Powerhouse Ventures Limited (ASX code: PVL)

Portfolio Showcase Briefings
Australia

Sydney
Monday 15 May 2017
Commence at 4.30pm
The Press Room
The Radisson Blu Plaza Sydney
27 O’Connell Street
Sydney, NSW 2000

Melbourne
Tuesday 16 May 2017
Commence at 4.30pm
The Wine Room
The Westin Melbourne
205 Collins Street
Melbourne, VIC 3000

New Zealand

Queenstown
Monday 22 May 2017
Commence at 7.30am
Rydges Lakeland Resort Queenstown
38/54 Lake Esplanade
Queenstown 9300

Tauranga
Wednesday 24 May 2017
Commence at 7.30am
Trinity Wharf Tauranga
50 Dive Crescent
Tauranga 3110

Christchurch
Monday 22 May 2017
Commence at 4.30pm
Rydges Latimer Christchurch
30 Latimer Square
Christchurch Central

Wellington
Wednesday 24 May 2017
Commence at 5.00pm
Rydges Wellington
75 Featherston Street
Wellington 6011

Auckland
Tuesday 23 May 2017
Commence at 12.30pm
Stamford Plaza Auckland
22–26 Albert Street
Auckland 1010
Disclaimer

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Opening remarks – Dr Stephen Hampson

AGENDA

Registration
Powerhouse overview
Healthcare
  Avalia Immunotherapies
  Upstream Medical Technologies
Agritech
  CropLogic
  Veritide
  Invert Robotics
Closing remarks
Transforming intellectual property into world-changing businesses by following a proven investment pathway
A patient capital investment model

5–10 new investments per year

Test proof of concept
Recruit management team (often includes Powerhouse team embedded)

Early revenues
Develop business model

Early profits before growth
Prepare for liquidity event

IP
University & research institute partners

Create
Invest up to $1m
Powerhouse + government grants

Develop
More than $1m external capital
Valuation events

Grow
Potentially disruptive
$3m

IPO

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Powerhouse creates companies that solve important global problems
Healthcare Sector

More than 50% of the world population lives with chronic disease

Cancer is one of the world's biggest killers, with ~14m new cases per year

- ground-breaking new therapeutic cancer vaccine

Cardiovascular diseases account for 31% of all deaths worldwide

- early, high-reliability screening test for unstable angina
Avalia Immunotherapies

Melissa Yiannoutsos, Executive Director
AVALIA
IMMUNOTHERAPIES LIMITED

HARNESSING THE POWER OF YOUR IMMUNE SYSTEM TO CURE CANCER AND PREVENT DISEASE
Avalia will become a leading supplier of vaccines that stimulate important immune cell populations to cure cancers and prevent infectious disease

1. Preclinical stage immuno-oncology company
2. Founded on decades of research in the field of natural killer T cells
3. Proprietary vaccine technology platform protected by four patent families
4. First patient study targeted for 2018
5. First vaccine targets treatment of cancers associated with human papillomavirus (HPV)
6. Springboard into personalised vaccines and infectious disease
Avalia Immunotherapies operates in the most promising area of oncology treatment.

**TREATING CANCER WITH IMMUNOTHERAPY**

In 2016, the cancer immunotherapies market reached $73 billion and is forecast to grow by 5.7% CAGR to reach $96.5 billion in 2021.

**Avalia’s immediate focused is the development of therapeutic cancer vaccines.**

**Sources:**
Frost & Sullivan, Transforming Cancer Treatment with Immunotherapy, September 2015.
Research and Markets, Global & USA Cancer Immunotherapy Market Analysis to 2020.
RESURGENCE OF THERAPEUTIC CANCER VACCINES:

- Tumour or whole cell vaccines
- Vector based vaccines
- Nucleotide based vaccines
- **Protein or peptide vaccines**

Avalia’s focus on peptide vaccines is driven by its demonstrated ability to activate key immune cells that drive robust, long-lasting responses.
Avalia’s first product is showing promise in the treatment of cancers for the many patients infected with the human papillomavirus (HPV).

HPV is a common sexually transmitted virus that can trigger the onset of many incurable cancers including cervical and head & neck.
HPV INFECTION AND CANCER RATES ARE HIGH

PREVENTATIVE VACCINES

EVERY DAY IN THE USA:

12,000
15-24 year olds are infected with HPV

2,600
of those are infected with HPV16, which is responsible for 5% of all cancers

HPV16 IS RESPONSIBLE FOR:

85%
of HPV-positive head & neck cancers

50%
of cervical cancers

THERAPEUTIC VACCINES IN DEVELOPMENT
Three key players in Phase I-II

CERVICAL INTRAEPITHELIAL NEOPLASIA (CIN)
Global incidence > 500,000
Standard of care inadequate
Avalia Immunotherapies

OUR ABILITY TO COMPETE IN HPV CANCER TREATMENT SETTING

Avalia vaccines enhance antigen specific cell killing

In industry standard TC-1 model Avalia vaccines reduce tumour growth

→ Ability to activate important immune cells to achieve a lasting anti-tumour response
→ Decades of research in the field of natural killer T cell activation results in patentable IP.
→ Clinical partnership options to accelerate path to the clinic
→ Key opinion leader, championing Avalia’s first product and the importance of NKT cell activation in the cancer setting

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**Avilia Immunotherapies’ investment highlights**

**PROGRESSION TOWARDS THE CLINIC FOR FIRST PRODUCT**

**2015**

1. **INVESTMENT**
   Investment from Powerhouse, NZ Government Callaghan Innovation and the New Zealand Venture Investment Fund, alongside founding institutes sets foundation for lead vaccine development.

2. **PRECLINICAL EFFICACY**
   Preclinical results define Avilia’s first product targeting premalignant HPV-associated cancers, paves the way for first clinical partnership option.

3. **GOOD SAFETY**
   Preliminary safety studies confirm favourable safety profile using multiple routes of administration.

4. **PHASE I STUDY DESIGN**
   Focus on patients with premalignant forms of HPV-associated cancers. Primary study end points safety and tolerability.

5. **GRANTED PATENTS**
   First of Avilia’s patent applications granted in the US.

**2017**

6. **RESEARCH DEPTH**
   Founding scientist, Gavin Painter attracts major grant from NZ Government to continue research in the field of self-adjuvanting vaccines.

7. **PIPELINE GROWTH**
   Australian research collaborations validate new functionality for use in the prevention of infectious disease.

8. **INVESTMENT**
   Oversubscribed seed round attracts high net worth individuals.
Activating the immune system

HOW AVALIA’S IMMUNOTHERAPY WORKS?

Natural killer T (NKT) cells are a special immune cell that help drive a powerful tumour-fighting response that is complementary and in some settings superior to other treatment approaches.
**Avalia Immunotherapies proprietary platform technology**

**INTELLECTUAL PROPERTY PORTFOLIO**

**CORE IP**

**PATENT COVERAGE**

Routinely modified to target a specific cancer or disease

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**PATENTS**

**Sphingoglycolipid compounds and uses / Organic compounds**

PRIORITY DATE: 2012
- Granted in NZ, US, pending in Canada, Europe, Japan, Australia, China, Korea, India

**Conjugate compounds**

PRIORITY DATE: 2012
- Pending in NZ, US, Canada, EU, Japan, Australia, China, Korea

**Sphingoglycolipid analogues**

PRIORITY DATE: 2013
- Granted in NZ, pending in US

**Amino sphingoglycolipid analogues**

PRIORITY DATE: 2014
- Pending US

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**KEY PUBLICATIONS**

**A self-adjuvanting vaccine induces cytotoxic T lymphocytes that suppress allergy**


**NKT cell-dependent glycolipid-peptide vaccines with potent anti-tumour activity**


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Avalia Immunotherapies

RESEARCH PARTNERS

AVALIA HAS RESEARCH PARTNERSHIPS IN PLACE WITH INTERNATIONALLY RECOGNISED INSTITUTES

The Ferrier Research Institute was recently awarded a major Government research contract for 5 years. The targeted research programme focuses on the manufacture of self-adjuvanting peptide vaccines for cancer and infectious disease. This programme strategically aligns with Avalia’s pipeline development.

The Malaghan Institute of Medical Research is the recipient of long term New Zealand Health Research Council funding to validate preclinical assets for clinical cancer settings. This provides Avalia early insight into the profile of vaccine candidates.

Discovery projects established with the University of Melbourne to validate efficacy in a range of infectious disease challenge preclinical models. Scientific Advisor: Professor Dale Godfrey
Avalia Immunotherapies’ growing pipeline

VACCINE DISCOVERY AND DEVELOPMENT

AVA1002 SOLID TUMOURS

AVA1001 HPV-DRIVEN CANCERS

AVA1001 PERSONALISED VACCINES

AVA1002 SOLID TUMOURS

AVA2001 INFECTIOUS DISEASE

AVA2002 INFECTIOUS DISEASE

Discovery | Lead Optimization | Preclinical | Phase I | Phase II
**Avalia Immunotherapies**

**CAPITAL PLAN**

### FUNDING TO DATE

**Pre-seed investment**
- Founding institutes
- Powerhouse
- New Zealand Venture Investment Fund

**Seed investment**
- Existing shareholders
- High net worth individuals

### FUTURE CAPITAL

<table>
<thead>
<tr>
<th>ROUND</th>
<th>CAPITAL</th>
<th>USE OF FUNDS</th>
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</table>
| Series A       | > $5 million | - Regulatory safety studies  
                   | PHASE I                      |   - Vaccine manufacture for Phase I study  
                   |                           |   - Regulatory filing to test in patients  
                   |                           |   - Complete Phase I clinical study |
| Series B       | > $10 million | - Complete Phase I/II clinical study  
                   | PHASE II                     |   - Regulatory filing for second vaccine product |
Avalia’s vaccines engage key components of our immune systems to generate potent, robust, targeted and durable T cell responses, which have the potential to translate to superior responses in the treatment of cancer and prevention of disease.
Upstream Medical Technologies

Ruth Appleby, Chief Executive Officer
Advanced Diagnostics For Acute Cardiac Care
The Vision:
Upstream Medical Technologies will become a global leader in the development and commercialisation of next generation biomarkers; delivering sustainable and substantial benefits to patient outcomes, healthcare delivery and shareholders.
Upstream Medical Technologies — At A Glance

Upstream has developed a world-leading cardiovascular diagnostic.

The addressable market for Unstable Angina is significant.

Upstream is planning for registration of its Unstable Angina test, UARatio, by late 2018.

Upstream’s current funding round will provide a reasonable runway to the next value inflexion point.

The company’s Unstable Angina blood test, UARatio, will allow emergency department physicians to rapidly diagnose heart attack risk in chest pain patients.

~8 million cases of chest pain patients present at Emergency Departments in US hospitals every year.

1000 patient multi-centre trial to be completed in 2018 with regulatory filings expected shortly thereafter

This funding round provides a pathway towards a potentially substantial Series B or IPO uplift within 18-24 months.
Upstream Medical Technologies — At A Glance

- Upstream’s founders have scientific credibility.
- Upstream’s Signal Peptide technology can be considered as a new platform for medical diagnostics.
- Upstream acquires complementary diagnostics where there is close alignment.
- Upstream’s prospects for licensing its technology are strong.

The Upstream research team and scientific advisory board are internationally recognised and globally connected.

The strong patent pipeline in behind the primary, lead product is both substantial and valuable.

Where the opportunity arises, Upstream is prepared to make value accretive strategic acquisitions.

The company’s global networks into the scientific, regulatory and commercial sectors will assist in leveraging the technology more rapidly.
The Primary Problem: Emergency Department (ED) Physicians require rapid and accurate methods to determine which patients require immediate life saving medical treatment when they present with chest pain.

The challenge is to determine who is really at risk of a heart attack?
Diagnosis of Heart Attack Risk

Acute coronary syndrome (ACS) is a continuum of artery blockage resulting in ischemia, lack of blood supply.

Unstable Angina
ECG may be normal
Blood test with Troponin normal

Heart Attack
ECG may be normal
Blood test with Troponin indicates heart attack

Heart Attack
ECG abnormal
Blood test with Troponin indicates heart attack
How Big Is This Problem?

8 million patients in the USA present in ED with chest pain each year.

Numbers are growing because populations are aging and there is a growing public awareness of early intervention due to heart attack.

1 in 25 is at risk of heart attack but are not able to be quickly and easily diagnosed.

Current screening requires a ‘watch and wait’ approach consuming time and resources within ED.

A missed diagnosis results in less effective treatment and may result in readmission within 30 days as the condition of patient deteriorates.
UARatio — A New Way To Manage Heart Attack Risk

The Problem—Using Traditional Testing Methods “Watch and Wait”

12% admitted with possible risk of heart attack

- 8% heart attack diagnosed
- 80% non-acute

20% Admitted

3 days at US$5,220
Typical diagnosis times of up to 3 days, at a cost of US$5,220 per day.

40% reduction in admissions

Conservatively, for every 100 chest pain patients in the ED there are 8 less admitted.

The Solution—Using UARatio Development by Upstream

4% risk of heart attack diagnosed

- 8% heart attack diagnosed
- 88% non-acute

12% Admitted

Results in 1 hour
Diagnosis with blood sample result within 1 hour.
1/3 less patients admitted.
The Scale Of The Solution

~8 million patients per annum in the USA

UARatio could conservatively save ~8 unnecessary hospital admissions per 100 patients x2 days at ~US$5220/day

UARatio would cost ~US$400 million to deploy across ~8 million patients at US$50/test

UARatio could save over ~$6.0 billion in costs to the US health system alone per annum
# Upstream Medical Technologies – Built On Strong Foundations

## A decade of excellence from within the Christchurch Heart Institute

<table>
<thead>
<tr>
<th>2006</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A wealth of international expertise</strong> and scientific credibility to draw upon: Pemberton, Than, Richards, Januzzi</td>
<td><strong>Clinical trials conducted</strong> with Roche, Abbott, Thermofisher/BRAHMS and Critical Diagnostics</td>
</tr>
<tr>
<td><strong>$3m of grant funding</strong> and in-kind support has supported the development of a solid asset base</td>
<td><strong>Over 125 peer-reviewed publications</strong> over the last decade from within the Christchurch Heart Institute</td>
</tr>
<tr>
<td>Deep patent portfolio established with <strong>eight patent families</strong></td>
<td><strong>Upstream Medical Technologies spun-out of Christchurch Heart Institute 2015</strong></td>
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</table>
### A Clearly Defined Pathway Forward

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>Commercial Test</td>
</tr>
<tr>
<td>2017</td>
<td>First Clinical Trial</td>
</tr>
<tr>
<td>2018</td>
<td>Licence Deals</td>
</tr>
<tr>
<td>2019</td>
<td>Licence Deals</td>
</tr>
<tr>
<td>2020</td>
<td>Sustainable Growth</td>
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</tbody>
</table>

- **UARatio, GHRsp, EPOsp** sold as Research Use Only.
- **Feasibility study of EPOsp** for drug doping monitoring.
- **Investment of $3 million** supports development and clinical trial.
- **UARatio clinical trial commences.**
- **Autoimmune products sold in Europe.**
- **UARatio licensed.**
- **GHRsp 510K and CE marking applications complete.**
- **Clinical utility of GHRsp demonstrated following patient trial.**
- **Feasibility study with TnTuORF complete.**
- **Company transitions to profitability.**
- **GHRsp, TnTuORF licensed.**

**UARatio**

- Using monoclonal antibodies, the commercial format of the lead product, **UARatio**, is established.
Strategic Business Model
— Delivering Early Revenue Streams

Direct Sales
Research Use Only and Autoimmune Diagnostics (CE Marked)

Customers
Cardiovascular Research and Autoimmune Research & Diagnostics

Cash flow
Kit Sales, Monoclonal antibody sales

Advantage
Immediate worldwide access. Sets market trend with key opinion leaders. Access to regulated European market.

Out-Licensing

Licensee
International Diagnostic Firm

Cash flow
Upfront Payment License, Maintenance Fee & Royalties

Advantage
Provides significant funds supporting rapid company growth

Molecular Diagnostics Product Pipeline
supporting ongoing growth in direct sales and licensing
Deep Intellectual Property Platform

**Background**

8 patent families directed to human focused peptide-based diagnostic technologies.

Clinical indications include acute coronary syndromes (ACS) e.g. myocardial infarction, unstable angina, renal disease, glucose handling disorders (e.g. diabetes), pneumonia with the complication of heart failure and sports doping.

Extensive territorial patent coverage in key markets including Australia (AU), Canada (CA), China (CN), Europe (EP), India (IN), Japan (JP), New Zealand (NZ), Singapore (SG) and United States (US).
Agritech Sector

World food production must **double** by 2050

*Increasing crop productivity* to meet global needs for food

- transformational technology for agronomists and growers

47% of **food recall** is due to microbiological contamination

- microbial contamination detection

- industrial inspection for mission-critical assets
CropLogic

Jamie Cairns, Chief Executive Officer
Optimising Crop Yields with Remote Monitoring and Big Data Analytics

Transformational Technology for Agronomists and Growers
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CropLogic uses complex modelling and Internet of Things technologies to predict crop yield outcomes and support agronomic decision making.

Blue chip customers (e.g. McCain – world’s largest supplier of french fries).

Established presence in US
- Three years of trials
- Acquisition target secured

Initial target is the high-value potato crop. Corn, Cotton, Soybean, and Wheat to follow.

90% profit increase for potato growers achievable from 6.25% overall yield increase.

Technology validated through field trials in the US, China, Australia and New Zealand with global food brands such as PepsiCo (largest producers of potato chips in the world), Simplot, ConAgra, and McCain Foods.

Intellectual Property position secured through exclusive license of PCT Patent and through trade secrets gained through 3 decades of research.
What is the CropLogic System and how does it differ from current practices?

(agronomy + technology)

Agronomist meets with grower and installs probe

CropLogic system analyses data and proposes fertigation decisions based upon predicted yield outcomes

CropLogic system correlates proposed decisions with financial analysis

Recommendations provided to agronomist OR direct to grower

Internet of Things

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The technology
Not just a system of probes

User management inputs
Crop Model
Demand Predictions
Potential yield
Output

User weather inputs
Soil Model
Supply Predictions
Stress Responses
Management Schedule

User soil inputs

Transforming the agronomy industry

Patent US8671006
Data validation
Modelled outputs validate inputs

Validation increases data accuracy and greatly improves exception management
30 years of research and 5 years of trials

Over 65,000 acres of trials from 2011 with key food processing companies.

United States
504 field trials,
Lamb Weston
29 field trials,
Frito-Lay

China
18 field trials,
PepsiCo

New Zealand
124 field trials,
McCain Foods

Australia
2 field trials,
Simplot
At US$35 per acre this is a potential revenue of USD$1 billion per annum.

Why USA first?
- This is due to relationships and brand recognition from previous trials
- Relationships and brand recognition that has been developed through successful trials
- The marketability of uptake of the CropLogic system in this region to other regions.

29 million acres
USD $1 Billion Annually

1000 acres
or more
Target Farms
Irrigated cropping farms of 1,000 acres or more

60 million acres
USD $2 Billion Annually

Outside the U.S.
Approximately 60 million acres meet CropLogic’s Target Farm criteria.
At US$35 per acre this is a potential revenue of USD$2 billion per annum.

Size of addressable market likely to grow
With the cost efficiency and increased capability of the CropLogic system this market is likely to grow.

Chinese Market
China has more acres under irrigation than any other country;
CropLogic plans to target the Chinese market building on relationships developed from successful trials with PepsiCo in this country.
Transforming the agronomy industry

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Growers Direct

Acquisition of Agronomist Service Companies

Partnering with Major Crop Buyers

Organic Growth of Acquisitions Supplemented by Direct Hires

Growers Direct

Route to Market
CropLogic has good relationships with many of the major potato processors globally. These buyers like the CropLogic model for three reasons:

- **Reducing costs**
  Increasing globalisation of the food industry has put downward pressure upon food prices.

- **Supply-chain management**
  Global population growth and diet changes have increased demand for food.

- **Environmental pressures**
  Increasing awareness of the environmental impact of cropping and an increased consumer demand for processors to demonstrate sustainability in commodity inputs.

CropLogic will continue to build upon these existing relationships to build processor promotion and advocacy.
CropLogic Revenue

A Business to Business per-acre per-crop recurring subscription model

Without CropLogic

- Per Acre per annum revenue model
- Labour costs and travel time means margins are generally low

Phase 1

- ~$20 COST
- ~$5 MARGIN

Phase 2

- ~$10 PER ACRE PREDICTIVE SERVICES
- ~$12 MARGIN

With CropLogic

- CropLogic System greatly reduces labour and travel costs
- CropLogic Systems allows agronomists to provide a broader range of advice, meaning growers will be willing to pay more
- Revenue model is aligned with existing agronomist charging model

~$25-35 REVENUE
~$10 REVENUE
~$13 COST

~$12 MARGIN
Value for growers
Up to 90% increase in bottom line

<table>
<thead>
<tr>
<th>All figures in $USD</th>
<th>END VALUE TO GROWER</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Currently</td>
</tr>
<tr>
<td><strong>Revenue</strong></td>
<td>$3,045</td>
</tr>
<tr>
<td><strong>Operating Costs</strong></td>
<td></td>
</tr>
<tr>
<td>Seed</td>
<td>$331</td>
</tr>
<tr>
<td>Fertilizer and chemicals</td>
<td>$702</td>
</tr>
<tr>
<td>Water</td>
<td>$109</td>
</tr>
<tr>
<td>Custom Services</td>
<td>$94</td>
</tr>
<tr>
<td>CropLogic Services</td>
<td>–</td>
</tr>
<tr>
<td>Labor and other</td>
<td>$582</td>
</tr>
<tr>
<td>Ownership costs</td>
<td>$1,030</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$2,848</td>
</tr>
<tr>
<td><strong>Profit per acre</strong></td>
<td>$197</td>
</tr>
<tr>
<td><strong>BOTTOM LINE (for 1000 acres)</strong></td>
<td>$197,000</td>
</tr>
</tbody>
</table>
USA Strategic Acquisition

Provides immediate:

- Footprint in the largest USA potato-producing region
- Acres under management – currently approx. 100,000
- Growth opportunities
- Three-year payout period
- Wider access to the lucrative North American agricultural industry
- 50 years industry experience in the principals (remaining with the company)

- Binding Term Sheet signed November 2016
- Settlement May 2017
- Settlement fee on signing S&P
- And then pay-out over a three year period
- Non-Compete (restraint of trade) for 5 years.
Milestones for the next 12 months

01. Appoint broker: Done, Hunter Capital appointed April 2017

02. $2M pre-IPO raise: Done, April 2017

03. USA Acquisition: Done

04. IPO – planned listing Q3 2017

05. Australian/USA agronomy firm acquisition
For more information contact:

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+64 21 645 445

James Cooper-Jones
james.cooper-jones@croplogic.com
+61 419 978 062
Veritide

Ian Hunter, Chief Executive Officer
Shedding New Light on Food Safety
The Vision:
Veritide’s contamination detection technology and services will become the global, benchmark food safety standard for the meat and poultry processing and distribution industries.
# The Problem

- Low Detection Accuracy/Reliability/Speed
- High Consumer Health & Safety Risks
- High Product Recalls
- Low Wastage/Product Losses
- Lower Stakeholder Returns
- Higher Reputational Risk/Brand Damage

# The Veritide Solution

- High Detection Accuracy/Reliability/Speed
- Low Consumer Health & Safety Risks
- Low Product Recalls
- Low Wastage/Product Losses
- Higher Stakeholder Returns
- Low Reputational Risk/Brand Damage
## Veritide
- **At A Glance**

| Setting a new benchmark in microbial contamination detection for the global meat and poultry processing and distribution industries. |
| A proprietary screening technology platform that represents a quantum leap in performance versus current industry practices. |
| A large global market with powerful legislative, customer and consumer drivers. |
| High barriers to entry for future competitors. |
Veritide
— At A Glance

Value-added services in development to deliver loyal clients and recurring revenue streams.

A simple, globally scalable operating model that cascades value through to all stakeholders.

An engaged blue-chip client base in target markets.
**Investment Synopsis**  
— A Compelling Growth Story

**Investment for Growth**

— Substantial sales opportunities targeted across large meat and poultry supply chains.
— Significant Australasian, European and North American distribution channels to penetrate over the next three years.
— Company is positioned for a substantial share of a multi-billion dollar global market.

**Attractive Revenue and Profit Projections**

— Potential revenues of NZ$30 million by 2021 in target markets.
— EBITDA projection >40% by 2021.

$30m  
2021
The global food safety testing market is expected to **grow to US$15 billion p.a. by 2019.**

The current solutions for faecal detection in the meat and poultry processing sectors are substandard.
The Problem
— Food-borne Pathogens

48m Americans fall ill annually.

Total costs: US$55b p.a.

— 48 million Americans fall ill every year as a result of food-borne pathogens.
— US$55 billion: The total annual cost of medical treatment, lost productivity and illness-related morality due to food-borne pathogens.
— US$10–30 million: The typical cost of a food recall in the USA (excluding the reputational/brand damage).
The Problem
— Microbial Contamination of Meat

47% of recalls: microbial contamination.
96% rise in recalls.

— Faecal matter in meat is home to a variety of dangerous bacteria — key among them, E.Coli.
— In the USA alone, meat and poultry account for 85 recalls per annum.
— 47% of recalls are due to microbial contamination.
# Current Solution — Failing All Stakeholders

## Laboratory Methods
- E.g. Swabbing meat samples and testing for the presence of bacteria
  - X Expensive
  - X Time consuming
  - X Contaminated product shipped

## Visual Inspections
- E.g. Dedicated personal visually inspecting in the meat processing facility
  - X Prone to human error
  - X Misses micro-contamination
  - X Contaminated product shipped

## Intervention Methods
- E.g. Acid washes, water washes, steam treatments
  - X Expensive
  - X Energy intensive
  - X Negative environmental impact
Veritide Solution  
— A Quantum Leap in Contamination Detection

Shedding a new light on food safety

Veritide combines:

**Patented, bacterial spore detection technology**

+ 

**World-class expertise and know-how in precision optics, imaging and processing techniques**

Veritide’s patented technology is able to detect both visible and invisible faecal contamination throughout the meat and poultry supply chain.
Veritide — Cascading Value to the Whole Supply Chain

Meat Processors/Manufacturer

- Automated screening at line processing speeds
- Real-time results
- Reliable and accurate
- Environmentally superior
- Fewer recalls
- Increased shelf-life
- Higher stakeholder returns
- Lower reputational risk and/or brand damage
- Lower consumer health and safety risks

Meat Inspection Services
Quality assurance and services, regulatory agencies, customs authorities

Distribution Partners
Supermarkets/butcheries/fast food chains

Consumers
ANZCO (NZ meat processor) have leased a Conveyor Hot Spot Scanner for 2 years.

Meat and Livestock Australia have sponsored a study using 3 Hand-held Scanners to analyse over 20,000 carcasses at one site over the next three months.

AsureQuality (NZ meat inspection company) is creating a Customer Audit and Advisory business based around Veritide technology following on from recent purchases.

Veritide has secured broad industry/stakeholder engagement.
Recurring Revenues Driven Off A Solid Product Platform

Product Platform

Primary Developments
— Hand-held scanners
— Hot-spot scanners
— Carcass scanners

Secondary Developments
— Robotic contamination identification
— Robotic contamination removal

Revenue Opportunities
— Off-the-shelf unit sales or lease options
— Monthly pay-per-use fees (e.g. NZ$1.00/beef carcass or NZ$0.01/chicken)
— Annual license fees for proprietary software analytics
Veritide are experts in optical techniques for rapidly finding food contamination.

Since Veritide’s inception, protection of our intellectual property with patents has been recognised as extremely important. We have developed a strong patent portfolio in the areas of bacterial spore detection, bacteria detection and faeces detection. All our patents protect technology for rapid detection and we have more patentable material in our pipeline.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Patent</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacterial Spore Detection</td>
<td>NZ542230</td>
<td>Granted</td>
</tr>
<tr>
<td></td>
<td>US7622723</td>
<td>Granted</td>
</tr>
<tr>
<td></td>
<td>AU2006288014</td>
<td>Granted</td>
</tr>
<tr>
<td></td>
<td>GB2445488</td>
<td>Granted</td>
</tr>
<tr>
<td></td>
<td>US8711354</td>
<td>Granted</td>
</tr>
<tr>
<td></td>
<td>EP2263072</td>
<td>Pending</td>
</tr>
<tr>
<td>Real-time Optical Detection of Bacteria</td>
<td>NZ611285</td>
<td>Granted</td>
</tr>
<tr>
<td></td>
<td>AU201368102</td>
<td>Granted</td>
</tr>
<tr>
<td></td>
<td>CN2013800408620</td>
<td>Pending</td>
</tr>
<tr>
<td></td>
<td>GB1422129.5</td>
<td>Pending</td>
</tr>
<tr>
<td></td>
<td>US14/404788</td>
<td>Pending</td>
</tr>
<tr>
<td>Substance or Contamination of Detection</td>
<td>WO 2015137828 A1</td>
<td>PCT Filing</td>
</tr>
<tr>
<td>Glycated Protein Detection (Diabetes)</td>
<td>US13/407842</td>
<td>Granted</td>
</tr>
</tbody>
</table>
Invert Robotics

Neil Fletcher, Managing Director
The Vision:
Invert Robotics will become a leading global provider of industrial inspection services for mission critical assets.
INVERT ROBOTICS — AT A GLANCE

- 21st Century industrial inspections services
- Proprietary robotic technology platform
- Value add services and recurring revenue streams
- Blue chip client base
- Strong European growth and international expansion plans
# BUILDING SOLID FOUNDATIONS FOR GROWTH

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>New investment round, raised NZD$500k</td>
</tr>
<tr>
<td></td>
<td>Secured first customer trials with Fonterra and Westland dairy</td>
</tr>
<tr>
<td>2012</td>
<td>First full season of commercial dairy inspection services</td>
</tr>
<tr>
<td></td>
<td>Patented sliding suction pad drive for robot</td>
</tr>
<tr>
<td></td>
<td>James Robertson appointed inaugural CEO</td>
</tr>
<tr>
<td>2013</td>
<td>Initial investment by Powerhouse Ventures and NZVIF</td>
</tr>
<tr>
<td></td>
<td>First full season of commercial dairy inspection services</td>
</tr>
<tr>
<td></td>
<td>International product trials and demonstrations commence</td>
</tr>
<tr>
<td>2014</td>
<td>$400k investment raised</td>
</tr>
<tr>
<td></td>
<td>First large-scale inspection contract (60 vessels)</td>
</tr>
<tr>
<td>2015</td>
<td>Callaghan Innovation Loan awarded to commercialise ultrasonic sensor technology</td>
</tr>
<tr>
<td></td>
<td>$160k investment raised</td>
</tr>
<tr>
<td>2016</td>
<td>International Expansion programme launched</td>
</tr>
<tr>
<td></td>
<td>European Office and GM established</td>
</tr>
<tr>
<td></td>
<td>$1.8M capital invested</td>
</tr>
<tr>
<td>2017</td>
<td>Rapid European growth</td>
</tr>
<tr>
<td></td>
<td>First aviation inspection contracts signed</td>
</tr>
<tr>
<td></td>
<td>First steps to establishing North American market</td>
</tr>
<tr>
<td>2018</td>
<td>Targets</td>
</tr>
<tr>
<td></td>
<td>First steps to establishing Asia market</td>
</tr>
<tr>
<td></td>
<td>Aviation market growth</td>
</tr>
<tr>
<td></td>
<td>Open new verticals e.g. oil &amp; gas</td>
</tr>
</tbody>
</table>
### The incumbents

<table>
<thead>
<tr>
<th>High</th>
<th>Health &amp; Safety Risks</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Specialist personnel required</td>
<td>No</td>
</tr>
<tr>
<td>Low</td>
<td>Inspection Accuracy</td>
<td>High</td>
</tr>
<tr>
<td>High</td>
<td>Asset downtime</td>
<td>Low</td>
</tr>
<tr>
<td>High</td>
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<td>Low</td>
</tr>
<tr>
<td>No</td>
<td>Defendable market position</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>Data warehousing/asset management capability</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### The innovators
DISTILLING DOWN THE SCALE

The Global Testing, Inspection and Certification Industry
NZD$300 billion annually

The Global Dairy and Food Processing Inspections Market
NZD$250 million annually
150,000 tanks and dryers

Global Inspection Market by Region
Europe - $82M
Asia - $72M
Africa - $70M
Oceania - $12.5 M

2020 Revenue Target
NZD$16,000,000

The Global Dairy and Food Processing Inspections Market

Global Inspection Market by Region

2020 Revenue Target

For personal use only
Current inspection methods fail to deliver on current market drivers

- Health and Safety is at the top of corporate agendas in boardrooms globally. Reducing risk to human life is a key driver for all primary industries.
- Converging with this is the commercial need to efficiently and cost effectively maintain mission critical capital assets. Reduced asset downtime and lifecycle management are imperative.
- Increasing food safety regulations place growing demand on accurate inspection services.
Current inspection methods place people, products, brands and companies at risk.

- Competing techniques are dependent on people entering the tanks, often working from ropes or scaffolds who have to search on average for 5km to find a single crack.
- Often times the inspection equipment used causes additional damage to the asset and takes a long time to setup and tear down.
- Repairs are of poor quality, frequently failing within 12 months, or worse, potentially unnecessary, thereby reducing asset lifetime.
Delivering services to 5 of the top 6 global milk processors
The European region collectively represents the largest cow’s milk output in the world. Following closely behind this is the American and Asian markets.
A FOCUSED GEOGRAPHICAL AND SECTOR SPECIFIC GROWTH PLAN

The scale of the dairy and food processing sector alone is sufficiently large enough to drive substantial revenue and profit streams with modest market penetration objectives.

Oceania produces only 5% of the 816M tonnes of milk produced annually.
AN EXPANDING GLOBAL FOOTPRINT

OFFICES
OPERATING COUNTRIES
PURCHASE ORDERS
With further development of platforms and payloads Invert Robotics will unlock both new verticals and new applications within existing verticals

<table>
<thead>
<tr>
<th>Development</th>
<th>Leads to...</th>
<th>Application</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrasonic and Eddy Current Crack</td>
<td>Improved + automated crack testing of any tank</td>
<td>Applicable to all market segments</td>
<td>Ultrasonic development project in conjunction with Callaghan Innovation in progress</td>
</tr>
<tr>
<td>Detection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fault Data Analysis</td>
<td>Predictive modelling</td>
<td>Predictive maintenance and capital expenditure decision support</td>
<td>Future development</td>
</tr>
<tr>
<td>Carbon Steel Climbing Platform</td>
<td>Inspections of carbon steel tanks</td>
<td>Applicable in over 90% of industrial tanks worldwide</td>
<td>Initial lab-level proof of concept drive platform built</td>
</tr>
<tr>
<td>Convex Surface Capability</td>
<td>Inspection of exterior convex surfaces</td>
<td>Aeronautical</td>
<td>Initial demonstrations</td>
</tr>
<tr>
<td>Biofilm Detection System</td>
<td>Hygiene inspections</td>
<td>Applicable globally within food industries</td>
<td>Future development</td>
</tr>
</tbody>
</table>
With a powerful platform, Invert Robotics is positioned to rapidly adapt the core technology to new inspection markets.
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<td>Yes</td>
</tr>
</tbody>
</table>
DISTILLING DOWN THE SCALE

The Global Airline Maintenance Market
24,597 planes in the world
NZD$90 billion annually

The Global Scheduled Maintenance Market
NZD$15 billion on scheduled maintenance annually

Beachhead Market
C Check rudder inspections
NZD$245M per annum

2020 Revenue Target
2 major customers
NZD$3,000,000
In 2017 Invert Robotics launched an Aviation Development Programme

- Seeking 5 major MROs or airlines to participate in programme designed to quantify material and financial benefits of robotic inspection.
- Invert Robotics is concluding negotiations with the first two clients;
  - a top 5 global MRO
  - a large global airline
- These two clients C-check rudder inspections represent c. NZD$4 Million annual revenue.
A STRENGTHENING INTELLECTUAL PROPERTY POSITION

A patented sliding suction system is at the heart of our world-leading inspection technology

Ongoing development of new applications and new payloads strengthen this core intellectual property position.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Country</th>
<th>Appin No.</th>
<th>Grant No.</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sliding suction cups and their application in climbing robots</td>
<td>New Zealand</td>
<td>595509</td>
<td>595509</td>
<td>Granted. Next renewal due 01/10/2016</td>
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<tr>
<td>Sliding suction cups and their application in climbing robots</td>
<td>Australia</td>
<td>2012316878</td>
<td></td>
<td>Awaiting examination. Next renewal due 1/10/2016</td>
</tr>
<tr>
<td>Sliding suction cups and their application in climbing robots</td>
<td>Europe</td>
<td>12836922.0</td>
<td></td>
<td>Search report and patentability opinion issued - response approved and submitted</td>
</tr>
<tr>
<td>Sliding suction cups and their application in climbing robots</td>
<td>USA</td>
<td>14/348529</td>
<td></td>
<td>Under examination - response to examiner filed and awaiting further action from examiner</td>
</tr>
<tr>
<td>Ultrasonic crack testing of stainless steel and other materials</td>
<td>Global</td>
<td>PCT/IB2017/051587</td>
<td></td>
<td>PCT application filed, next step is individual country filing in January 2019</td>
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<tr>
<td>Use of lightweight climbing robots to perform NDT tasks on aircraft</td>
<td>Provisional Patent Application</td>
<td></td>
<td></td>
<td>Provisional to be filed by 25/5/2017</td>
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</tbody>
</table>
Closing remarks
A new asset class with an attractive risk/return profile

1. Strong links with university partners for high-quality deal flow
2. Proprietary approach to screening and shaping innovation for predictable success
3. A new model for investing, based on the largely untapped value of university IP
4. Successful and repeatable performance through a prescribed business growth methodology
5. An experienced team of innovation professionals
6. Opportunities for co-investment
The portfolio

<table>
<thead>
<tr>
<th>Medical &amp; Healthcare</th>
<th>Agritech &amp; Environmental</th>
<th>Digital &amp; ICT</th>
<th>Cleantech &amp; Engineering</th>
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<tbody>
<tr>
<td>AuramerBio</td>
<td>CertusBio</td>
<td>edpotential</td>
<td>ArcActive</td>
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<tr>
<td>avaalia immunotherapies</td>
<td>CROPLCIGIC</td>
<td>Fluent</td>
<td>Cirrus Materials Science</td>
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<tr>
<td>ferronova</td>
<td>Inhibit Coatings</td>
<td>MODLR</td>
<td>Hydroworks</td>
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<td>aspect</td>
<td>INVERT ROBOTICS</td>
<td>MOTIM</td>
<td>KOTI Technologies</td>
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<tr>
<td>mars</td>
<td>VERITIDE</td>
<td></td>
<td>Photonic Innovations</td>
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<tr>
<td>OBJECTIVE ACUTY</td>
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<td>SolarBright</td>
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<td>Tiromedical</td>
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<td>Syft Technologies</td>
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<td>UPSTREAM</td>
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</table>
Thank you

Contact details:

Stephen Hampson
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+64 27 227 9854
stephen.hampson@powerhouse-ventures.co.nz

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