

Bluechiip Ltd

Annual General Meeting: Managing Directors Report

October 2015



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Corporate



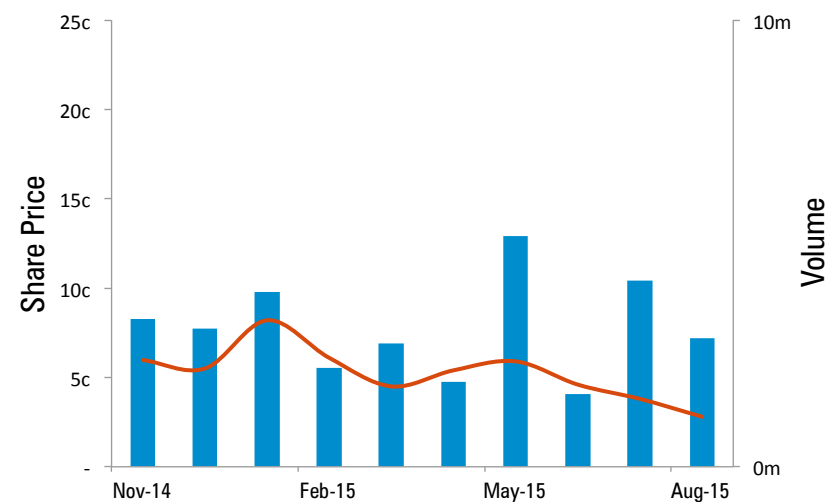


Corporate overview

Shareholders

Dr. Stephen Woodford	10.2%
Chairman & Entities	5.6%
Top 20 Shareholders	44.95%
Founder	2.5%

Share Price



Summary

ASX Code	BCT	Market Cap.	\$5.0m
Share Price (19 Oct '15)	3.0c	Net Cash (30 June '15)	\$0.74m
Shares on Issue	167,508,269	Enterprise Value	\$4.3m



Our Team

Board

Iain Kirkwood

Chairman

Experienced investor and non-executive director (listed and unlisted). Iain has considerable practical and operational experience gained from a successful financial career spanning 35 years including in resources, manufacturing and latterly healthcare in Australia, Britain and the USA. Iain has been a major shareholder in Bluechiip for over 5 years.

Andrew McLellan

Managing Director

Experienced in innovation and commercialisation combined with significant technical and operational background. Andrew has held senior positions including as VP of Business Development in North America and Director at Leica Microsystems (previously Vision BioSystems a division of the publicly listed Vision Systems), and as CEO of the Advanced Manufacturing Co-operative Research Center (AMCRC)

Matthew Morgan

Non-executive Director

Principal of Millers Point Company, a firm which provides strategic and transactional advice to emerging companies. Matt is a former venture capitalist at QIC an institutional fund manager. He is an experienced executive in private equity funded portfolio companies with specific experience in corporate turnarounds.

Michael Ohanessian

Non-executive Director

CEO and Managing Director of Praemium Ltd, Michael brings executive experience in technology-related businesses. Previously CEO of Vision BioSystems Michael led the technology commercialisation into global markets before its parent Vision Systems was acquired by US based Danaher Corp. Michael brings a mixture of operational, strategic and leadership capabilities to his role at Bluechiip.

Team

Scott Turner

Engineering Manager

Dr Ian Johnston

Product Engineering Manager, MEMS (EU)

Irvin Teoh

Finance Manager

David White

Business Development North America (US)



Our Mission |

To be a leading global player in secure wireless tracking for extreme environments.





Bluechiip

Sample tracking for extreme environments
using MEMS sensors

The Company

- Founded in 2003
- Listed on Australian Securities Exchange (ASX) in 2011
- Head office in Melbourne, Australia
- Distributors in Nth America, Europe, China, Hong Kong, Japan, Taiwan, Sth Korea, Malaysia, Sth America and Australia
- Key manufacturing partners in Europe, UK and Malaysia.
- Strong IP portfolio – 18 patents in 7 families

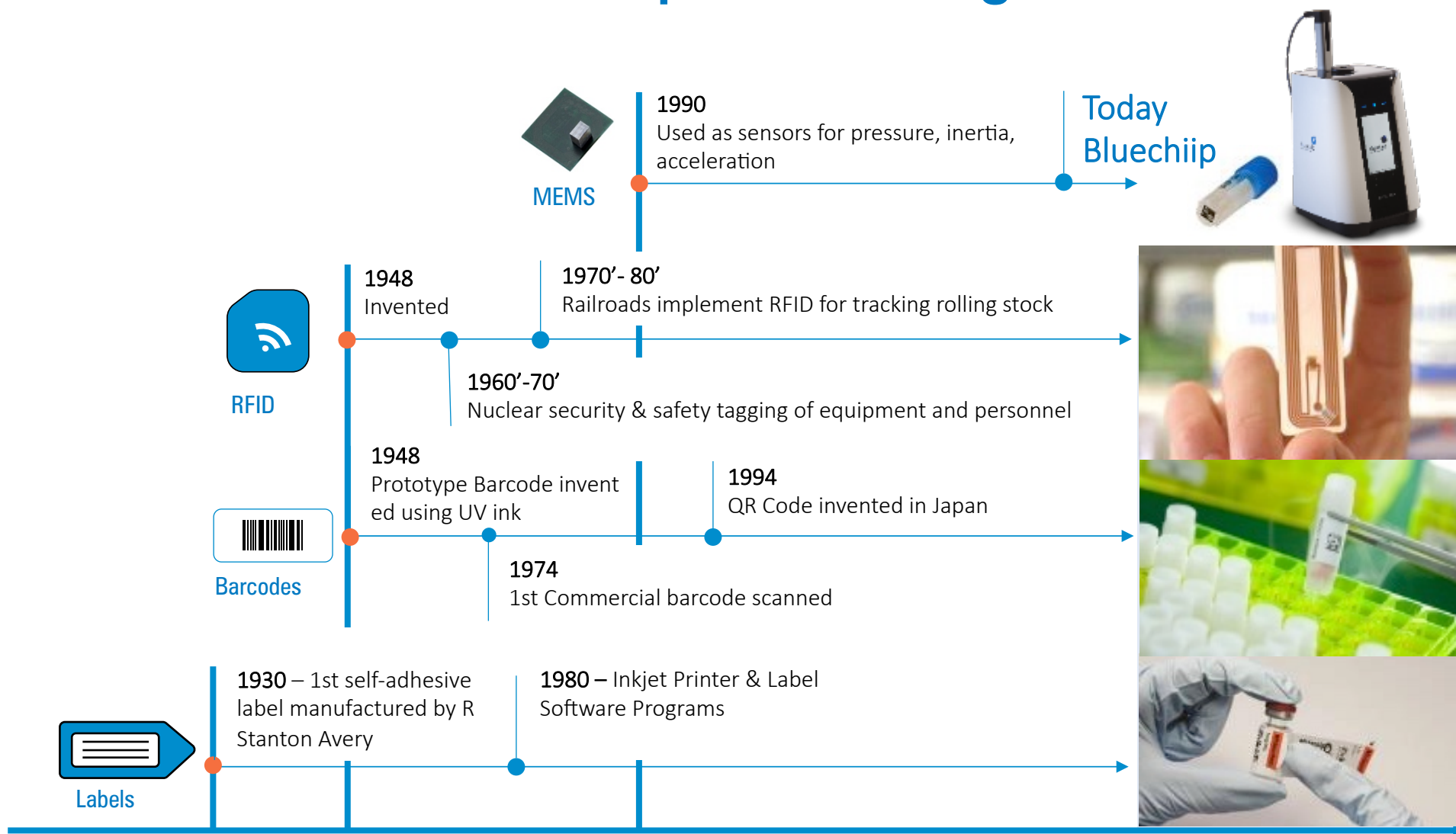
Our Product : Chip + Reader + Software

- Unique differentiated technology to labels, barcodes and RFID
- Operates reliably down to -196°C
- Instant sample temperature sensing
- Gamma resistant
- Reduced human error
- Increased productivity
- Extremely difficult to clone
- Applications in niche markets eg cryogenic storage and Biobanking





The evolution of sample tracking





Core Technology | Chiip

MEMS smart Chiip

Micro-Electro Mechanical Systems (MEMS) is a manufacturing technology used to make micro devices with features less than the width of a human hair

MEMS chips are superior to RFID in harsh environments

Most RFID tags use integrated circuit (IC) technology with electrical components sensitive to damage by temperature extremes and gamma radiation. MEMS devices contains micromechanical components that are rugged and able to withstand exposure to wide temperature ranges and gamma radiation.

Tag Property	Results
Temperature Range	Operating Temperature without encapsulation : -196°C to 60°C Storage Temperature without encapsulation: -196°C to 150°C
Gamma Radiation	Tags from all development and pre-production lots have been tested, with no change in performance. One lot was exposed to 500kGy (11 times medical requirements), with no change.
Cryogenic Cycling	Sample tags from all lots are accelerated life tested by being cycled up to 200 times from LN2 to room temperature. The tags are still operational after this process.
Reading/Scanning	Tags have been continuously read over one million times, with no change in performance.
Cryogenic Storage	Tags from different lots have been stored at Bluechiip for over 500 days in LN2, and tags are still operational when read at LN2 and room temperatures during this period.
Injection Molding	Bluechiip has carried numerous tests of direct over mould of the Bluechiip's tag using polypropylene and other plastics.
Microwave, Frost and Drop Testing	Through the trials described in this section, the Bluechiip tag survives microwave and drops.
High security/Anti counterfeiting	Each bluechiip tags ID is mechanically encoded during manufacture making it extremely difficult to clone or corrupt





Core technology | Reader

Chain of Custody Device

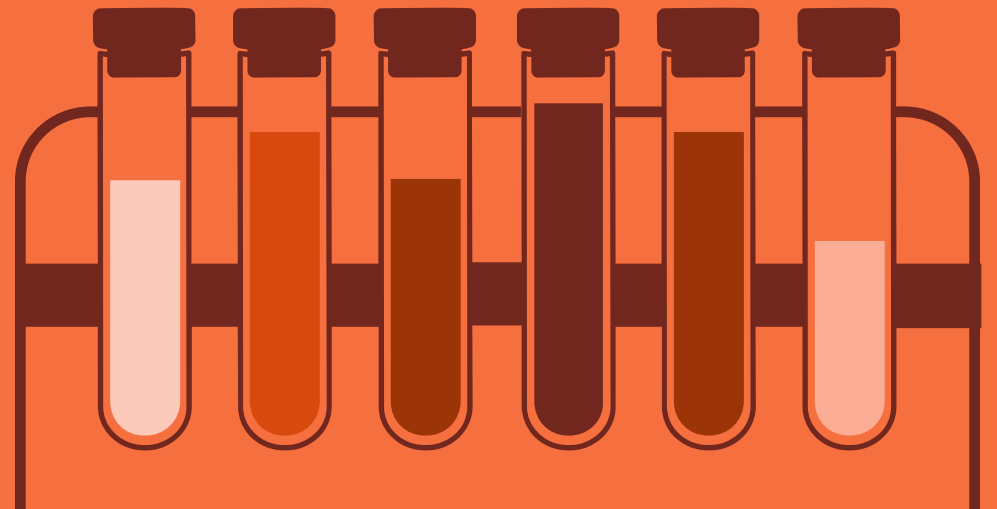
The Matchbox™ reader is the point to read the bluechiip® cryovial and CryoTag™ to track and record the identification and temperature to the individual sample level. The Matchbox™ Reader is able to read both vials and bluechiip® smart chiip enabled racks, cassettes, towers and tanks without interrupting the thermal stability of the biosample and its environment.

The Matchbox™ Reader comprises a web server together with a database that matches the bluechiip® smart chiip against pre-recorded data related to the individual biosample. The Matchbox™ Reader provides a graphical interface on the front of the unit that allows the Stream™ Software to deliver benchmark levels of consistency, reliability, efficacy and robustness to ensure quality and viability of biosamples from the time of collection to disposal or dispatch.





Primary Market Biobanking





Biobank tracking technology is not keeping up with the increasing value of biosamples



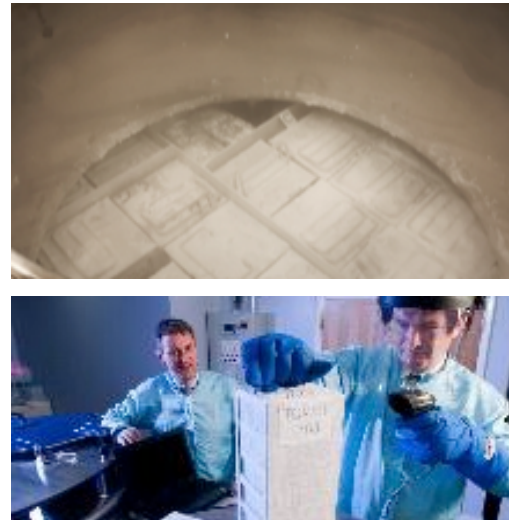
Tissue

Pharma

IVF

Clinical Trials

StemCell





Biobanking today

300+ million biosamples per annum, 2+ billion in storage



High volume
processing



Dual
labelling



Emerging guidelines
(ISBER, CAP etc)
including temperature



Increasing demand for
Cryogenic storage

Current Issues

Current Biobank Process

Bluechip Solutions

Not Gamma
Resistant



Not reliable in
Cryo temps



Poor readability in frost.
Labels unreliable



No temperature
tracking so sample risk



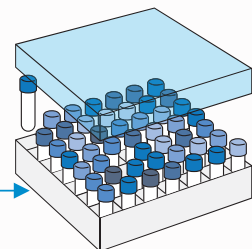
Human error



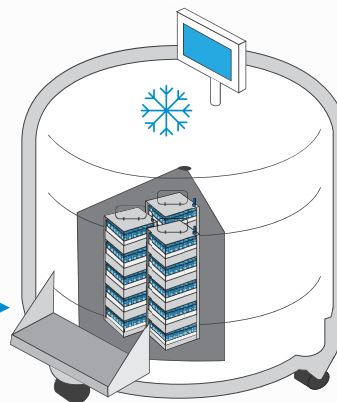
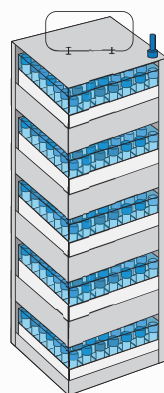
Inefficient



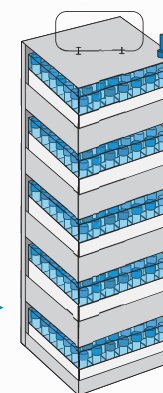
Vial



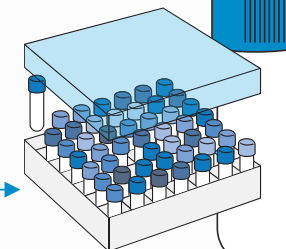
Vial box



Cryo tank



Transport dewar



Vial & box



Gamma Resistant
Immune to gamma
irradiation
(used for sterilisation)



Cryo safe
Survives extreme
temps



Non visual ID
Reads through frost



On-board sensor
Temperature sensing
































**Reduced human
error**



**Productivity
improvements**



Alternative technologies

		LABELS	BARCODES	RFID	BLUECHIP
	Gamma Resistant				
	Cryo safe Survives extreme temps				
	Non visual ID Reads through frost				
	On-board sensor Temperature sensing				
	Reduced human error				
	Productivity improvements				



Our Success

MonashHealth

BluBioBank®
保莱生物银行

THE
FLOREY


Taylor-Wharton
Since 1742

 **The WESLEY
RESEARCH INSTITUTE**
Making a difference today

 **LabCorp**
Laboratory Corporation of America

 **Flinders
UNIVERSITY**

 **Biorep®**
Technologies

 **Cell Care**

 **SOBC**
OUTDO BIOTECH

**Australian
Synchrotron** 


ATCC®

PETER MAC CASE STUDY:


Cancer Foundation

METHOD

Bluechiip tracking devices were attached to five cryocyte cryopreservation bags.

All bags were transferred to a cryogenic storage tank. Each bag underwent five consecutive freeze-thaw steps.

RESULTS

All bags were successfully identified without the need to manually lift and visually check the patient identification label.

The Bluechiip tracking technology provided localised temperature information during the retrieval process.

Faster and more consistent search times compared to manual methods.

Bags were maintained in more ideal, less disrupted conditions compared to manual methods.



Infrastructure and Focus



Component
Suppliers

PLEXUS



EUROPLAZ[™]
Medical Device Manufacturing



Global
Distributors



O.E.M Partner
Pipeline

IVF

Regenerative
Medicine

Biobanking

Protein
Crystallography

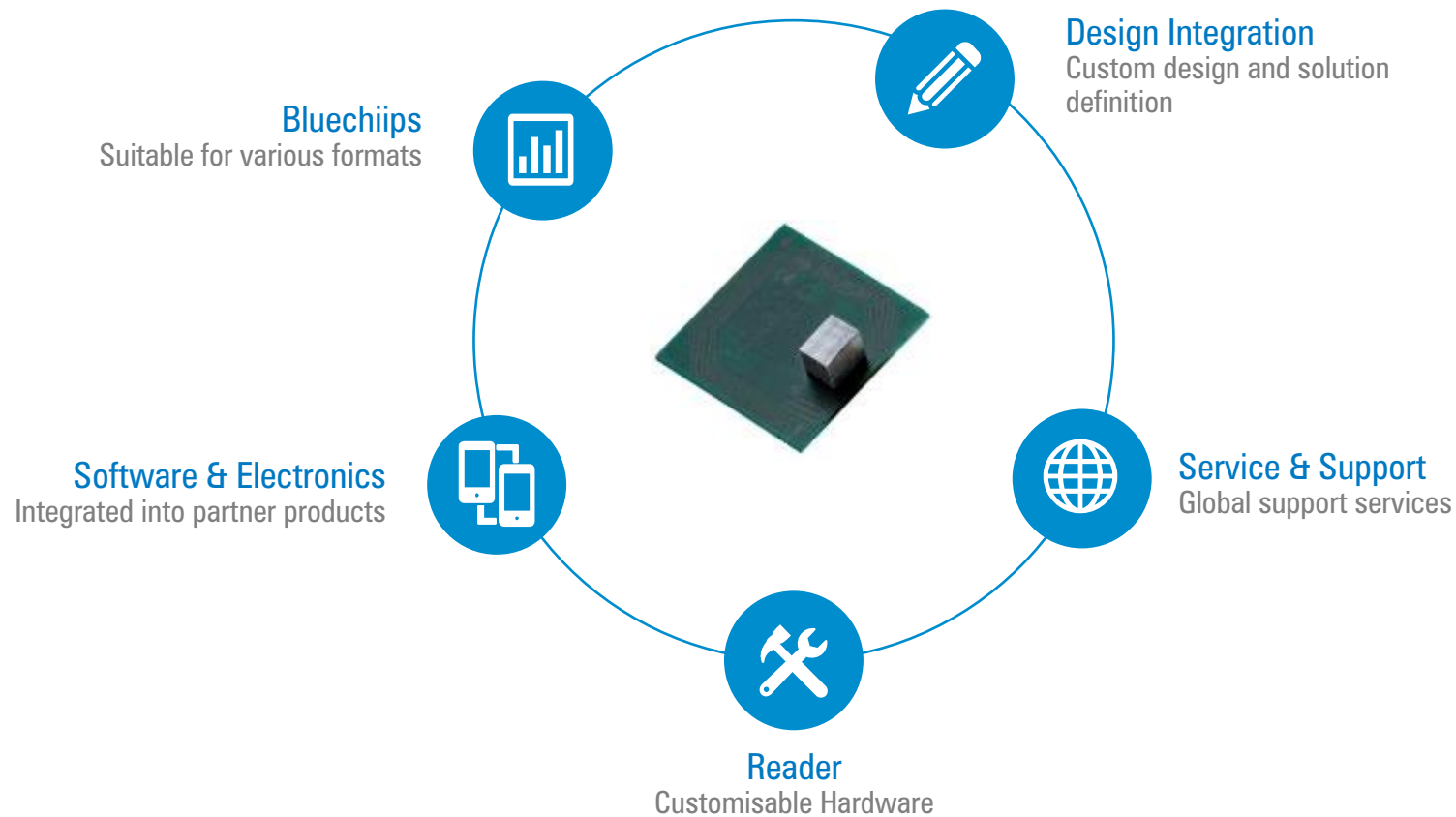


Strategy, Opportunity, Pipeline & Execution





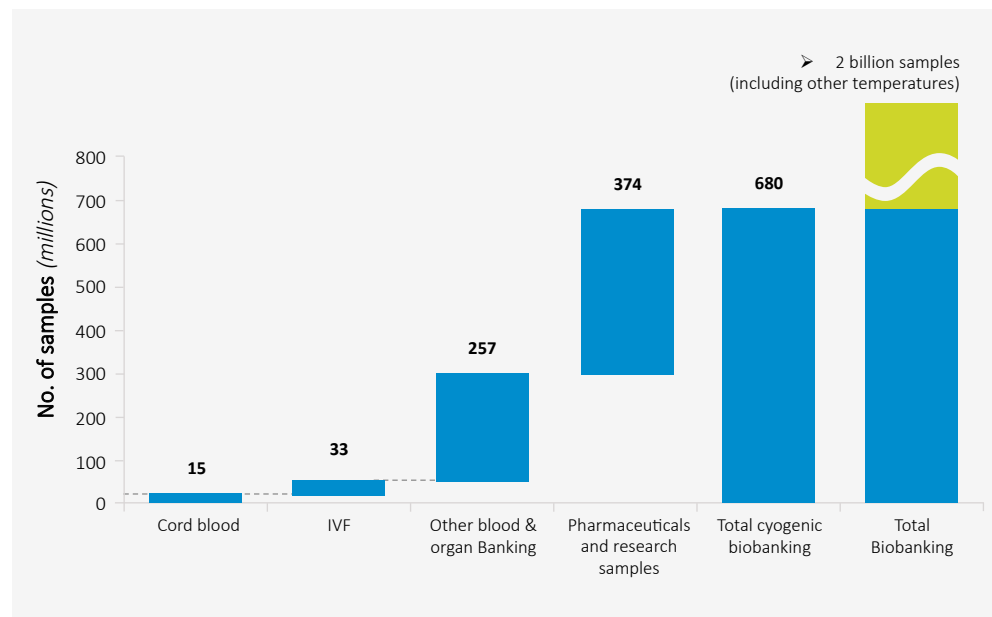
Embedded solutions for OEM partners





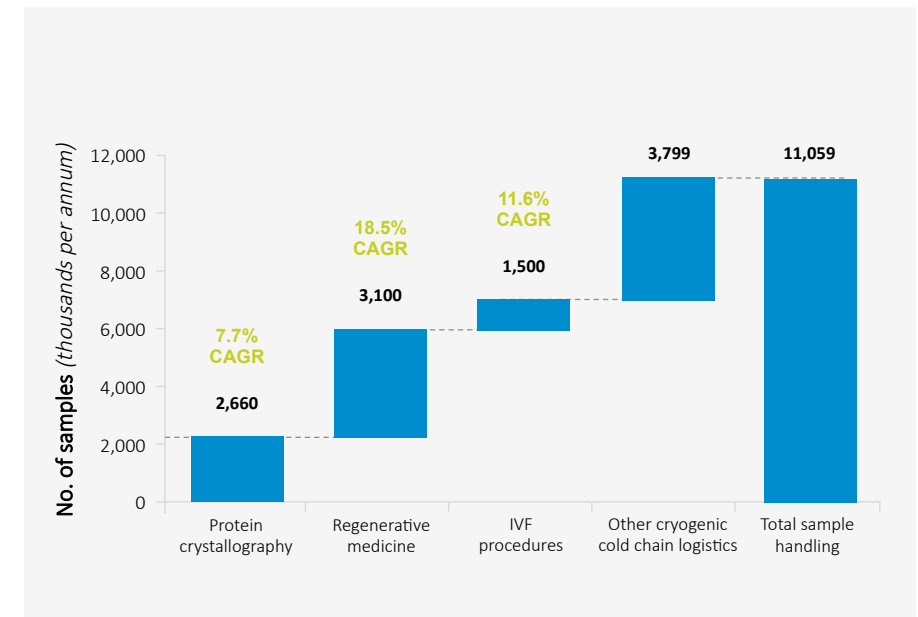
Primary Market Opportunity

Cryogenic biobanking
680 million samples



Cryogenic biobanking is a segment of the biobanking market which stores samples at cryogenic temperatures (-196°C) for extended periods. The market is dominated by human samples for biomedical applications.

Sample supply, transport & handling
11.1 million samples/annum



Cryogenic sample supply, transport & handling refers to the transport of samples from long term storage facilities to application sites as well as short-term storage and manipulation of samples at cryogenic temperatures (e.g. personalised medicine and protein crystallography)



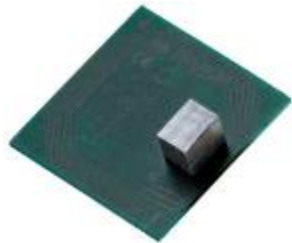
Primary Market Pipeline

	Protein Crystallography	Regenerative Medicine	IVF	General Biobanking
Bluechiip Opportunity	Tracking of samples in protein crystallography (Visualisation of protein structures at atomic level, ie Synchrotrons)	Tracking of cells and bioengineered materials to repair or replace human tissue and organs	Tracking of eggs and sperm used and stored for In-vitro fertilisation	Tracking of samples for tissue, organ, serums and genetic materials
Bluechiip Progress	Executed development agreement (Sept 2015) Existing customers Global distributor	Multiple evaluation agreements & developer kits Existing customers Global distribution network	OEM Agreement in review	Multiple evaluation agreements & developer kits Biobank customers Global distribution network
Bluechiip Opportunity Size	>100 readers >2,500,000 chips	>1000 readers >3,000,000 chips/yr >15,000,000 storage	>1000 readers >1,500,000 chips/yr	>1000 readers >7,500,000 chips/yr >2 billion in storage
Execution Timeframe	Reading system customisation for specific applications 3-6 mths	Multi vial reader, handheld reader and access to storage market with buttons 6-12 mths	Agreement execution and development 6-12 mths	Multi vial reader, handheld reader and access to storage market with buttons 6-12 mths



Existing Bluechip Product Range

CHIIP Applications



Tag



Cryopin



CryoVial



Cryotag



Cryocassette



Towers

Match Box Reader



Matchbox Reader



Cryopin Readerhead



New Products

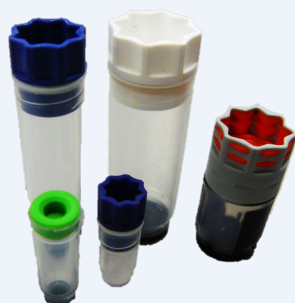
CHIIP Applications



Bluechiip Buttons – for retrofit in existing samples and multivendor cryovials



OEM Bluechiiped Blood bags – for blood products market in development



OEM Bluechiiped Vials – for partner range in development

Reader Systems



Hand Held Reader – for mobile applications



Multi Vials Reader – for high volume biobanks



Other addressable markets



Cold Chain Logistic Pharmaceuticals

Item level **temperature tracking** of pharmaceuticals through-out the cold chain cycle.



Cold Chain Logistics Food

Item level **temperature tracking** of frozen and temperature sensitive food stuffs through-out the cold chain cycle.



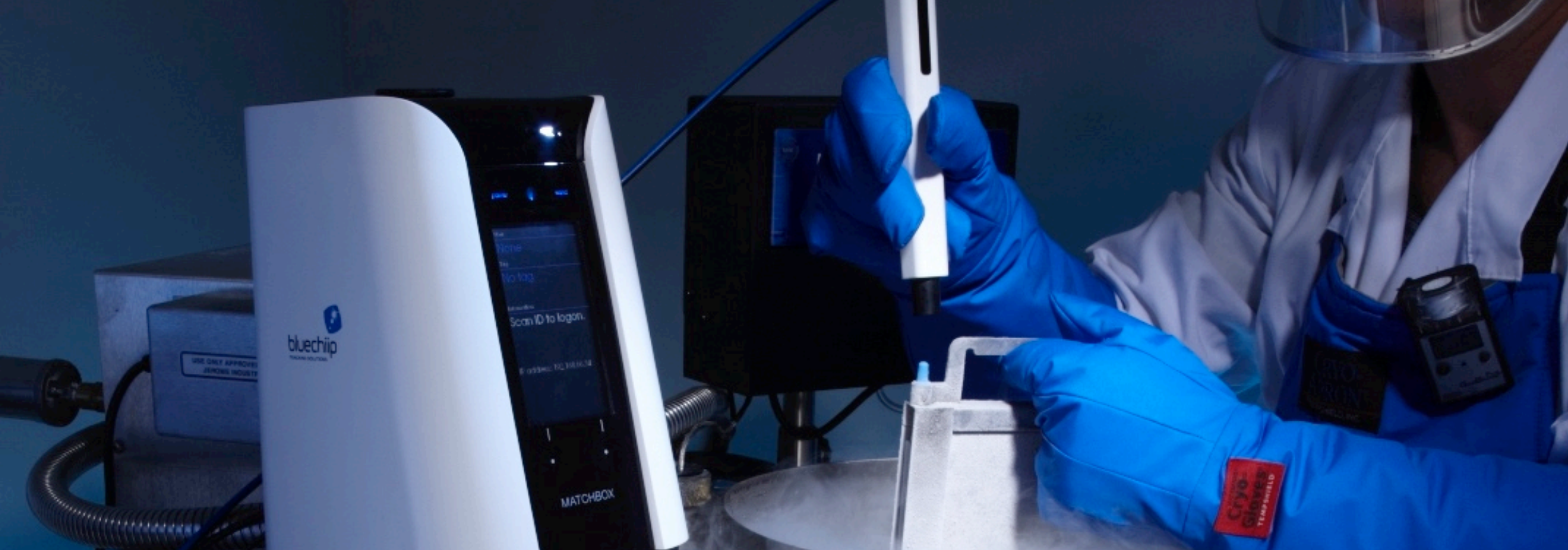
Industrial and Manufacturing

High **temperature tracking**, structural health monitoring, tracking of tools and parts that are exposed to ionizing radiation or **gamma radiation** including sterilised medical devices, disposables and some food products.



Security & Defence

Anti counterfeiting fashion, food and high value commercial items. Cloning a bluechiip® tag is extremely difficult. tracking of tools and parts that are exposed to **ionizing radiation**, security and defense.



Bluechiip

Andrew McLellan

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