5 QUESTIONS TOÂ€¦.BIRTE NOER BORREVIK, DIRECTOR HYDROGRAPHIC SERVICES AT THE NORWEGIAN MAPPING AUTHORITY

Unleashing the Full Potential of Hydrographic Data

Hydro International spoke to five leading experts about the present and future of the hydrographic industry. In this interview, Birte Noer Borrevik (Kartverket: the Norwegian Mapping Authority) talks about big data, artificial intelligence and machine learning, and the importance of learning from other industries with experience in large data volumes.

2020 has been an extraordinary year. What are the impacts of Covid-19 on the hydrographic industry, and what other factors have influenced the business?

Like everyone else, we have been impacted by the restrictions imposed on us. In the first few weeks of March and April, the crew on our survey vessel was sent home and our production slowed down as most of our employees also had to work from home. As the situation stabilized, the crew returned to the ship and most of us adapted to the new situation.

The sale of ENCs has clearly increased in this period. Also, the increased focus on food security has sparked a growing understanding of the need for information about the seafloor and the biodiversity in our oceans. This has had an impact on the use of hydrographic data: bathymetry, backscatter and water column data. There is a high and increasing demand for data covering the shallow areas and the intertidal zone to enable the sustainable management of coastal zones.

When it comes to technological developments, how would you describe the current state of the hydrographic industry?

There have been several developments in both sensor and platform technology lately, with Lidar from drones being one example. The need for data for purposes other than safe and efficient navigation is leading to the collection of high-density data in a wider range of data types than have traditionally been collected. The rapid increase in the volume of data presents challenges in the areas of data management, processing and dissemination. Developing efficient solutions to these challenges is key to the future use of hydrographic data. The strength of our international umbrella organization, the IHO, is that it supports and facilitates the further growth of the hydrographic industry through the development of services and standards, and through cooperation and coordination on many of the important policy issues. The newly endorsed IHO strategic plan will help us to focus on the right issues to take us into the future of hydrography and to become an even more acknowledged actor on the international ocean scene.

How do you expect hydrography to evolve over the coming years?

Hydrography will continue to expand into new areas. The report commissioned by the ‘High level panel for a sustainable ocean economy’ illustrates how a sustainable ocean economy in which protection and prosperity go hand in hand can create a healthy ocean that provides solutions to global challenges. To achieve the goals described in the report, data about the ocean and the seafloor is essential. The trend that started several years ago of going from our classical role of serving the professional mariner with official products and services to serving the entire blue economy with valuable knowledge of the ocean floor will further expand. The same applies to the transition from a product approach to a more data-centric approach. All of this will require more outreach and interaction with other maritime and marine stakeholders. This is echoed in goals two and three of the IHO strategic

plan concerning the increased use of hydrographic data (including our role to facilitate a functional MSDI environment) and being an active player/contributor to international initiatives, with regards to knowledge and the sustainable use of the oceans.

In what ways can the hydrography sector learn from other industries?

'Big data', artificial intelligence and machine learning will be key to unleashing the full potential of hydrographic data. We need to connect with other industries that have experience in utilizing large amounts of data. We like to take pride in the fact that we have come a long way in building the necessary spatial data infrastructure to ensure the easy access to and use of important sets of authoritative and updated data. However, if there is one domain that is light years ahead of us on spatial data infrastructures, it is the meteorological domain. We take for granted that we can go to one website and get real time, updated weather information and predictions pretty much anywhere in the world. This requires cooperation and standardization among many meteorological institutes, GIS specialists, industry, and so on, with probably the most diverse user group imaginable.

What opportunities and threats do you see for our profession?

There is increased worldwide interest in our oceans. This ranges from trying to find mitigating actions for climate change, to ensuring food security for a growing world population, developing green energy solutions, and harvesting minerals and medicines. However, all of these activities must be founded on sound knowledge about the oceans – and bathymetry is the backbone of that knowledge. Unfortunately, this knowledge is still lacking in many places around the world. The global Nippon Foundation GEBCO Seabed 2030 project has increased that knowledge significantly and made it accessible to the wider public. Nevertheless, 80% of the seafloor of the world's oceans and coastal waters remains unknown to mankind.

A positive development is the increased awareness outside our hydrographic community that we need to increase the knowledge of the physical characteristics of the oceans. More and more countries are prepared to share their bathymetric data, at least at some level of detail, for the benefit of the world's society and its many challenges. Many of us, including Norway, are to some extent dependent on revenues from our sales of nautical charts to cover operational costs. If these business models limit our abilities to contribute to improving ocean knowledge, we need to engage with our governments and find new ways of securing funding. We will need to do more with less, through smart solutions and increased cooperation with industry, and across multiple sectors.

Birte Noer Borrevik, Director Hydrographic Services at the Norwegian Mapping Authority, has had a long career in the oil & gas exploration business and has served in several leadership positions at both operational and executive level in Norway and abroad. She became the national hydrographer of Norway in September 2016.

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