

The Next Big Thing?

Trends Shaping Nordic Innovation

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Nordic co-operation

Nordic cooperation is one of the world's most extensive forms of regional collaboration, involving Denmark, Finland, Iceland, Norway, Sweden, and three autonomous areas: the Faroe Islands, Greenland, and Åland.

Nordic cooperation has firm traditions in politics, the economy, and culture. It plays an important role in European and international collaboration, and aims at creating a strong Nordic community in a strong Europe.

Nordic cooperation seeks to safeguard Nordic and regional interests and principles in the global community. Common Nordic values help the region solidify its position as one of the world's most innovative and competitive.

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Leverage of Innovation Hot-Spots



In an article in the *Harvard Business Review*²² John Kao has argued

“That there’s a whole new world of innovation opportunities opening up for companies – if you know where to look. Dozens of countries sponsor programmes to lure innovative enterprises to their home territories. Singapore offers R&D grants to life-sciences and employee training. India provides talent management for some of the world’s most sophisticated technology development work. Finland is becoming a global center for innovative design”.

Companies may capitalise on these and other innovation hot-spots first by identifying which countries offer the best match for their innovation strategy, and then by tapping into the relevant hot-spots and their innovation ecosystems. The main driving forces behind national policies for building innovation ecosystems and the resultant innovation hot-spots are closely related to the changes innovation has undergone in recent years. These changes have been made possible in particular by globalisation, IC technologies and the commodification of research. It is widely acknowledged that a timing of a nation’s industrialisation has an impact on its future opportunities and its technology and innovation trajectories.

Countries that underwent early industrialisation, such as the UK and France, took more time than later developers such Germany, the US and others. However, a nation’s standing in the global division of labour is not deterministic. The Asian Tigers have shown that small countries undergoing late industrialisation can make shifts in their respective production bases and ascend the global value chain. Singapore was the poorest country in the world when in 1965 it gained independence from Great Britain. Thirty years later, Singapore had developed into one of the world’s richest and most sophisticated nations. China played hardly any role in international trade, production and investment until the late 1980’s, and yet today, China is a powerhouse in virtually all aspects of the global value chain linked to the production of goods and services. In order to understand the current global configuration of innovation hot-spots it might be instructive to look at them in terms of their main driving forces, their main characteristics, the role of the state in their development, and the approximate timing of their launch.

²² John Kao: “Big Picture – Tapping the World’s Innovation Hot Spots” *HBR*, March 2009, pp. 109-114

A Taxonomy of Global Innovation Hot-Spots

Driving forces and focus	Nation/entity	Characteristics	Role of state instruments	Time of take off
Entrepreneurs & Venture Capital	US, Israel	Market-led	Tax incentives and market institutions, e.g. Nasdaq, and elite universities	1960's
Up-scaling of national innovation ecosystems	Finland, Germany	Institution led	Industry-university collaboration, state funds for VC, tech-transfer, intermediaries	1990's
Functional industry bet	France, Singapore, Iceland	Medium – high degree of favourable state regulation	Clusters and selection of winner industries	1990's
Large numbers	China, India	Both state and market-led	Massive investments in R&D, student enrolment and attracting FDI	1990's
R&D-centred	Russia	High degree of state dirigism	Major investments in STEM centres of excellence	Early 21st century
Finance hub	UK, US, (NyLon), China (ShanKong)	Global, market-led until global financial melt down in2008	Laissez-faire until 2009 with minor use of state instruments.	NyLon mid 1980s and ShanKong early 21st century
Base of the pyramid	No single nation – instead poorest people living in Asia, Africa and elsewhere	Led by multinational companies' search for extreme cost-efficient solutions for re-export to more affluent countries. TATA's Nano-car etc.	No states have so far played a significant role in developing this emerging and untraditional innovation hot-spot. Foreign aid programmes could be instrumental.	Early 21st century
Internet communities	YouTube, Facebook, Innocentive etc.	Global, people-led and based on the internet.	No states have so far played a role in developing global internet communities.	Early 21st century.

Source: Jørn Bang Andersen: "Global Innovation Hot Spots – A Taxonomy", 2009, Nordic Innovation Center, Nordic Council of Ministers

The strategic path selected for the development of national innovation hot-spots largely resembles that taken by several nations during the earlier phases of their industrialisation process. The difference being that the focus in the 21st century is directed on innovation and not industrialisation. This suggests that the institutions supporting economic growth tend to use the

same skills that they have accumulated over time. The ability of these institutions to adapt to changing circumstances, such as globalisation, provides a guide to how well a nation will steer its destiny in the context of the global value chain towards its ultimate prosperity or partial failure.

According to the taxonomy above, it can be argued that a given nation with particular strengths within certain areas such as entrepreneurship and venture capital (e.g., US, Israel), or the development of institution-led ecosystems such as Finland and, to some extent, the other Nordic countries. Nonetheless, all nations will have policies focusing on all these elements. The point here is that different countries have different strengths, and these strengths tend to be reinforced by the state instruments that are applied. It is worth noting that China and India can be characterised as being less restrained than Europe, the US or Russia in terms of their orthodoxies related to the role of the market versus the state, and that in reality they often adopt a more pragmatic view. This view corresponds with Deng Chou Ping who once said that “I don’t care if the cat is black or white, as long as it catches the mouse”. What he meant was that if the Communist system can build factories it is good. If the free enterprise system can build a factory, that’s good too. Indeed, the entrance of China and India into the world market with their innovative capacities in many ways represent the major challenge in terms of change for the rest of the world.

Finally, the “bottom-of-the-pyramid” and internet communities are included as global innovation hot-spots because both phenomena have a huge potential impact on future innovation loci. However, these are also areas which are beyond our traditional spatial understanding of hot-spots and are thus seldom included in discussions about where to look for or tap into global innovation hot-spots.

One issue is how different nations develop their innovation hot-spots at home. Another equally important aspect is how they leverage their national innovation hot-spots onto the global stage and tap into foreign hot-spots. For decades, the US has enjoyed a privileged position in that it has been able to attract the best students and entrepreneurial talent to their universities and to Silicon Valley. This has never been an option for the Nordic countries. The Nordic countries taken together produce about 7% of the world’s R&D results. Their global impact in terms of innovation in its broadest sense is probably somewhat similar. The Nordic countries have

been pioneers in terms of the establishment of innovation centres in a number of global innovation-hot spots, notably in Silicon Valley, Shanghai, Tokyo, New Delhi, Munich, Seoul, St. Petersburg - to name just a few.

In the national taxonomy of innovation hot-spots, the Nordic countries are grouped in the category characterised by being institution-led. In other words, they construct ecosystems around tripartite partnerships involving the industrial sector, academia, and the state, incorporating support institutions such as growth funds designed to assist the market with venture capital functioning, etc. However, if we examine this at a more detailed level, it turns out that there are some fundamental differences even within such a relatively homogenous group such as the Nordic countries.

Divergence of Nordic Innovation Ecosystems

	Domestic driving forces for innovation ecosystems	Focus for globalising national innovation ecosystem	Global industry profile
Sweden	World's highest R&D spending as a percentage of GDP. Has no national innovation policy. Has virtually no industry-led technology transfer system, state-global industry dialogue.	Strong focus on the acquisition of scientific intelligence from global hot-spots. Vehicle ITPS offices	Leading global multinationals in manufacturing, e.g. Volvo and Ericsson; and in services e.g. H&M and IKEA
Finland	World's second highest R&D spending as a percentage of GDP. Decade-long focus on science, technology and education. 2008 – a shift in focus towards more user-driven innovation and markets. Strong role of state-initiated technology institutions such as Tekes and Sitra.	Strong focus on moving the entire national Finnish innovation ecosystem to global hot-spots. Combined technology, innovation and export focus for activities. Vehicle-Finnodes.	NOKIA is the dominant factor in national industry profile and national innovation ecosystem.

To be continued.....

Continued

	Domestic driving forces for innovation ecosystems	Focus for globalising national innovation ecosystem	Global industry profile
Denmark	World's first country to adopt a design policy, and a programme for user-driven innovation. In general exhibits a strong focus on market driven solutions. Strong industry-led technology transfer system (GTS).	Strong focus on gaining access to near-market relevant technologies and solutions. Combines innovation, export and investment promotion with less focus on science. Vehicle – Innovation Centre Denmark	Primary global companies within Transport, e.g. Maersk Shipping. Foodstuffs. e.g. Arla and Carlsberg and global leader in niche markets in pharmaceuticals such as Novo Nordic, Novozymes. Also Vestas, the global leader in wind turbines. .
Norway	World's second richest country per capita. Owns 1.6% of all European companies listed on the stock exchange. Natural resource-based industry with strong state ownership and involvement. Medium to low score on official R&D statistics. Strong element of applied industry science institutes, e.g. SINTEF.	No particular leading focus preferring a global presence for all industries. Vehicle – Innovation Norway	Primary global companies within oil and gas – StatoilHydro and fisheries salmon production
Iceland	Strongest entrepreneurial culture in the Nordic region.	Has no global presence in terms of innovation centres or export promotion. Vehicle – operates partly via Nordic partners.	Primary global industry profile related to fisheries and aluminium smelters relying on geothermal power as a cheap energy resource.
Nordic Council of Ministers	One of Europe's and the world's most developed examples of regional co-operation.	Strong focus on globalisation initiatives within innovation. Vehicle – pilot financing programme for Nordic innovation representations in Asia	Relatively weak global profile. Primarily known as Scandinavia or individual regional multinational companies.

Source: Jørn B. Andersen, Nordic Innovation Center, Nordic Council of Ministers, 2009

A central issue in terms of the divergence between the Nordic countries is that companies tend to adopt a domestic pattern in their ways of engaging with state authorities, and they tend to organise their operations around these patterns. Moreover, companies frequently bring these domestic idiosyncracies with them when they enter foreign markets. The last decade of globalisation may have done something to weaken these national corporate traits, but they should probably not be dismissed out of hand. In a Nordic context, the variations in terms of industry profiles, domestic driving forces for innovation ecosystems and their *modus operandi* for

globalisation may erect barriers. It is probable that such barriers require better understanding if the achievement of joint Nordic solutions, such as the establishment of Nordic innovation centres in Asia or elsewhere in the world, remains the target.

An alternative approach to joint Nordic initiatives could be to focus on the bottom-of-the-pyramid and Internet communities. Both of these emerging hot-spots have the advantage of being in their infancy. There is no entrenched state-industry pattern to deal with, and Nordic initiatives would therefore not come into conflict with domestic Nordic interests *per se*. Nordic experimentation would provide the countries concerned with insights into future avenues available for innovation activity. The role and relevance of hot-spots will change over time. There is a need to develop and consciously promote hot-spots throughout the Nordic countries by initiatives such as the identification of and tapping into hot-spots abroad, which can then be used as platforms for:

- The international expansion and development of Nordic businesses as well as their use as possible sources of information on innovation.
- Radical new approaches and the establishment of good practice in areas such as health care, town planning and public administration, and public sector innovation in general.

The five Nordic countries have world-class capabilities in areas such as agricultural production, food processing, logistics, retail, distribution, design, mobile phone systems and oil exploration. These are all areas which bottom-of-the-pyramid economies lack. The knowledge, know-how or ability to execute initiatives in these areas is not easy to codify. These forms of intellectual and social capital are deeply tacit and diffuse. They exist at the level of the organisation rather than that of the individual. They are the result of the values and attitudes of employees and the unique culture inherent in every organisation that is necessary to support work practices which in turn promote high performance systems and organisational structures.

Most Nordic countries have experienced success in exporting their systems. For example, in the area of agricultural production, Denmark has had considerable success and arguably leads the world in its ability to transfer this kind of know-how. In the future, the successful export of

organisational and management practices will rely more on partnering than on patenting. It will require a new vision, a new vocabulary, and a new set of methods for prosperity creation. It corresponds to a new and emerging form of economic globalisation, representing an estimated \$5 trillion opportunity.