## Keeping Up With Technology

The academic institution I work with recently acquired a multi-beam echo sounder system for the purpose of training undergraduate students. Moreover postgraduate students can also use the system as part of their studies, and the academicians will benefit from the multi-beam system by employing it in research work.

In my experience there are two stages to in this process of need fulfilment. Firstly the budget allocated to meet multi-beam system expectations does not necessary fulfil the bill. Perhaps this scenario rings true for many an institution of higher learning. A lot of convincing needs to be done to realise expectations. Sometimes I envy those hydrographic agencies that have managed to secure large budgets for investing in high-tech equipment.

Secondly, once the multi-beam equipment is delivered the real work starts: to get the system operational. Unlike the hydrographic agencies, who have dedicated and permanent staff to continually operate the system, academic institutions have limited personnel at their disposal. The aim of the hydrographic agencies in this purchase is very clear, i.e. to deliver products according to their business. Perhaps this is where the borderline between the industry and the institution of higher learning lies. In the academic institution the operators need to be trained from among existing staff, i.e. academicians or technicians. They can employ research assistants if there is a research fund available, but this will take time.

In practice, initial training will involve the academicians themselves. In the end it is they who will have to pass on their training to support staff, who will then assist in undergraduate and postgraduate training. This is not easy, because the number of dedicated support staff is limited. Support staff from other fields may be brought in, but then they might not have the necessary hydrographic background to appreciate the training. So the real challenge for an academic institution is to make the systems operational and deliver the necessary output. Furthermore, technology transfer from a trainer during a test-run is sometimes quite superficial. There is not enough time for trainees to pick up all the information necessary for them to operate the system themselves. They will normally require much more time to familiarise themselves with the multi-beam system enough to fully operate it.

An institution of higher learning needs to keep up with the current and future technology available in the commercial sector. This will provide students with the up-to-date information required at graduation. There is a saying that university students are only familiar with the theoretical aspects of their subjects. They lack field-survey work as practised by the industry. Perhaps this is true. If so, the underlying reason is an unavailability of necessary equipment at the institution because such equipment is too expensive to purchase. An institution of higher learning that is unable to purchase high-tech equipment should consider building smart partnerships with interested government agencies and private sector representatives. Such partnerships will benefit both parties in terms of the knowledge and development acquired. The training of undergraduate students can be tailored to support industry requirements. In this way potential graduates will be better equipped to deal with current technology when they come into the employment of the hydrographic industry.

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