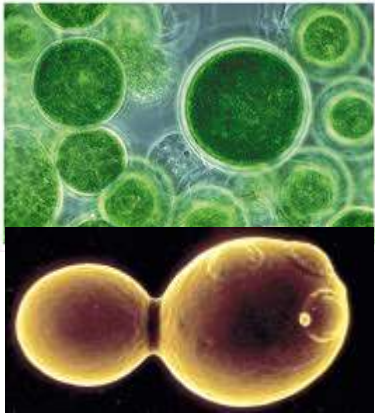


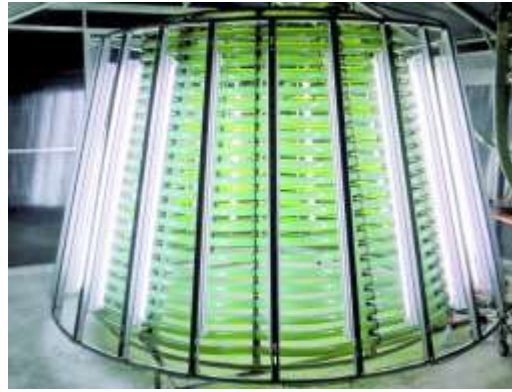




The Bio-Economy Revolution [bio-manufacture]



Microbe-based production



Scaled up manufacturing



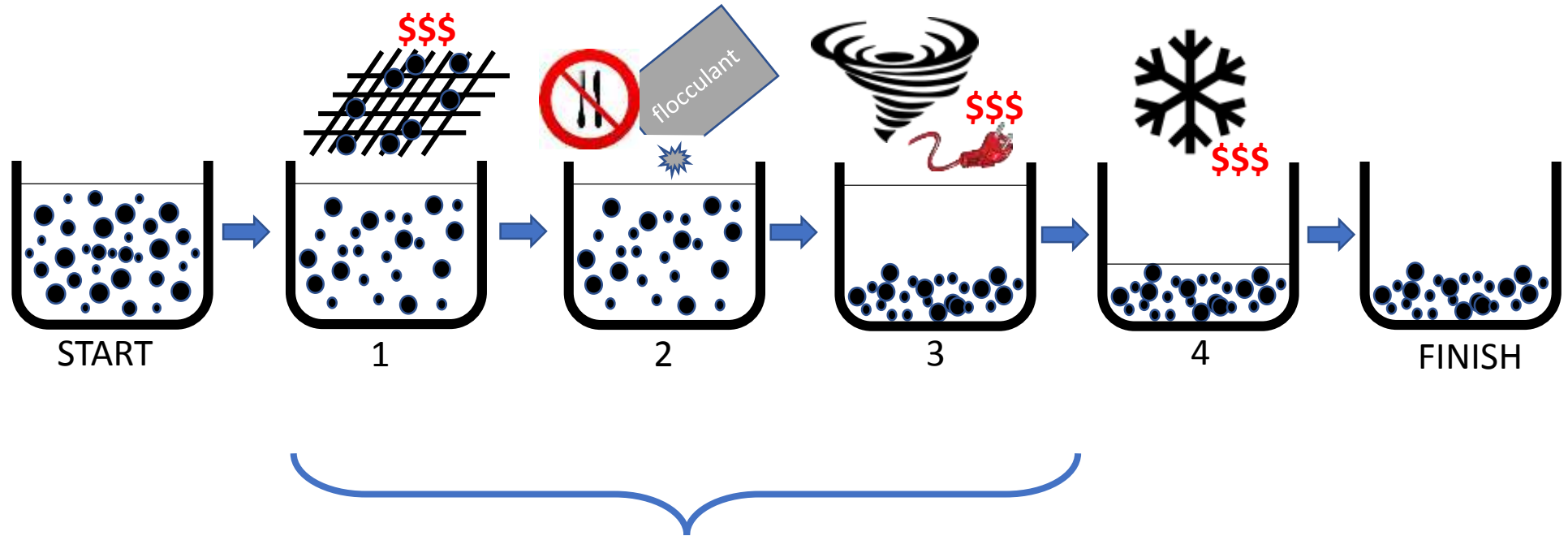
Products



Problem / Solution

Problem

- Multistage
- Inefficient
- Expensive





Pilot test



Swansea University
Prifysgol Abertawe

Microfluidics-based biomass harvesting system



**CLEAN
OUTLET**

Water

Culture ready
for harvest

INLET

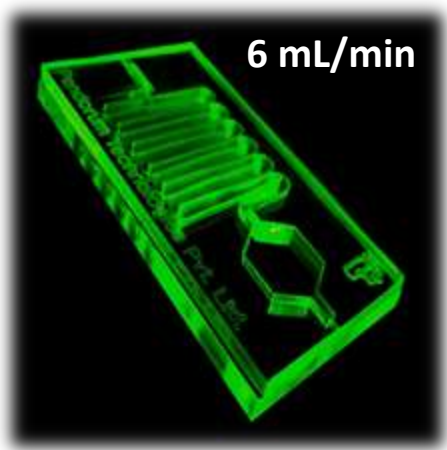
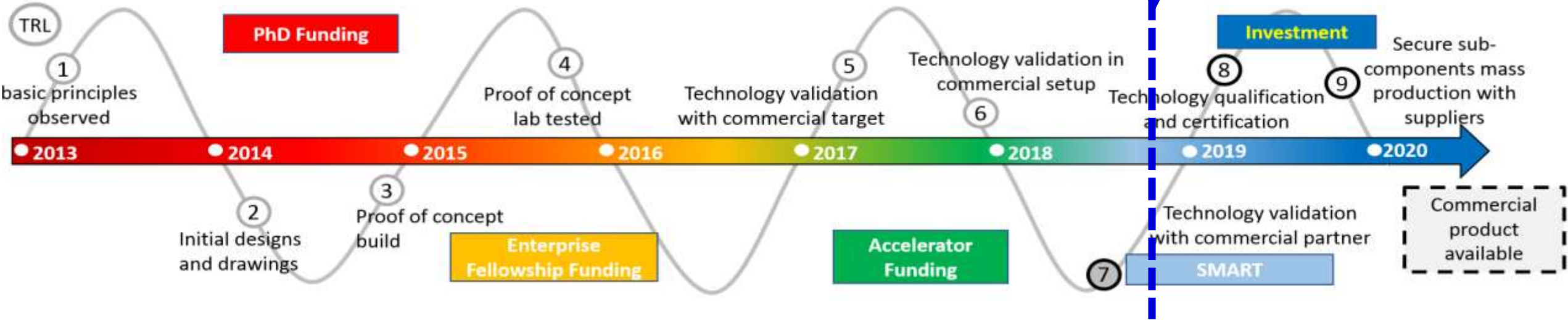
Pilot test 11.05.2018

Biomass

CONCENTRATED OUTLET

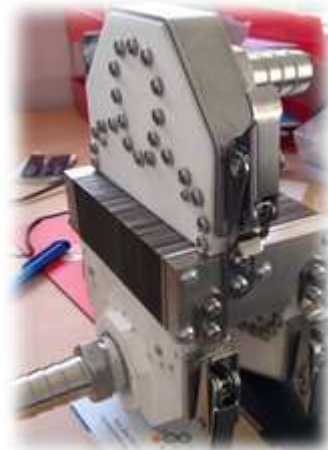


Where we are now



6 mL/min

Lab scale microfluidics



prototype



5 Litres/Min

pilot test



100s Litres/Min

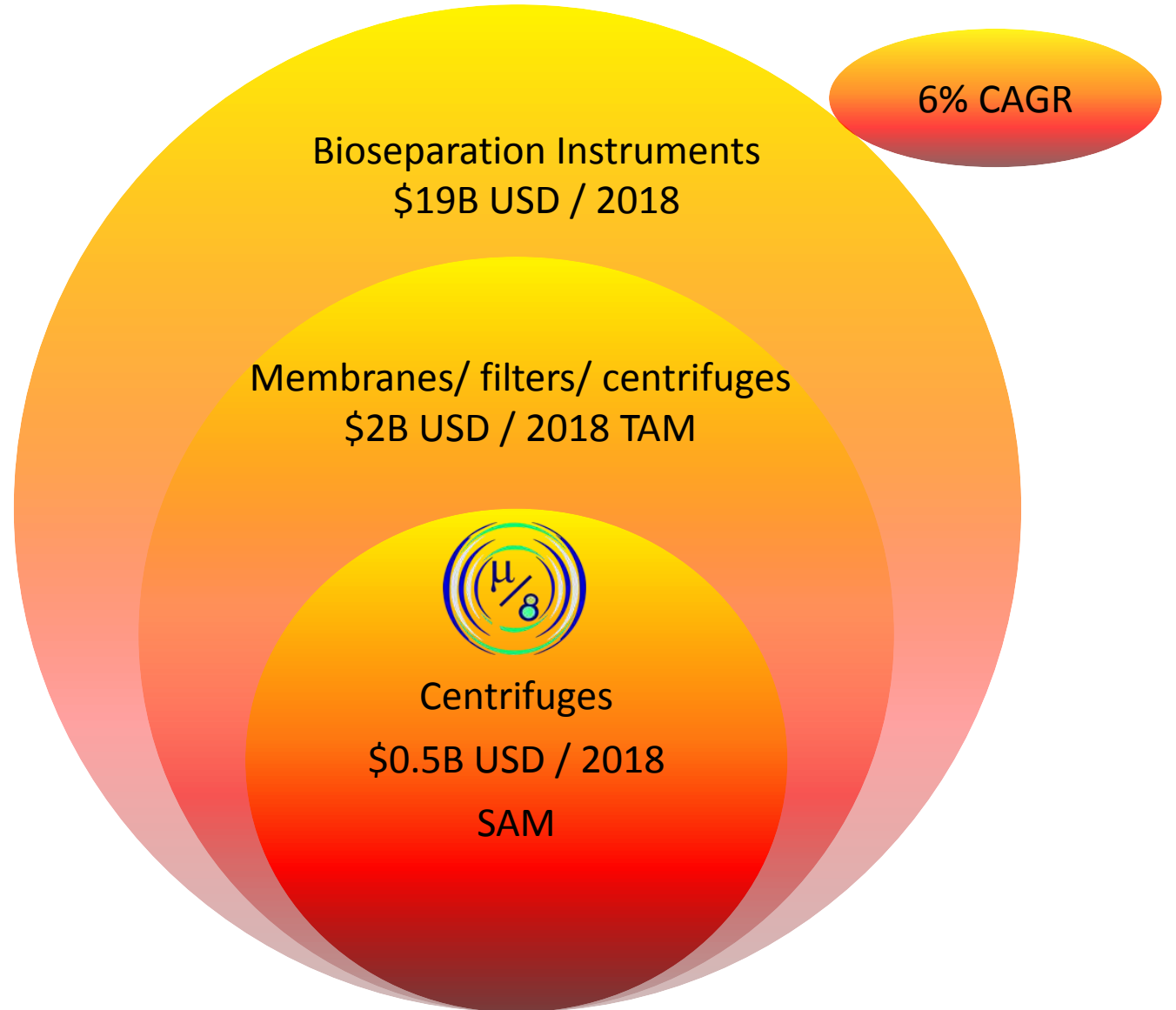
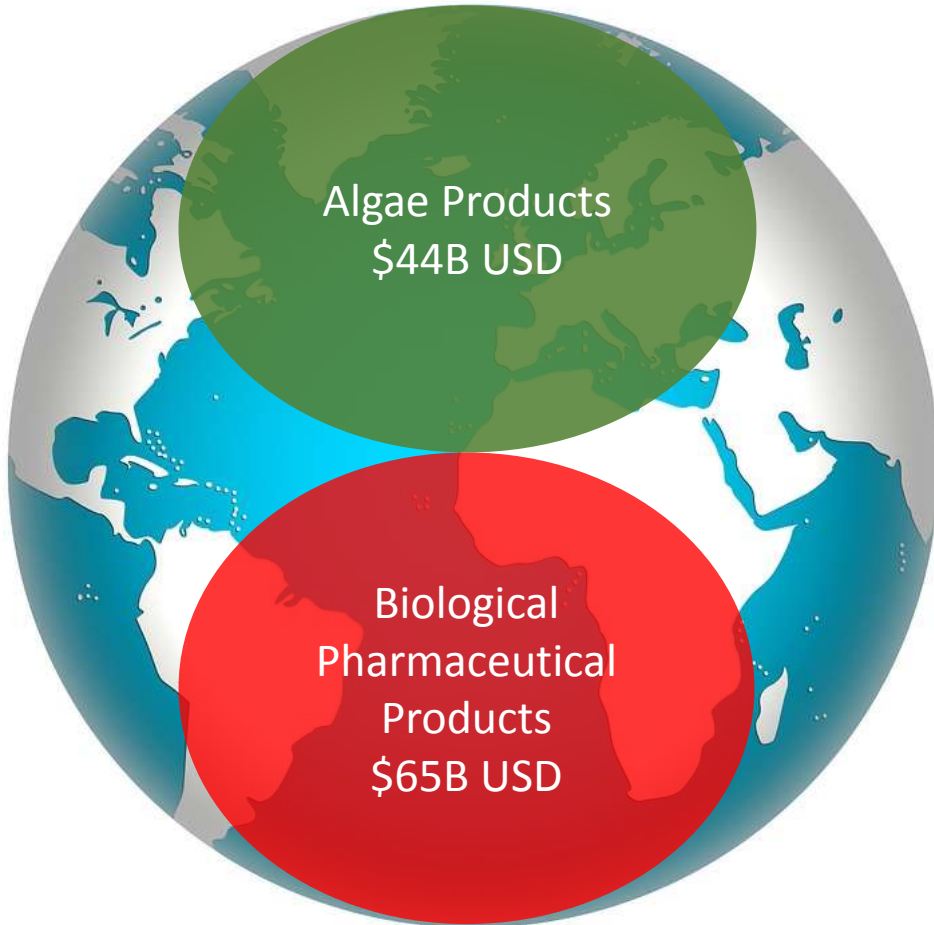
Industrial scale microfluidics



Market Size

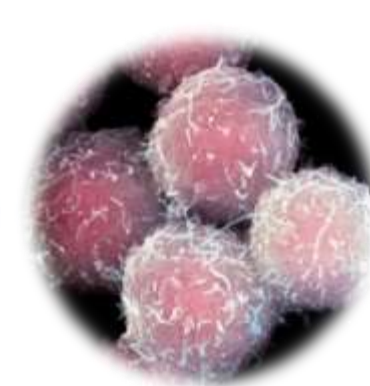
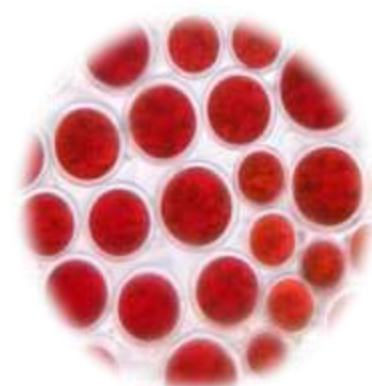
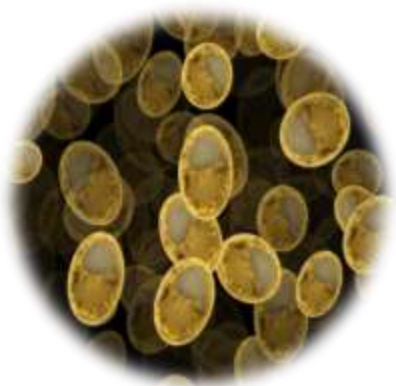


because **innovation** needs **direction**





Target customers - biomanufacturers



Beer

Food

Pigment

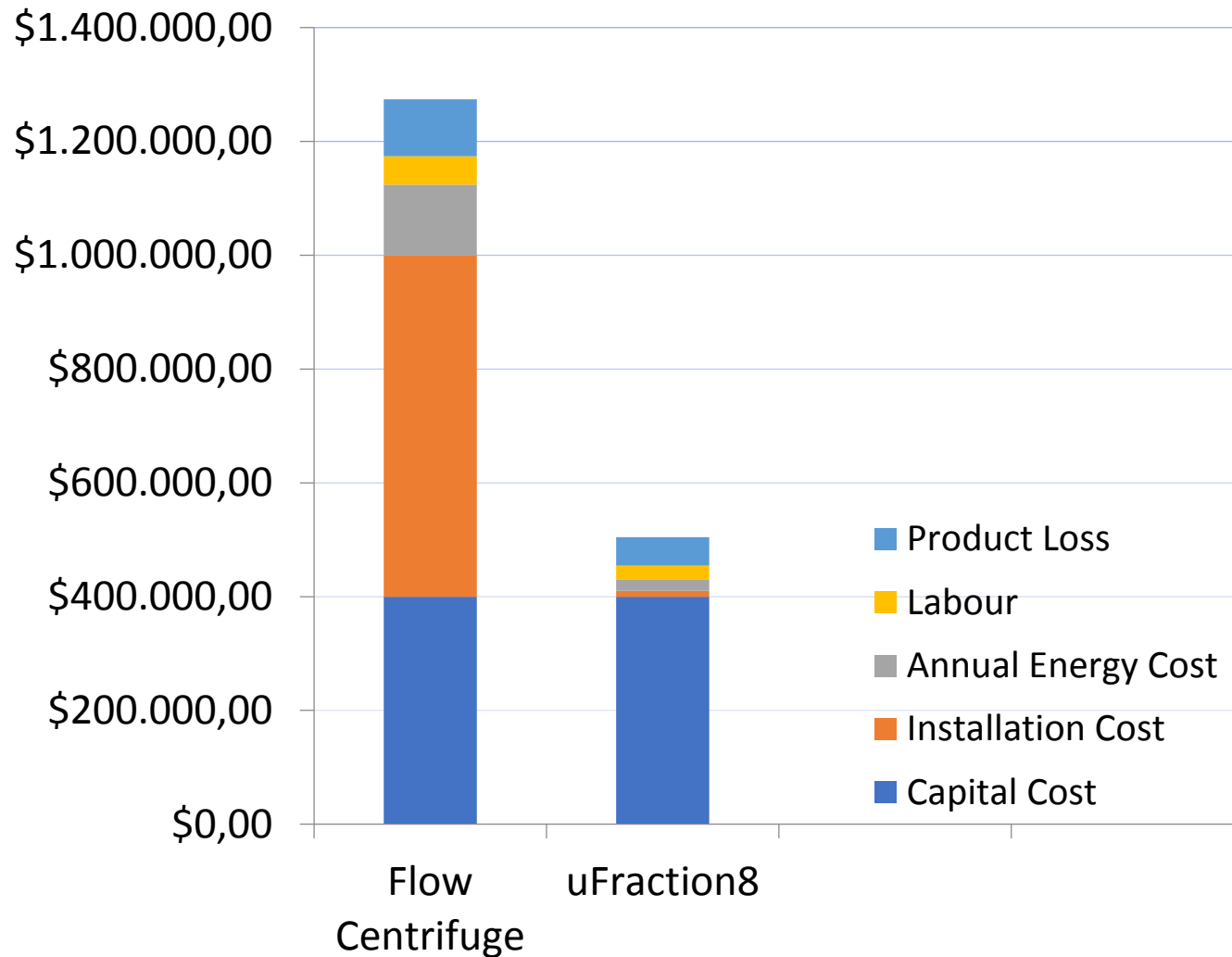
Drugs

Animal
Feed

Cell
Therapy



Customer Value Proposition



\$770,000 saving in first year on
\$400,000 capital cost

Immediate ROI based on installation
costs

Total cost of ownership reduction
even if centrifuge was free

Up to 15% more product recovered

Cost of new technology implementation at the customer side

(example shows comparison between uFraction8's medium size unit costing £400k and the equivalently sized centrifuge system)



Features, Benefits and Competitive Advantages

Feature

- Modular
- Energy Efficiency
- Single Stage Process
- Gentle Flow Regime
- Closed System
- Low Stored Energy

Customer Benefit

- Scalable to match process
- Reduced OPEX
- Ease of use, reduced labour
- Increased product recovery
- No contamination vector
- Safer to operate and maintain

Competitor disadvantage

- Fixed capacity ranges
- Expensive to run and install
- Requires pre-concentration
- Up to 15% product loss
- Can't reuse contaminated liquid
- Confined spaces, catastrophic failure potential



Executive Team



Dr Monika Tomecka

PhD in Biomedical science

Geneticist and Biochemist

Previous startup experience



Dr Brian Miller

PhD in Microfluidics and Biosensors

High throughput microfluidics expert

Automation & Microfluidics Engineer

Advisors



Liza Sutherland
Enterprise Executive
(University of Edinburgh)
Business/Corporate Advisor



Adam Irvine
IP specialist
(Carlton Hill Ltd)
ClimateKIC mentor



Dr Helen Bridle
Associate Professor
(HWU)
Technical Advisor



Andrew McNair
Managing Director
(Innova Partnerships)
Commercial Advisor High Grow Startup Unit

Team



Ameya Vaidya
Engineer



Catherine Hill
PhD student



Interns



Traction and collaboration

- Industry Partners

First sale



AkzoNobel



ThermoFisher
SCIENTIFIC



VEOLIA



I-PHYC
INDUSTRIAL PHYCOLOGY



Xanthella
Illuminating algae



Mitsui Chemicals



Allergan



SCOTTISH BIOENERGY



euglena
ミドリムシの会社



MiAlgae
The next generation of agriculture



algaceuticals

- Research Partners



Aston University
Birmingham



HERIOT WATT
UNIVERSITY



IBiolC



RGU ROBERT GORDON
UNIVERSITY ABERDEEN



Swansea University
Prifysgol Abertawe



SAMS



University of HUDDERSFIELD
Inspiring tomorrow's professionals



Leave a Nest



Summary

- Disruptive, patented and sustainable filtration/ concentration/ dewatering solution
- Tested pilot scale **prototype** –TRL7
- Substantial beachhead market opportunity (**Microalgae**)
- **Market** appetite and traction
- £40k **sales revenue** generated in year 1
- cumulative **£400k** of cash and **£250k** in kind services and partnerships
- looking for **£1.5million** investment
- looking for **collaboration partners**



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