

HYDRO INTERNATIONAL INTERVIEWS JOHN RAMSDEN, MANAGING DIRECTOR OF SONARDYNE INTERNATIONAL LTD

A Company with a Deeper Understanding



Sonardyne is an organisation at the forefront of acoustic, inertial, sonar and optical subsea technology development. It takes vision, a sustained focus on research and development and strong leadership to get there. Hydro International interviews John Ramsden, managing director of Sonardyne, for an in-depth look at adapting to the diverse nature of subsea operations and where the company that is now 43 years young, is headed next.

You have now served as MD for five years and been with the organisation for a total of 20 years, achieving growth in all of Sonardyne's

business divisions. What drives you?

Being part of a business that is not content with standing still or resting on its achievements. For many years we were known exclusively for our acoustic positioning technology. However, over the last six or seven years, all this has changed. We have diversified into sonar imaging, wireless communications and inertial navigation technologies – all of which have emerged from our in-house research programmes. As you read this we will have revealed our next development – a high performance DVL called Syrinx. All this new and exciting technology, coupled with my unwavering belief in the ability of all of our employees in our offices worldwide, means that we are uniquely placed to cement and extend our leadership position.

You have a strong track record, having worked at other Sonardyne offices for several years, one of which was Singapore. How has this experience shaped you?

There is no substitute for first-hand experience to help improve your level of understanding of the daily challenges that regional offices have to deal with. There, you are completely immersed in the offshore industry 24/7, where customers are often your office neighbours. This has allowed me to gain a unique and extensive insight into our remote operations and the sorts of decisions that need to be made to ensure a successful outcome for our customers and the business.

What is the overall philosophy in developing new products?

There are so many things to address when we set out to manufacture and market new products. But first and foremost, we need to invest in the technology in-house and thoroughly understand the applications for the new products. When we put it into the market place, we ensure that it is well supported so that we continue to provide reliable cost-effective solutions for our customers.

What do you consider to be your latest and greatest technical developments in the field?

Tough to say as there are several notable products, both in our current stable and among those under development. But if I had to single out just two, I would have to say SPRINT and our new DVL – Syrinx.

Beginning with SPRINT. It is an acoustically aided inertial navigation system for ROVs that makes use of aiding data from USBL and/or LBL acoustics and other sensors. For users, this improves position accuracy, precision, reliability and integrity while reducing operational time and vessel costs.

And then there is Syrinx – a 600kHz DVL that employs full linear signal processing to provide very low noise, high-precision velocity measurement in a wide range of seabed bottom types. It is almost three sensors in one, providing the comparable range to a 300kHz DVL and the precision of a 1200kHz product. So the customer gets the best of both worlds; high-altitude performance and high-accuracy velocity measurements close to the seabed. In addition, Syrinx is also designed to integrate seamlessly into our inertial navigation systems.

Which further innovations have you seen emerging that are driven by customer demand?

I would have to say BlueComm. It is an optical communications system that uses high-power LEDs, which flash millions of times per second to wirelessly transfer subsea data from A to B. This enables data rates equivalent to current broadband internet speeds, hence the ability to transfer large amounts of data or video streams subsea over significant distances of up to 200 metres. In short, BlueComm is a game changer, enabling real-time wireless control of subsea vehicles and extraction of large quantities of data from subsea nodes.

Focusing on Ocean Science and hydrography, acoustic tracking is where Sonardyne first started. Do you expect further innovations in this area?

Underwater acoustics remains at the heart of what we develop so we will always invest and expand our capability in this area. Last year our 6G platform won the Queen's Award for Enterprise in Innovation which was great recognition of the contribution it has made to improving the efficiency of underwater operations around the world. The product family is expanding all the time and visitors to the upcoming Ocean Business exhibition in Southampton will be amongst the first to see our latest developments.

Automation will create new possibilities (upcoming AUVs, gliders, ASVs). How is Sonardyne capitalising on this trend, how will you contribute to further automating tasks for these platforms, and what can we expect from the company in the near future?

The technology found within 6G means that we have been able to satisfy demands for autonomy for quite some time now. Equipment can be deployed and left to carry out its task unsupervised, often for years at a time. This reduces the risk and costs associated with sending crew and vessels to sea.

Our AMTs (Autonomous Monitoring Transponders), for example, are being used by Shell as part of an uninterrupted production monitoring study lasting six years. Every few hours, each AMT wakes up, collects readings from sensors, logs the data and then goes back to sleep. So far they have logged and downloaded acoustically more than a quarter of a billion measurements.

The data gathered by instruments like AMT can now be quickly and reliably harvested using platforms such as Wave Glider or C-Worker. We work with all the major vehicle manufacturers to integrate our technology into their payloads, optimising them for weight and power.

What are the biggest challenges to developing (ultra) deepwater positioning further?

As a business we are very well positioned (so to speak) to meet these challenges. Water depths of 3,000 metres are routine operating territory for our LBL, USBL and LUSBL acoustic instruments. As we manufacture everything in-house, when our clients need to go deeper (and they regularly do) we are able to design, supply and test the most appropriate and even bespoke subsea housing materials and transducers to withstand the immense pressures and ensure that acoustic signals from far below are reliably received at the surface.

The geographical remoteness of the ultra-deepwater fields produces a big challenge for supporting the products. However, our investments in technical support, quality and training are paying dividends.

How can Sonardyne help improve mapping of the deepest oceans?

We are always pushing the positioning accuracy of our systems in deep water – this enables more accurate navigation of ROVs and AUVs subsea on which imaging sensors are installed. We also supply our own high-resolution side-scan bathymetry sonar, Solstice, which is extremely low power and hence enables AUVs to cover much larger areas from a single dive.

Since Deepwater Horizon, there has been a focus on preventing and monitoring oil spills. How is Sonardyne technology contributing to lessening the severity of such ecological disasters?

Firstly, there is our Automatic Leak Detection Sonar (ALDS), which continuously monitors for hydrocarbon leaks around subsea oil and gas assets and is sensitive enough to detect leaks below one barrel per day at a radius in excess of 500 metres in deep water. Secondly, we design and manufacture high security wireless acoustic BOP control systems, which enable a well to be remotely shut in the event the primary umbilical systems were to fail. As a business, we have implemented OHSAS 18001 globally to ensure our customers have confidence in our approach to safety.

What opportunities do you see in renewable energy (for example, wave, tidal, offshore wind farms)? Will this be an incentive for completely new products, solutions and services?

When it comes to traditional products the opportunities may be limited, however we do see a market developing for shallow-water acoustics as the renewable energy industry matures.

Are young people still interested in technical professions and wanting to come and work for companies like Sonardyne?

It has been difficult in more recent years to find well qualified engineers and that has forced us in some instances to look further afield. However, once we find them, we tend to hang on to them due to the interesting nature of our work, which can literally take you anywhere in the world. This includes posts in our overseas offices, coupled with the opportunity to become a product or technology specialist.

To help uncover and support young engineering talent, The Sonardyne Foundation, has been established to provide financial and practical support to the best and brightest students in the UK. Through the Foundation, we are able to offer industrial placements and mentoring at our research and development centre in Yateley where we seek to further develop the technical and professional skills of aspiring engineers.

What is your message to hydrographic professionals?

There is a big world out there that needs mapping, make sure that you use the right tools for the job. Come and talk to us about your particular application and we will support you along the way to help you reduce your risk and cost. That may come from an off-the-shelf solution, or by virtue of us working together to come up with a tailor-made solution. Either way, we will make it happen.

How can the hydrographic profession continue to attract more young people?

By actively promoting the industry and why it is a rewarding profession to dedicate your life to. The old days of people beating down your door to come and work for you are long gone. One needs to go looking for fresh talent with a strong and clear message of why it pays to be a part of this addictive subsea industry that gets us out of bed in the mornings.

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