

Significant innovation potential.

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*Innovations from
the North*

Section (05)

Innovations from the North

Core-and-periphery is a recurrent and ongoing debate in regional science.

Much of the literature on business start-ups tends to focus on models in core areas. An assumption in this literature is that business activity at large can be explained by access to financial and human capital, and that peripheral growth is a consequence of growth in the core areas.



This report has taken a first step to explain how companies with limited access to the aforementioned dimensions grow strongly domestically and globally. In so doing this chapter presents an overview of key clusters, brand names and companies in the BIN area. The underlying aim of this overview is to offer updated images of growing organizations beyond extraction industries and highlight known companies' less known origin. Furthermore, the chapter reports on key performance indicators (KPI) for the entire BIN area and its Norwegian, Swedish, Finnish and Russian parts respectively. The latter is based on survey results.

Findings:

- BIN area business has already developed a significant innovation potential – an issue often overlooked when the region is viewed on the basis of natural resources
- Many innovative businesses and brands build upon identity with Northern life style and values
- New emerging industry sectors, such as tourism, have served to develop related industries such as promoting food branding and symbolic values of the BIN area
- The most successful companies in the BIN area are those with higher growth opportunities, sound value performance, yet a less aggressive approach to innovative competitiveness
- Selected companies in the BIN area report strong organizational and value performance while exports and uniqueness KPI scores remain low.

Overview of key clusters, brand names and companies

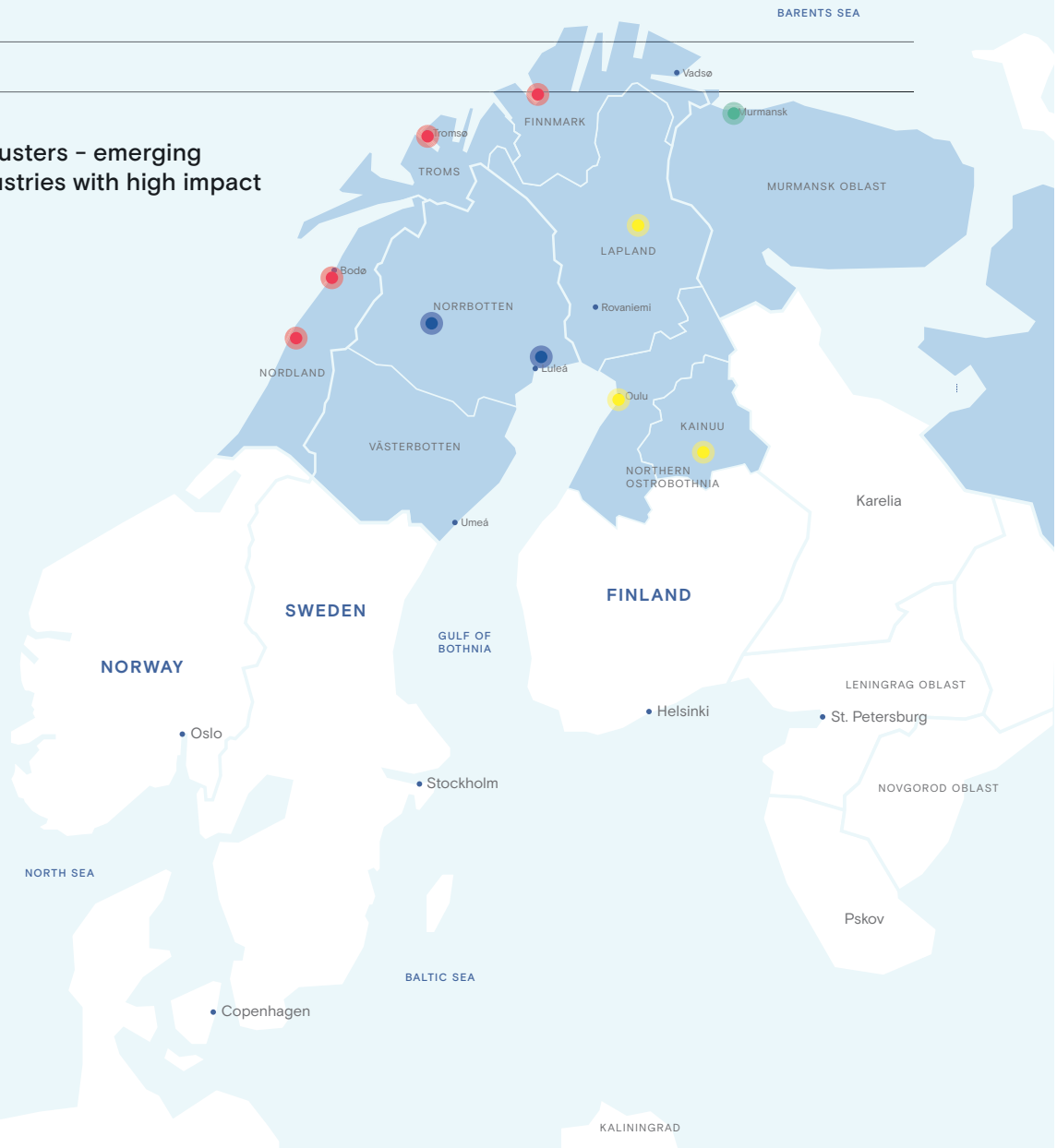
A cluster here refers to a number of organizations sharing similar aims, characteristics, goals and activities with a shared geographical belongingness. Due to this geographical sense of belonging they benefit from shared goals, strategies and operations that are mostly stronger and more specialized than if developed independently. A cluster is typically easy to observe as activities and goals are related. A tourism cluster often has natural boundaries determined by a natural resource such as a mountain or an island. A manufacturing cluster may on the other hand have a strong locomotive company supported by a myriad of small specialized organizations that together build one or multiple products.

Clusters can likewise be identified due to cultural characteristics with experience or knowhow for building boats, manufacturing or making movies. In addition, we have small manufacturing clusters formed due to an entrepreneurial spirit, capital or some other property characteristic that stimulates business creation. Some of these clusters are formed spontaneously with initiatives from individual companies while others are related to a university or other politically motivated initiative. Many cities have clusters but these are often related to technology or capital because administration can easily be coordinated and competence guaranteed to a greater extent. Clusters are thus agglomerations of organizations of some sort. These clusters may be formed strategically or grow through attractiveness related to any of the characteristics mentioned above.

The BIN area is unique in many ways. It has a unique base of natural resources, culture and entrepreneurial spirit. In recent years a number of activities have been launched to an international audience when car testing companies came up to the Arctic region to test cars. This activity attracted a significant amount of foreign direct investment (FDI) to a sparsely populated part of the BIN area. This and other clusters in the BIN area are presented on Map 1 below. We selected these clusters to illustrate emerging innovative and new industries with high impact.

Figure 1

Examples of BIN area clusters - emerging innovative and new industries with high impact



- **Sweden**

Blue dots represent an *inland cluster of car testing activity* and a *coastal industry with server technology*.
- **Norway**

Red dots represent *NCE Aquaculture* cluster with commercial production of farmed fish for the global market; *Biotech North* - a blue biotech industry cluster; Emerging *Smart Construction Cluster* and *Mo Industrial Park*.
- **Finland**

Yellow dots represent *Kajaani cluster of data centres* providing "green" power; *tourism industry* cluster and *Oulu health technology cluster*.
- **Russia**

Green dots represent an emerging *Tourism and recreation cluster of the Murmansk region*.

On the map we also emphasized information technology server-farms around Luleå in Sweden as the location of Facebook servers in Luleå became known to an international audience. The rationale of cold weather for cooling servers, an ample supply of cooling water and a location close to a technical university became a winning concept. This concept attracted multiple similar organizations now forming a farm of server plants. The most famous foreign direct investment (FDI) is likely the establishment of Facebook servers in Luleå.

Finland was likewise successful in launching and developing around Santa Claus in Rovaniemi. Northern Finland also strategically developed a triangle of tourism around Rovaniemi, Levi and Ylläs. The design of hotels and services such as those of Holiday Club were also benchmarked and reproduced to other tourism clusters. The tourism industry operating in the area from Rovaniemi to Säärisehkä has seen a rapid growth. According to the Finnish public service broadcasting company YLE, there were about 2.6 million overnight stays by non-residents in Finnish Lapland in 2016. The greatest boost to tourism in the area stems from growth in the number of tourists from Asian countries: overnight stays by Asian tourists rose by close to 50 per cent and stays by tourists from China doubled in comparison to 2015.

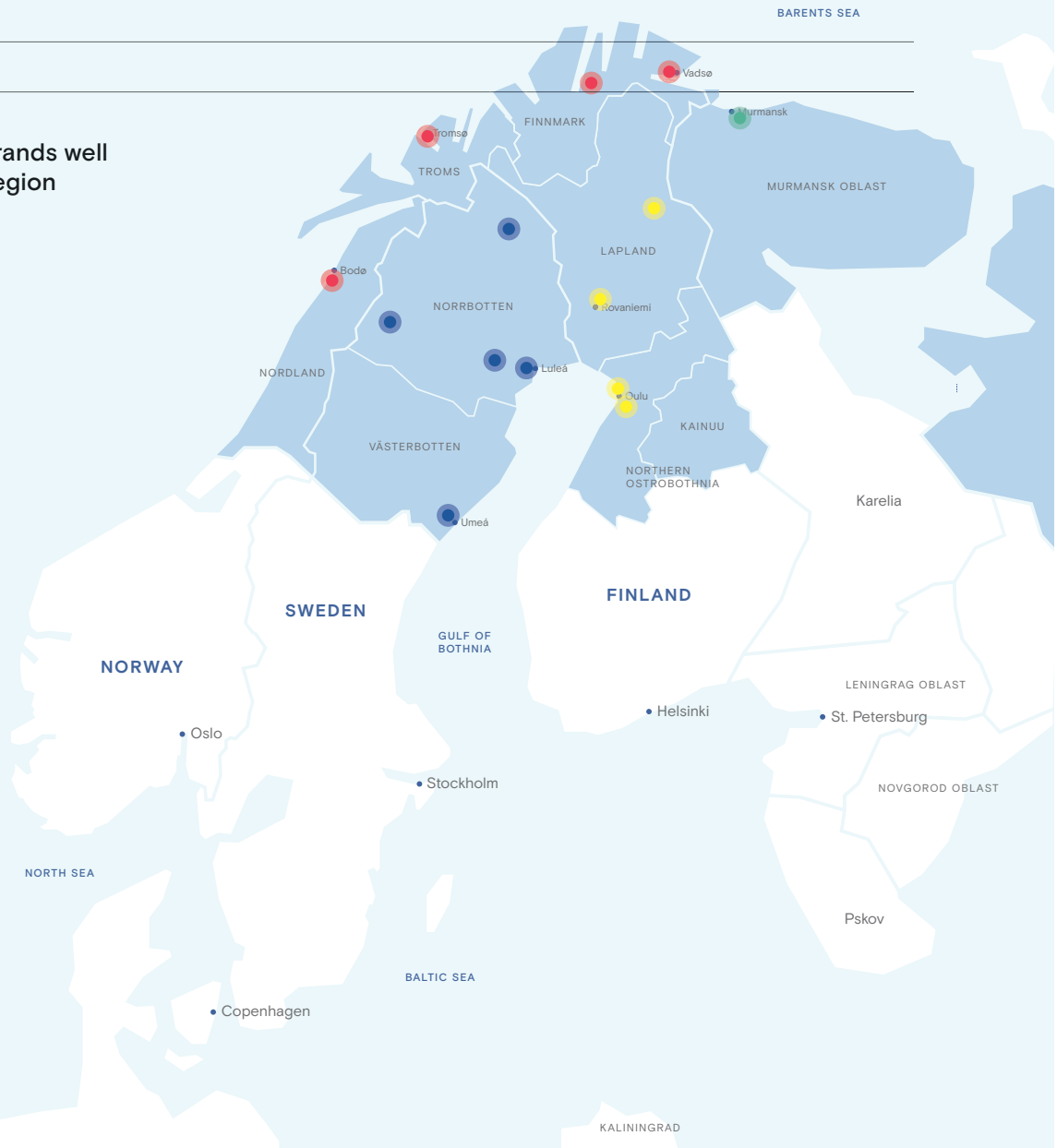
Other noteworthy Finnish examples include the Kajaani cluster of data centres with absolute readiness for business in terms of brownfield space, pre-zoned greenfield land and "green" power, and the "Oulu health technology cluster". The OuluHealth ecosystem comprises several stakeholders from academia, the public sector and the private sector. The ecosystem approach enables the combination of expertise from wireless information technologies and life sciences to introduce smart ICT solutions for delivering advanced, personalized, connected health service solutions.

In the Russian part of the BIN area, tourism is also gaining in popularity with growing numbers of tourists coming to the Murmansk Region from Asia. The tourism and recreation cluster of the Murmansk region has been formed on the basis of the tourist attractions and operators throughout in the whole area with 10 territorial sub-clusters. Using the official portal "Murman Tourism" (available in Russian, English, and Chinese) guests can plan and book their overall trip to the area. The tourism industry is one of the main growth industries in the Murmansk region. Among other things, there is a unique opportunity for cruising on board a nuclear-powered icebreaker from Murmansk via Franz Josef Land and further to the North Pole.

The following are examples of clusters in Northern Norway. "NCE Aquaculture" is a cluster focusing on value creation and innovation associated with the commercial production of farmed fish and seafood for the global market. The cluster consists in 2018 of 12 partners covering the entire supply chain within aquaculture. "Biotech North" is a blue biotech industry and innovation cluster. Biotech North members generally operate in the biomarine and biotechnology sectors with a broad focus on marine bioprospecting and marine rest raw materials. The "Smart Construction Cluster" is a cooperative owned by its members and aiming to develop the cluster into the leading Norwegian force in the implementation of the national "Digital Roadmap" for the building and construction industry. The cluster currently has 26 member companies from the ICT and building, construction and real estate industries. In addition to these three emerging clusters, we mention "The Mo Industrial Park", the leading industrial development zone in Northern Norway with 2,335 employees in 110 companies. The Mo Industrial Park is a world-class industrial park that creates value through a focus on environmentally friendly and energy-efficient services and solutions.

Figure 2

Examples of BIN area brands well representing the arctic region



- **Sweden**
 Blue dots are represented by *Polarbröd; Icehotel; Max hamburger; Leos Lekland, Kalix läjrom and Rapunzel.*
- **Norway**
 Red dots represent *TIFF - Tromsø International Film Festival; Finnmarksløpet; Nordland Musikkfestuke and The Arctic Race of Norway.*
- **Finland**
 Yellow dots represent *Rovaniemi Lappset Group; Polar; Fingersoft and Igloo hotel.*
- **Russia**
 Green dot represents *Biokontur.*

Brand names

Brand name refers to the name that symbolizes a product or multiple products. Brand name is sometimes synonymous with a company name or is hard to distinguish from a company. Brand names are important in many ways as they symbolize something specific.

The BIN area hosts a number of brand names carried by a company or sometimes by the entire region. We have introduced a number of brand names in the sense of a symbol because many of these are also prominent because they strongly symbolize the entire country. We intentionally mention a number of brand names related to food and tourism which are visible on tables and images nationwide.

In the Swedish BIN region, for instance, we have Västerbotten cheese produced by Norrmejerier. Bread is often considered very local but Polarbröd is today among the biggest exporting companies in Sweden. In addition, the Swedish BIN region hosts Kalix löjrom, which is similar to Russian caviar and is often served in select restaurants to symbolize the very best that Sweden has to offer. The brand Kalix löjrom is offered by certain fisheries along the Swedish coast, which also process. Attracting tourists from all over the world, Icehotel is a company but also a strong brand name for the entire region. From the Luleå region originates brand names such as Max Hamburger and Leos lekland. The rapidly expanding Rapunzel of Sweden started in Umeå and is now exporting hair extensions all over the world. These are growing fast and are recognized in Sweden and abroad. Originating from the Finnish part of the BIN area is Rovaniemi Lappset Group which is a leading designer, manufacturer and supplier of children's playground equipment and outdoor exercise solutions for people of all ages. The company was established in 1970. This family-owned company sells its products to over 50 countries. Moreover, Polar, the Oulu-based producer of heart rate monitors employs 1,200 people worldwide, has 26 subsidiaries globally and manages a distribution network supplying over 35,000 retail outlets in more than 80 countries.

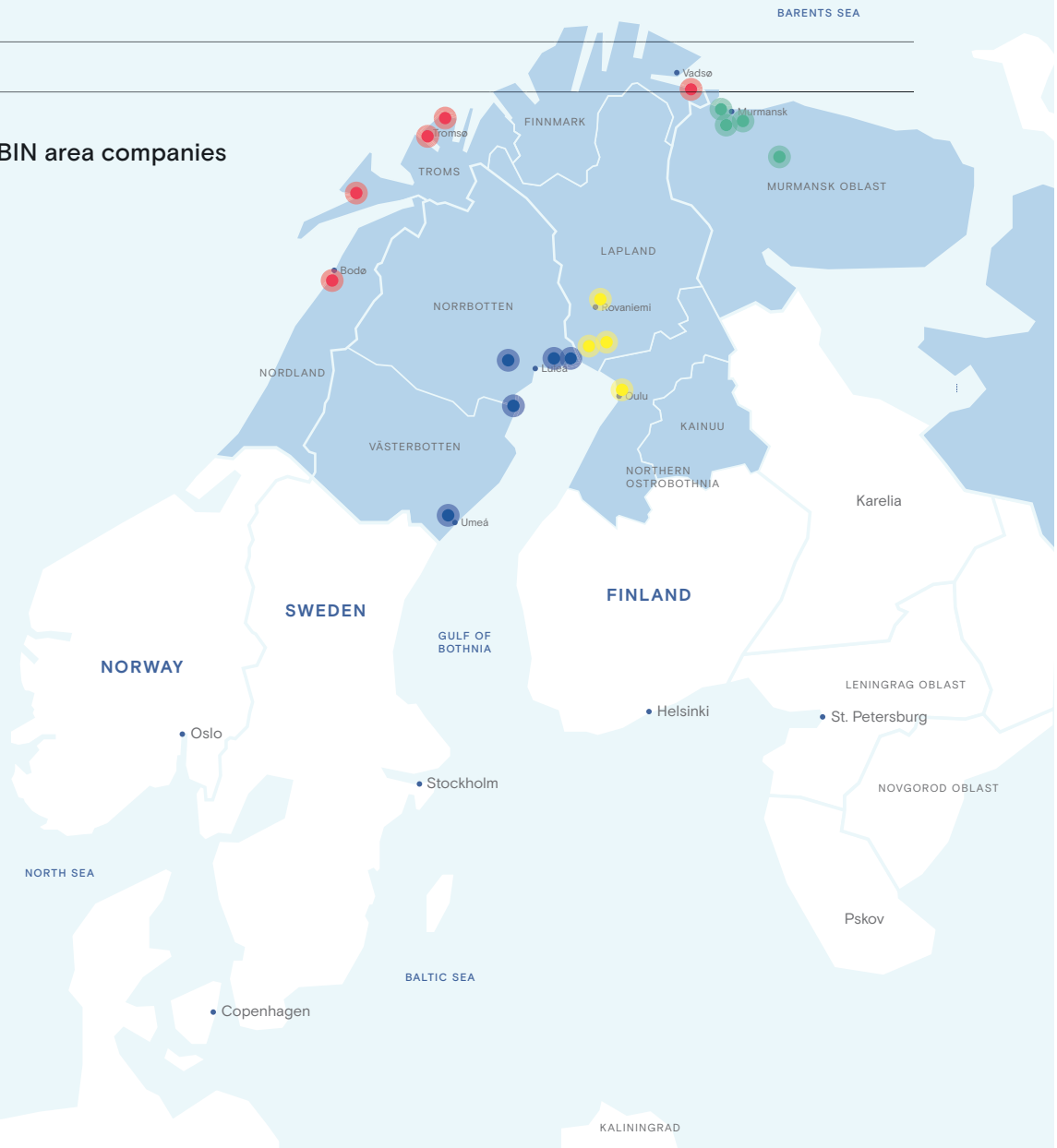
Oulu Fingersoft game development studio and a publisher located in Oulu, Finland, have published games like Hill Climb Racing 2, Make More!, Javelin Masters 3 and Fast Like a Fox.

Norway is represented with branded cultural and sport events with North-Norwegian identity, all held on an annual basis. The TIFF - Tromsø International Film Festival screens challenging quality films for a local, national and international audience and serves as a meeting point for representatives of the Norwegian and international film industries. The total number of admissions in 2017 was 60,135. Finnmarksløpet is the world's northernmost dogsled race running through amazing Arctic nature. The Finnmarksløpet webpage has about 1 million visitors during the race. In 2018 there were 126 contestants from 16 countries divided into 3 race classes with teams of 6, 8 and 14 dogs. Nordland Musikkfestuke is a music festival combining natural and cultural landscape. This is one of the most important venues for classical music in Norway. Around 25,000 people attend the event. The Arctic Race of Norway is a multiple stage bicycle race held since 2013. The race is an official UCI-sponsored event, and has been included as part of the Europe Tour. The race of 2017 was televised in 190 countries and got about 3 million online media views; it involved 1300 riders and a live audience of 150,000 people.

On the Russian side we would like to highlight Baikonur, which is a brand for fish oil products developed and produced by the Murmansk based company Polaris (a member of the PolarFarm group). The company is one of the leaders in the Russian Federation in the production of dietary supplements based on fish oil and vegetable oils in soft gelatin capsules.

Figure 3

Examples of innovative BIN area companies



- **Sweden**
 Blue dots represent *Ålvsbyhus; Brokk robots, Lindbäcks bygg, Tree hotel, Vinter, Hybricon and Polarica.*
- **Norway**
 Red dots represent *DIPS; Lofotprodukt; ArcticZymes; Kongsberg Satellite Services and Kimek.*
- **Finland**
 Yellow dots represent *Balmuir; Hätälä; Arctic Warriors and Tornion Panimo.*
- **Russia**
 Green dots represent *Tundra; BR Electornics; Systemy promyshlennoi bezopasnosti and Kalaland.*

Companies

Companies constitute a unique for-profit formal unit. We selected a number of companies that differ from the conventional way of viewing the BIN area. In the Swedish BIN region, we note Polarica, offering local foodstuffs such as berries, fish and meat. To exemplify a growing number of high technology companies we mention Brokk offering robotics for industrial purposes, Lindbäcks bygg developing sustainable constructing, and Hybricon with electric buses that can function in the challenging arctic climate. Among the new emerging companies. The map also includes the communication agency Vinter and the concept destination Treehotel, to symbolize a growing focus on services and creative industries.

In Norway we would like to exemplify innovative companies from various industries. DIPS is the leading supplier of eHealth systems to Norwegian hospitals. Lofotprodukt is a producer of fish food which achieved tremendous growth during the last decade, and now has its products on sale in stores in every municipality in Norway. ArcticZymes develops and markets recombinant enzymes derived from cold-water marine species for use in life science research and in the molecular diagnostics sector. Kongsberg Satellite Services is a world lead of ground station services for polar orbiting satellites. Barel develops and manufactures electronics within the global markets for the international lighting and heating industry. Strategically located in Kirkenes, the company Kimek has a network of partners in Russia and is one of the largest northernmost mechanical environments.

Examples of successful innovative companies from Northern Finland include Balmuir, a lifestyle brand offering interior decoration items and fashion accessories made from the finest natural materials while Oulu based Hätälä is a Nordic market leader in premium fish products. Rovaniemi Arctic Warriors is an arctic superfoods company and Tornion Panimo reopened a brewery with 140-year traditions manufacturing the beer known as Lapin Kulta. On the Russian side (Murmansk Region), we note numerous successful SMEs in various sectors. For example, Tundra is a reindeer herding enterprise dating from 1930 and the main business for the town of Lovozero populated by indigenous people – the Saami. High quality meat and food products are produced and marketed in the region and beyond. In 2015 the company won the all-Russia contest competition “Quality star”. BR Electronics is a Russian subsidiary of the Norwegian company Barel handling high volumes and work-intensive products in Murmansk. For more than a decade Barel companies we have been manufacturing world-class electronic, electromechanical and cable products. “Systemy promyshlennoi bezopasnosti” provides planning and design of environmental protection systems for the petroleum industry with clients in many regions of Russia. All the key experts of this entrepreneurial company are women and, according to the director general, this works well since most of the company’s clients and partners are “male-companies”. Kola Land is a young, modern and dynamic company dealing in the harvesting of northern wild-growing and garden cultivated berries. Their range of products includes cloudberry, blackberry, cowberry, cranberry, crowberry, black currant, red currant, buckthorn, raspberrry and cherry. Since 2008 Kola Land has gradually branched out and has already taken its place among the primary packers with an average turnover of 300–400 tons per season and has expanded to a reliable client base in Murmansk Region, Arkhangelsk Region, Pskov Region, Vologda Region and other regions of Russia.

Key performance indicators

This section introduces a number of self-reported key performance indicators (KPI) by BIN area companies. These KPIs are growth opportunities, innovativeness, innovation, performance, exports, newness and regional support. To identify a KPI on each dimension we worked with so-called composite measures. A composite measure is based on multiple indicators to form a broader perspective than only focusing on one single indicator. The indicators were collected from the BIN area companies by means of a survey.

The survey results are based on a sample of 263 observations collected from BIN area companies in Sweden (113), Norway (66), Finland (68) and Russia (16). We included companies with more than five employees and with a significant regional impact. As the region spans a large geographical area we made a stratification that should be representative of size, industry and location. We also listed through our expert panel a number of companies that have a specific impact in the region. Most of these companies participated in the survey. Here we present results of the survey.

Figure 4

Business and innovation survey results

BIN – area

Competition	3,40	●
Regional support	3,31	●
Growth opportunities	3,41	●
Innovative competitiveness	3,36	●
Value performance	3,60	●
Organizational performance	3,64	●
Exports	2,86	●
Newness	2,56	●

Finnish part of BIN

Competition	3,45	●
Regional support	3,29	●
Growth opportunities	3,33	●
Innovative competitiveness	3,43	●
Value performance	3,72	●
Organizational performance	3,75	●
Exports	3,26	●
Newness	2,48	●

Swedish part of BIN

Competition	3,41	●
Regional support	3,37	●
Growth opportunities	3,47	●
Innovative competitiveness	3,35	●
Value performance	3,57	●
Organizational performance	3,68	●
Exports	2,49	●
Newness	2,54	●

Russian part of BIN*

Competition	3,61	●
Regional support	3,06	●
Growth opportunities	3,11	●
Innovative competitiveness	3,62	●
Value performance	3,63	●
Organizational performance	3,60	●
Exports	3,27	●
Newness	3,30	●

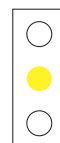
*Murmansk Region only

Norwegian part of BIN

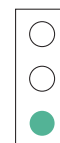
Competition	3,28	●
Regional support	3,29	●
Growth opportunities	3,45	●
Innovative competitiveness	3,23	●
Value performance	3,51	●
Organizational performance	3,46	●
Exports	2,99	●
Newness	2,50	●



Index<3



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Challenges and findings

Implications for the BIN area

For Policy:

- A** This chapter endeavours to describe the BIN area holistically with a strong representation from the entire region. We have broadened the perspective to focus not only on the geographical aspect but also to illustrate the significance of companies, brand names and clusters. To do this we mapped the region by noting clusters, brand names and companies that may in part explain the key business activities in the region. This mapping passed through several stages with experts meeting and offering a representation of symbols that may explain innovative initiatives beyond known sectors such as the forest, fisheries and extraction industries. Policy-makers are therefore invited to address further development of significant innovative potential of the BIN area and its regions.
- B** This report moreover provides an overview of KPIs measuring perceived regional support, competition, growth opportunities, innovativeness, innovation competitiveness, organizational performance, exports and newness. This is a unique data set that describes key business activities in the BIN area. This set of KPIs is also an inventory of existing activities that can support policy-makers in targeting and stimulating certain activities.
- C** Our findings also suggest that there are minor differences in the values of KPIs of companies within the BIN area, which is an indication that the area is fairly homogeneous across all these aspects. This has to be taken into account by policy-makers in the BIN countries if they are to work together towards a common innovation policy for the area.

For Investors:

- D** Establishing a business in the BIN area offers vivid view of opportunities and innovative ideas. We claim that the many emerging clusters and innovative companies that not only present a unique idea but also become a globally growing profitable company offer a different view of a known extraction industries region. These companies find it difficult to grow organically because of lack of financing. In countries like Germany and Japan companies are supported to a greater

extent by banks. Many banks in the BIN area, however, are reluctant and have fewer opportunities to support businesses. Investors are therefore crucial to support any business. We have shown that companies like Max, Polarbröd, Icehotel etc. have grown strong and over a long period of time even with limited access to investors. Therefore, more knowledge is needed to develop an awareness of companies which operate far from the known capital markets.

- E** We have therefore mapped entire clusters such as car testing in Arjeplog, server plants such as Facebook in Luleå, tourism in Levi and Rovaniemi and the way an entire fish industry exports significant quantities globally. Investors may therefore not only recognize individual companies but also clusters, brand names and industries in the BIN area.
- F** Our group was surprised as we developed this inventory of innovative companies. The rich variation in types of industries and companies with origins in the BIN area is likely not known at this point and much work still remains to be done. Therefore we invite investors to look at the BIN area as an area with significant, already developed innovative potential.

For Businesses:

- G** Our report has taken a first step to explain how companies with limited access to financial and human capital resources grow and prosper globally. This is important as it may not only serve to change the investor perspective but also inspire confidence among young entrepreneurs in the arctic regions. Examples of domestic and global companies developed in the BIN area may also stimulate a second generation of innovative companies.
- H** Initially developing a business means developing an idea. The first strategic choice of a company is to decide what products to make and the second where to operate. This report offers some basic information on the entire BIN area. In particular, it is shown that innovative and unique companies can only grow and prosper if their value performance is supported by sales and profits.