovation Ecosystems Sustained by the Future Internet. FIREBALL White Paper.*
- Schaffers, H. and Turkama, P. (2012) Living labs for cross-border systemic innovation. *Technology Innovation Management Review*, September 2012, pp. 25-30.
- Hurmelinna-Laukkanen, P. & Nätti, S. (2017). Orchestrator types, roles and capabilities – A framework for innovation networks. *Industrial Marketing Management*, Vol. 74, pp. 65-78. Available at <https://doi.org/10.1016/j.indmarman.2017.09.020>.
- Hurmelinna-Laukkanen, P., Möller, K. and Nätti, S. (2011) Innovation orchestration – Matching network types and orchestration profiles. *Proceedings of 27th IMP conference, 30 August – 3 September, 2011, Glasgow, Scotland.*
- Raunio, M., Nordling, N., Ketola, T., Saarinen, J.P. and Heinikangas, A. (2016). *Open Innovation Platforms. An Approach to City Development. Handbook for developers.* Available at https://avoimetinnovaatioalustat.files.wordpress.com/2016/02/kc3a4sikirja_eng.pdf (accessed May 4th 2018).

Thursday 4th April, TRACK 2 16.00-18.00

Title	<i>Marine littering in the Barents area: fishers' attitude</i>
Name	Julia Olsen
Position and Affiliation	PhD candidate Nordland Research Institute

In the Barents area, fisheries contribute a high portion of the marine litter that threatens marine life, and ultimately the provision of clean and healthy seafood. Little knowledge is accumulated on causes and solutions related to marine waste from fisheries. There is also a lack of systematic data and knowledge on what influences the fishers’ attitude to waste management, on their access to facilities for disposal of waste produced onboard as well as litter collected while fishing, and on their perception of challenges and solutions to the marine litter problem. By applying a value approach and mix methods methodology, this study aims to explore fishers’ attitude and practices to handle marine waste. The empirical data derives from 19 qualitative interviews and 197 responses from a survey among fishers from Northern Norway. The data indicate that attitudes have changed during the last years, partly because of the recent focus in the media. There has been a gradual shift in attitude, where fishers realize that the ocean no longer is a convenient dumping place, and that litter is harming the environment as well as their sustenance. The study concludes that fostering fishers’ awareness and providing them with knowledge of adequate waste management practices, as well as adequate infrastructure is effective in influencing their attitude and practices concerning the problem of marine litter. Port authorities also have an important role: easy-to-use and reasonably priced waste facilities in harbors are key to encourage proper waste management onboard, as well as bringing to shore litter collected in the ocean. Standardization of waste management facilities in harbors will increase efficiency of waste management and reduce the time fishers use for waste delivery.

Title	<i>Analysis of the Arctic Strategies: from Environmental Concerns to Business Interests</i>
Name	Alexandra Middleton
Position and Affiliation	Assistant Professor PhD Oulu Business School University of Oulu

The Arctic is one of the most discussed issues in the press and on the political level. Climate change that speeds up melting of the ice cap creates a business case for the use of vast Arctic resources. The Arctic possess 13% world undiscovered oil and 30% of undiscovered gas resources and is rich in rare earth minerals. At the same time, the Arctic is one the most fragile ecosystems, where anthropocentric impact shall be minimized. The Arctic Council was created in 1998 with the aim for peaceful cooperation between eight Arctic states. The focus of the Arctic Council has been environmental protection and cooperation, which resulted in three international binding agreements (Search and Rescue, Oil Spill Prevention and Scientific Cooperation in the Arctic). Over the course of it functioning Arctic Council has accepted thirteen non-Arctic states that act as observers.

The purpose of this paper is to investigate Arctic strategies produced by the Arctic states and observers with specific focus these strategies take on the business opportunities in the Arctic. This research is trying to answer the question: do we observe the shift in focus from environmental protection to exploration and business development of the Arctic. This study uses discourse analysis (Johnstone 2018), more precisely action-implicative discourse analysis (Tracy 1995). The data of analysis constitutes Arctic strategies (and their iterations) eight Arctic states (Canada, Denmark, Iceland, Finland, Norway, Sweden, USA and Russian Federation) and 13 observer states (France, Germany, Italian Republic, Japan, The Netherlands, People's Republic of China - Kiruna Ministerial meeting,

Poland, Republic of India, Republic of Korea. Republic of Singapore, Spain - Switzerland and the United Kingdom).

References:

Johnstone, B. (2018). Discourse analysis (Vol. 3). John Wiley & Sons.
 Tracy, K. (1995). Action-implicative discourse analysis. *Journal of Language and Social Psychology*, 14(1-2), 195-215.

Title	<i>Mapping participatory governance practices and smart city initiatives in the High North</i>
Name	Igor Khodachek
Position and Affiliation	Researcher Nord University Business School

The growing use of ICT technology and so-called smart city-, community- or region concepts opens up new areas for public innovation, especially regarding the development of local dimension of governance in the High North. Such innovations can give greater voice to local stakeholders, in relation to strategic, urban and financial planning decisions in the High North territories, i.e. form participatory governance (PG). However, knowledge about the existing and new practices of local stakeholders' involvement/participation in the context of the High North is mostly missing, especially when it comes to its inscription into smart city initiatives.

The aim of the study is to map and reveal PG experiences in the High North through an extensive media review. Specifically, we review articles, chronicles and archival materials available in online news, newspapers and magazines (e.g. *The Economist*). The review is limited to the period of 10 years, justified by the development of the PG agenda and Smart City discourses during 2010s.

Title	<i>The sustainability of cargo transport via the Northern Sea Route</i>
Name	Alina Kovalenko
Position and Affiliation	PhD student CHNL, Nord University Business School

Shipping in the Arctic has attracted much attention during the last two decades. The possibility of using the Northern Sea Route (NSR) as a shorter trade route between NW European and NE Asian markets compared to the Suez Route, is of interest to many Arctic stakeholders and commercial shipping and logistics companies. A key prerequisite for this to happen is to determine what type of cargo, as well as maximum cargo volumes/tonnage, could be transported along the Arctic route on a sustainable basis. A second prerequisite is that shipping via the NSR needs to take place year-round to be of interest to commercial shipping companies. The third prerequisite is political and financial will of Russia (together with international partners) to build up the needed maritime infrastructure to make year-round transit shipping possible via the NSR, including a fleet of high-ice class cargo vessels and powerful icebreakers and terminals. This paper describes a new PhD research at Nord University that offers a techno-economic approach to assess the potential of a new year-round transport and logistics system for the

NSR. Discussed are the four parts (articles) of the study, research methodology and the overall significance of the proposed research.

Keywords: Arctic shipping, infrastructure, transportation, logistics, Northern Sea Route, Northeast Passage, cargo transit, operation system

Title	<i>Interaction of Oil and Gas industry and National Economy: Evolution and Estimation on the Arctic Projects example</i>
Name	Daria Kolesnikova
Position and Affiliation	Doctoral student National Research University Higher School of Economics, Moscow

Severe climate, lack of infrastructure and qualified labour, distance from transportation, production and customer hubs and absence of reliable technology are not the only characteristics of oil and gas arctic projects. All these make these projects less cost effective and attractive for investors.

Russian import of specified machinery and equipment for extraction and processing of mineral resources amounts to more than \$6-8 billion per year. With exchange rate has gone up, the completion of such projects in Arctic region as Yamal LNG in Sabetta and Shtockman field development, made government to either increase its share of subsidies or postpone the project indefinitely. Yamal LNG costed overall more than \$27 billion according to official sources and was launched in December of 2017. Earlier development of Shtockman was stopped because of the shale revolution in the USA in 2012, however, nowadays mass media talks periodically about resumption of its work despite the fact that the project is still unprofitable during all exploitation period.

Oil and gas projects are required to not only generate direct cash flows in form of tax and rent revenue for government, and dividends for investors, but also influence socio-economic environment and contribute region's development. The latter becomes possible due to strengthen the connection between sectors and further localization of value chain. Value chain consists of three directions: *financial flows* (direct effect) - is represented by taxes, licenses, fines, fees paid by oil and gas sector in favor of government, dividends and wages directly related to the implementation of the project; *relations with suppliers and service* and *relation with customers* – together represents indirect effect. Total socio-economic effect on the national economy is a sum of direct and indirect effects. If the definition of direct effects does not cause any challenges, the concept of indirect effects is rather more sophisticated. In the current research, it is determined that indirect effects are appeared due to economic shock (project launch), which multiplies the number of economic activity cycles (cycles of production and consumption).

To assess the cumulative impact of oil and gas industry activity the current paper supposes to indicate a specific method - macroeconomic "input-output" model. The model, which were developed based on Wassily Leontief's ideas of inverted matrix, allows implement the structure of the considered economy (country, which is a project-operator) as a parameter and calculate the total effects. If the project parameters (investment and industry) are introduced as one separate sector, the results show the level of influence the whole economy. It is also possible to embedded the level of localization costs,

for example, the share of domestic suppliers and contractors in the model. All these "input-output" model innovations would increase the ability of this method to predict the development of certain industries and structural adjustment of the economy.

Thus, under the research a survey addressing the indirect effects of the Arctic projects (especially focusing on Yamal LNG case) is conducted with focus on energy companies' activity and authorities' measures as well. Due to application of the model under particular case studies with focus on their operational frameworks and microdata, the results of the research may contribute to increase of knowledge of localization and multiplier effects dynamic. Therefore, the development of the research will result in recommendations in respect of project management improvements considering multiplier effects, requirements for suppliers and services as well as enhancement of political and industrial measures and instruments.

Title	<i>Greening the blue tourism industry</i>
Name	Julie Gibson
Position and Affiliation	County Archaeologist Development and Marine Planning Orkney Islands Council Lecturer, UHI Institute for Archaeology

How can we create sustainable tourism growth in a northern periphery? This case study assesses impact on tourism of locally driven archaeological research.

The islands of Orkney are situated an hour or two's ferry ride north of the Highlands of Scotland. The islands' main traditional industry is farming, whose income is flat-lined, leading to depopulation. Climate change is threatening much of the heritage resource. Volume tourism, including from cruise ships, is a substantial and growing source of income, but large numbers of visitors adversely affect the World Heritage monuments. These kinds of circumstances are common to many peripheral communities especially in the North, where finely balanced ecosystems do not include masses of visitors.

The presence of an archaeological research institute based in the community, enables significant positive impacts to be made towards sustainable heritage tourism and marketing in Orkney. Examples include active archaeological excavation becoming seasonal visitor attractions e.g. <https://www.visitorkney.com/things/history/ness-of-brodgar>; interdisciplinary research (folk lore/history/archaeology) enables creation of an authentically-based new pilgrimage route <https://www.stmagnusway.com/> across the islands.

Instant dissemination of a range of research findings is undertaken via Social Media; this works towards balancing disadvantages of distance from centres of power and encourages attention from traditional media. This in turn is a means of product placement for the more general heritage of the Islands and has led to statistically significant changes in regard to visitor choice of destination/activity. Heritage and identity are valued both as commodity and intrinsically, as visitors desire a more intimate connection with the past (via small group experiences) than that available via mass transport.

*Archaeologist for Orkney Islands Council and Lecturer in Archaeology UHI Archaeology Institute, Orkney College, Kirkwall, Orkney Scotland. +44(0)1856 569341

FRIDAY – PRESENTATIONS 10.15-12.15

Title	<i>(Arctic) science diplomacy in H2020 research: InsSciDE</i>
Name	Rasmus Gjedssø Bertelsen
Position and Affiliation	Professor University of Tromsø, Norway

Transdisciplinary thinking and work is necessary in many both professional and research settings. Public, private and civil society organizations work across disciplinary, sectorial and national borders. European, Nordic and other research projects need to integrate societal impact. However, much higher education is disciplinary and not challenge-oriented. In this presentation the author will discuss and share transdisciplinary experiences and best practices from the Harvard Kennedy School, United Nations University and as observer to UNFCCC COP15 and COP21.

Title	<i>Arctic Science and Business/Industry Cooperation</i>
Name	Federica Scarpa
Position and Affiliation	Communications Manager - International Arctic Science Committee (IASC)

As access to the Arctic increases, we have seen a concurrent increase in interest of small businesses and large industry in potential opportunities. Scientific studies are often essential precursors to reduce risk associated with investments on the frontiers of new opportunities. Additionally, new technology developed for applications in the harsh, remote regions of the Arctic have enabled private enterprise to push profitable ventures far beyond what once appeared to be the limit of secure investments. In this way, science can facilitate business, but business can also facilitate science, whether through financing, data, or collaboration.

Based on the findings and outcomes of the IASC's action group "Arctic Science and Business/Industry Cooperation (ASBIC), examples of best practices and lessons learned to lay groundwork for future cooperation between Arctic science and business will be introduced at the Research Workshop and discussed with the attendees.

The International Arctic Science Committee (IASC) is a non-governmental, international scientific organization, founded in 1990 by representatives of national scientific organizations of the eight Arctic countries. Over the years, IASC has evolved into the leading international science organization of the North and its membership today includes 23 countries involved in all aspects of Arctic research. Since 1998, IASC has been observer to the Arctic Council.

Keywords: IASC, Science, Arctic, Business, Cooperation

Title	<i>Arctic Development from an Italian point of view</i>
Name	Alessandra Caruso
Position and Affiliation	SIOI – UNA Italy Italian Society for International Organization

What are the reasons as to why Italy, a country with Mediterranean inclinations, wants to and can sit in an international forum such the Arctic Council? What are the strategic implications of this projection into the High North?

Italy's presence in the Arctic spans over a century. Developed through the years, Italy's relationship with the Arctic began in an era of pioneering that saw striking conquests of last frontiers and later arrived to a fruitful cooperation in the scientific, commercial and geostrategic fields in collaboration with Arctic actors. Due to this longstanding history, Italy appears to be an accredited country and a solid commercial partner in sharing high-specialized know-how in the fields of science, research, technology, exploitation of natural resources and commercial shipping.

The melting of the Arctic ice caps and the opening of new economic perspective gives Italy opportunities, but there are also risks that cannot be ignored.

Italy has always played a strategic role in the Mediterranean Sea and is now called to give attention to the opening of new maritime routes. In the light of Italy's recent economic crisis, a decline of its port network and a redefinition of the alliance system, it is necessary to look towards more globalized options, in particular the Arctic north. The center of gravity and the flow of wealth are moving north and Italy should act in an intelligent and preventive way to remain economically competitive. How could Italy adapt to these new challenges?

Title	<i>Arctic image making: creating business image in the Arctic, for the Arctic</i>
Name	Liubov Timonina
Position and Affiliation	M.A. in Global Studies, Ghent University, Dept. of Conflict and Development Studies; Research Intern at The Arctic Institute (TAI)

The paper is concerned with tracing ways of how business companies of different scale use the image of Arctic and common associations related to the Arctic in their marketing practices and how they create their own corporate image based on particular perceptions and ideas about the Arctic, its past and its future.

Due to the vulnerability of the Arctic physical environment and the complexity of impacts of current economic activities, especially in regards to extractive industries, long-term business making in the Arctic remains challenging. It has to prove that it is both sustainable and consumer-friendly and is able to bring vital changes on a local level, contributing to the economic and social development of the region. Trying to form a positive image and at the same time to justify their corporate interests, business companies often reproduce the stereotypes, consciously or unconsciously. Despite the recent turn to "green business" and the ever-growing number of SMEs dedicated to this idea, the Arctic is, however, still being used as a synonym to a vast "resource base", where the physical environment is commodified and perceived in terms of its economic value, disconnected from the socio-economic practices of local communities.

The paper calls for a more reflexive and self-aware approach to using imaginations about the Arctic, and its social and physical environment, for establishing and promoting one’s business and aims to encourage a grounded, non-anthropocentric and decolonized vision, which would communicate an adequate image of the Arctic and the multifaceted challenges it is facing nowadays.

Title	<i>Joint Emergency Response Coordination. The Case of Rescue Operations in the Svalbard Sea Areas</i>
Name	Natalia Andreassen
Position and Affiliation	Associate Professor Nord University Business School High North Center for Business and Governance

Joint response operations in the Arctic oceans is a challenging task due to limited resources, vast distances, harsh weather conditions and technical limitations on equipment functionality. Coordination is facilitated by established incident command systems that define managerial roles and information flows between individuals and organizations participating in rescue work in large-scale crises. The tactical and operational management-levels may have to adapt and improvise both their organization and task-work to function efficiently under these conditions. This paper focuses on the inter-organizational coordination mechanisms facilitating joint emergency response in complex operations.

This study explores cases of rescue operations in the waters around Svalbard in the Arctic. In this region there has been a substantial growth in maritime traffic, including cruise liners with 2-4 thousand pax, calling into question the capacity and effectiveness of established emergency preparedness. Cruise adventure tourism boosts extremely the last years reaching 2-4 thousand tourists on board the cruise liners which run up to 80N. Even though a large number of new vessels are being designed and built tailor-made for the navigation in the polar waters and meeting the high standards, including the Polar code, they are as vulnerable for accidents as other ships. Their itinerary through remote, non-populated regions may call for extra safety and security precautions, including emergency preparedness.

FRIDAY – PRESENTATIONS 13.00-15.30

Title	<i>Convergence or Competition? Russia and China in the New Geopolitics of the Arctic</i>
Name	Xin Zhang
Position and Affiliation	Associate Professor

	School of Advanced International and Area Studies Deputy Director, Center for Russian Studies, East China Normal University
--	--

The presentation accesses the recent shifting perceptions of the Arctic in the grand geographic imaginations of both Russia and China. It then discusses the newly emerging opportunities and challenges in the potential collaboration between the two countries in the Arctic and the implication of such collaboration for the Arctic.

Title	<i>The Hydrocarbon Industry's Arctic Challenge: A case of square peg and round Hole?</i>
Name	David Dusseault
Position and Affiliation	Professor School of Advanced Studies, University of Tyumen

"While policies and technologies help shape living standards and the evolution of energy, they also disrupt the status quo and can cause uncertainty and unexpected consequences."

Exxon Mobil's Outlook for Energy 2019

The Context

Global climate change has opened up a discussion devoted to how the development of Arctic trade routes will influence the world's economy. Such conversations have evolved to such an extent that the Chinese are speaking of the establishment on a Polar Silk Road along which goods, including hydrocarbons would flow between Asian and European markets with ease. For today's oil and gas industry, the Arctic's estimated reserves are fraught with structural risks which may outweigh any potential economic value to be accrued from future development. The risk is not only in the numbers, but also tied to processes which are themselves defined by conceptions, shaped by market mechanisms and delineated by engineering frameworks rooted in the industry's recent past.

Historically the hydrocarbon industry's geo-political and geo-economic clout has been based on the expectation of physical scarcity. While the existence of the physical limitation of oil and gas resources remains an undeniable if not entirely quantifiable, geological fact of life, global markets are currently awash in hydrocarbons. While industry estimates expect future energy demand to grow by 25% up to 2040 spearheaded by non-OECD countries, developed markets from which the majors earn their high value margins will remain stagnant, with little hope of demand ramping up over the same period.

In this present lower price environment, producers are hesitant to fall into a race to the bottom to increase revenues at the expense of their competitors. As a consequence, companies prefer to maintain market share in an attempt to extend the value garnered from the existing business model while keeping a wary eye on the future. Under such particular circumstances, there is a palpable risk that the more producers "structurally" pump to maintain the business the less economic value each barrel garners over time. In a doomsday scenario, these trends would have great potential to erode the basis of the industry's overall ability to provide sustained value to the global economy.

Why? While accepted as the foundation of the global energy trade, traditional, capital intensive, linear value chains which delivered predictable economic results for the past 65 years are now increasingly

seen as a necessary evil of keeping the business afloat in the face of intensely competitive and fluid transportation and end-market conditions.

As an example, downstream consumers who rely on upstream producers to provide for their energy needs are demanding more transparency in pricing, flexibility in contractual arrangements, and reductions in associated environmental costs. According to this emerging calculus, bottom line price remains the deciding factor. However, what has changed is how consumers calculate their energy-related costs, with a mix of proximate, flexible and cleaner becoming preferable to distant, political and dirtier products earmarked to fulfill current as well as expected energy demand.

Meanwhile, energy return on new investments (EROI), especially concerning the game changing potential of the Arctic's hydrocarbon reserves, is a major concern within the industry. The ratio between energy spent to produce one barrel of oil or unit of natural gas is expected to be higher, thus more ultimately expensive, in the Arctic than levels associated with current legacy production. In the Arctic upstream, reserves are more difficult to access and exploit, investment in traditional forms of transmission capacity is a non-starter, while from the financial perspective shareholders who still invest in carbon intensive industries continue to demand their dividends. Such circumstances make it difficult all involved to accurately forecast, never mind maximize future value and significantly minimize an interrelated set of costs accrued from the evolving energy business.

Hypothesis

At the heart of the Arctic challenge is a conscious attempt by the hydrocarbon business to adjust longstanding tactical, operational and strategic activities in the face of an evolving risk – benefit relationship influenced simultaneously by evolving consumer preferences in global markets on the one hand and particular environmental circumstance posed by the resources locked in the Arctic on the other.

In this paper, the transition concept is presented as a symbiotic relationship between two evolving processes. Firstly, that of *optimization* of existing technology in pursuit of cost savings and preserving market share which is then coupled with market development aided by *innovation* of processes and products emerging from the research and development pipeline.

As a result of the *optimization / innovation* relationship, the article hypothesizes that the degree to which *optimization* and *innovation* processes match up over time will determine the functionality of markets, the stability of energy supply and the degree to which the energy business will sustainably underwrite the continued well-being of the world's population.

Methodology

First, using the example of the substantive and multi-layered structural changes to the world's energy markets embodied in the Arctic context, this paper will concentrate on the degree to which technical optimization and business innovation processes will determine the functionality of markets, the sustainability of policy provision and the well-being of the world's population.

Second, apply relevant Disruptive Innovation / Systems Theory / Actor Agency paradigms to expose the extent to which major policies and events have the power to produce expected / unexpected structural consequences.

Third, investigate changes to structural circumstances in terms of observed impact on crucial state institutions, commercial enterprises, as well as individuals and societal groups.

Title	<i>High North Energy Projects: current implications and potential for development</i>
Name	Olga Noshchenko
Position and Affiliation	Doctoral student National Research University Higher School of Economics, Moscow

For the recent decades, we could observe a growing concern about Arctic region. Despite the fact, that it is characterized by considerable remoteness, harsh climate conditions as well as sparse population, there is a strong believe that High North comprises immense economic potential. The climate changes that circumpolar North has undergone for the last years, technological advance and growing demand for mineral resources unlocked the opportunities that were “frozen” in the Arctic ice for a long period of time.

Nowadays, the increasing number of projects developing in circumpolar regions, relevant federal initiatives as well as significant governmental support confirm the strategic role and growing importance of the Arctic. Nevertheless, the process of the Arctic development is quite ambiguous and questionable. On the one hand, numerous economists and scientists highlight the economic benefits that can be reaped by the local communities and Arctic regions. On the other hand, project development in High North is primarily associated with risks and high level of costs determined by the extreme conditions and remoteness. In addition, the amount of potential benefits from the Arctic development highly depends on policy and certain measures adopted by the government and local authorities under cooperation with energy companies. Thus, the main problem resides in striking a balance between energy *companies’ interests* and *common welfare*. Should be noted, that these issues determine the economic sustainability at regional and even national levels. In this regard, under the research the effectiveness of energy projects management in the Arctic is analyzed and assessed from local/ regional impact perspectives.

At this point, it is necessary to note that under this approach the level of investment project efficiency is estimated based on ripple effects generated by the project and comprising direct and indirect effects. This approach is regarded as more comprehensive since it takes into account total socio-economic impact exerted under project development. In particular, by determining such exogenous variables as (1) initial input in form of investments or project’s demand (for employment, equipment, technology etc.) and (2) current production multiplier, we could measure the transformation of local/regional economic and social spheres and identify the main weaknesses. For example, the common problem of most of the energy projects is import of foreign technologies, equipment or even workforce that leads to undercapacity of national production. In the result, despite the fact that main idea implies production and value chain localization, the total output is quite low. By determining such soft spots we could find out problems for improvement or reveal efficient measures that could be taken into account for further projects. Consequently, based on ripple effects analysis our qualitative estimations and conclusions could be reinforced by quantitative explications and forecasts.

Despite the lengthy timeline of hydrocarbon exploration there was no precedence or well-formed approaches towards the institutional framework and management of the Arctic energy projects development. Hence, such Arctic countries as Norway or Russia were pioneers (to some extent) of High North exploration and production with regard to regional development. For this reason, sometimes the implementation of measures developed did not comply with pre-determined aims and expectations. As follows from the previous studies performed, despite the fact that generally authorities set common goals in respect of local and regional development (incl. infrastructure improvement, manufacture localization, value chains increase), the benefits received vary and are far beyond the expected. Hence, we should admit that nowadays there are only few examples of Arctic projects that stroke success in regional development due to comprehensive and complex approach towards project management. Particularly, Norwegian Snohvit (Snow White) is often regarded as the most prominent example of effective Arctic project development.

Nevertheless, should be admitted that the main risks related to oil/gas field development are mainly bore by the companies, for that reason frequently project efficiency is measured only based on direct effects (generated cash flows/revenue). The significance of socio-economic approach to energy project analysis is disregarded while the necessity of comprehensive examination of generated value chains within the country is often underestimated. Given the above, the analysis of current Arctic project conditions and frameworks with regard to their socio-economic implications is of high importance. Thus, the main aim of the research is to provide some insights on the determinants of successful energy project development based on examination of existing examples and application of methods estimating ripple effects generated. Therefore, the principle concepts and approaches towards project realization could be identified and elaborated.

Title	<i>Social risks in Archangelsk region</i>
Name	Georgy Sukhanov
Position and Affiliation	Professor Northern Arctic Federal University

Functioning of countries and regions occurs in the acceleration of qualitative changes generated by interdependence, uneven development and intensification of competition between countries and regions. It increases the probability of negative trends in socio-economic development of territories.

Restrictive feature of manageability and stability of any socio-economic system is the uncertainty. All economic agents have to take quite serious decisions under risk and uncertainty. In order to make optimal decisions government should have a certain program of action reducing the risk not only at federal level but also at the level of regions and municipalities.

Assessment of regional risks impact on the territory sustainability should be implemented in operational management, especially in the state-private partnership projects .

Complexity in the development of optimal model of regional risk management is defined by significant interregional differences in population, regional economy specialization, infrastructure development, socio-economic development level in general.

Various global institutions develop appropriate tools to respond to the manifestation of uncertainty in

the functioning of socio-economic systems. But their systems of indicators are not universal and are the subject to serious changes and adaptation to diverse types of territorial systems.

Regional risks management should be based on the determination of basic blocks of the system:

- actual, target and forecasting indicators of regional risks;
- model analysis of regional risks: subject, object, influence;
- collection of information and data processing;
- regional risk management algorithm.

Regional risks defined as the probability of occurrence of certain factors, conditions or trends that may have an impact on carried out economic activity and regional system functioning.

Keywords: Aggregated indicator of risk-factor, risk-factors assessment model, regional operational management system, current socio-economic situation of the region, state-private partnership .

Title	<i>Enhancing the contribution of Arctic local foods to the local economy</i>
Name	Yulia Verina
Position and Affiliation	Researcher Higher school of economics, management and law Northern (Arctic) Federal University named after M.V. Lomonosov Arkhangelsk, Russia

This abstract is devoted to discussion the project “Enhancing the contribution of Arctic local foods to the local economy” (ALOFO), where Northern (Arctic) Federal University named after M.V. Lomonosov is a partner of the ALOFO project consortium. The consortium includes partners from Kolarctic CBC core program areas in Finland, Norway, Russia and Sweden.

The ALOFO project will assess the potentials for increased production and value addition to local foods from the Arctic region. In order to increase the production and utilization of local foods (which include berries, mushrooms and seaweeds) research and development activities will identify the challenges that mitigate against the operations of small and medium food enterprises in the region from scientific, economic and legal dimensions.

During the workshop it’s planned to present the realization steps, main activities, preliminary results, future vision.

Historically, Northern societies were reported to have low incidence of obesity, diabetes, cancer and cardiovascular disease (Bang et al., 1971; Lanier et al., 2002; Mozaffarian and Rimm, 2006).

Wild berries and mushrooms raised from the Arctic region have nutritional health benefits as indicated by their high density of bioactive substances and research on their effects Herbivore animals, such as reindeer forage wild plants and are able to utilize these nutrients making their meat nutritious and healthy.

The Arctic Human Development report and the Finnish Arctic Strategy both state a need to secure necessary pre-requisites for a good quality of life for the local inhabitants of the Arctic region as a priority (ADHR 2014, Finnish Arctic Strategy, 2013). One of the ways to ensure this initiative is to promote regional self-sufficiency in local food production.

The interest in local foods has increased along with the interest of people in healthy living and the awareness of cultural and social values. The cross-border collaboration amongst the countries in the North Calotte and Northwest Russia on this topic will help to stimulate the local economy in this region.

The 'Arctic food brand' that focus on berries, mushrooms and seaweed will ensure higher market penetration, broader and expanded product lines particularly in flavor enhancing species and unique combinations, better processing techniques, modern food labelling, regulations and safety issues that will result from the ALOFO project.

There are global interests in the quality and geographical origin of foods, which has increased during the past decades due to scandals in the food systems that led to an increased awareness of consumers of their choices. Local food movements that focus on food sovereignty or on restoring the decision making regarding food to local actors are on the rise. The food localisation movement promotes joint activity between producers and eaters, which make consumers to appreciate proximity, diversity and ecological sustainability (Patel, 2008).

ALOFO project will respond to this awareness by aiming to empower local food processors through the knowledge that will be gained from a multidisciplinary research with technical inputs that highlight their health benefits. The possibility of creating more jobs that are related to the processing of berry juices, smoothies, berry soups, berry concentrates, frozen berries, including bulk berry seeds, seed oils, fresh and dried wild berries, organic wild berries, mushrooms and mushroom based foods, seaweed and sea weed based products, will benefit the local economy.

The broad multi-disciplinary depth of the ALOFO collaboration offers the opportunity for the development and creation of exciting and unique flavor-enhancing combinations between berries, mushrooms and seaweed.

Referencias

ADHR 2014. Arctic Human Development Report, 2014. Regional Processes and Global Linkages (Larsen, J.N. & Fondahl, G., eds). Nordic Council of Ministries. TemaNord 2014:567, 503 pp. <http://dx.doi.org/10.6027/TN2014-567>. Accessed 28th November, 2018

Bang HO, Dyerberg J, Nielsen AB. Plasma lipid and lipoprotein pattern in Greenlandic West-coast Eskimos. *Lancet*. 1971;1(7710):1143–5.

Finnish Arctic Strategy, 2013. Finland’s Strategy for the Arctic Region 2013. Government Resolution on 23 August, 2013. Prime Minister’s Office Publication 16/2013

Lanier, A., Ehram, G. and Sandidge, J., 2002. Alaska Native Mortality 1979-2002. Anchorage, AK: ANTHC, Alaska Native Epidemiology Center.

Mozaffarian, D. and Rimm, E.B., 2006. Fish intake, contaminants, and human health: evaluating the risks and the benefits. *Jama*, 296(15), pp.1885-1899.

Patel, R. 2008. Stuffed and Starved: The Hidden Battle for the World Food System. UK : Portabello Books, 416p.

Title	<i>Is regional government interested in corporate social responsibility?</i>
Name	Yakusheva Uliana
Position and Affiliation	Senior lecturer, Northern (Arctic) Federal University

Nowadays, the corporations play not only vital role for region. Last researches show that companies generate not only economical benefit to the region but contribute to the social sphere a lot. It means

that, the part of government social functions is delegated to the corporations. Is the region interested in allocation of social functions between the region and territory? The recent research shows that corporations take some social function of government (Levitt, 1958; Bichta, 2003; Zadek, 2004). The reasons are marketing benefits, reaction on social pressure or corporate policy to get access to resources (Buchholz, 1993; Bruke & Logsdon, 1996; Jenkins, 2004). But there is a lack of research about government expectations from CSR companies. The CSR activity is essential in region called Arctic zone of Russian Federation. According to Decree of the President of the Russian Federation No. 296 of May 2, 2014 the Arctic zone of Russian Federation includes Arkhangelsk region, Murmansk region, Nenets Autonomous District, Krasnoyarsk region (Taimyr (Dolgan-Nenets) Municipal District and Turukhansky District), Chukotka Autonomous District, The Republic of Sakha (Yakutia), Yamalo-Nenets Autonomous District, Komi Republic. The oil & gas industry generates essential input to the economic growth of the Arctic Zone. But economic input is not so large as far as companies have regional tax break and federal government collects some taxes. Thus, region depends also on voluntary social activity and CSR is seen as compensation for ability to operate in the territory.

The research question is “What is the government perception of CSR oil & gas companies ”. In particular, Does government expect voluntary corporate activity in solving social issues and acknowledge the corporate social activity?

Methods

The research is based on analysis of secondary data. The region and government strategies or programs of Arctic development were used:

- Strategy of socio-economic development of the Nenets Autonomous District for the perspective till 2030, approved by the Resolution of Congress of Deputies of the Nenets Autonomous District by June 22, 2010 № 134-pr;
- Strategy of the socio-economic development of the Yamalo-Nenets Autonomous District till 2020, approved by the Resolution of the Legislative Assembly of the Yamalo-Nenets Autonomous District by December 14, 2011 № 839 (with all changes from 15.12.2016 n 675);
- Social and economic development program of the Republic of Sakha (Yakutia) for the period up to 2025 and the main directions up to 2030 approved by Government Decree of the Republic of Sakha (Yakutia) of May 5, 2011 No. 190;
- Strategies of socio-economic development of the Komi Republic for the period till 2020, approved by Resolution of the Government of the Komi Republic, March 27, 2006 № 45 (with changes from 02.03.2018 n 118);
- Program of socio-economic development of the Taimyr Dolgan-Nenets Municipal District until 2020, approved by the decision of District Council of Deputies by May 18, 2012 № 11 – 0245;
- Program of social and economic development of the municipality "Turukhansky district" for the period from 2007 to 2017, approved by Decision of the Turukhansky District Congress of Deputies by December 20, 2007, №. 12-306;
- The strategy of social and economic development of the Chukotka Autonomous District until 2030 approved by the order of the Government of the Chukotka Autonomous District by July 16, 2014 No. 290-rp;
- The strategy of development the Arctic zone of the Russian Federation and national security for the period up to 2020, approved by the President of the Russian Federation dated February 8, 2013 No. Pr-232;

- The energy strategy of Russia for the period up to 2030, approved by the decree of the Government of the Russian Federation of November 13, 2009 No 1715-p;
- The concept of sustainable development of small indigenous peoples of the North, Siberia and the Far East of the Russian Federation, approved by decree of the Government of the Russian Federation, February 4, 2009 No 132-p;

These strategies are marked out as main document for development of the Arctic Zone and represented government interests. The content analysis are applied because the aim of research is to clarify existing assumptions about government perception. The study is divided on two parts: searching the data in the text and interpretation of data.

The following concrete words was searched in the documents

- «корпоративная социальная ответственность» (corporate social responsibility)
- «государственно-частное партнёрство» (privet-goverment partneship)
- «социальный проект» в отношении бизнеса (social project, in regard to business)
- «частные инвестиции» в отношении социальных проектов («privet investment» consirning social projects)

Also, any references of social role company were marked out to create the pattern.

Interpretation is based on complying the chosen criteria and ranking the level of interests.

The following criteria were used:

- calculation of frequency of searched words
- the share of the part devoted to social role of company
- is there any references of oil and gas companies
 - names
 - number of references
- is there any references of social role the company
 - in the aim
 - in the main text
- the most common used phrases and words in the text as regards to social role the business

The ranking system of criteria consists of ranks from 0 to 5, where «0» means that criteria are not presented or exist and «5» is the highest meaning in all sets of values. Gathered data are presented in a distribution matrix.

Results.

Perception of CSR by reginal government are varies by region. The regions where oil & gas production is high relay on social activity of companies and mentioned it in the strategy. The phenomena of voluntary CSR becomes a norm of ordinary corporate behavior.

Title	<i>Socially Responsible Investments (SRI's) in the European Arctic: Financing the protection of Arctic ecosystems</i>
Name	Adrian Braun
Position and Affiliation	University of Eastern Finland LYY Institute

	Arctic Centre University of Lapland Founder Arctic Values
--	--

The idea of Socially Responsible Investments (SRI's) emerged notably in the years around 2005. At the same time the term ESG (Environmental, Social, Governance) entered the landscape of investment communities and several "green" financial products were developed. The dominant product that can be allocated to the niche of SRI's are Climate Bonds (aka Green Bonds). These bonds work just like conventional bonds but the capital that is going to be raised, upon issuance, has to follow a purpose that benefits "the climate" to some extent. Thus, the capital has to go into something that either mitigates or adapts to the negative impacts of a warming climate. Decrease of greenhouse gas emissions or more energy-efficient technologies in industries are common examples in this regard. By considering a vulnerable Arctic ecosystem that suffers comparatively more in case of rising temperatures than more southern latitudes on the globe, it is of interest how climate bond issuers invest capital into Arctic regions to counteract climate change impacts. Consequently, a couple of questions arise. How can "global" capital be useful allocated in Arctic localities? Did Arctic cities/municipalities and Arctic corporations issue climate bonds to this date, to raise capital from the international financial markets? The global investment community (pension funds, investment banks, large-scale funds) have lots of power by allocating capital. Research needs to be done, how investors perceive SRI's in the Arctic compared to conventional investments and to what extent climate bonds are already in the investors' portfolios. Listings on bond market places like the Luxembourg Stock Exchange, Oslo Børs or Helsinki Nasdaq reflect the relevance on climate bonds as well on the globe as in the Arctic context.