



Case Study - Iceotope

Romonet® provides in-depth engineering analysis and TCO life cycle to help Iceotope secure funding from strategic technology investor



Iceotope servers offer full-time, free cooling for hostile environments, cloud services and HPC environments. Its liquid-cooled server platform has been modelled and engineered to ensure it harvests as much heat from electronics as possible in the most efficient way. As a result, organisations can reduce data centre cooling costs by up to 97%, ICT power load by up to 20% and overall ICT infrastructure costs by up to 50%. This case study looks at how Iceotope used Romonet's Software Suite and professional services to analyse and prove the performance and benefits of its technology compared to traditional, air-cooled servers. With this proof, Iceotope was able to attract \$10 million in funding to continue developing its technology.

Profile:

Iceotope is the home of cutting edge liquid cooling technology. Its patented technology offers high density IT, reduces energy consumption and improves computing performance. Iceotope systems have no fans, are virtually silent in operation, and can be positioned in populated or hostile environments in addition to the traditional data centre. Iceotope's mission is to reduce energy usage, improve performance and drive down the costs associated with high performance computing.



Challenge

As a technology start-up, Iceotope needed to attract further investment in order to keep developing its technology and improve on the efficiency and sustainability benefits it already provides. In order to invest, potential partners need to be certain that Iceotope's technology could fulfil its potential. In particular, Iceotope needed to demonstrate that it provided superior energy and cost efficiency compared to high-density air-cooled systems commonly used in High-Performance Computing data centres. However, providing real-world examples that could demonstrate this was a difficult task. As a start-up, Iceotope did not have customers using its technology inside a production data centre, which would demonstrate the potential of its technology. Even if it had, there would still be obstacles: real data centre operators may be unwilling to offer their precise energy use for comparison in such a way while, even if a willing customer was available, differences in performance in production data centres could be attributed to factors beyond the cooling technology used. The alternative was creating multiple test-bed infrastructures to demonstrate the savings Iceotope's technology could create. Yet this was prohibitively expensive and impractical. It was clear that Iceotope needed another way to show its potential.

Solution

Iceotope decided that it needed an accurate simulation of how its technology would compare to traditional air-cooling systems in order to prove its potential to would-be investors and partners. It therefore approached Romonet, as it knew that Romonet's expertise in modelling and predicting data centre performance and costs would give the most accurate picture possible. "We knew we had developed a great product, we just needed the proof-points. Romonet are quite simply the best at what they do, so they were automatically our first choice," said Peter Hopton, Iceotope founder and CEO. Romonet used its Software Suite, based on its patent pending predictive data centre modelling technology, to simulate data centre energy use and costs using both Iceotope's technology and a number of traditional air-based cooling technologies. They also simulated a traditional hot/cold aisle data centre cooling system to provide a suitable 'baseline'. Romonet also simulated rack exit door cooling systems and in-row cooling systems. Romonet then delivered a comprehensive report analysing the cost over time of each technology and showing exactly how the simulation had been created, in order to demonstrate the validity of its results.



“For a relatively young startup, as Iceotope was at the time, developing strong links to experienced practitioners and experts is invaluable. Romonet has seven years of data centre and equipment simulation experience and has modelled thousands of data centres around the world – exactly what we needed. Almost all of their simulations are then tested against real-world measurements; as a result, they guarantee extremely accurate simulations.”

Peter Hopton, founder and CEO.

Benefits

In Romonet’s simulation, Iceotope’s technology was shown to produce cost savings more than three times greater than those of the next most efficient air-cooling method, cutting the cost of the scenario data centre by 32%. Armed with this proof of concept, Iceotope could demonstrate the validity and potential profitability of its technology to investors and partners that its technology could provide significant savings to customers. “Romonet’s report has been a key element of our funding; it’s safe to say that its expertise has opened doors for us,” said Peter Hopton.

Outcome

Thanks to Romonet’s report, Iceotope has been able secure funding to continue its development: most recently a \$10 million investment in January 2014 from bodies including Aster Capital and Ombu Group, with strategic sponsorship from Schneider Electric (acting through Aster Capital); one of the world’s largest engineering technology companies. Iceotope has used this investment to continue developing and refining its technology for large scale deliveries in 2015, to ensure it will provide the greatest possible benefit to the industry.

Future

Iceotope will continue to use Romonet’s report to demonstrate the power of its technology. It also plans to extend the initial modelling as the technology advances, in order to provide up-to-date and compelling data to investors and partners.

Conclusion

In order to demonstrate the potential of its liquid-cooling system and attract investment, Iceotope needed proof that it could significantly outperform conventional cooling systems. Iceotope contacted Romonet to simulate the performance of its technology in the data centre environment, compared with today’s most efficient air-cooling systems. Romonet’s simulation both validated Iceotope’s claims and gave it a vital proof point that was used to attract and secure investment, most recently \$10 million in January 2014.





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