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Water treatment faces scale-up funding hurdles

A cautious investor community may still hinder the opportunities for global growth in the water treatment space, despite the immense potential for improvement and efficiency.

Within a large and rapidly growing wastewater treatment industry, technologies that can address and efficiently manage this resource offer a compelling growth prospect.

Ostara is one such company, using its proprietary technology to remove polluting nutrients from waste waters and recycle them into a commercial fertiliser. It has already scaled-up and commercially deployed its technology, with the next step being to partner with water utilities and municipalities for further roll-out.

Aiming to address the financial and operational efficiency, as well as environmental sustainability of wastewater treatment facilities, the company has already received backing from Silicon Valley-based venture capital firm VantagePoint Venture Partners and European investor Frog Capital.

Start-up to scale-up

Despite this support, it is well-acquainted with the growth hurdles faced by an emerging technology start-up, according to CEO Phillip Abrary, as it relied on private seed capital to get off the ground.

He explains, 'This turned out to be vital, considering technology scale-up was required and the investment community as a whole was not particularly interested at that stage. It was very difficult to attract investment.'

In September 2008, the company held a $10.5m round with VantagePoint and Frog Capital. The big step, according to Abrary, was that by this point, the technology had already been scaled up, which meant it was effectively commercial, and had been operational for more than six months.

He says, 'Importantly, we had also had our first sale negotiated, in conjunction with the financing. And this was required for the investment community to take us seriously. Many investors were not interested in taking on early-stage technology and commercialisation risk with our company. We had to prove our technology and business model before we became attractive to them.'

He also concedes that in some areas, there remains a general lack of interest from the municipal sector in emerging technology, and while this remains a concern, attitudes are changing.

Abrary says, 'I believe investors are still concerned about the pace of growth. It is a very real challenge that is faced by companies that are still on the small side, in a sector that is dominated by large companies with established, often global sales pipelines with the ability to wait years for something to come to fruition.'

> "There are more followers than there are leaders in the investment community, particularly in cleantech

Investor caution

However, while gaining the initial funding was predictably challenging, this was made easier with a proven product operating within an established industry. And while interest grew, this mainly arose when Ostara reached a certain level of operations, reflecting a continued prudence from the investor community.

He says, 'We saw a lot of interest, in terms of investors keen to learn more about the company, the sector and opportunities to participate. To some extent this is attributable to our success, though I would still say investors remain basically cautious in this sector. It obviously helps to have top-tier investment firms as partners, which in many ways ratifies the technology and the company.

'The calibre of investor that sought us out went up dramatically. It helped to alleviate the concerns of many of these venture capitalists, in that we had, to some extent, been pre-approved by established investors.'

However, Abrary is critical of what he perceives as a 'me-too' attitude among many investors, reflecting the relative unfamiliarity of the sector, and the tough economic climate.

He says, 'There are a lot more followers than there are leaders in the investment community, particularly in cleantech.

Industry Profile: **Phillip Abrary, Ostara**

It is a risk-appetite situation, which as we know is extremely cautious at the moment. Not everybody has the bandwidth to be a leader, as it requires considerable resources to do adequate due diligence, and if necessary, take the hit when the going gets tough.'

Commercialisation challenges

The challenge for many cleantech start-ups lies with the initial scale-up of the technology and with many investors unwilling to commit before this has taken place, the substantial costs must often be borne by the companies themselves. For this, Ostara partnered with the city of Edmonton in Canada, which also committed funds and to purchasing the demonstration unit, providing it was successful.

Abrary says, 'We were adamant that our scale-up had to be in a real, commercial situation, as opposed to a laboratory or experimental facility. While we took on the bulk of the risk, we worked with a real customer that helped us understand some of the challenges. Because it met their standards, when other potential buyers came to assess the plant and the technology, we were able to answer all their questions in a satisfactory way. They were able to discuss the situation with their peers and it was important that it received their seal of approval.'

One way that this challenge can be mitigated is when establishing a product or service within an established industry or sub-sector. This has been critical, he says.

'If the end market is not established, then you will struggle. You might have the best idea in the world, but if the economic value proposition isn't simple and real it just won't work. It doesn't matter how ground-breaking the technology might be, there has to be an economic driver.'

This can be brought forward by governments putting in place the necessary support networks and market drivers to lessen this inherent risk, he adds.

'What governments have done for us, in Canada, primarily, is that they have helped fund the research in the early stages. Through our development, government support is critical to helping developing the risks surrounding scale-up and technical challenges. This is so important.'

And while operating in an established industry does offer some degree of security, there is still a general reluctance from many quarters to embrace innovation and new operating methods. This is slowly improving, however, particularly in Europe, according to Abrary.

'The attitude of many of these established industry players has certainly improved, and they have been broadly receptive. People do want to improve and develop though they are reticent about making commitments early on and moving first. We are seeing the attitude improve in that these industries and municipalities are keen to embrace new technology, though obviously it must be proven, it must be scaled and it must be commercially viable. But once it is, there is a genuine interest, as the proposition is a compelling one.'

One of Ostara's directors and a venture partner at VantagePoint Venture Partners is Robert F Kennedy Jr. With a keen interest in water quality and treatment and an active environmental litigator, Ostara's product struck an immediate chord.

Phillip Abrary, CEO, Ostara

Kennedy says, 'I have been a litigator for 26 years and have been suing polluters for many years. The conventional costs from removing phosphorous from wastewater are horrendous. For many smaller municipalities and water companies, it can literally bankrupt them to comply with the law.'

With water treatment facilities often spending millions of dollars on industrial processes, the opportunity to save money on treatment, as well as through the sale of the fertiliser end-product is clearly attractive. Additionally, phosphorous fertiliser is a finite and valuable resource, and with a costly manufacturing process attached.

'The proposition is undeniable.' He says, 'It's something of reversal, as historically I have been in touch with water companies with an intent to sue them for their pollution, but now I can come to them with the offer of bringing them a new line of revenue and save millions of dollars in process efficiency. I love making those calls because it is so easy.'

Market shift

Despite what is clearly a compelling proposition, there are still hurdles to be overcome to bringing the technology to a wider level, particularly in the US, with its distributed and fragmented series of water districts. The UK and Europe offer a more consolidated universe, with a smaller number of water boards and utilities, as well as specific targets in place for phosphorous recovery and a clampdown on imports.

As illustrated by the company's partnerships with UK utilities Thames Water and Severn Trent Water, there is a great deal of interest in accessing these nutrients and becoming more self-sufficient – not just in terms of energy, but all natural resources, according to Abrary.

Kennedy adds,'Everybody's looking for change. Sometimes in the US, some of the smaller plants at the lower level of plant bureaucracy there might be stubbornness, but at the upper levels of industry and local government, people are keen to change and improve, and save money.'