

22 May 2023

Industry supports opportunity

NEED TO KNOW

- BCT's novel microchip monitors cryogenic biosamples
- Forum highlights industry change
- BCT's technology in prime position

An industry forum which included ARMI¹, a customer of BCT, highlighted the increasing pressure to 'sophisticate' the current methodologies of tracking cryogenically stored biosamples. ARMI is considered an industry leader in regenerative medicines and its endorsement brings credibility and exposure of BCT's novel approach. With some 170+ affiliated members, further interest is expected to see higher adoption of the BCT approach.

Investment Thesis

Strong industry growth outlook - BCT's first target market, cell therapies, is expected to grow from ~US\$7.8b market in 2019 to ~US\$48.2b by 2027².

Competitive advantage - BCT's Bluechiip[®] uniquely monitors each individual item, which compares to its competitors who monitor by cryo-storage box and other larger receptacles holding multiple items. BCT's 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 to mid-sized customer markets. The model allows for higher margins and reduces its current single key customer risk.

Valuation

MST's DCF 12-month valuation remains at \$0.06 per share, with a capital raise already included in the forecast. MST assumes that BCT's new direct sales marketing model will see the company free cashflow positive and profitable (NPAT) from 1HFY26 onwards. The model also assumes that BCT's 2-year contract agreement with Fujifilm Irvine Scientific and Labcon agreement continue at similar terms.

Risks

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

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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.

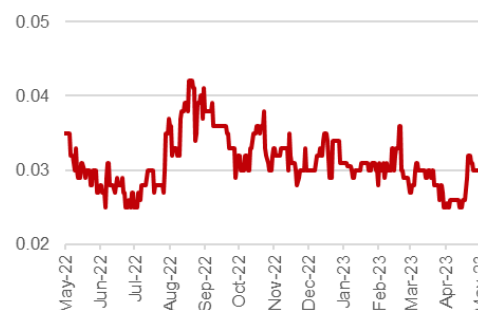
<https://www.bluechiip.com/>

Valuation	\$0.06 ps (unchanged)
Current price	\$0.03ps
Market cap	\$17m
Cash on hand	A\$0.3m (as at Q3FY23)

Upcoming Catalysts and Newsflow

Period	
FY23	Finalise and execute Fuji supply agreement
FY23/FY24	Growth of direct sales customers
FY23/FY24	Expansion of sales force

Share Price (A\$)



Source: FactSet, MST Access

¹ ARMI Advanced Regenerative Medicines Institute - See page 4 for detail

² 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.

BlueChiip

BCT-AU

Year end 30 June

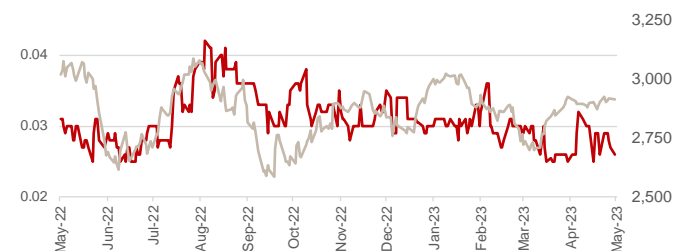
MARKET DATA

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	699
Options	m	-
Other equity	m	100
Potential shares on issue (diluted)	m	799

INVESTMENT FUNDAMENTALS		FY21	FY22	FY23E	FY24E
EPS Reported (undiluted)	¢	(0.5)	(0.5)	(0.8)	(0.7)
EPS Underlying (undiluted)	¢	(0.5)	(0.5)	(0.8)	(0.7)
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	%	-	-	-	-

KEY RATIOS (A\$)		FY21	FY22	FY23E	FY24E
Forecast year end shares	m	594	598	699	799
Market cap (Y/E / Spot)	\$m	17.8	17.9	21.0	24.0
Net debt /(cash)	\$m	(4.8)	(0.9)	0.8	2.2
Enterprise value	\$m	13.0	17.1	21.7	26.2
EV/Sales	x	7.3	9.8	19.3	14.9
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	(0.1)	(0.4)
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)	(4.2)	(3.9)
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	0.00	0.00
Price to book (NAV)	x	2.5	4.1	9.4	21.0
NTA / share	\$	0.01	0.01	0.00	0.00
Price to NTA	x	2.5	4.1	9.4	21.0
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

12 month performance



PROFIT AND LOSS (A\$m)		FY21	FY22	FY23E	FY24E
Revenue & Other Income	\$m	1.8	1.7	1.1	1.8
Expenses	\$m	(5.0)	(4.8)	(6.2)	(7.1)
EBITDA	\$m	(3.3)	(3.1)	(5.1)	(5.4)
Depreciation & amortisation	\$m	(0.0)	(0.0)	(0.0)	(0.0)
EBIT	\$m	(3.3)	(3.1)	(5.1)	(5.4)
Interest	\$m	0.0	0.0	0.0	(0.0)
Tax	\$m	-	-	-	-
Underlying NPAT	\$m	(3.2)	(3.1)	(5.1)	(5.4)

BALANCE SHEET (A\$m)		FY21	FY22	FY23E	FY24E
Cash	\$m	5.9	2.8	1.1	(0.3)
Term deposit	\$m	-	-	-	-
Receivables	\$m	1.1	1.1	0.6	1.0
Inventory	\$m	1.6	3.0	3.2	3.5
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	5.0	4.3
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	2.2	1.1

CASH FLOW (A\$m)		FY21	FY22	FY23E	FY24E
Receipts from customers	\$m	1.2	0.6	1.1	1.5
Payments to suppliers and employees	\$m	(5.4)	(4.9)	(6.2)	(7.1)
Other (R&D)	\$m	1.7	0.8	0.3	0.3
WC	\$m	0.4	0.3	0.7	1.4
Interest	\$m	0.0	0.0	0.0	(0.0)
Operating cash flow	\$m	(2.0)	(3.2)	(4.2)	(3.9)
Capex	\$m	-	-	-	-
Acquisitions	\$m	-	-	-	-
Other	\$m	-	-	-	-
Investing cash flow	\$m	-	-	-	-
Borrowings	\$m	-	-	-	-
Equity	\$m	-	-	2.5	2.5
Dividend	\$m	-	-	-	-
Financing cash flow	\$m	-	-	2.5	2.5
Change in Cash / FX	\$m	(2.0)	(3.2)	(1.7)	(1.4)
Year end cash	\$m	5.9	2.8	1.1	(0.3)

Source: MST Access, FactSet, Company Reports

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

Bluechiip® (BCT.AX) has developed a novel microchip for monitoring/tracking items/samples stored/transported in cryogenic temperatures. Its initial target market is the pharmaceutical industry. The investment thesis is based on:

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

Evolving industry demands higher standards

From a regulatory stance, as an emerging therapeutic approach, the strong growth of 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

BCT meets the need for more formalised, automated systems to manage the growing sample collections. Its novel microchip, Bluechiip® monitors/tracks each sample that requires storage and/or transportation in temperatures ranging -196°C to +100°C. 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. Industry practices include hand-written labels that are commonly illegible in the frosted conditions and/or monitoring by cryoboxes and other larger storage vessels of multiple specimens. The current manual systems do not allow accurate recording of removal/return of individual samples over time.

2. Target sectors offer strong growth

BCT's initial target markets within the pharmaceutical sector, include In Vitro Fertilisation (IVF), 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.

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

3. New direct sales model

MST's valuation recognises BCT's new marketing strategy. Its dispute with Labcon North America, its largest Original Equipment Manufacturer (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.

Regulatory oversight is growing with increasing compliance requirements for provenance of the samples.

Bluechiip® offers unique advantage of tracking each individual sample.

The potential for storage of samples of up to 30 years compounds the demand for storage.

Industry leader, ARMI, endorses BCT

A recent industry meeting which included one of BCT's clients, Advanced Regenerative Medicines Institute (ARMI), highlighted the strong and rapid growth of cell-based therapies. Emerging therapies such as genomics and personalised medicine added to the momentum. The potential for storage of up to 30 years compounds the demand for storage. With the growth of storage, there came an equal need for more effective and efficient systems to track/monitor the integrity of storage conditions and provenance of the cells.

ARMI highlighted the strong and rapid growth of cell-based therapies was driving demand for cryogenic storage facilities.

The discussion highlighted that the success of biological therapies is attracting strong funding for R&D and clinical trials. The key clinical areas of interest included:

- **Renal** - >2m people worldwide currently receive dialysis treatment or a kidney transplant to stay alive. This number was estimated to potentially represent only 10% of people who actually need treatment to live. The remaining 90% highlight the need for new treatment approaches.
- **mRNA** - Therapies to resemble mature and processed mRNA molecules allow for the ability to deliver proteins to the cells. They are currently being explored in cancer immunotherapies and infectious disease vaccines. The novel approaches aim to replace or supplement proteins and stimulate the induction of pluripotent stem cells, or mRNA therapies.
- **Pancreas** - The pancreatic system is another strong interest area, with ~0.5b living with diabetes mellitus. Research is focused on regeneration of the insulin-secreting β -cells of the pancreas.

For BCT, it is a win/win situation. The intense research efforts are driving demand for cryogenic storage and success brings the need to store the new therapies. The discussion focused on how the growth was bringing the need for automated tracking systems.

Storage of the biosamples is not 'store and forget'. Samples are frequently removed for use in the labs and returned to the freezers. The industry is evolving from small hospital research labs to facilities storing 100,000 - 200,000 samples. The samples can become intermediates for testing, with others as starting materials for next batch and final product. The wide application, particularly in 'downstream' research studies brings higher risk. Later stage projects have seen greater investment of capital, both human and financial.

A meeting participant related a recent study of a kidney experiment that failed. A review showed the potential contributing factors included compromised renal cells. Tracking details including thaw/re-freeze monitoring were not available. **The cost of that one 'failed' laboratory experiment' was estimated to be ~US\$40,000.** For the potential patient it is much higher.

The discussion concluded that traditional manual tracking systems were no longer 'fit for purpose'. As reinforced by one participant waving his notebook, the handwritten manual records or OneNote devices were not adequate.

The discussion around the drivers for change included:

1. Quality Assurance

As evidenced by the failed renal study, the participants discussed that the integrity of the samples was very important.

2. Productivity

There was a strong view that the growth of the industry was also driving the need for higher productivity. The potential approaches included electronic systems that would be able to manage the growth by bringing efficiencies, mitigate risks and lower costs.

3. Competitive Edge

There was also discussion around the benefits for facilities such as ARMI. **The ability to offer the quality assurance of an automated, fully documented storage system was seen as a competitive edge.**

During the discussion BCT's team noted the growing opportunities. Recent enquiries included:

- A single tank for a single study for an advanced therapy required a tank holding over 50k samples

- A -80° freezer with 100,000s of samples, managed by Bluechiip®'s Advanced Sample Management solution.

Bluechiip®'s sales strategy plans to expand from its sales coverage of the south-west US and Texas to include research/biopharmaceutical hubs in north-east US.

Advanced Regenerative Medicines Institute (ARMI)

ARMI is a public-private entity with investment funding approaching nearly \$300m. ARMI brings together a consortium of nearly 100 partner organizations from across industry, government, academia, and the non-profit sector to develop next-generation manufacturing processes and technologies for cells, tissues, and organs. It is a 100-member organisation. It is tasked to provide the industry standards.

BioFabUSA, a program of ARMI, is a public-private partnership with more than 170 members that represent industry, academia, government and non-profit organizations. The focus is understanding the science of regenerative medicine to enable scalable, consistent and cost-effective manufacturing. They aim to define the fundamental tenets of good manufacturing processes in the biofabrication industry.

The uptake of BCT's advanced tracking/monitoring system is a high recommendation. ARMI looks to be leader on guidelines for the regenerative industry, ensuring best practice. Its endorsement is expected to bring recognition of BCT's capabilities.

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