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ASX RELEASE

19 July 2016

INVESTOR UPDATE

4DS Memory Limited (ASX: 4DS) (**4DS**) has released an updated presentation to coincide with investor marketing commencing in Australia today.

In addition, a corporate video can be viewed at www.4dsmemory.com/company/corporate-video.

ENDS

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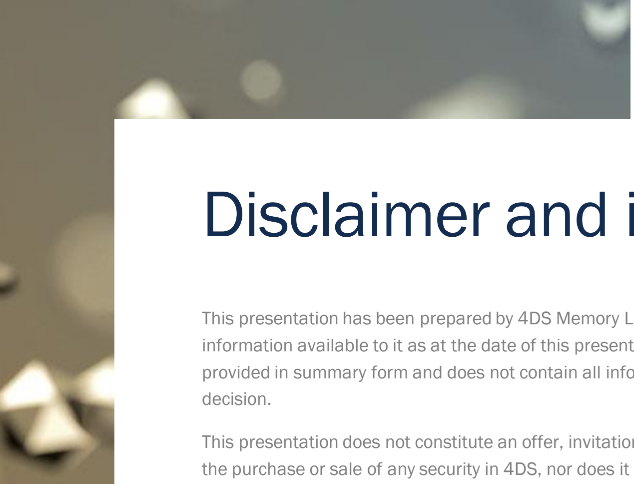
About 4DS

4DS Memory Limited (ASX: 4DS), with research and development facilities located in Silicon Valley, is a developer of non-volatile memory technology, pioneering non-filamentary ReRAM for next generation storage in mobile and cloud. Established in 2007, 4DS owns a patented IP portfolio developed in-house to create high density gigabyte storage. 4DS has a joint development agreement with HGST, a global storage leader. For more information, please visit www.4dsmemory.com.

Addressing the massive storage demands of tomorrow

July 2016



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4DS Memory

We are a Silicon Valley memory technology developer listed on the ASX

We own 16 patents with over US$10m invested in development so far

We make non-filamentary ReRAM for next generation gigabyte (GB) silicon storage

We enable higher-density memory to operate cooler, faster and longer

We have a strategic partnership with Western Digital subsidiary HGST, a global storage leader

Board and management team

Global expertise founding and building high-tech companies

Jim Dorrian
Chairman

Served as CEO and director of several Silicon Valley companies. M&A and IPO experience gained through founding and managing successful technology exits as a partner at Crosspoint Venture Partners, a venture capital firm for early stage companies.

Dr Guido Arnout
CEO & Managing Director

Specific expertise with over 30 years in commercialising electronics technology from concept to product including Power-Escape, CoWare, CrossCheck Technology and Silvar-Lisco.

Howard Digby
Non-Executive Director

Former senior roles at IBM, Adobe, Gartner and the Economist Group. Director of Estrella Resources (ASX:ESR).

David McAuliffe
Non-Executive Director

Experienced company director. Involved in numerous capital raisings and in-licensing of technologies and founder of several companies in Australia, France and the UK, many of which are now publicly listed.

Michael Van Buskirk
Chief Engineering Officer

Executive roles with a number of leading memory companies in Silicon Valley including Adesto Technologies Corporation, Innovative Silicon Inc and Spansion Inc.

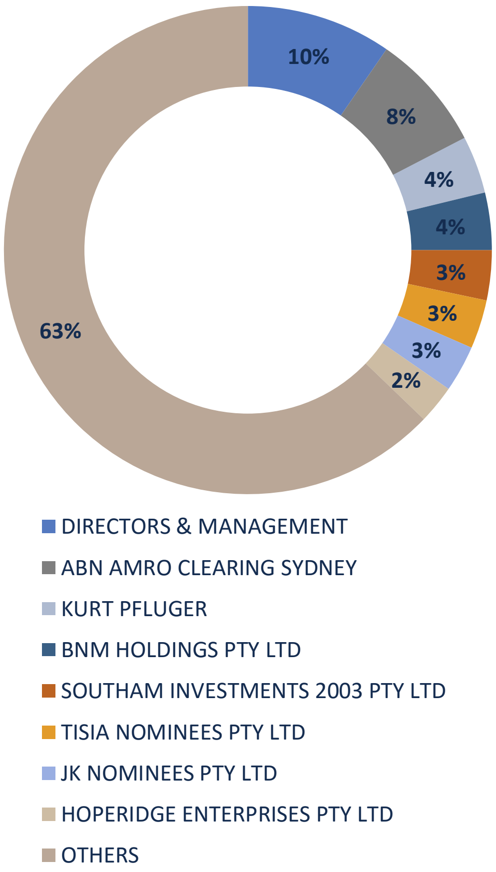
Melanie Buffier
Corporate Strategy & Investor Relations

Investor relations, communications and financial reporting experience gained at some of Australia's leading public companies including Scentre Group, Westfield Retail Trust, Mirvac Group and Westfield Group.

Capital structure

ASX Code	4DS
Market capitalisation (fully diluted)[1]	$18.3 million
Ordinary shares on issue[2]	659.2 million
Performance shares[3]	67.6 million
Unlisted options[4]	106.2 million
Top 20 Shareholders	50.4%
Cash (at 31 March 2016)	$1.8 million

1. At 18 July 2016 and including 67.6 million performance shares and 106.2 million unlisted options.
2. Including 113.4 million escrowed shares on issue.
3. Escrowed with expiry 31/12/18.
4. Including 66.5 million escrowed unlisted options.



90% of the data in the world today was created in the last two years

Endless demand

Every 24 hours...

1 million
video hours
are uploaded

250 billion
emails are sent

700 million
tweets are posted

1.3 billion
photos are uploaded

4DS memory

Silicon storage facts

Apple is the **biggest buyer of Flash** in the world

Microsoft **trialled an underwater data centre** for 90 days to test its cooling benefits

Data centre space will grow to almost **200 million square metres** in 2018

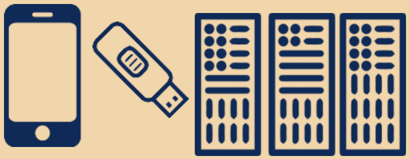
Amazon Web Services adds more server capacity **in a day** than Amazon.com had a decade ago

Consumers spend over **US$2 trillion** on content, devices and services every year

Household digital content is forecast to grow by **150%** in the next 5 years

The world is home to **7.2 billion** mobile devices which are multiplying **five times faster than we are**

Flash, hard drives & solid state storage



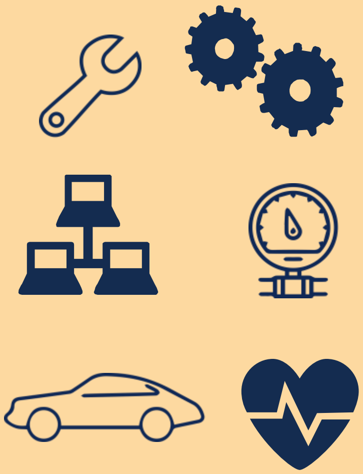
- Flash dominates the US$40 billion non volatile memory market
- Used in billions of smartphones, tablets and laptops
- More recently used in solid state drives (SSDs) in data centres

- Hard disk drives (HDDs) are a data storage device used for storing and retrieving digital information in the cloud
- HDDs have great retention and recovery, but:
  - Power hungry
  - Heat producing
  - Inferior latency

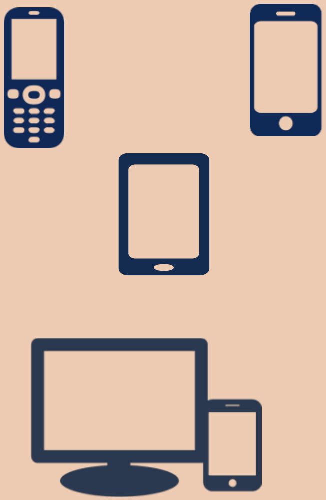
- Data centres and cloud players are moving to the use of SSDs / silicon storage at exponential rates
- Flash has been able to scale to meet industry's increasing storage needs – now it is starting to reach its limits

Growing demand for non volatile memory

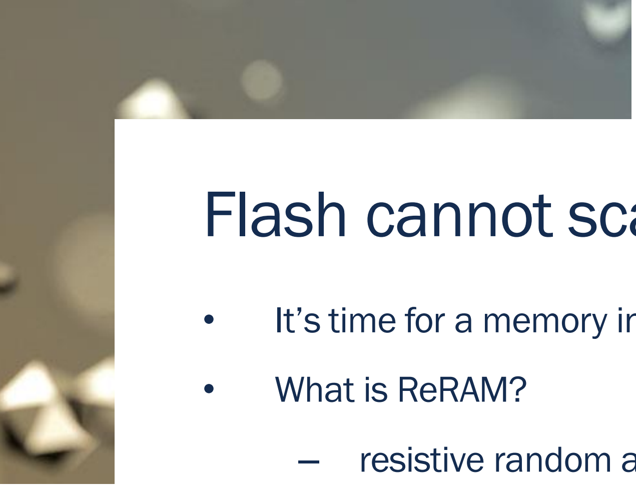
Internet of Things



Mobile devices



GB silicon storage



Flash cannot scale forever

- It's time for a memory innovation for GB silicon storage
- What is ReRAM?
  - resistive random access memory
  - non volatile: retains data when power is switched off
  - changes in material resistance works as the storage mechanism
- Scalability and low currents are essential for GB silicon storage

The solution: 4DS ReRAM

Why is 4DS ReRAM the solution?

- Operates without filaments
  - allows the switching current to scale in line with cell size
- Scales well to smaller geometries
  - well suited for GB storage required for mobile and cloud

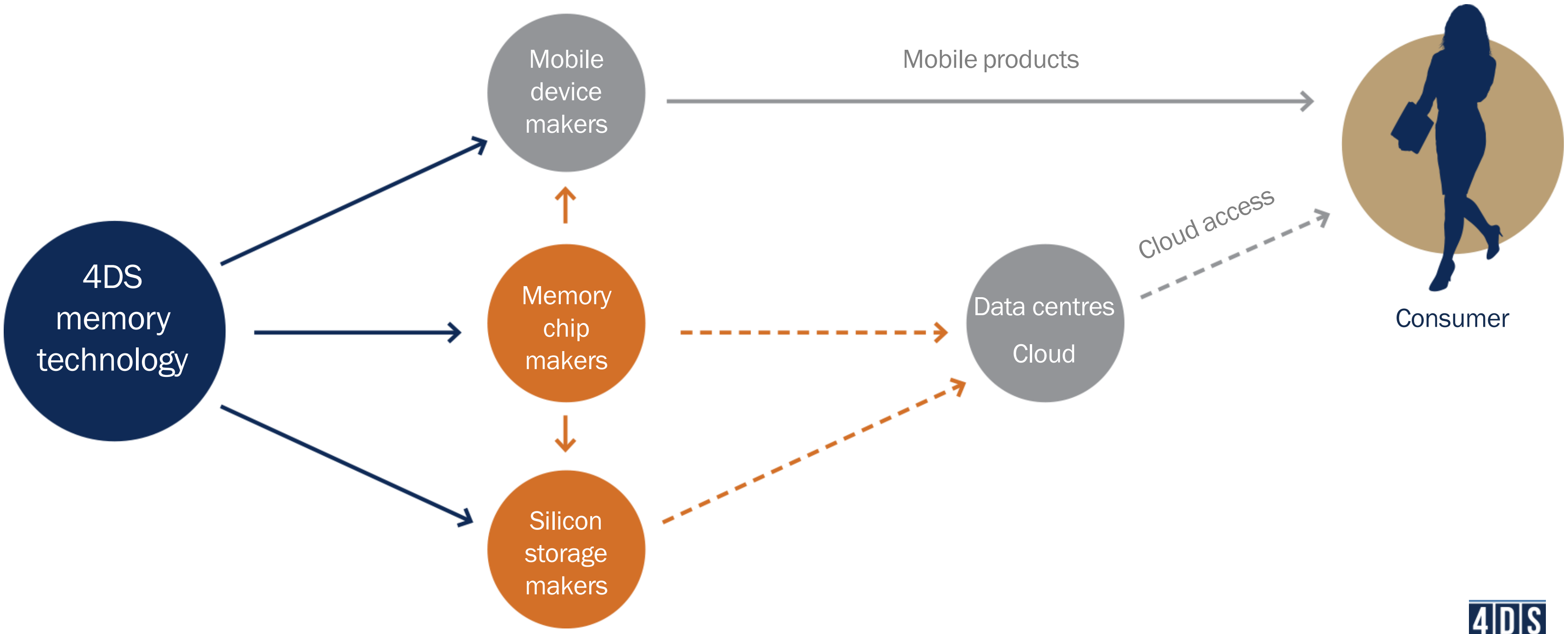
The benefits of 4DS ReRAM

- Higher density / scalability
- Lower power consumption
- Greater endurance and reliability
- Faster access speed and performance

With higher density memory that runs cooler, faster, longer, 4DS is well positioned to target the fast growing multi-billion-dollar NVM market

4DS memory

How 4DS fits into the GB silicon storage supply chain

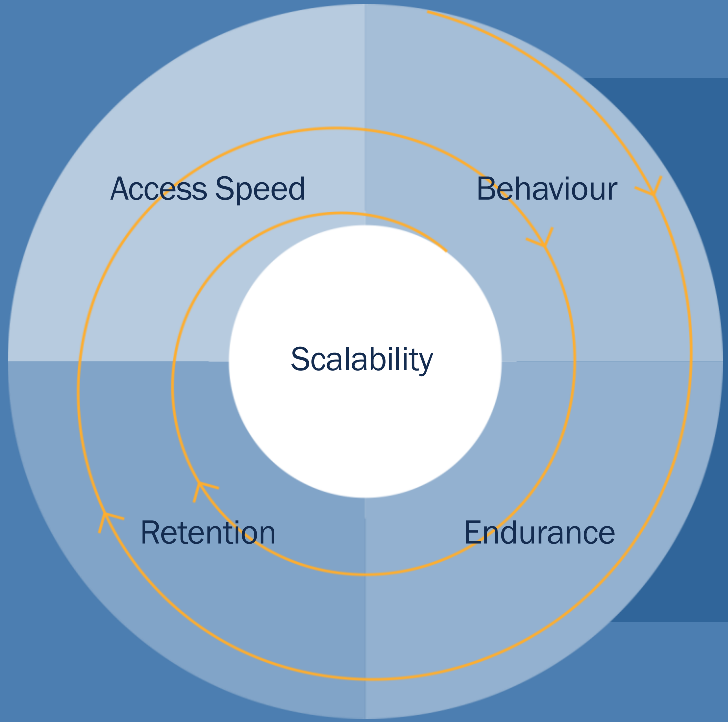


4DS memory

Joint development agreement with HGST

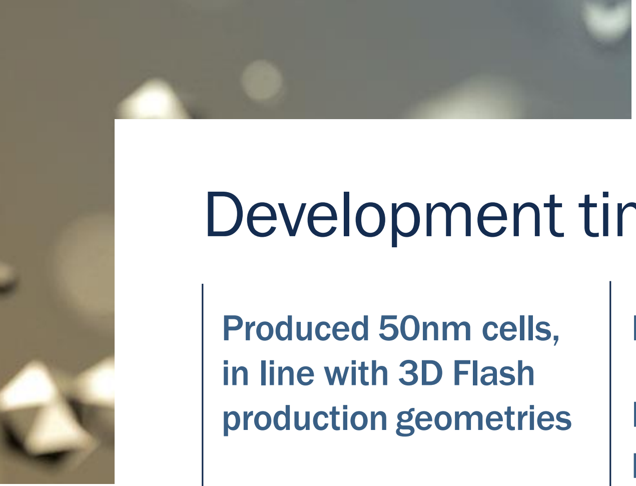
- HGST is a subsidiary of Western Digital Corporation, the leader in digital storage
- Strategic player in emerging high growth technologies
- Commenced in 2014 and renewed for the 2nd time in July 2016
- Goal is to optimise 4DS memory technology for the mobile and cloud GB storage market
- Collaboration provides access to HGST's expertise
- Accelerates the evolution of 4DS' non-filamentary ReRAM
- Cost effective way to demonstrate commercial viability of 4DS' unique ReRAM technology
- Only known non-filamentary ReRAM technology with a JDA partner

Development of viable ReRAM technology



Every time changes are made to the cell architecture, cell size, materials composition, material thickness or the fabrication process, 4DS has to re-confirm that the changes have the desired effects.

4DS memory



Development timeline

Today

Produced 50nm cells, in line with 3D Flash production geometries

Demonstrated scalability, consistency and behavior with high yield

Renewed JDA with HGST

Next 3 months

Endurance testing

Meet endurance performance milestone

Demonstrate viable scalability below 50nm

Ongoing

Continue fabrication refinements

Optimise endurance, access speed and retention

2017 goals

Demonstrate viability of 4DS ReRAM for GB silicon storage

Additional patents granted

Potential IP licensing

4DS memory

Our strategy

- Deliver higher density memory that operates with lower power consumption, increased reliability and improved performance
- Develop and own all IP
- Leverage strategic partnership with HGST
- Focus on GB silicon storage for mobile and cloud
- Demonstrate commercial viability and prove the value of our ReRAM solution
- Create significant shareholder value by continuing to achieve all critical technical milestones

ReRAM landscape

Company	Exchange	Market Cap	Type	Target Market
Crossbar	Private	n/a[1]	Filamentary ReRAM	Internet of Things, wearables, SSDs
Weebit Nano / Radar Iron	ASX	A$60 million[2]	Filamentary ReRAM	Internet of Things, wearables
Adesto Technologies	NASDAQ	US$57 million	Filamentary ReRAM	Internet of Things
Strategic Elements	ASX	A$33 million	Nano cube ReRAM	Printable memory
4DS Memory	ASX	A$15 million	Non-filamentary ReRAM	GB silicon storage for mobile / cloud

Recent transactions

Acquirer	Transaction	Date	Value (US$)	Technology	Market
Western Digital	Acquired startup Virident	2013	$685 million	Flash controllers	Cloud
Western Digital	Acquired sTec	2013	$340 million	Solid state drives	Cloud
Seagate	Acquired LSI	2014	$540 million	Flash controllers	Mobile
Cypress	Merger with Spansion	2015	$5 billion	Flash memory	Flash systems
Western Digital	Acquired Sandisk	2016	$19 billion	Flash memory	Cloud

1. Raised US$85 million to date.
2. Implied valuation upon re-listing.

Summary

- 4DS is developing a next generation non-filament based ReRAM memory solution which can store more data and can operate cooler, faster and longer compared to traditional storage memory
- Unique, patented IP, wholly owned and developed in-house over the past 10 years
- World-class team of memory specialists, material scientists and test engineers
- Consistently achieved stated milestones
- Board experienced in founding, building and exiting high tech companies
- Development accelerating through strategic partnership with the leader in digital storage
- 4DS is well positioned to target fast growing markets that require GB silicon storage

We are addressing the massive memory storage demands of tomorrow

Appendix

Investment proposition

- Penetration of mobile devices, generation of digital content, proliferation of cloud storage, the emergence of the Internet of Things and the growth of connected devices drive the need for memory storage solutions
- NAND Flash (Flash) is a 30 year old non volatile memory (NVM) technology with diminishing ability to reliably scale to meet the exponential growth of data demands
- Industry experts cite resistive random access memory (ReRAM) as the leading emerging memory candidate to overcome the limitations of Flash, creating a multi-billion-dollar emerging NVM market
- 4DS is developing breakthrough ReRAM technology for next generation gigabyte (GB) storage in mobile and cloud – it enables higher density memory to run cooler, faster and longer than traditional storage technologies
- Unique, patented IP, wholly owned and developed in-house over the last 10 years
- A strategic partnership with HGST, a world leader in digital storage, is now into its 3rd year
- Experienced management team and industry respected memory specialists

2D Flash versus 3D Flash

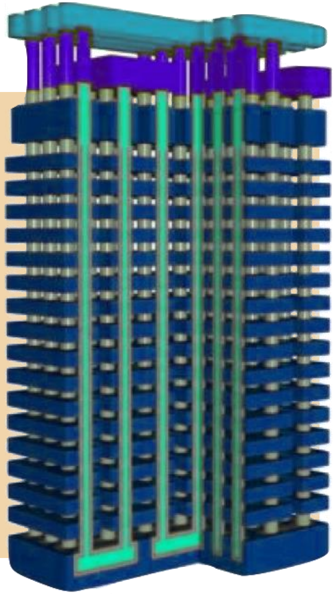
Flash currently dominates the US$40 billion GB silicon storage market

2D Flash

- 16nm to 20nm cell size
- Limits are # of electrons

3D Flash

- 40nm to 50nm cell size
- Limits are structural



4DS memory

Two approaches to ReRAM

The 4DS memory cell uses no filament to switch therefore no scaling issues

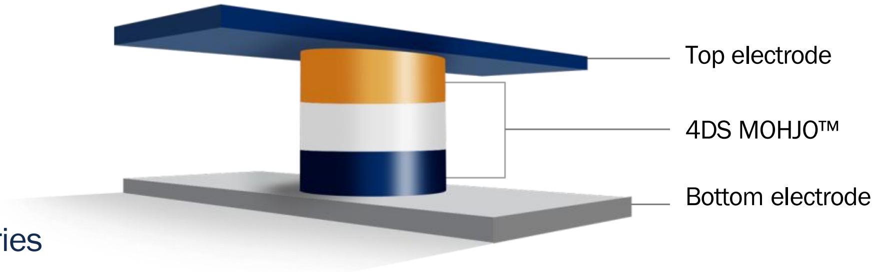
	Filamentary ReRAM	4DS Non-filamentary ReRAM
Switching currents	High and don't scale with cell size	Low and **scale with cell size**
On-off current ratios	Must be high due to widely fluctuating currents	Can be low due to much **more stable currents**
Scalability	Limited by wire current densities due to constant switching currents	Lower current allows **smaller cells** not limited by wire current densities
Cycling endurance	Constant filament formation and destruction results in eventual cell breakdown	Does not rely on a destruction mechanism thereby **increasing reliability**
Data retention	High switching currents needed for long data retention	Low switching currents **help data retention**
Market sweet spot	Low density: IoT devices, small embedded memories	**High density:** GB silicon storage for mobile and cloud

Why is 4DS ReRAM better placed?

4DS ReRAM technology is non-filamentary therefore has no filamentary scaling issues

4DS MOHJO™

- Metal Oxide Hetero Junction – patented cell structure and operation
- Oxygen exchange across hetero-junction
- A voltage pulse reversibly changes resistance
- Reversing voltage polarity switches resistance
- Non-filamentary switching mechanism



4DS patented ReRAM

- Inherently scales well beyond mainstream memories
- Ideal candidate to replace Flash as dominant future non volatile memory

Corporate directory

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