



Investor Presentation

24 February 2022

Imagion Biosystems Limited

ImagionBiosystems.com

ASX:IBX

A Breakthrough in Magnetic Molecular Imaging



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Investment Highlights

Imagionbiosystems.com



A Clinical Stage Medical Device Company developing bio-safe medical imaging technologies

- ✓ Multi-faceted imaging technology using magnetic nanoparticles coated with a targeting antibody to detect cancer tumors
- ✓ Multiple commercial possibilities and targeting a printer-ink revenue model in addition to other opportunities



Addressing large markets and unmet needs in earlier more specific detection of cancers

- ✓ One in three people impacted by cancer
- ✓ Over \$100B spent annual in cancer diagnosis but still unable to non-invasively diagnosis tumors
- ✓ Current medical imaging technologies invented more than 50 years ago



MagSense® technology will transform cancer diagnosis

- ✓ Does not require radioactivity
- ✓ Uses bio-safe magnetic nanoparticles
- ✓ Designated as a 'breakthrough device' by the FDA



Multiple revenue opportunities

- ✓ High gross margin proprietary molecular imaging agents
- ✓ Ability to extend utility to therapeutic applications
- ✓ Supply agreements with 3rd parties for use in their medical products



Strong leadership and advisory board

- ✓ Experienced and skill diverse board of directors and management team
- ✓ Scientific advisory board with collective expertise in oncology, medical imaging, nanotechnology and clinical trial design



01

Company Overview

Imagion Biosystems Overview

Imagionbiosystems.com

A clinical stage medical device company developing next generation molecular imaging technologies

- Innovative medical imaging using bio-safe magnetic nanoparticles to identify and stage cancer and other diseases
- Proprietary MagSense® technology is non-invasive and non-radioactive and provides more specific & sensitive detection for cancer than current imaging technologies
- Multiple commercial opportunities with magnetic nanoparticles:
 - Proprietary MagSense® imaging technology
 - Magnetic Resonance Imaging (MRI) contrast agent
 - Therapy and/or drug delivery

Imagion Biosystems ASX:IBX

- ✓ Market cap: ~\$63 million
- ✓ Cash at 31 Dec 2021: \$13.4 million
- ✓ Listed on the ASX: June 2017
- ✓ R&D operations: San Diego
- ✓ Registered office: Melbourne

Imagion Biosystems Overview

Imagionbiosystems.com

Recent Milestones

- ✓ **Jul 2019** Received FDA designation as a "Breakthrough Device"
- ✓ **May 2020** Research collaboration with Siemens
- ✓ **Oct 2020** HREC approval for MagSense® HER2 Breast Cancer Phase I study
- ✓ **Dec 2020** MagSense® HER2 Breast Cancer Phase I study opens for enrolment
- ✓ **Mar 2021** Receive CSIRO grant to support Prostate Cancer imaging research
- ✓ **May 2021** First patient dosed in Phase I study
- ✓ **May 2021** Collaboration with Patrys (ASX:PAB) for Brain Cancer imaging
- ✓ **Aug 2021** Joint Development Agreement with Global Cancer Technologies to develop nanocrystals for treatment of breast cancer

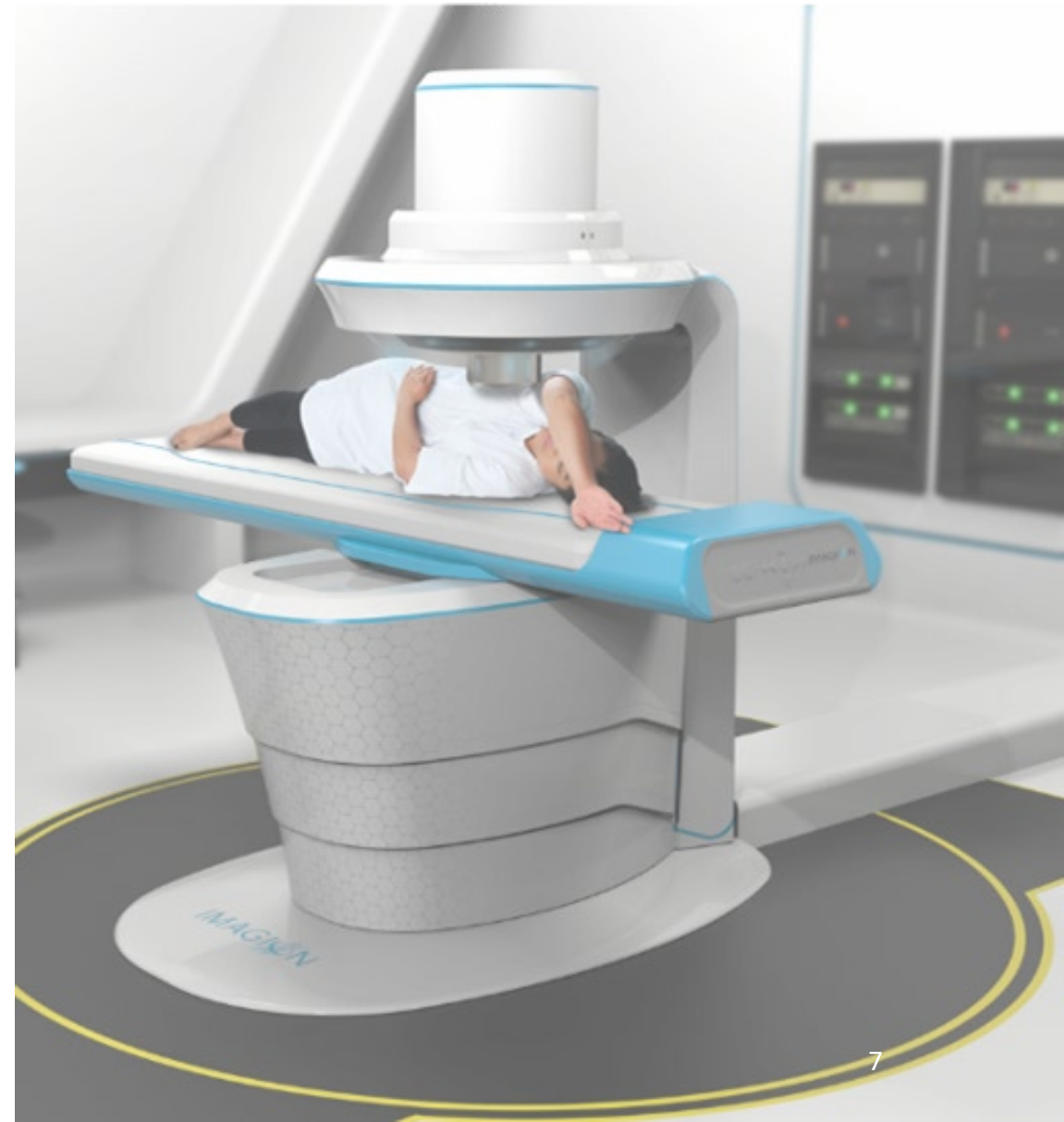


Medical Imaging Breakthrough

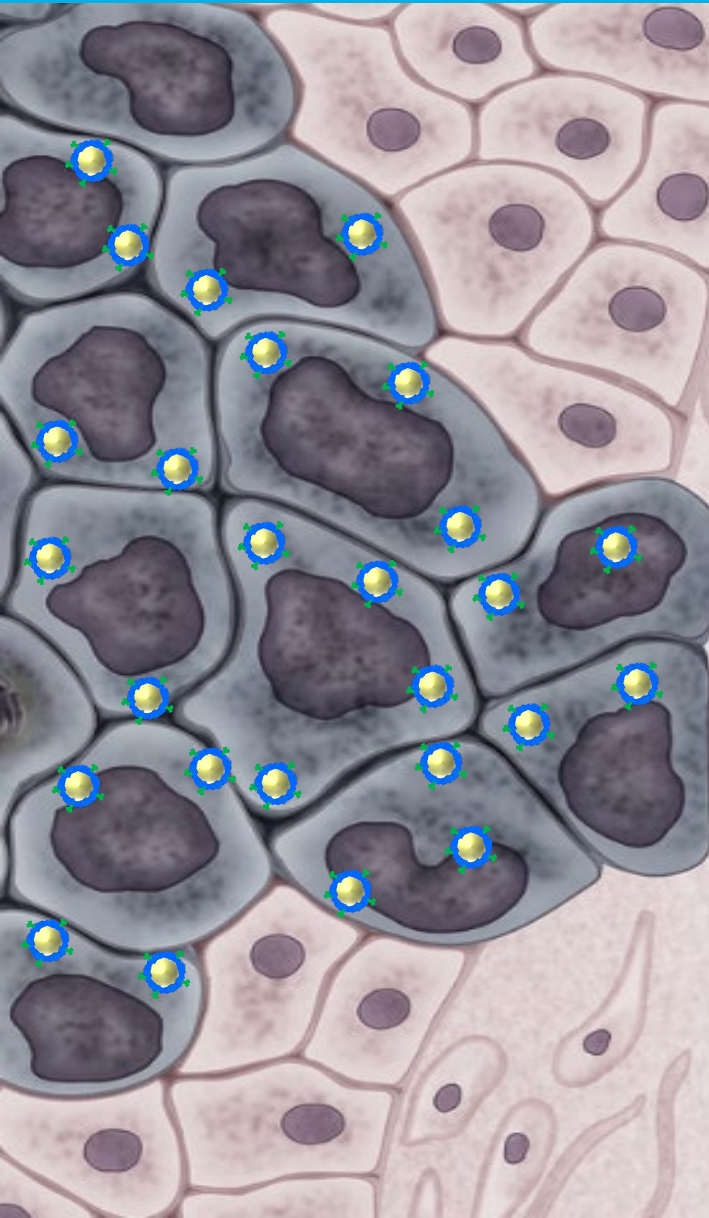
Imagionbiosystems.com

MagSense® Technology will transform cancer diagnosis

- ✓ **Non-invasive** – a safe and non-surgical solution to detect cancer
- ✓ **No radioactivity** – uses bio-safe magnetic nanoparticles to “tag” cancer cells
- ✓ **Specific** – use of targeted imaging agent provides molecular confirmation of the presence of cancer not just a suspicion
- ✓ **Platform technology** – can be used for many cancers as well as other diseases



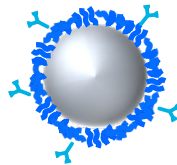
How It Works



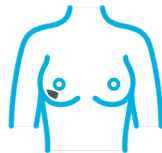
Bio-safe magnetic nanoparticles are attracted to the tumor and detected



Patients are given a low dose injection of the nanoparticle imaging agent.



Targeting antibodies affixed to the nanoparticles, ensure high specificity for the cancer, and cause the nanoparticles to find and bind to tumor cells.



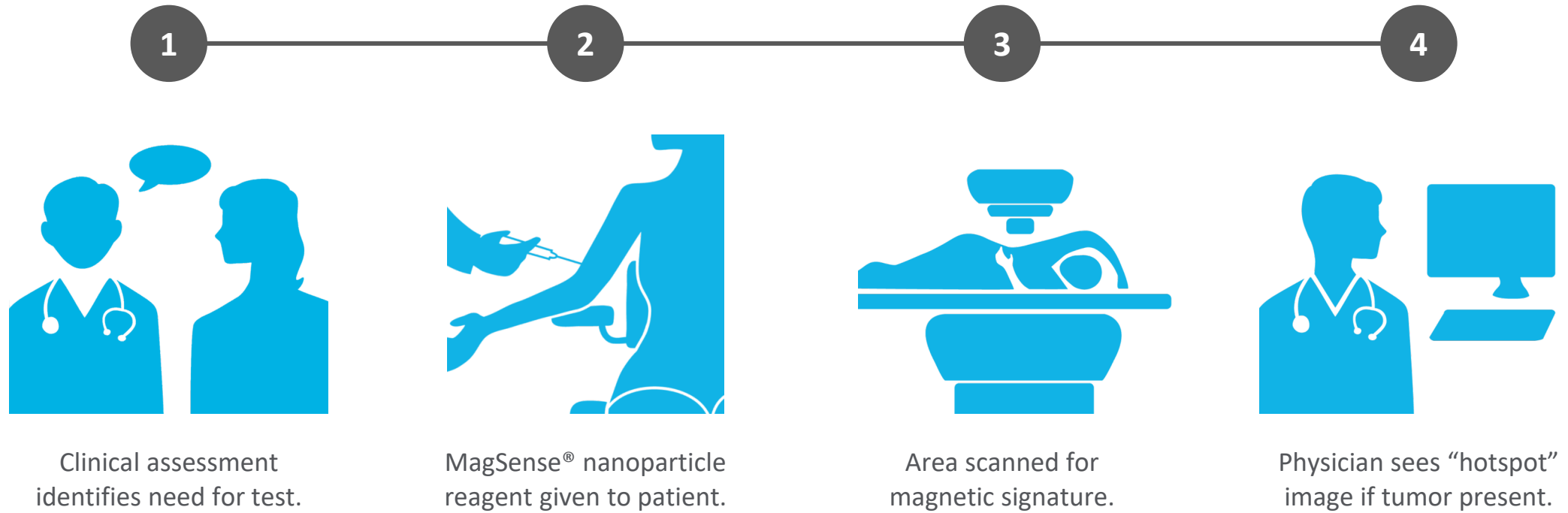
Once attached to the tumor the magnetic property of the particles is detectable by magnetic sensors and can be imaged by MRI.



The tiny nanoparticles are cleared by the body through the liver with the iron core being “repurposed” to produce ferritin used in hemoglobin production

The MagSense® Technology Process

Imagionbiosystems.com



Works within current standard cancer diagnosis and staging protocols.

How It Works - Video

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Click play to watch video in browser



The MagSense® HER2 Metastatic Breast Cancer Test

- Works within current standard cancer diagnosis and staging protocols
- Replaces current non-functional imaging such as MRI or ultrasound used to assess for enlarged lymph nodes but which cannot determine if tumor cells are present
- In 2022 there are estimate to be ~287,000 new breast cancer cases in the US with approximately 20% or ~57,000 being HER2 with metastatic spread to the lymph nodes¹
- The use of MagSense® is expected to eliminate ~48% of unnecessary biopsies for patients that do not have metastatic spread to the lymph nodes reducing incidence of lymphedema and associated morbidity²
- Across 57,000 patients MagSense® is expected to save health providers over US\$8.5 million per year compared to the current Standard of Care²

(1) https://www.breastcancer.org/symptoms/understand_bc/statistics

(2) Modelling performed by Boston Healthcare (engaged by Imagion) comparing current Standard of Care to MagSense® Standard of Care. The modelling is a guide only and actual results may differ from expected results.

The MagSense® HER2 system and test has been designated by the FDA as a Breakthrough Device - reserved for products that provide for more effective treatment or diagnosis.



02

A Global Medical Need

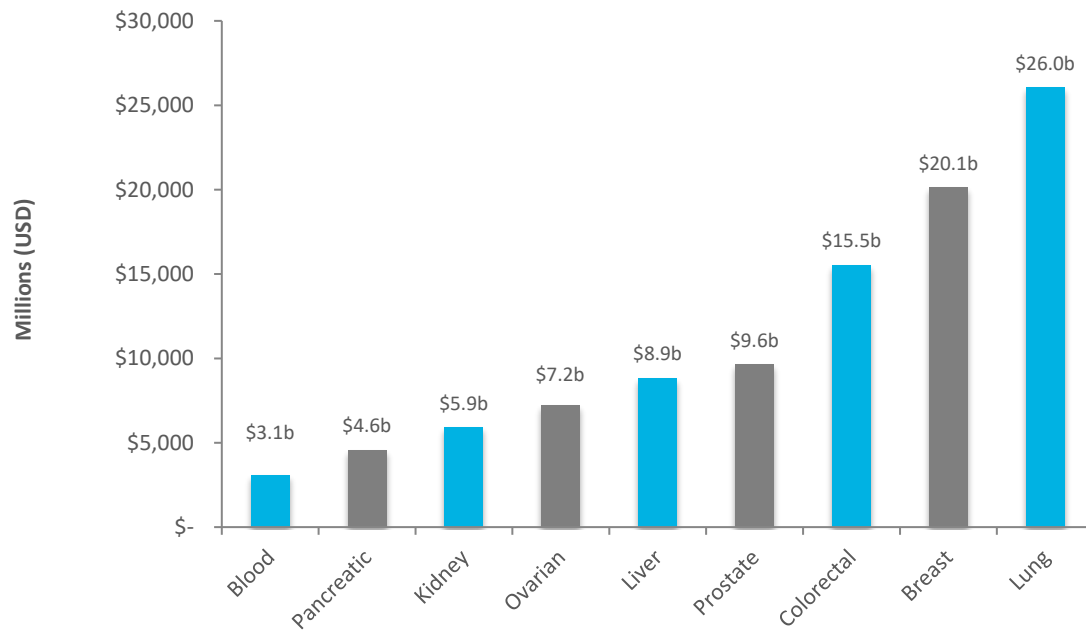
Each year cancer kills 9 million people

\$100 billion spent annually to diagnose or detect cancer, yet cancer continues to be a leading cause of mortality and morbidity.

A Growing Global Health Problem

1 in 3 people are affected by cancer

US\$100 BILLION CANCER DIAGNOSTICS MARKET



* Source: Transparency Market Research – Global Cancer Diagnostics Market 2014-2020



Clear Unmet Medical Need

Anatomical images can't differentiate benign from malignant lesions



**X-RAY
(MAMMOGRAPHY)**

Mammography used for screening for breast cancer but limited to identifying “areas of interest”

Exposure to ionizing radiation



ULTRASOUND

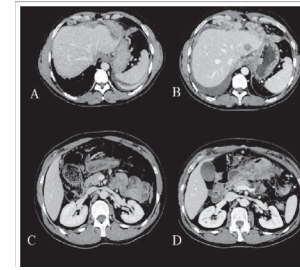
Inexpensive but poor sensitivity to detecting tumors – tumors must be billions of cells in size



MAGNETIC RESONANCE (MRI)

Able to identify suspicious lesions but not able to confirm malignancy

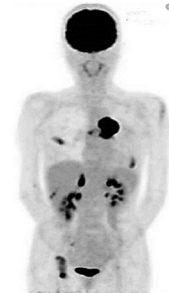
Scans can be long and claustrophobic



COMPUTED TOMOGRAPHY (CT)

Can provide good anatomical context for guiding biopsy but not diagnostic

Exposure to ionizing radiation



POSITRON EMISSION TOMOGRAPHY (PET)

High sensitivity but poor resolution and expensive
Requires use of radioactive tracer

“Despite technical advances in many areas of diagnostic radiology, the detection and imaging of human cancer remains poor.”

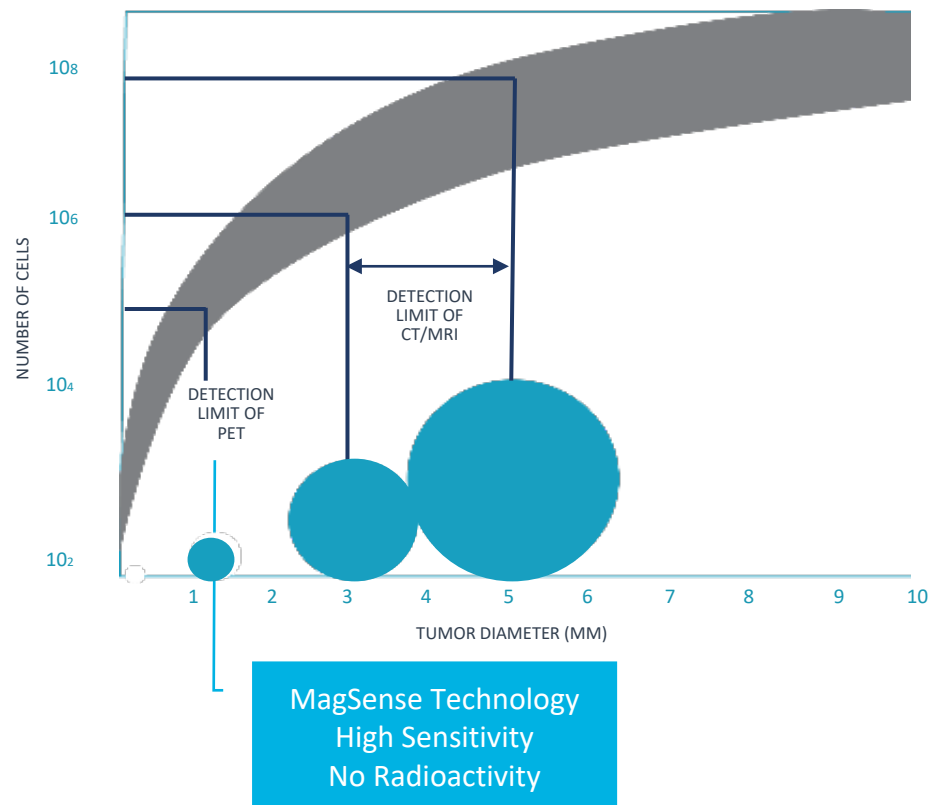
Journal of Clinical Oncology, 2008 New Technologies for Human Cancer Imaging Vol 26 No 24

Improving Outcomes

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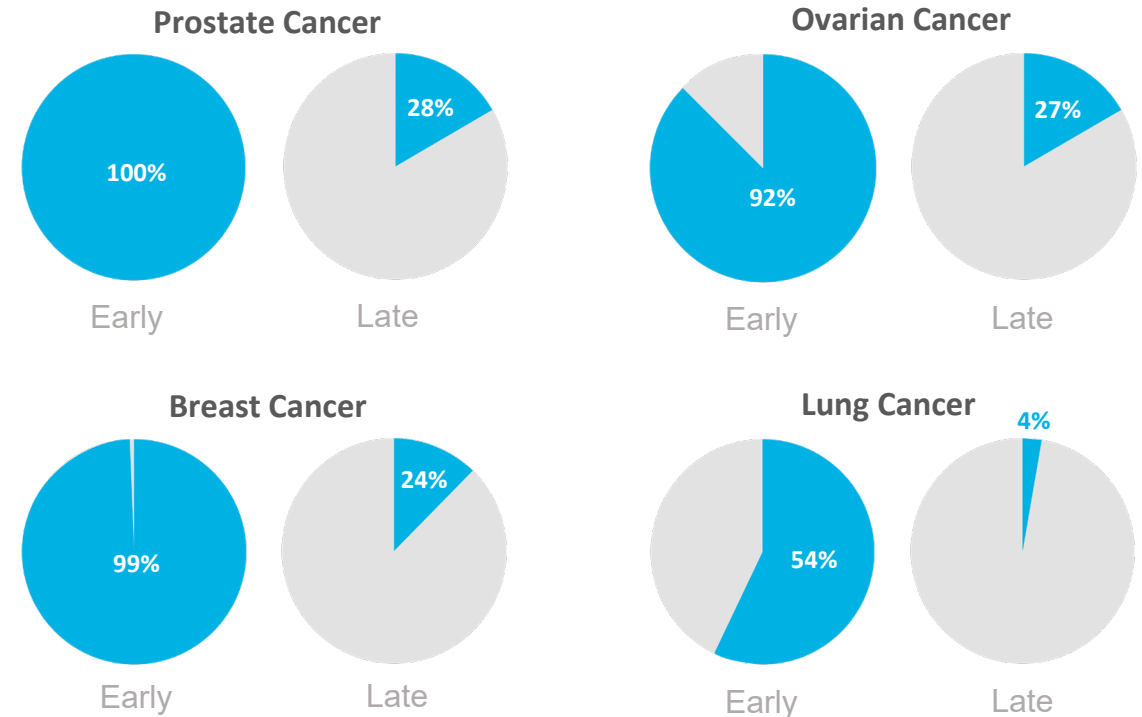
MagSense® technology is expected to have sensitivity comparable to PET without use of radioactivity, making it better for routine use in early detection and resulting in more successful treatments and patient outcomes.

Better sensitivity could mean earlier detection



Earlier detection means better survival outcomes

Survival rate: Early vs Late Diagnosis



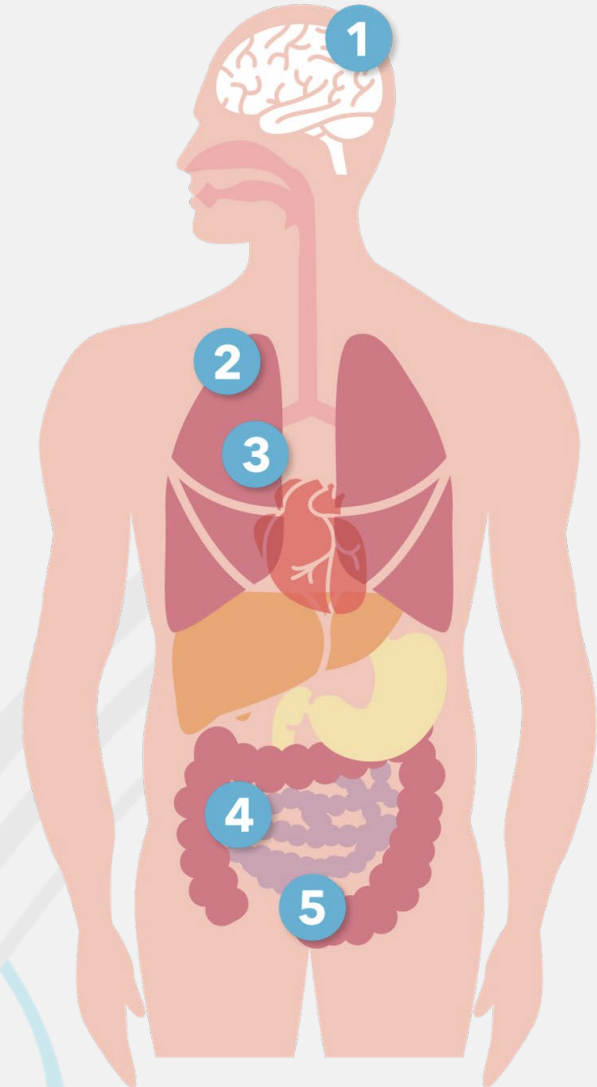
* Source: SEER Cancer statistics, National Cancer Institute, 2013

Broad Commercial Applicability

MagSense® imaging agents can be developed for many types of solid tumors and can be used at multiple stages of diagnosis including primary diagnosis, staging, and monitoring the effectiveness of therapy.

Each type of cancer will have a unique and specific formulation for the cancer of interest creating a portfolio of imaging agents and a recurring revenue stream for each indication of use.

- 1 Brain Cancer
- 2 Breast Cancer
- 3 Lung Cancer
- 4 Ovarian Cancer
- 5 Prostate Cancer



Proof-of-principle verified in pre-clinical models

Specificity

- In vitro cell based studies confirm specificity for targeting the specific cancer cells.
- Animal studies confirm in vivo selectivity for "tagging" the tumour.

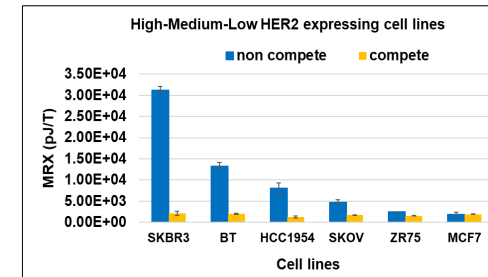
Sensitivity

- In vitro cell based studies indicate the required level of sensitivity achievable.
- In vitro and in vivo animal studies indicate the lack of non-specific background.

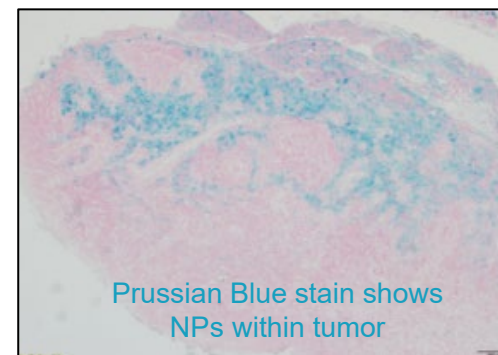
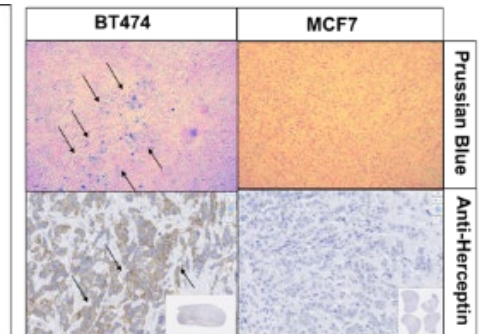
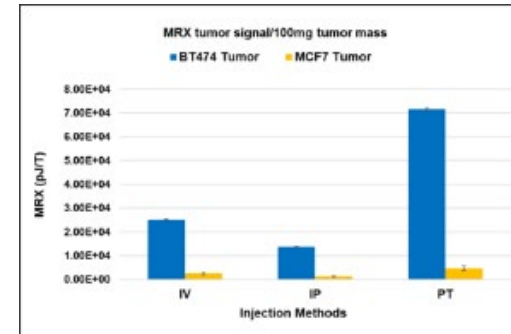
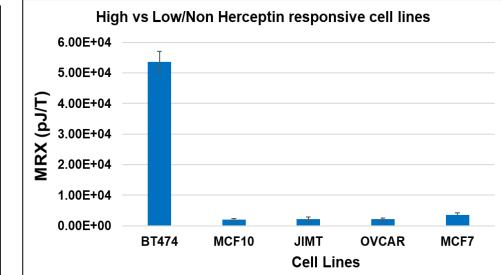
Safety

- GLP-compliant toxicology and toxicokinetic study show no adverse effects.

Cell Competition Assay



Cell Selectivity Assay



Dual Tumor Model

NPs go to HER2+ Tumor

No NPs in HER2- Tumor



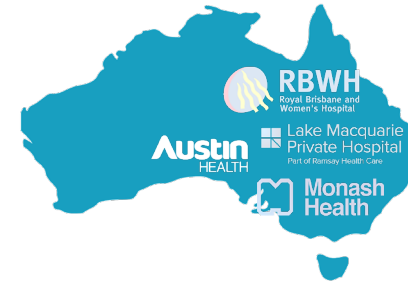
Phase 1 Study for Nodal Staging of HER2 Metastatic Breast Cancer

- ✓ Multi-site study for patients with HER2 positive primary tumor
- ✓ Collaboration with Siemens provides multi-modal imaging assessment of MRI and proprietary relaxometry
- ✓ Patients receive a single dose of the MagSense™ HER2 imaging agent for passage to the lymph nodes
- ✓ Results will show initial concordance of imaging compared to pathology and clinical assessment for nodal staging



Phase I Study

- Primary endpoint is testing for patient safety
- Exploratory endpoints are initial assessment of effectiveness for MRX / MRI



Multi-Site in AUS

- 4 clinical sites in Australia (VIC, NSW and QLD)
- Goal of testing ~15 subjects up to a maximum ~30



Timing

- First patient enrolled in May 2021
- Study completion expected in 2022



03

Growth Strategy

Compelling Business Model

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Proprietary Consumables Drive Growth & Profitability



Lower Cost Capital
Sale than MRI or CT ~
\$500K USD

Does not require
installation expense
of shielded room

Licensing or Commercial
Partnership with Medical
Imaging Player(s)

Imagion receives
licensing/milestone fees
and royalties on sales

Injectable
MagSense
Nanoparticles



Each Cancer Test Billable

~\$1,500 USD*

~80% Gross Margin*

Annual Revenue per Installed
MagSense® System

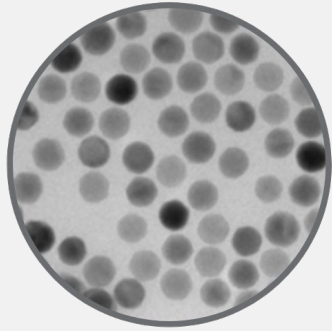
\$500k - \$2M USD

US Patent 9095270 - Detection, measurement, & imaging of cells such as cancer & other biological substances using targeted nanoparticle & magnetic properties thereof

*Company estimate based on current procedures. Reimbursement code and pricing has not been defined.

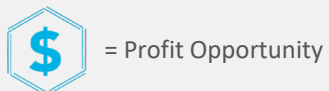
Nanoparticles Are at the Core of Our Business Model

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We have developed a proprietary method for making magnetic nanoparticles that precisely controls for key attributes, such as size, dispersity, and magnetic properties, important in biomedical application.

There are significant opportunities for revenue and growth in biomedical applications of magnetic nanoparticles.



Research Sales



- Direct sales of PrecisionMRX[®] nanoparticles to institutions for research purposes.
- Provides visibility and access to future applications leading to OEM sales.

Available PrecisionMRX[®] Products:

- Carboxylic Acid Functionalized
- Dextran-Coated
- mPEG Coated
- Oleic Acid Coated

OEM Sales



- Revenue generated from contract research fees.
- Supply of nanoparticles which are used in third party branded products.

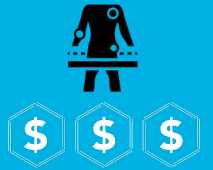
Example Applications:

- Hyperthermia
- Human and animal vaccines
- Cancer screening and treatments

A few of our current OEM customers:



Diagnostic Imaging



- Revenue generated from strategic partners in the form of licensing or milestone fees.
- Sales of our proprietary MagSense[®] imaging products.

Example Applications:

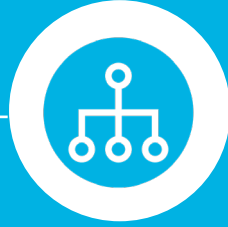
- MagSense[®] tumor detection: breast, prostate, ovarian, brain, and lung
- Treatment monitoring
- MRI contrast
- Detection and therapy

Business Strategy



Use MagSense® HER2 Test as a commercial launchpad

Current Phase 1 study provides proof-of-concept that MagSense® imaging is effective and provides path to commercialization.



Expand the pipeline

Build a pipeline of other diagnostic imaging agents targeting other cancers and diseases with high unmet medical need.



Collaborate in other biomedical applications

Generate revenue through collaboration with 3rd parties to leverage our nanoparticle expertise in other areas such as vaccines and therapy.



Create a high-value biomedical portfolio

Align with strategic partners to commercialize our proprietary imaging and therapeutic products.



04

Leadership and Financials

Experienced Board and Management

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Commercially focused team with deep industry & clinical experience



ROBERT PROULX
CHAIRMAN & CEO

- Operationally oriented executive
- Over 25 years in life science & medical devices
- Product development & commercialization



YALIA JAYALAKSHMI
CHIEF DEVELOPMENT OFFICER

- Over 25 years clinical translation of drug, device, nanoparticle delivery and diagnostic imaging product delivery



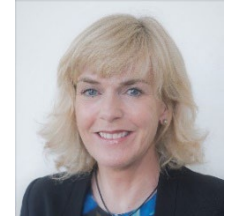
MICHAEL HARSH
NON-EXEC DIRECTOR

- Former CTO of GE Healthcare
- Over 35 years in medical imaging product development



DAVID LUDVIGSON
NON-EXEC DIRECTOR

- Over 35 years in pharma, medical devices
- Corporate strategy, M&A, & financing



DIANNE ANGUS
NON-EXEC DIRECTOR

- Over 20 years in Australian & US listed Biotechnology companies



GEOFF HOLLIS
CFO & COSEC

- ASX experienced CFO with over 20 years as a Chartered Accountant



MARIE ZHANG
VP R&D

- 20 years in drug development
- Leadership in early stage and start-up founder



MARK VAN ASTEN
NON-EXEC DIRECTOR

- Strong track record in diagnostics & healthcare
- Over 25 years commercializing diagnostic products



JOVANKA NAUMOSKA
NON-EXEC DIR

- Attorney with over 20 years experience advising research organisations
- Expertise in commercialisation, regulatory compliance, governance & risk management

Scientific Advisory Board

Imagionbiosystems.com

Collective expertise in oncology, medical imaging, nanotechnology, clinical trial design



DR JOHN HAZLE
SCIENTIFIC ADVISORY BOARD CHAIR

- Board certified in medical physics
- 30 years in pre-clinical & clinical imaging research
- Chairs Cancer Research at UT Graduate School of Biomedical Sciences



PROF LISA HORVARTH

- Director, Department of Medical Oncology, Chris O'Brien Lifehouse
- Head of Clinical Prostate Cancer Research, Garvan Institute of Medical Research



DR ROBERT IVKOV

- Expertise in radiation oncology and development and characterization of magnetic nanoparticles



PROF ANDREW SCOTT AM

- Director, Department of Molecular Imaging, Olivia Newton-John Cancer Research Institute
- Experience in pre-clinical development and first in-human trials.



DR PAUL GRINT

- Expertise in commercialization of molecules
- Over 20 years experience in biologics and small molecule R&D

Collaborators and Partners

Imagionbiosystems.com

MD Anderson Cancer Center

- In 2015 the MD Anderson established a Magnetic Relaxometry Research Laboratory to help validate the Imagion technology for various cancer targets.

UC San Diego

- Radiologists with expertise in biomagnetism have been helping develop the analytical algorithms associated with magnetic relaxometry measurements and magnetic resonance imaging.

Siemens

- A research collaboration was established with Siemens Healthineers of Australia to assist with the optimization of MRI protocols currently being used in the MagSense® HER2 Breast Cancer Phase I study.

Monash University

- A \$50k CSIRO grant supports pre-clinical research at Monash University's Biomedicine Discovery Institute for prostate cancer imaging. Work commenced later in 2021.

Patrys Limited

- A collaborative research program with Patrys Limited aims to combine technologies to improve brain tumor imaging and diagnosis. Preliminary research commenced in 2021.

Global Cancer Technology

- A Joint Development Agreement aims to develop GCT's novel nanoscintillator technology for the treatment of breast cancer. Preliminary work commenced under this agreement in 2021.

NewPhase

- Imagion supplies NewPhase with iron oxide nanoparticles for incorporation into their magnetic hyperthermia treatment for cancer. The high quality of Imagion's nanoparticles enables effective heating of cancer cells resulting in cell death.

World class scientific collaborations & partnerships:



Capital and Financial Snapshot

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Imagion ended 2021 with \$13.4 million

- 2021 cash flows were funded by cash reserves, exercise of listed options and R&D tax incentive
- Strong liquidity
- Widely held register with over 9,750 shareholders

Ordinary shares on issue	1,121 million
Listed and unlisted options	282 million
Share price (22 February 2022)	\$0.057
12-month range	\$0.056 - \$0.225
Average daily volume (12 months to 22 February 2022)	6.0 million shares
Market capitalization (22 February 2022)	\$62.8 million
Cash (31 December 2021)	\$13.4 million
Shareholder spread (22 February 2022)	Top 20 shareholders own 18.2%

Historical Cash Flows

	2020				2021			
Operating	Q1 AUD '000	Q2 AUD '000	Q3 AUD '000	Q4 AUD '000	Q1 AUD '000	Q2 AUD '000	Q3 AUD '000	Q4 AUD '000
Receipts from customers	50	26	82	65	41	48	34	84
Payments - R&D	(492)	(1,036)	(794)	(790)	(490)	(645)	(640)	(749)
Payments - other	(1,183)	(925)	(1,085)	(798)	(1,002)	(1,322)	(1,572)	(1,510)
Interest - net	(8)	(9)	(9)	(9)	(3)	3	(2)	(1)
Grants and R&D incentive	-	2,197	22	16	-	2,612	-	-
Other	23	22	26	26	46	-	-	-
Total operating	(1,610)	275	(1,758)	(1,491)	(1,408)	695	(2,180)	(2,176)
Investing								
Payments - assets	-	-	(4)	(4)	(20)	(91)	(95)	(103)
Financing								
Proceeds - shares (net)	-	2,195	4,403	5,563	-	-	-	-
Proceeds - options	-	-	1,568	1,038	1,334	253	134	3,785
Repayment of borrowings (leases)	(97)	(67)	(173)	(144)	(142)	(66)	(74)	(77)
Other	-	234	-	-	-	-	-	-
Total financing	(97)	2,362	5,799	6,457	1,192	187	59	3,708
Net cashflows	(1,707)	2,637	4,037	4,962	(236)	791	(2,216)	1,429
Forex	4	(9)	(18)	(107)	43	130	273	(21)
Cash at start	3,402	1,698	4,327	8,345	13,201	13,007	13,928	11,986
Cash at end	1,698	4,327	8,345	13,201	13,007	13,928	11,986	13,394



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