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**MICRO-X** Ltd

ACN 153 273 735

**2018 Bioshares Biotechnology Summit, Queenstown NZ**

**The Investment Proposition: The End Justifies the Means**

**Micro-X: A New Era in X-Ray Imaging**

Peter Rowland, Managing Director

Saturday 28<sup>th</sup> July 2018

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# Bioshares Session Theme

## Medical Devices: Does the End Justify the Means?

“It is a costly, capital intensive process to develop cutting-edge medical devices and diagnostics and then to launch and compete with products in global markets in a bid to create a viable, high growth business. This can be a long-term process.” (Bioshares)

- Getting cutting edge medical devices to global markets can only be a long-term process!
- Once-off Investment is required in setting up People, Culture, Facilities, Processes, Equipment, QMS, Partnerships, Regulatory Approvals, etc... and the core technology
- Then: Expect the Unexpected
- Nobody does that for one product
- The big once-off investments need multi-product returns
- The technology platform must provide sustainable competitive advantage for the long-haul
- With each new product the risk profile reduces
- Medical devices is a long-haul business.

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## The MX1 Core Business Model:

Developing & manufacturing innovative, ultra-lightweight, x-ray imaging products for global medical and security markets.

- Core technology is Carbon Nano-Tube (CNT) emitters
  - Exclusively licenced from technology partner XinRay Systems
  - Enables small size and electronic control of x-ray tubes
- Path-to-market Partnership with global brand name, Carestream Health
  - OEM supply ex-works Adelaide
  - Follow-on product opportunities under discussion
- Leverage contracts with Australian Department of Defence & UK Government
  - Unfulfilled need for deployable medical x-ray and stand-off IED imaging
  - Appetite for a new paradigm in airport checkpoint security
  - ADF as reference customer for MX1 brand development
  - Prove new electronic beam 3-D imaging modality
- New products pioneer unique x-ray modality

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# Micro-X's Five Biggest Challenges getting here

## Creating the CNT Technology Platform



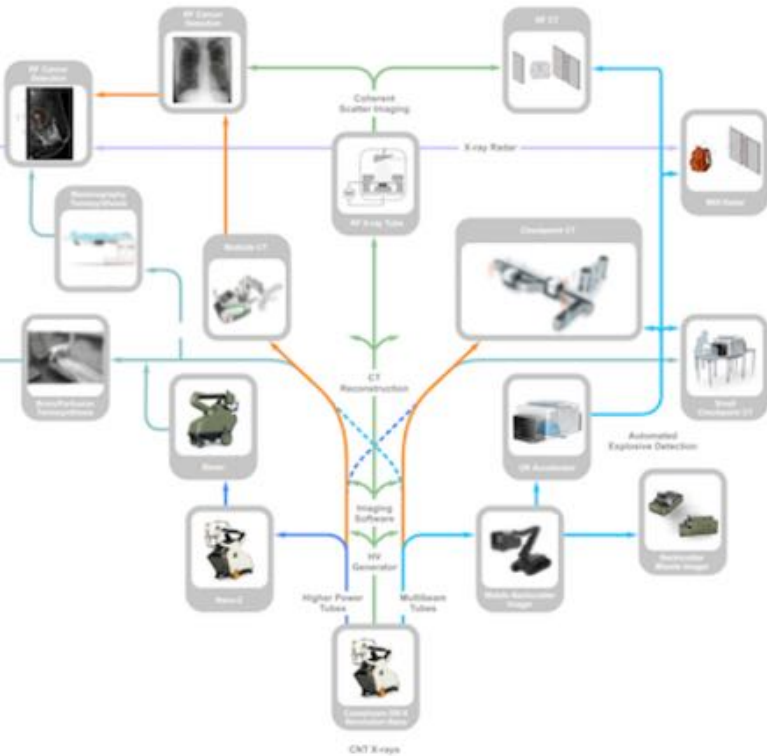
- Unexpected core technology issues had to be solved
- Achieving engineering & production discipline in scientific/academic organisations
- New vacuum physics learnings of tube operation
- Low supply chain negotiation power of a start-up
- Combatting x-ray industry's conventional thinking



# The Long-Term Strategy Hasn't Changed

A journey of 1,000 miles starts with a single step

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- Prove the CNT technology platform with the Carestream DRX Revolution Nano
- Prove the MX1 team can deliver world-class innovation, design and manufacture
- Become established in both Medical and Security markets
- Create a Product Roadmap of opportunities where we can offer high customer value and there is no competitor
- Progress the opportunities in order of best risk/return

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# Future Challenges

Fully Understanding the Global significance of this technology leap:

Profiting from staying in control of CNT x-ray



Filament



LED

- Micro-X now recognised globally for creating the first cold-cathode X-Ray product
- Multiple attractive product applications with no competitors
- Many approaches from global x-ray companies to partner and collaborate on new products
- Slow response to new opportunities will encourage competitors

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# Grand Alliance

## Partnering to Accelerate Global Commercialisation

- Collaboration discussions have progressed well with a number of global & technology radiology companies
- MX1 is looking in the Alliance to achieve:
  - A shared vision for technology and applications
  - Investment to accelerate product development and commercialisation
  - Technology synergy so that  $1 + 1 = 3$
  - New paths to market
  - Access to additional Resources for acceleration
- Project funding as well as corporate investment sought
- Expect an announcement early in Q4 CY18

# First Product – Now On Sale

## Carestream DRX Revolution Nano



- Carestream sales and marketing now taking orders
- MX1 production deliveries against first order
- A short hiatus currently while some issues with air freight damage being resolved
- Expecting a strong Q4CY18
- Addressable global market \$500M annually



Imaging Technology News Jul/Aug18





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# Future Product Opportunity in Development

## Rover – Mobile X-Ray for Deployed Military Medical Facilities



- X-Ray tube re-designed for the more demanding, higher-energy exams used in trauma medicine
- Operated up to 10kW (100kV, 100mAs)
- Imaging tests for Australian Defence Force completed
- Australian Defence Force Radiologist imaging reviews shows full diagnostic quality
- Australian Army tender in evaluation.
- Addressable global market \$170M

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# Future Product Opportunity in Development

## Mobile Backscatter Imager (MBI) for Counter-IED Assessment

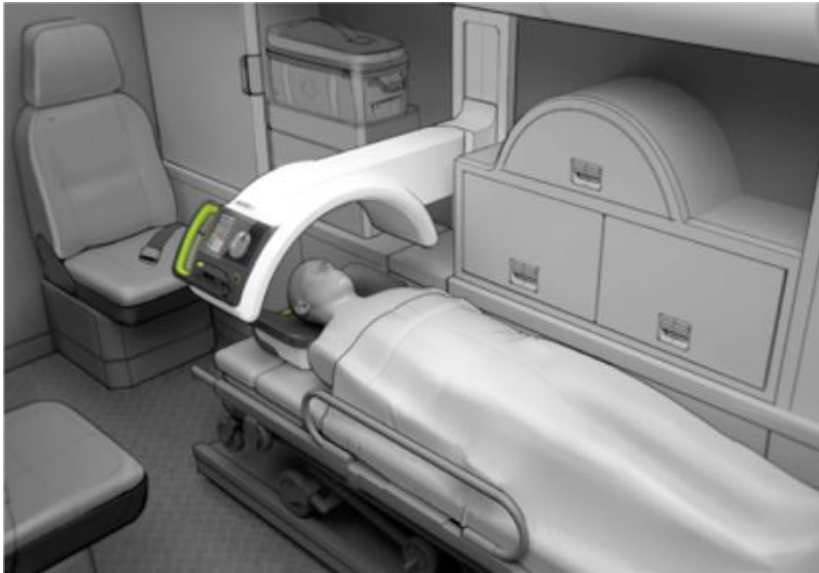


- Today Explosive Ordnance Disposal technicians exposed to high risk acquiring x-ray image to assess and render-safe IEDs
- MX1 has demonstrated stand-off backscatter imaging to Australian Defence Force with 0.5mm resolution

- Voice of Customer meetings conducted with Australian Defence Force and FBI & DoD in Washington DC
- Interest in product very strong
- New configuration of standalone imaging unit which can be picked up by any EOD robot
- More challenging weight target
- Addressable global market \$1.8B



# Future Product Opportunity: Brain Perfusion CT Imaging



- Multi-beam CT is small, light and affordable
- Potential fit to every ambulance
- Treatment can commence in Ambulance
- Addressable global market: \$25B

- Stroke dichotomy: Thrombotic or Haemorrhagic? CT diagnosis must precede treatment
- Time to commencement of treatment biggest factor in recovery and on-going patient care costs.
- Stroke Ambulance is single-purpose due to large size of conventional CT imaging

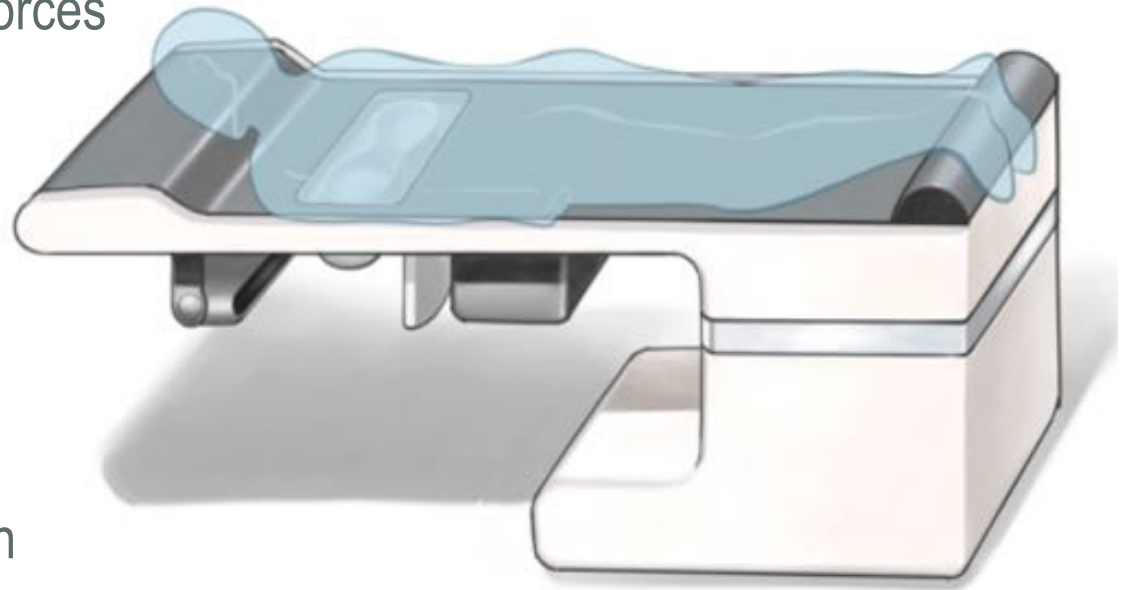


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## Future Product Opportunity:

### 3D Breast Imaging for Screening

- 2D projection x-ray imaging being replaced by 3D CT to improve diagnosis
- Pain from 30kg breast compression forces in current technology reduces patient participation in screening
- CNT technology product offers:
  - No breast compression
  - Short scan time
  - No motion blur
  - Dual energy to improve detection
- Addressable global market: \$1.3B<sup>1</sup>



<sup>1</sup> 2015 Market size extended by year-over-year growth of 13.7%.

<https://www.itnonline.com/content/digital-breast-tomosynthesis-spurring-mammography-equipment-market-growth>

# Future Product Opportunity:

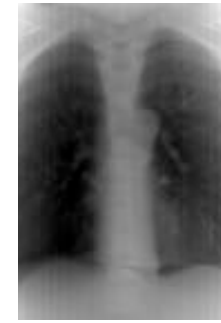
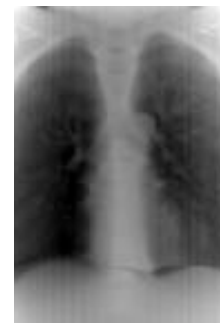
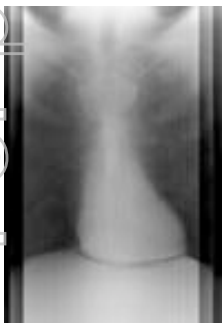
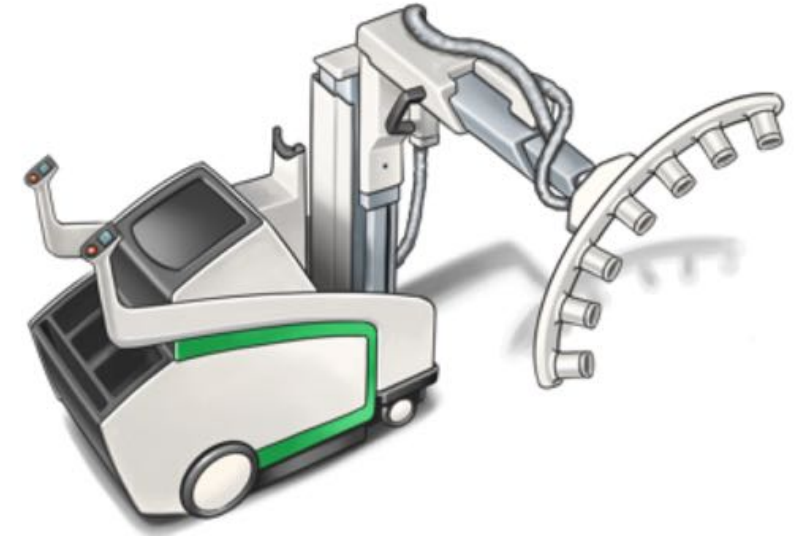
## Bedside Cone Beam CT Imaging

Risks in moving ICU Patients for a conventional CT scan

Mobile Tomosynthesis Applications include:

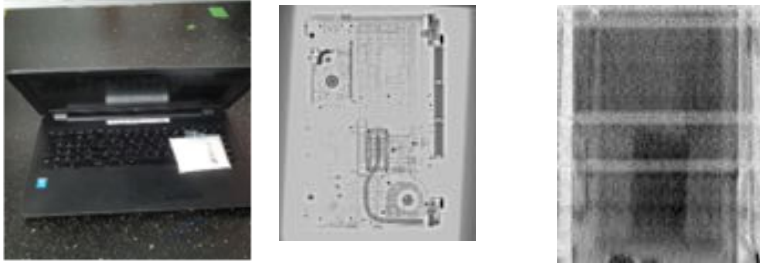
- Coronary Artery CT, Pneumothorax, Pulmonary Tuberculosis, Nontuberculosis Mycobacterial Disease, Cystic Fibrosis

CT image slices shown below from proof-of-concept imaging



# Future Product Opportunity:

## Airport Checkpoint X-Ray Security



- Contract from UK Government Future Airport Security Solutions
- “Finding Explosives in Electronics” leads to next-generation checkpoint x-ray

Future Airport Checkpoint X-Ray concept uses same imaging module technology

Combination Multi-beam CT & Backscatter with automated detection algorithms

ECAC Detection Standards 3 & 4

No divestment necessary - 1200 bags per hour possible (currently 200)

Looking for global go-to-market partner

Addressable global checkpoint CT market: \$2.4B



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# Valuing MX1

## Does the End Justify the Means? - Valuing the whole Product Roadmap

- MX1's investment to date in its capability and its platform technology will support multiple future valuable products
- Commercialising products quickly is important to derive most value
- Building Micro-X brand image (and value) by first product recognition also important
- NPV of the 9-year cashflows from these products (at 15% discount) is being used in partnership/ investment discussions.
- The NPV points to a A\$ 1.17B company (\$4.86 per MX1 share fully diluted for future capital raising).
- The end does justify the means.

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Questions...?