Bluechiip Ltd

BCT.AX

A research platform of MST Financial

4 April 2023

Initiation of Coverage – Prime Position

NEED TO KNOW

- Unique offering of monitoring by each item/sample
- Targeting high value pharma biological therapies
- Markets are large and growing

Unique offering - Bluechiip (BCT.AX) has developed a novel microchip for monitoring/tracking items/samples stored/transported in -196°C to +100°C temperatures. It uniquely tracks each unit item or sample.

First target is pharmaceuticals - It offers application in many industries. Its first market, the pharmaceutical sector offers high growth/healthy margins. Other industry applications include industrial manufacturing and Security/Defence tracking tools, parts exposed to radiation and cold chain food logistics.

Investment Thesis

Strong industry growth outlook - Cell therapies, alone, are expected to grow from ~US$7.8b market in 2019 to ~US$48.2b by 2027[1].

Competitive advantage - BCT's Bluechiip® uniquely monitors each individual item, which compares to its competitors who are limited to monitoring by cryo-storage box and other larger receptacles holding multiple items. BCT's key competitive advantage is important to both regulators and customers.

New marketing strategy to drive sales growth/expand margin - BCT's new marketing strategy expands its current Original Equipment Manufacturer (OEM) model to include a direct marketing role. The aim is to actively drive sales growth in the smaller–mid sized customers. The model allows for higher margins and reduces its current single key customer risk.

Valuation

MST's Discounted Cash Flow (DCF) 12-month valuation of BCT is $0.06 per share (currently $0.03ps). MST assumes that BCT's new marketing model will see the company Free Cashflow Flow positive and profitability (NPAT) from 1HFY26 onwards.

Risks

MST's valuation is subject to upside/downside risks including market penetration, sector growth, competitor behaviour, regulatory change and new direct sales strategy. BCT may fail to gain market traction. BCT's key target market is the US. As the largest market it creates competitive tension. The industry regulatory environment may change, bringing upside and downside risk. BCT's Bluechiip® may create interest from competitors and corporates seeking a point of differentiation in the company.

Cash at H1FY23 was reported as A$575k. Further capital will be needed. MST valuation assumes a capital raising of A$5m to provide funding to early signs of its new marketing strategy.

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Biotechnology & Plasma Products

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Bluechiip® provides advanced tracking and monitoring solutions for the management of biological samples across a wide range of applications. Based on a unique patented technology, the MEMS-based wireless tracking contains no electronics. It represents a generational change from current tracking methods such as labels (handwritten and pre-printed), barcodes (linear and 2D), and Radio Frequency Identification. Growth of cell based and other therapies in healthcare present BCT with significant opportunity.

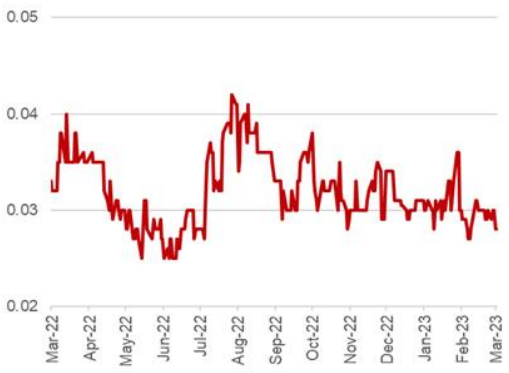
https://www.bluechiip.com/

Valuation	**A$0.06ps**
Current price	**A$0.03ps**
Market cap	**A$17m**
Cash on hand	**A$0.6m (H1FY23 end)**

Upcoming Catalysts and Newsflow

Period	
FY23	Executing supply agreement with Fuji
FY23/FY24	New direct sales customer purchase orders
FY23/FY24	Expansion of sales force

Share Price (A$)



Source: FactSet, MST Access

1. Ravi et al. (2020). Cell Therapy Market by Cell Type (Stem Cell and Non-Stem Cell), Therapy Type (Autologous and Allogenic), Therapeutic Area (Malignancies, Musculoskeletal Disorders, Autoimmune Disorders, Dermatology, and Others), and End User (Hospitals & Clinics and Academic & Research Institutes): Global Opportunity Analysis and Industry Forecast, 2020-2027

Figure 1: Financial Summary

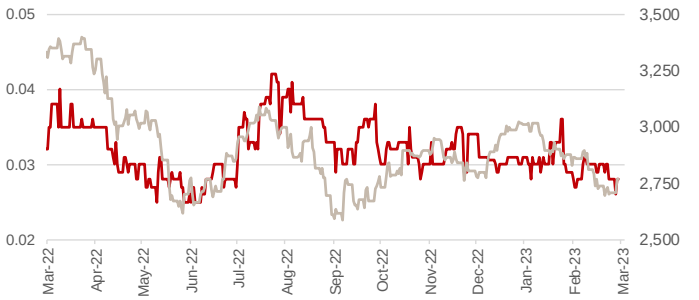
BlueChiip **BCT-AU**

Year end 30 June

MARKET DATA

Share Price	**A$**	**0.03**
52 week high / low	A$	0.02 -0.05
Valuation (12 month forward)	**A$**	**0.06**
Market capitalisation	**A$m**	**17**
Shares on issue	m	599
Options	m	-
Other equity	m	-
Potential shares on issue (diluted)	m	599

12 month performance relative to ASX Small Ords



INVESTMENT FUNDAMENTALS		FY21	FY22	FY23E	FY24E
EPS Reported (undiluted)	¢	(0.5)	(0.5)	(0.6)	(0.5)
EPS Underlying (undiluted)	**¢**	**(0.5)**	**(0.5)**	**(0.6)**	**(0.5)**
Underlying EPS growth	%	n/m	n/m	n/m	n/m
P/E Reported (undiluted)	**x**	**n/m**	**n/m**	**n/m**	**n/m**
P/E at Valuation	x	n/m	n/m	n/m	n/m
Dividend	**¢**	**-**	**-**	**-**	**-**
Payout ratio	%	0%	0%	0%	0%
Yield	**%**	**-**	**-**	**-**	**-**

PROFIT AND LOSS (A$m)		FY21	FY22	FY23E	FY24E
Revenue & Other Income	$m	1.8	1.7	2.3	2.7
Expenses	$m	(5.0)	(4.8)	(6.2)	(7.1)
EBITDA	**$m**	**(3.3)**	**(3.1)**	**(3.9)**	**(4.4)**
Depreciation & amortisation	$m	(0.0)	(0.0)	(0.0)	(0.0)
EBIT	**$m**	**(3.3)**	**(3.1)**	**(3.9)**	**(4.4)**
Interest	$m	0.0	0.0	0.0	0.1
Tax	$m	-	-	-	-
Underlying NPAT	**$m**	**(3.2)**	**(3.1)**	**(3.9)**	**(4.3)**

KEY RATIOS (A$)		FY21	FY22	FY23E	FY24E
Forecast year end shares	m	594	598	799	799
Market cap (Y/E / Spot)	**$m**	**16.6**	**16.7**	**22.4**	**22.4**
Net debt /(cash)	$m	(4.8)	(0.9)	(1.9)	0.1
Enterprise value	**$m**	**11.8**	**15.9**	**20.4**	**22.5**
EV/Sales	x	6.7	9.1	8.7	8.4
EV/EBITDA	**x**	**n/m**	**n/m**	**n/m**	**n/m**
EV/EBIT	x	n/m	n/m	n/m	n/m
Net debt / Enterprise Value	x	n/m	n/m	n/m	n/m
Gearing (net debt / EBITDA)	**x**	**1.5**	**0.3**	**0.5**	**(0.0)**
Operating cash flow per share	$	(0.0)	(0.0)	(0.0)	(0.0)
Price to operating cash flow	**x**	**n/m**	**n/m**	**n/m**	**n/m**
Free cash flow	**$m**	**(2.0)**	**(3.2)**	**(4.0)**	**(2.1)**
Free cash flow per share	$	n/m	n/m	n/m	n/m
Price to free cash flow	**x**	**n/m**	**n/m**	**n/m**	**n/m**
Free cash flow yield	**%**	**n/m**	**n/m**	**n/m**	**n/m**
Book value / share	$	0.01	0.01	0.01	0.00
Price to book (NAV)	**x**	**2.4**	**3.8**	**3.9**	**16.4**
NTA / share	$	0.01	0.01	0.01	0.00
Price to NTA	**x**	**2.4**	**3.8**	**3.9**	**16.4**
EBITDA margin	%	n/m	n/m	n/m	n/m
ROE (Average Equity)	%	n/m	n/m	n/m	n/m
ROA (EBIT)	%	n/m	n/m	n/m	n/m
Interest cover (EBIT / net interest)	x	n/m	n/m	n/m	n/m

BALANCE SHEET (A$m)		FY21	FY22	FY23E	FY24E
Cash	$m	5.9	2.8	3.8	1.7
Term deposit	$m	-	-	-	-
Receivables	$m	1.1	1.1	1.3	1.5
Inventory	$m	1.6	3.0	3.2	1.1
PPE	$m	0.0	0.0	0.0	0.0
Intangibles	$m	-	-	-	-
Other	$m	0.2	0.1	0.1	0.1
Total Assets	**$m**	**8.8**	**7.0**	**8.5**	**4.5**
Payables	$m	0.4	0.4	0.6	1.0
Deferred revenue	$m	1.1	1.9	1.9	1.9
Employee benefits	$m	0.2	0.3	0.3	0.3
Total Liabilities	**$m**	**1.8**	**2.6**	**2.8**	**3.2**
Shareholder's Equity	**$m**	**7.1**	**4.4**	**5.7**	**1.4**

CASH FLOW (A$m)		FY21	FY22	FY23E	FY24E
Receipts from customers	$m	1.2	0.6	1.5	1.7
Payments to suppliers and employees	$m	(5.4)	(4.9)	(6.2)	(7.1)
Other (R&D)	$m	1.7	0.8	1.0	1.0
WC	$m	0.4	0.3	(0.3)	2.2
Interest	$m	0.0	0.0	0.0	0.1
Operating cash flow	**$m**	**(2.0)**	**(3.2)**	**(4.0)**	**(2.1)**
Capex	$m	-	-	-	-
Acquisitions	$m	-	-	-	-
Other	$m	-	-	-	-
Investing cash flow	**$m**	**-**	**-**	**-**	**-**
Borrowings	$m	-	-	-	-
Equity	$m	-	-	5.0	-
Dividend	$m	-	-	-	-
Financing cash flow	**$m**	**-**	**-**	**5.0**	**-**
Change in Cash / FX	$m	(2.0)	(3.2)	1.0	(2.1)
Year end cash	**$m**	**5.9**	**2.8**	**3.8**	**1.7**

Source: MST Access, FactSet, Company Reports

Investment Thesis - Leveraging BCT's unique technology in a changing market

BCT's initial target market is the pharmaceutical industry, providing its unique tracking system for cryogenically (~-196°C) stored biological samples. The investment thesis recognises:

1. BCT's strategy to leverage its technology in a changing industry

Evolving industry demands higher standards

BCT's superior monitoring and tracking capabilities can uniquely help the industry meet emerging guidelines.

From a regulatory stance, the growth of the biological therapies brings higher risk and as such a demand for greater scrutiny. **Regulatory oversight is growing with increasing compliance requirements for provenance of the samples and the need for storage conditions to be documented.** Documentation including identification, type of sample/specimen, associated diseases and/or therapeutic protocols, environmental information are becoming accepted practice.

Recent recommendations from industry bodies include:

- The International Society for Biological and Environmental Repositories (ISBER) Best Practices recommends either evidence-based or consensus-based practices for collection, long-term storage, retrieval and distribution of specimens.
- ISBER Best Practices recommend that freeze/thaw cycles of samples should be kept to a minimum.
- College of American Pathologists Guidelines highlight the importance of monitoring temperature and any fluctuations.

Bluechiip® uniquely meets emerging industry trends

Bluechiip® offers unique advantage of tracking each individual sample.

BCT meets the need for more formalised, automated systems to manage the growing sample collections. Its novel microchip, Bluechiip® monitors/tracks items that require storage and/or transportation in temperatures ranging -196°C to +100°C temperatures. **It is the only system that can provide data including temperature monitoring to the individual sample level**. In addition, its 'Advanced Solution System' offers data management programs and as such provides its clients with efficiencies and cost benefits. It compares to an industry that has a heavy reliance on hand-written labels or monitoring by cryoboxes or and other larger storage vessels of multiple specimens.

2. Target sectors offer strong growth

BCT's initial target markets within the pharmaceutical sector, are Vitro Fertilisation (IVF) and stem cell and regenerative medicine therapies. From a commercial perspective, the sector offers high value and margins with strong growth trends. Currently, billions of biological samples, including human/ animal cells, bacteria, viruses, serum/plasma and DNA/RNA, are in storage for potential application in research, diagnostics and treatments. In addition, public (government) and private non-profit organizations are pursuing nation-wide or international programs for biobanking of specimens. Advances in cell and gene-based therapeutics, blood-based products, vaccines and medical services such as IVF also offer strong growth. Emerging therapies such as genomics and personalised medicine bring further growth. **The potential for storage of up to 30 years compounds the demand for storage.**

Other applications of its technology include industrial manufacturing and Security and Defence services in high temperatures where tools/parts are exposed to gamma/ionising radiation. Cold chain food logistics also present as a growing opportunity.

3. New direct sales model

MST's valuation also recognises BCT's new marketing strategy. Its dispute with Labcon, its largest OEM partner in 2020 highlighted its exposure to a 'single large customer risk'. To mitigate the risk and take advantage of its experience in the market, BCT is expanding its inhouse sales/marketing team. The strategy aims to grow market coverage and realise higher margins over time.

The BCT technology

BCT has developed a Micro Electronic Mechanical Systems (MEMS) microchip, a system that combines mechanical and electrical components. The structure includes different lengths of beams which resonate at different frequencies allowing for billions of unique ID combinations.

MEMS microchip Bluechiip® allows for billions of unique IDs.

The technology offers a number of advantages:

- The structure provides high reliability and robustness.
- It can provide the temperature of the sample while it is in the cold environment without the biosample being handled or removed and therefore subject to the risk of repeated partial thawing.
- The Bluechiip® microchip can undergo sterilisation processes including gamma radiation, autoclaving and ultracold sterilisation.
- It offers function across an extreme temperature range (-196°C to +200°C). It has advantage over monitoring systems such as Radio Frequency Identification (RFID) which generally only operates from -40°C to +200°C.
- Bluechiip®'s Quality Management system is ISO9001 certified. Bluechiip® Enabled products are approved with a European notified body and FDA registered.

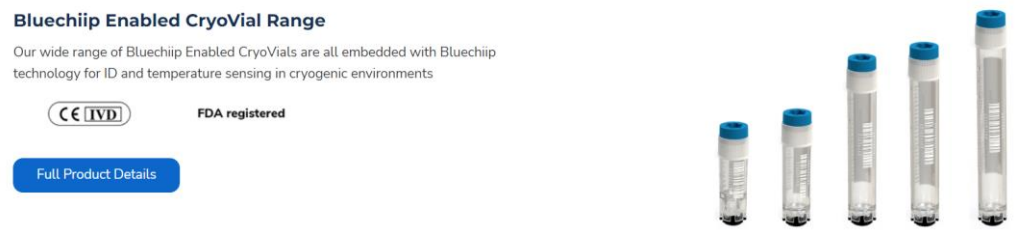
BCT's Advanced Sample Management Solution

Expansion of the offering to include end product sees BCT increase share of value chain.

BCT's Advanced Sample Management Solution has been developed to complement its novel Bluechiip® technology. It comprises:

- Range of Bluechiip® enabled cryovials, cryostorage boxes and cryolabels.
- Handheld Reader to read the Bluechiip® signal.
- Inventory management software - Bluechiip Stream™ and multi vial reader to assist in remote monitoring of the Bluechiip® labels by vial, box. The system provides a single depository for all relevant data while allowing access to the data remotely.

Figure 2: CyroVial Range

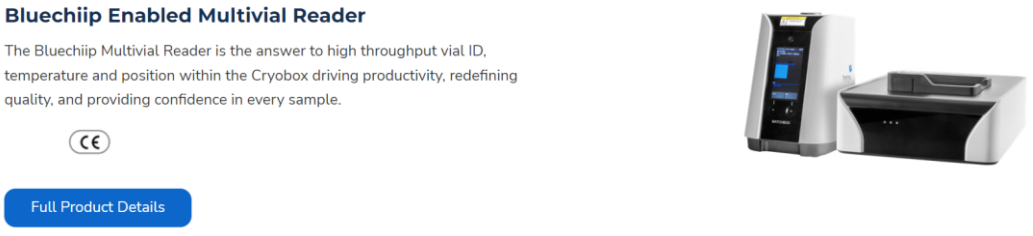


Source: Company

Figure 3: Handheld Reader

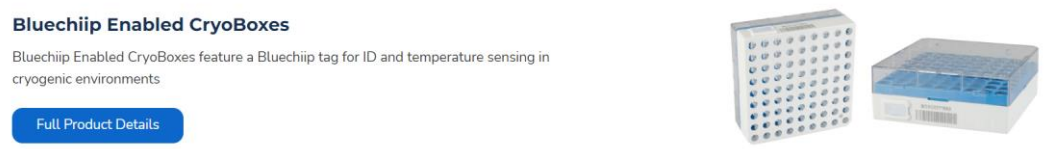
Source: Company

Figure 4: Multivial Reader



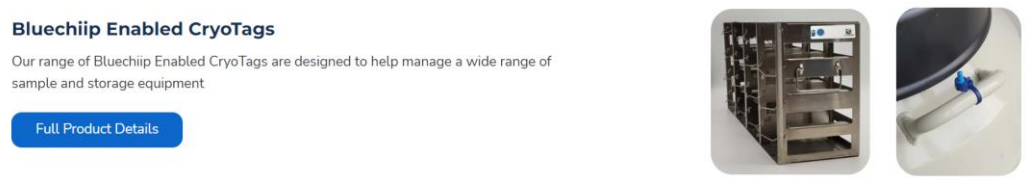
Source: Company

Figure 5: CryoBoxes



Source: Company

Figure 6: CryoTags



Source: Company

Case Study – Typical revenue flows from a new customer

A case study on BCT's revenue generation and commercialisation demonstrates BCT's revenue model, through both the initial sale of products such as readers and hardware and recurring revenue streams such as repeat cryovial sales and software licensing.

Figure 7, presents a real-world case study where a new customer lab purchased 3 handheld readers at US$5.3k each, a multivial reader at US$19k and a Stream Sample Management Server Hardware at US$8k. The total initial revenue from the lab was US$42.9k. The Lab then went on to purchase 65k worth of Cyrovials at US$4 per unit and the BCT licensing software for US$12k for an annual recurring revenue of US$272k.

Figure 7: Initial revenue flows directly from a new customer **Recurring yearly revenue once customer is onboard**

Source: Company *Source: Company*

Competitor Field

It is important to recognise that cryostorage is not set and forget. Inspection, repositioning and transfer of samples is not uncommon. Each brings the risk of error and thawing/refreezing of the sample.

The 'ideal' system allows for:

- Identification and relevant data relating to the sample
- Sterilisation of storage device
- Monitoring of temperature data to confirm sample viability

Figure 8: Competitor comparison – BCT answers industry gaps

	Labels	Barcodes	RFID	BlueChiip®
Gamma Resistant	✓	✓	✗	✓
Cyro Safe Survives extreme temps	✓	✓	✗	✓
Nonvisual ID Reads through frost	✗	✗	✓	✓
On-board sensor Temp sensing	✗	✗	✗	✓
Reduce human error	✗	✗	✓	✓
Productivity improvements	✗	✗	✗	✓

Source: Industry data, MST assumptions

The current cryostorage approaches include:

1. Labels/Barcodes - Handwritten & Printed Adhesive Labels/Laser Etching

Labelling of frozen vials is a common challenge as the majority of labels/barcodes do not stick to already frozen containers. Typically, the adhesive solidifies upon contact with the ultracold surface. Hand/printer written labels also bring risk of translation error. Laser etching integrated into the resin during moulding of storage receptacle reduces the risk of adhesive failure but translation errors can still occur.

In addition, the cold environment commonly sees the cryosample containers coated in frost presenting challenges to visually identify the labels. Retrieval of the container into a warmer environment is often needed to allow physical inspection. This brings **risk of partial thawing** which can also compromise the quality of the bio-sample. **The need for human intervention brings risk of error.** Manual procedures also incur higher costs and inefficiencies in comparison to remote monitoring.

2. RFID tags/chips

RFID tags and chips cannot be subject to gamma irradiation for sterilisation and not effective in cryogenic temperature range.

The RFID tracking system entails smart RF enabled chips or tags for the sample receptacles. In keeping with the Bluechiip®, the RFID tags allow for remote collection of data, with the information being transmitted from the sample to a computer program. In contrast to labels/barcodes, RFID tags have the ability to scan multiple items instantly without a direct line-of-sight. All inventory can be accounted for without the risk of human error and sample thawing. However, **they cannot be subjected to gamma irradiation for sterilisation and generally are not effective in the cryogenic temperature ranges.**

3. BCT offers clear advantage in current market

Review of BCT technology within the current market shows clear advantages such as:

BCT automatically records thermal data at the sample level and is not subject to frosting as it is read remotely reducing the risk of human error and sample thawing.

- The wide use of cryogenic storing in the medical field over long periods brings the need for reliable identification systems. **BCT technology is not subject to frosting and is read remotely which reduces the risk of human error and sample thawing.**
- Its microchip has wide utility. The small size allows for easy incorporation into sample tubes, vials, bags or deployed as stand-alone tags. The technology also brings the ability to embed the microchips into vials, racks, storage equipment or retrofitted to existing containers. **Uniquely, BCT allows for tracking to the sample, identification is not restricted to by the box or tank.**
- It is the only system that can undergo the required sterilisation processes including autoclaving, irradiation and centrifuge processes.
- **From a compliance perspective, uniquely, Bluechiip® automatically records thermal data when receiving and handling samples – necessary for the audit trial of sample integrity.**
- Together, the advantages present cost savings, higher productivity and lower risk in comparison to the current labelling offerings. Additional benefits include - enhanced productivity, staff efficiencies through elimination of paper records and optimisation of the storage utilisation. Importantly, it also brings documented audit trail of quality assurance for the customers. The chip composition makes it difficult to clone which adds additional security.

Significant Market Potential

As discussed, cryogenic storage finds application in a number of industries. BCT is targeting the healthcare sector to take advantage of its higher value and strong growth. Within healthcare, cryogenic storage is used extensively in cell therapies and regenerative medicines. They span multiple therapeutic areas, including stem cell immunotherapy, cancer treatments and IVF. Other applications include biobanking and clinical trials to support the development of the new therapies.

Cell therapies

Cell therapy has application in the development of regenerative medicines. Cells such as blood and bone marrow cells, mature, immature & solid tissue cells, adult stem cells, and embryonic stem cells are widely used in cell therapy procedures. The ongoing development of stem cells has expanded the range to include induced pluripotent stem cells (iPSCs), embryonic stem cells (ESCs), neural stem cells (NSCs), and mesenchymal stem cells (MSCs). Once confined to autologous cell therapy (self-donated), allogeneic therapies are becoming more widely available.

Global cell therapy market is expected to grow at a CAGR of 25.6% and reach US$48.2b by 2027.

The global cell therapy market size accounted for US$7.8b in 2019 and is expected to reach US$48.2b by 2027, registering a CAGR of 25.6% from 2020 to 2027[1]. Cell therapy replaces diseased or dysfunctional cells with healthy functioning ones. Stem cells are commonly used, owing to their ability to differentiate into specific cells required for repairing damaged or defective tissues or cells.

The success in cell therapy has seen significant growth in the sector. In 2021, the global cellular therapy pipeline added 2,073 active agents, 572 more when compared to the 2020 update, **representing a 38% increase in the past year compared to a 48% increase from 2019 to 2020[2].**

In-vitro Fertilisation (IVF)

In 2020, 38% of IVF cycles involved frozen transfers.

In-vitro Fertilization (IVF) is one of the more widely used types of assisted reproductive technology (ART). To reduce the need for regular procedures to retrieve the donor eggs, embryos are commonly cryopreserved to store the fertilized eggs for later use. IVF is a mature but growing industry with some 2.5m cycles reported in 2018. The IVF market in US was valued at $4.9b in 2020 and is expected to reach $5.6b by 2027 (CAGR of 6.8% from 2019 to 2027)[3]. **In terms of cryogenic storage demand, some 38% of its cycles involved frozen transfers in 2020.**

Figure 9: Assisted Reproductive Technology Cycles (ART)

	2010	%	2020	%
Fresh	111,673	76%	203,164	62%
Frozen	35,587	24%	123,304	38%
Total (inclusive of target)	**147,260**		**326,468**	

Source: US Centers Disease Control (CDC) Assisted Reproductive Technology (ART) Fertility Clinic and National Summary Report

Biobanking

Global biobank market value of US$71.4b in 2022 and is expected to grow at 8.6% CAGR till 2030.

Biobanking is the collection, processing and storing of biological samples and data for research. The samples of bodily fluid or tissue are collected, annotated, stored and redistributed for research in health and diseases. The growth of biobanks worldwide has been exponential with recent studies estimating hundreds of millions of samples are stored in U.S. biobanks and >1b are stored worldwide. Sales of US biobank resources and services were estimated to have grown from US$7.9b in 2009 to US$19.1b in 2015. The growth has continued **with estimates of global biobanks market value of US$71.4b in 2022** and is expected to expand at a compound annual growth rate (CAGR) of 8.6% from 2023 to 2030[4]. As an example, the Mayo Clinic stores more than 35 million physical or biological samples.

1. Ravi et al. (2020). Cell Therapy Market by Cell Type (Stem Cell and Non-Stem Cell), Therapy Type (Autologous and Allogenic), Therapeutic Area (Malignancies, Musculoskeletal Disorders, Autoimmune Disorders, Dermatology, and Others), and End User (Hospitals & Clinics and Academic & Research Institutes): Global Opportunity Analysis and Industry Forecast, 2020-2027.
2. Ravi et al. (2020). IVF Market in U.S. By Cycle Type (Fresh IVF Cycle, Thawed IVF Cycle and Donor egg IVF cycle) and End User (Fertility Clinics, Hospitals, Surgical Centers, and Clinical Research Institutes): Analysis and Industry Forecast, 2019-2027
3. https://www.cancerresearch.org/blog/june-2021/io-cell-therapy-development-in-2020-pandemic
4. https://www.grandviewresearch.com/industry-analysis/biobanks-industry

Commercialisation

BCT's story so far

2003 – Bluechiip Limited (formerly MEMS-ID Pty Ltd) was incorporated in May 2003 by co-founders Dr Ronald Zmood and Mr Brett Schwarz. Dr Zmood is the inventor of the Bluechiip® technology. Further development of the technology was undertaken.

2011 – ASX listing with funding raised to commence volume production and marketing activities. BCT adopted an OEM model licensing with the aim to expedite uptake.

2015 – Contract with Genea Biomedx for application of BCT technology in its fertility centres.

2016 – Sale of two Starter Kits to Chinese Centre for Disease Control and two Starter Kits to SIAD, a Prague based biobank with medical product distribution operations to eastern Europe.

2017/2018 – Starter kit to Labcon North America, a manufacturer of earth friendly laboratory consumables. Subsequently, in August 2018, US based Labcon North America negotiated a licence and supply agreement. The three-year agreement entailed A$5.8m two-year purchase included chips, multi-vial readers software and engineering services and an agreed minimum of A$10.1m for the third year. An option for extension over Years 4 and 5 with agreed minimums was also undertaken.

2020/21 – **Labcon** advised its **intention to terminate** its agreement for supply of Bluechiip®.The dispute was settled and a **new Supply Agreement** was negotiated.

2021/2022 – BCT adopted **new strategy** to reduce single customer risk by developing its own product portfolio to sell directly. The BCT branded cryovials were registered with **US Food & Drug Administration (FDA)** and received **EU Conformité Européene (CE)** In-vitro diagnostics (IVD) certification for the Bluechiip Enabled™ cryovial range, providing direct access to the US and European Union markets respectively.

In November 2021, **BCT launched its own portfolio of products. Bluechiip's direct-to-market portfolio of products for the Biobanking market** includes a range of Bluechiip® Enabled and Bluechiip® branded cryogenic consumables, Bluechiip® readers and Bluechiip Stream™ software. The North America (NAM) sales team was expanded from one to four to fully leverage the opportunity. The products were released for sale at the end of calendar year 2021. BCT's **Advanced Sample Management Solution** tracks and monitors samples' accumulative time outside the controlled temperature.it is launched in North America and Australia/New Zealand.

Enabled Sample Management Solution, with a direct-customer base globally, including ARMI, OrganaBio, Crux Biolabs and Labcon for their end customer. BCT has launched its biobanking portfolio of products following the successful R&D progress and CE certification for Europe and FDA registration for the US.

In October 2021, BCT signed a two-year OEM licence-and-development agreement with **FUJIFILM Irvine Scientific (FISI)** for the Assisted Reproductive Technology (ART) and IVF markets. FISI will pay BCT initial licence and development fees over the next 18-24 months. Along term supply agreement is expected to be finalised during the project for Bluechiip ® -enabled and branded product.

BCT from here – new strategy to flow

BCT's sales expansion to include in-house sales team.

BCT has followed an original equipment manufacturer (OEM) mode, whereby it provides its Bluechiip® component for incorporation into another company's finished product. While successfully resolved, the company's dispute with Labcon, an OEM customer, exposed the risk of single key customer risk. **BCT has responded with an in-house sales and marketing team to market directly for its full product offering**. The strategy looks to bring both higher sales momentum and margins in the key growth sectors.

In MST's view, the adoption of the OEM model bore logic in 2011 as an introductory route for a small company with significant opportunity in a large, highly diversified global market. The passage of time has allowed BCT's stable management team to develop an in-depth understanding of the market and importantly determine the key market opportunities for its technology. Over 2020/21 it developed its own range of consumables and Advanced Sample Management Solutions team with the view to develop inhouse sales and marketing capability to sell directly. The addition of its own product line and marketing activities is timely and looks to bring higher revenue growth and important, control.

Over CY22, BCT expanded its US team from one to four sales representatives. BCT's growing sales team is focusing on cell therapies, clinical research organisations and pharma biobanking. IVF will be serviced by Fuji Film teams with Bluechiip® support. Customer markets include large pharmaceutical, cell therapy, clinical trial and research organisations. It will also target mid-smaller facilities.

Review of competitors within the sector also supports the new strategy. Including companies such as Thermo Fisher Scientific, Inc., Azenta Inc, PHC Corporation, B Medical Systems, Helmer Scientific Inc., Eppendorf AG, Haier Biomedical, Corning and Philipp Kirsch GmbH, BCT's competitors are generally large corporates with multiple product offering and significantly greater marketing resources and reach. To target the smaller niche sectors bears sound logic.

Evidence to date

BCT to grow sales and marketing team over the next 12 months to upwards of ten members.

While only in early stage of implementation, there is emerging evidence of uptake of the new strategy. The adoption by laboratories of Bluechiip® enabled solutions increased from four in Q4CY21 to 13 in Q4CY22. BCT reported 11 end user customers across 13 laboratories at the end Q4CY22, up one customer and laboratory from the previous quarter. Each new end customer represents multiple laboratories and therefore offer significant expansion opportunity. **BCT plans to continue to grow its current four member sales and marketing team over the next 12 months to upwards of ten members**. It will continue to focus on the North American market. In terms of revenues, the usual industry time for a new sales rep to gain traction is about one year. BCT expects to see evidence of the new strategy flowing through over FY24.

Valuation, Risks Sensitivities

MST's Discounted Cash Flow (DCF) 12-month valuation of BCT is $0.06 per share (currently $0.03ps). MST assumes that BCT's new marketing model will see the company Free Cashflow Flow positive and profitability (NPAT) from 1HFY26 onwards.

Figure 10: Key Assumptions in DCF Valuation

Key Assumptions	
Revenue	Revenue per new lab of A$30k per Qtr; to rise to A$50k in FY25
Lab Growth	New lab growth to rise from 3 per Qtr to 5 per Qtr in FY25
COGS	COGS ~30% and assumed to lower as volumes rise
Sales force	Sales force to grow to 10 in FY24
Cash flow &Profitability	Free Cashflow Flow positive and profitability (NPAT) from 1HFY26 onwards
Contracts	Assumes Labcon & Fuji contracts continue

Source: MSTe

Figure 11: DCF Risk Assumptions

Key Assumptions	
Tax rate	30%
Risk free rate	4%
Beta	1.2
Market Risk Premium	7%
Cost of Equity	12%
Debt Premium	2%
Cost of Debt	6%
Target gearing	0%
WACC	**12%**
Terminal growth rate	2%

Source: MSTe

The valuation is subject to the upside/downside risks around the assumptions regarding market penetration, sector growth, competitor behaviour, roll out of its new sales strategy. The valuation accounts for BCT's change in strategy to focus on a 'direct to customer' approach as well as its current OEM model.

BCT's new business strategy will require the appointment of new staff over FY23, bringing higher costs before significant revenue flows. MST revenue assumptions include forecasts to rise from A$30K per lab per qtr to A$50K per lab per qtr in FY25. Sales reps are expected to increase to reach 10 in FY24 from 4 currently. The number of labs is expected to grow from currently around three per qtr to five per qtr. MST model assumes the company will be free cashflow positive and NPAT positive from 1HFY26 onwards. These assumptions may not eventuate.

The model also assumes Fujifilm Irvine Scientific and Labcon contracts will continue at similar terms. BCT's competitors include large multinational corporates including such as Thermo Fisher Scientific Inc, (Market capitalisation US$214b) with a multiple product offering and significantly greater marketing resources and reach. Proof of significant uptake of BCT's technology many invite corporate activity/licensing revenues.

The implementation of the new strategy may vary to MST assumptions which brings upside and downside risk. BCT may fail to gain market traction. BCT's key target market is the US. As the largest market it creates competitive tension. Timing may also vary to MST's estimates as BCT implements its new strategy. The industry regulatory environment may change, bringing upside and downside risk. BCT's Bluechiip® may create interest from competitors and corporates seeking a point of differentiation in the company.

Further capital will be needed. **Cash at H1FY23 was reported as A$575K**. MST valuation assumes a moderate capital raising of A$5m to allow the company to demonstrate the early signs of uptake of its new marketing strategy.

Company Directors and Senior Officers

Appendix 1 - Directors

Iain M Kirkwood – Non-Executive Chairman Qualifications: Chairman MA (Hons) Oxon, FCPA

- Appointed non-executive to the Board in November 2007.
- Experienced private consultant and investor.
- 35 years across auditing, resources, manufacturing and healthcare including F.H. Faulding & Co and Clinuvel Pharmaceuticals in Australia, Britain and the USA.

Andrew McLellan – Managing Director and CEO Qualifications: MBA, B Eng (Hons), GAICD

- Appointed as Managing Director and CEO on 27 January 2015.
- Experience in innovation and commercialisation combined with technical and operational.
- CEO of Advanced Manufacturing Cooperative Research Centre (AMCRC).
- Director at Leica Microsystems Pty Ltd (previously Vision BioSystems Pty Ltd, a division of the former publicly listed Vision Systems Limited), Ltd.
- Bachelor of Engineering Degree (Hons), MBA (Strategy) from Monash Uni (Melbourne).
- Australian Institute of Company Directors (GAICD).

Michael Ohanessian – Non-Executive Director Qualifications: B Eng, MBA

- Appointed to the Board on 15 December 2014.
- Experience in technology-related businesses in operational, strategic and leadership roles.
- Corporate experience includes Mobil Oil, Boston Consulting Group CEO of Vision BioSystems, Chief Executive of Genetic Technologies Limited, Lion Capital. CEO Praemium Limited.

Andrew Cox – Non-Executive Director Qualifications: MBA, B Commerce (MELB)

- Appointed to the Board on 26 July 2017.
- Bachelor of Commerce from the University of Melbourne and an MBA from the International Institute for Management Development (Lausanne, Switzerland). He is also a member of the Australian Institute of Chartered Accountants (ICA) and is a graduate of the Australian Institute of Company Directors.
- Experience in finance in emerging and international markets.
- Roles at KPMG, SG Warburg, the Australian Trade Commission and Ernst & Young.
- Co-founder and former chairman of Inlink (sold to ASX-listed oOh! Media Ltd in 2015) and co-founder of iPro Pty Ltd.

Chelsea Sheridan – Company Secretary Diploma in Business Administration

- Affiliate of the Governance Institute of Australia (GIA).
- Provides company secretarial services to various ASX listed, unlisted public and private companies across a range of industries including financial services, technology and biotechnology, mining and exploration and healthcare.

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