

The Journey Towards Market Acceptance

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Green Business Forum for Asia and the Pacific

Investing in a Sustainable Future

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Green technology innovation and commercialization requires **moonshot** thinking with the objective of making a disruptive world changing impact.



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Instead of a mere 10% gain, a moonshot aims for a 10x improvement over what currently exists.



When you only work to make things 10% better, you take the obvious path that everyone else is on.

Making 10% improvements means using the same assumptions, processes, and tactics that everyone else is using.



It's often easier to make something
10 times better than it is to make it
10 percent better.

Throw out your existing assumptions, boil
things down to their fundamental truths,
and reason up from there.



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SUBMERSIFY

TAKE THE PLUNGE



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HUGE PROBLEM

Data centers are expensive, unreliable and environmentally unfriendly.

To build a complete data center = \$5000 PSF
To operate a data center annually = \$1200 PSF
Big space requirements
Long build times

Cooling failure response time before catastrophic damage = 8 minutes
Annual server failure frequency rate = 11%
Dust & Noise levels of 90dB

In the Top 10 industries that contribute the most to global greenhouse gases



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RADICAL SOLUTION

Take air out of the cooling equation and fully submerge the IT equipment in coolant, coupled with an innovative cost model:



**ZERO
CAPEX
UPFRONT**



**50%
ENERGY
SAVINGS**



**50%
CARBON
REDUCTION**



**55% LOWER
MAINTENANCE
COSTS**



**30% INCREASE
IN SERVER
RELIABILITY**



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EXPONENTIAL TECHNOLOGY

Current Industry Average

1 Watt of Electricity



1 Watt of Heat

1 Watt of Air Cooling

Power Usage Effectiveness (PUE) Metric = 2.0
Total Facility Load / IT Load

Submersify Re-writes the Formula

0.85 Watt of Electricity



0.85 Watt of Heat

0.04 Watt of Coolant Cooling

Power Usage Effectiveness (PUE) Metric = 1.047
Total Facility Load / IT Load

95% Reduction in Cooling



15% Reduction in IT



Avg 50% Reduction in Total DC Energy

Air is a poor heat conductor.

The Submersify coolant is 1356x more efficient than air.

Equipment fans are not needed.



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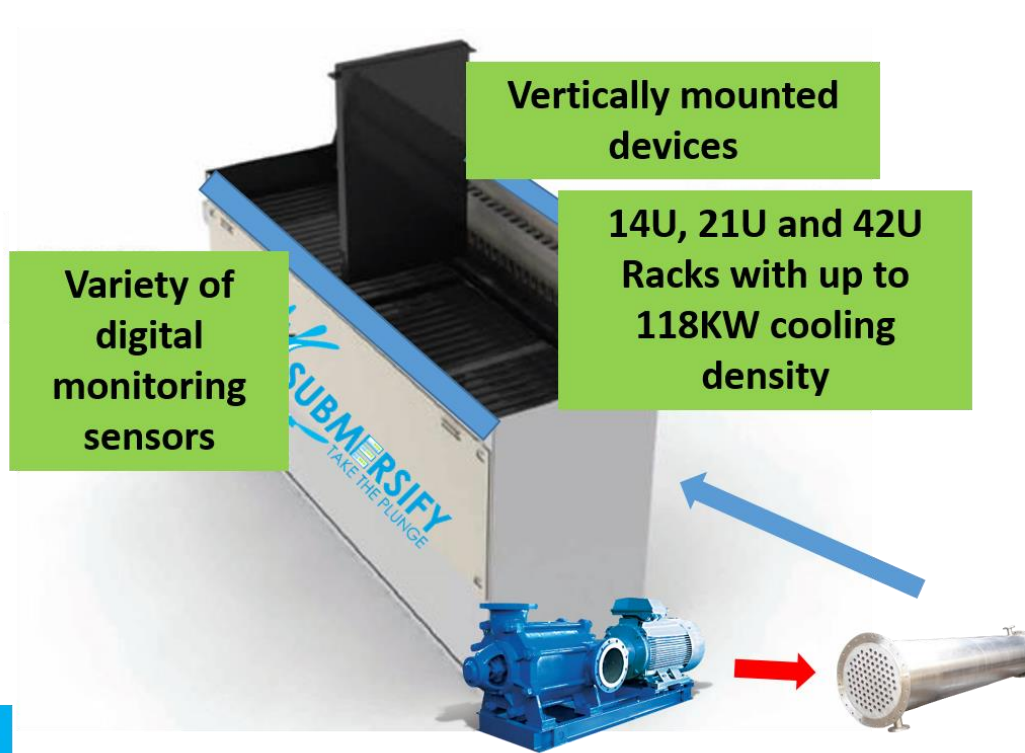
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EXPONENTIAL TECHNOLOGY



Any OEM server,
switch, firewall,
router, storage
and UPS.



Variety of
digital
monitoring
sensors

Vertically mounted
devices

14U, 21U and 42U
Racks with up to
118KW cooling
density



Submersify
Racks

Coolant pump
and filter

Heat
exchanger

Choice of cheap
cooling



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2010 Ideation



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2011 Prototype



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2012 Proof of Concept



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2013 Pilot Test



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2014 Expanded Pilot Test



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2015 Emerged From Stealth Mode



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What Did We Do Right In 2015?

- Closed 2 Customers
- Obtained Hardware Manufacturer Extended Warranty



- Won 5 International Awards

CHAIRMAN'S AWARD



Global ICT Excellence
Awards 2016
BRASILIA



APICTA
ASIA PACIFIC
WINNER 2015
Best of Sustainability
and Environmental
Technology
COLOMBO



WINNER 2015
Best of Sustainability
and Environmental
Technology

SILVER 2015
Best of Start-Up
Companies



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2016 Business Model Innovation



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2017

Spinoff Company: SpaceARK



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2017

Back To Square One....



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