

63rd Meeting of the Nordic Hydrographic Commission Meeting

9 – 11 April 2019, Helsinki, Finland

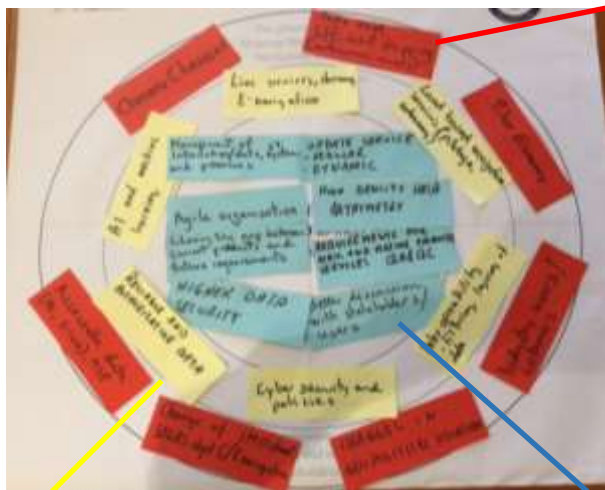
Paper for Consideration by NHC63 The future role of the Nordic Hydrographic Offices

1. Introduction / Background

At the Council 2 (C2) meeting we (DK, NO, SE, FI) agreed to arrange a Nordic workshop in order to discuss and harmonize our long term strategic views regarding where our hydrographic services and also IHO as an organisation will have to be year 2030 and beyond. There is also a need to harmonize strategic milestones towards 2030. At the workshop it was agreed that Denmark should prepare a input paper in order for the NHC63 meeting to discuss the challenges and the role of Nordic Hydrographic offices in a forward looking perspective.

2. Analysis/Discussion

Below is the result from the NHC Strategic workshop in Malmoe.



Looking at the National HO from a 2026/2030 perspective. Looking outside and in.

What are the most important initiatives/developments?

- Climate change
- Safe and efficient shipping (autonomous vessels)
- Blue economy
- Industry users/costumers
- Changes in geopolitical situation
- Change of IMO stand. SOLAS chapter 5/E navigation
- Accessible data (B1, S-100), M5P

What are the 3 to 5 most important demands/requirements?

- Live services, streaming, E-navigation
- Land based navigation services ("piloage", autonomy)
- Interoperability – filtering, layering of data
- Cybersecurity and policies
- Reliable and authoritative data
- AI and machine learning

Actions from the national HO to meet the demands/requirements:

- Management of information/data, systems and processes
- Agile organization
- Closing the gap between current products and future requirements
- Higher data security
- Update service: regular, dynamic
- High density data bathymetry
- Requirements for NAV. and marine and products/services QA & QC
- Better discussion with stakeholders/users

Below is a presentation of the general results of the Nordic HO SWOT.
All SWOTs are presented in annex A.

<p>Strengths and weaknesses are internal factors unique to the business in question. Some may be a result of external factors like a weak economy or tight labour market, but they are still company-specific.</p>	
<p>Strengths</p> <ul style="list-style-type: none"> - International community (regarding contacts, nautical charts) - Well-established international cooperation and organization - Experienced and motivated staff (good skills and knowledge → competent) 	<p>Weaknesses</p> <ul style="list-style-type: none"> - Small organization/unit - Different kinds of economic restrictions (low economic flexibility, partly self-financed agency) - Coordination/management “issues” (in value chain, Long chains of decision from Government, Rigid internal management and governance processes)
<p>Opportunities and threats are external to the company. They represent things that could happen in the right conditions. That is a very broad guideline, so you can use the strengths and weaknesses above to narrow in on opportunities and threats that follow naturally from them.</p>	
<p>Opportunities</p> <ul style="list-style-type: none"> - Digitalization - Sustainability (ex. “We offer new products that lead to environment improvement”, Increased need for high resolution hydrographic data: Focus on sustainable use of the ocean, Autonomy, Environment) - Arctic affairs/ Uncharted Arctic areas - Open/free data 	<p>Threats</p> <ul style="list-style-type: none"> - Financial threats (Lack of financial resources to implement new initiatives, Shortage of funding, Risk of less EU income due to Brexit etc.) - Regulations (Regulations, national/EU, Decisions of our government, EU, Choice of infrastructure at government level, New regulations (PSI etc)) - Pressure for free/open data - New stakeholders/monopoly change

PEST analysis:

Input from the NHC strategic workshop in Malmoe.

<p>PEST Analysis (Political, Economic, Social and Technological) is a management method whereby an organization can assess major external factors that influence its operation in order to become more competitive in the market. As described by the acronym, those four areas are central to this model.</p>	
<p>Political:</p> <ul style="list-style-type: none"> - Changes in geopolitical situation - Cybersecurity and policies - Higher data security - Management of information/data, systems and processes - Update service: regular, dynamic 	<p>Social:</p> <ul style="list-style-type: none"> - Safe and efficient shipping (autonomous vessels) - Climate change - Industry users/costumers - AI and machine learning - Agile organization - Better discussion with stakeholders/users
<p>Economic:</p> <ul style="list-style-type: none"> - Blue economy 	<p>Technological:</p> <ul style="list-style-type: none"> - Live services, streaming, E-navigation - Accessible (B1, S-100), M5P - Change of IMO stand. Solas chpt5/E navigation - Reliable and authoritative data - Land based navigation services (“pilotage”, autonomy) - Interoperability – filtering, layering of data - Closing the gap between current products and future requirements - Requirements for NAV. and marine and products/services QA & QC - High density data bathymetry

Revised BCG model (Boston Consulting Group)

Input from the Strategic workshop in Malmoe. Actions from the national HO to meet the demands /requirements.

Importance - high Resources – low <ul style="list-style-type: none"> - Update service – regular, dynamic - Better discussions with stakeholder/users 	Importance - high Resources – high <ul style="list-style-type: none"> - Higher data security - Closing the gap between current products and future requirements - High density data bathymetry - Management of information/data, systems and processes
Importance - low Resources - high <ul style="list-style-type: none"> - Agile organisation 	Importance - low Resources - low <ul style="list-style-type: none"> - Requirements for NAV. And marine products/services QA & QC

3. Conclusions

Below we have tried to highlight some general trends and views from the analysis above.

From the Revised BCG model the Nordic HO should focus on:

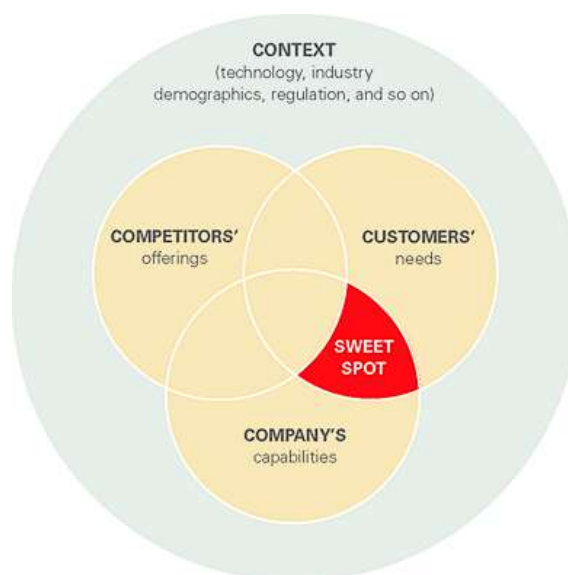
- Update service – regular, dynamic
- Better discussions with stakeholder/users
- Higher data security
- Closing the gap between current products and future requirements
- High density data bathymetry
- Management of information/data, systems and processes

4. Recommendations

It is recommended that the NHC63 discuss the following questions:

- What are the most important challenges and possibilities from a HO perspective?
- What are the future role of a Nordic HO?

In support to discuss the above questions it could be beneficial to initiate a discuss about the Sweet Spot seen from a Nordic HO perspective.



5. Action Required of NHC

The NHC63 invited to:

- a. Discuss the suggested questions
- b. Agree on a way forward
- c. Take appropriate actions.

The Nordic HO SWOT: Norway

Strengths and weaknesses are internal factors unique to the business in question. Some may be a result of external factors like a weak economy or tight labour market, but they are still company-specific.	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Recognized authority body • Financed by state budget • Regulations <ul style="list-style-type: none"> ○ Authorized Hydrographic Office ○ Act relating to information regarding specific areas, vital objects and depth conditions • Fully integrated production line • Nautical expertise • Existing data portfolio 	<ul style="list-style-type: none"> • Adaptability • Low economic flexibility • Inefficient production line • Long chains of decision from Government • Rigid internal management and governance processes
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Opportunities	Threats
<ul style="list-style-type: none"> • Increased need for high resolution hydrographic data <ul style="list-style-type: none"> ○ Focus on sustainable use of the ocean ○ Autonomy ○ Environment • Uncharted Arctic areas • Increased focus on safety in the leisure fleet • New areas for use of our data 	<ul style="list-style-type: none"> • Technological development makes us irrelevant • Other Government agencies with similar/overlapping • Privatization of public services

The Nordic HO SWOT: Denmark

Strengths and weaknesses are internal factors unique to the business in question. Some may be a result of external factors like a weak economy or tight labour market, but they are still company-specific.	
Strengths	Weaknesses
<ul style="list-style-type: none"> ○ High technical competences in the hydrographic field (Including GIS, data) ○ Profound experience with navigation and nautical sector ○ Nautical charts across national borders ○ Well-established international cooperation and organization ○ Monopoly with regards to official charts ○ Knowledge about other sectors at sea (fishery, environment, natural resources, underground, windmills, pipe lines etc.) ○ Partly self-financed agency ○ Agile organisation, short time from decision to execution ○ Responsible for the Danish MSDI ○ Open minded for new possibilities and procedures 	<ul style="list-style-type: none"> ○ Less knowledge about other sectors at sea (fishery, environment, natural resources, underground, windmills, pipe lines etc.) ○ Less knowledge about marine spatial planning and coastal zone management (planning and analysis) ○ Lack of knowledge, network and competences for political decision-making ○ Lacking knowledge and other competences than technical e.g. communication, marketing, storytelling ○ Lacking focus on user and market needs ○ Partly self-financed agency (politically controlled) ○ Vulnerable organisation due to implementation of new system ○ Lack of domain knowledge due to lots of new staff ○ Challenges due to different cultures ○ Lack of coordination in the value chain ○ Lack of pursuing external funding ○ Small organisation; key knowledge placed on few persons
Opportunities and threats are external to the company. They represent things that could happen in the right conditions. That is a very broad guideline, so you can use the strengths and weaknesses above too narrow in on	

opportunities and threats that follow naturally from them.	
Opportunities	Threats
<ul style="list-style-type: none"> ○ Digitalisation ○ Automation, data/information/products to support the technical development ○ Future digital basis for planning, analysis and administration e.g. nautical routes, installations, environment, transports, fishery etc. ○ The Authoritative data provider ○ Supporting digitisation among maritime authorities ○ Surveying ○ S-100, S-10X. ○ The need for international standardisation - IHO standards ○ UKC ○ MSDI, coordination ○ The role as the maritime/marine data manager ○ The role as the coordinating marine data authority ○ Blue Growth Opportunities e.g. surveying (e.g. ICZM, energy, MSP), QA, Metadata ○ Free data ○ The role as technical advisor 	<ul style="list-style-type: none"> ○ Lack of financial resources to implement new initiatives ○ Regulations, national/EU ○ Pressure for free data / enforcement of copyrights ○ S-100, new stakeholders ○ Monopoly change ○ IHO standards and user needs – Lack of speed of international standardization ○ Continues new technical solutions ○ Surveying – difficult to change prioritisation – 3 different organisations ○ NtoM different organisations, difficult to change prioritization ○ Risk due to time laps between surveying and publishing end products

The Nordic HO SWOT: Sweden

Strengths and weaknesses are internal factors unique to the business in question. Some may be a result of external factors like a weak economy or tight labour market, but they are still company-specific.	
Strengths	Weaknesses
<p>Our competence Motivated staff New projects = challenge for our staff Tools in place for managing projects Routine and skill for managing EU projects Flexible organization Important international and national contacts Quality improvement of our databases Projects imply quality improvement High productivity/efficiency Cost effective Market for new products such as S-102 Information, process and system management in place High rate of external financing Raise in sales: 45% in 6 years SMA is an enterprise organization</p>	<p>Prioritizing (between different projects and ordinary activities) Support functions (communication, finance, HR, IT) New management at SMA/reorganizations Resources – lack of some important competences Difficult to handle all projects Process documents in place but are they followed? Quality – too high sometimes Need for education of new systems ”Bottlenecks” (process problems) Plans if something unpredictable happens Poor at using excess money when staff is on leave SMA is used to SHO finding financing (EU etc) SMA is an enterprise organization</p>
Opportunities and threats are external to the company. They represent things that could happen in the right conditions. That is a very broad guideline, so you can use the strengths and weaknesses above to narrow in on opportunities and threats that follow naturally from them.	
Opportunities	Threats
<p>We offer new products that lead to more efficient shipping We offer new products that lead to environment improvement New staff = new competences We are well known to our stakeholders We find new products/services to offer our markets The political situation creates new possibilities, such</p>	<p>Economic situation of shipping in the future Decisions of our government, EU Choice of infrastructure at government level New regulations (PSI etc) Lack of accurate competence when hiring Risk of not solving customer needs Appeal against tenders Security situation</p>

as climate and sea planning Lobby for sea transports instead of land transports Coastal shipping including IWW SMA R & D department well known on international level New products to the Armed Forces Open data	Open data Risk of less EU income due to Brexit etc.
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The Nordic HO SWOT: Iceland

Strengths and weaknesses are internal factors unique to the business in question. Some may be a result of external factors like a weak economy or tight labour market, but they are still company-specific.	
Strengths <ul style="list-style-type: none"> - <i>Experienced staff, with good skills and knowledge.</i> - <i>The surveyors are trained navigators</i> - <i>Two-way support within the ICG</i> - <i>Part of international community</i> 	Weaknesses <ul style="list-style-type: none"> - <i>Small unit</i> - <i>Lack of project and workflow management</i> - <i>Lack Quality Management.</i>
Opportunities and threats are external to the company. They represent things that could happen in the right conditions. That is a very broad guideline, so you can use the strengths and weaknesses above to narrow in on opportunities and threats that follow naturally from them.	
Opportunities <ul style="list-style-type: none"> - <i>Arctic affairs</i> - <i>The seabed mapping project (lead by the Marine and Freshwater Research Institute)</i> - <i>Print on Demand.</i> 	Threats <ul style="list-style-type: none"> - <i>Shortage of funding</i> - <i>Shortage of staff</i> - <i>Declining sales of paper charts.</i> - <i>Policy and focus of government</i>