



4DS
memory

**4DS UPDATE
NOVEMBER 2020**

DISCLAIMER IMPORTANT NOTICE.

This presentation has been prepared by 4DS Memory Limited. ("4DS" or the "Company") based on information available to it as at the date of this presentation. The information in this presentation is provided in summary form and does not contain all information necessary to make an investment decision.

This presentation does not constitute an offer, invitation, solicitation or recommendation with respect to the purchase or sale of any security in 4DS, nor does it constitute financial product advice or take into account any individual's investment objectives, taxation situation, financial situation or needs. An investor must not act on the basis of any matter contained in this presentation but must make its own assessment of 4DS and conduct its own investigations. Before making an investment decision, investors should consider the appropriateness of the information having regard to their own objectives, financial situation and needs, and seek legal, taxation and financial advice appropriate to their jurisdiction and circumstances. 4DS is not licensed to provide financial product advice in respect of its securities or any other financial products. Cooling off rights do not apply to the acquisition of 4DS securities.

Although reasonable care has been taken to ensure that the facts stated in this presentation are accurate and that the opinions expressed are fair and reasonable, no representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions and conclusions contained in this presentation. To the maximum extent permitted by law, none of 4DS, its officers, directors, employees and agents, nor any other person, accepts any responsibility and liability for the content of this presentation including, without limitation, any liability arising from fault or negligence, for any loss arising from the use of or reliance on any of the information contained in this presentation or otherwise arising in connection with it.

The information presented in this presentation is subject to change without notice and 4DS does not have any responsibility or obligation to inform you of any matter arising or coming to their notice, after the date of this presentation, which may affect any matter referred to in this presentation.

The distribution of this presentation may be restricted by law and you should observe any such restrictions.

Forward looking statements

This presentation contains certain forward-looking statements that are based on the Company's management's beliefs, assumptions and expectations and on information currently available to management. Such forward looking statements involve known and unknown risks, uncertainties, and other factors which may cause the actual results or performance of 4DS to be materially different from the results or performance expressed or implied by such forward looking statements. Such forward looking statements are based on numerous assumptions regarding the Company's present and future business strategies and the political and economic environment in which 4DS will operate in the future, which are subject to change without notice. Past performance is not necessarily a guide to future performance and no representation or warranty is made as to the likelihood of achievement or reasonableness of any forward-looking statements or other forecast.

To the full extent permitted by law, 4DS and its directors, officers, employees, advisers, agents and intermediaries disclaim any obligation or undertaking to release any updates or revisions to information to reflect any change in any of the information contained in this presentation (including, but not limited to, any assumptions or expectations set out in the presentation).

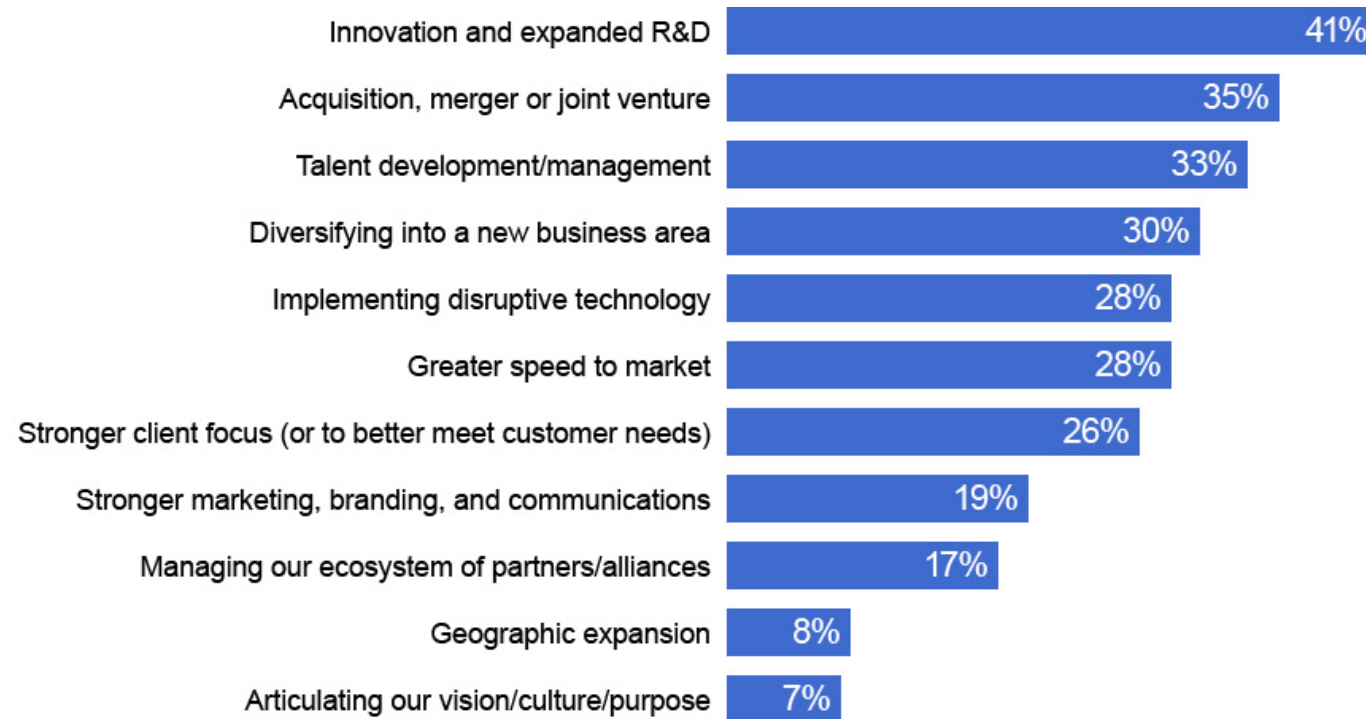
INDUSTRY PRIORITIES.



“As the backbone of the connected world, the [semiconductor] industry’s future is bright”.



Top strategic priorities for semiconductor companies over the next three years:



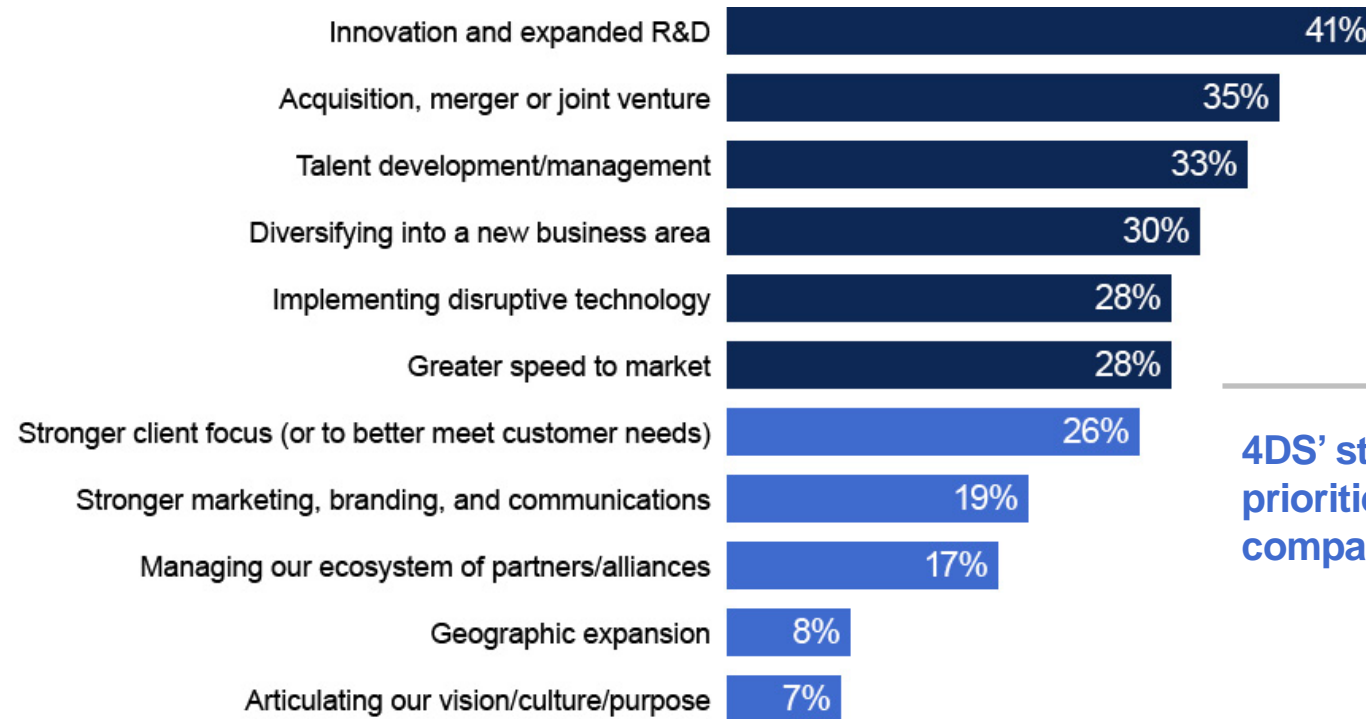
INDUSTRY PRIORITIES.



“As the backbone of the connected world, the [semiconductor] industry’s future is bright”.



Top strategic priorities for semiconductor companies over the next three years:



4DS' strategy aligns with the top priorities of semiconductor companies

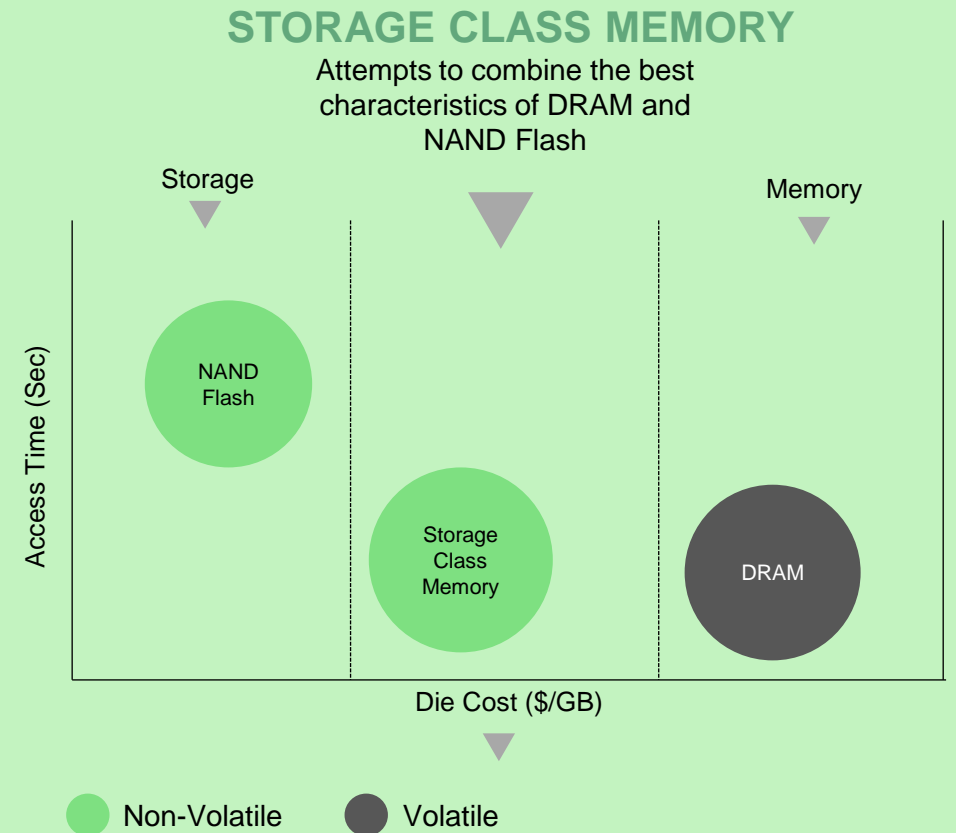
STORAGE CLASS MEMORY.

4DS Interface Switching ReRAM is a unique ReRAM being developed specifically for Storage Class Memory applications.

It will supplement the US\$ 96 billion DRAM and US\$ 56 billion NAND Flash markets – not replace or diminish them or their growth.

Battleground for next generation memory technology.

- ✓ **Faster** DRAM-like read speed
- ✓ **Cheaper** NAND Flash-like costs
- ✓ **Non-volatile** Retains data when power is off



BEST DATA SET RECORDED BY 4DS.

In 2020, 4DS Interface Switching ReRAM showed **record achievements** in relevant Storage Class Memory categories:

- ✓ Best endurance data recorded – two to three times better than previously reported*
- ✓ Highest recorded speed near DRAM speed – an area-based ReRAM first – **US patents now granted***
- ✓ No need for speed crippling error correction – **a ReRAM first – US patents now granted**
- ✓ Retention data recorded – additional studies to be completed to assess upper limits
- ✓ **Data validated by two of the world's leading semiconductor participants – imec / HGST**



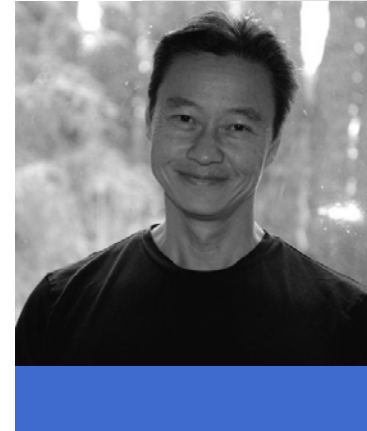
*ASX Announcement 24.06.2020

BOARD AND MANAGEMENT STRENGTHENED.



Drs. Wilbert van den Hoek

- Post AGM will assume role of Non-Executive Chairman
- 17 years at Novellus Systems - Chief Technical Officer and Executive VP from 1999/2005 and President and CEO of Novellus venture arm from 2005/2008
- Novellus was a leader of advanced process equipment and was acquired by Lam Research Corp for US\$3.3 billion in 2011
- Board member of Cypress Semiconductor Corp from 2011/2017, a leader in innovative solutions for multiple industries
- Cypress was acquired by Infineon Technologies AG for US\$ 10 billion in June 2019
- Currently Executive Chairman of Neocera LLC, Chairman of Jiaco Instruments BV and a Director of Innovent Technologies LLC

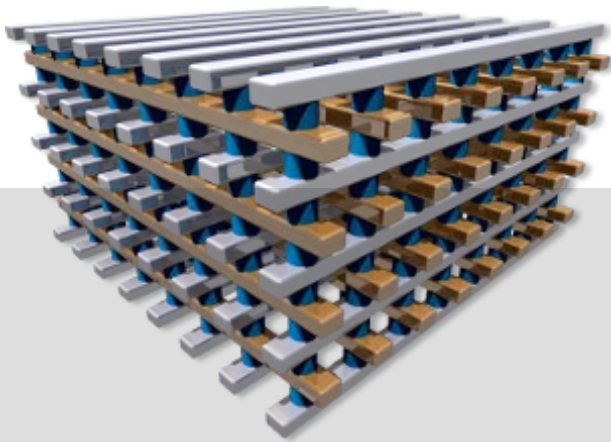


Mr Ting Yen

- Appointed VP of Process Integration
- 30 years' experience in commercialisation of memory technologies
- Various roles at Integrated Memory Technology, Netlogic Microsystems, Integrated Device Technology, Cypress Semiconductor, Paradigm Technology and Philips Research

COMPANY HIGHLIGHTS.

4DS
memory INTERFACE
SWITCHING
ReRAM



- ✓ World-leading Silicon Valley based Interface Switching ReRAM developer
- ✓ Completed Additional Wafers Lot of 300mm wafers, **most successful to date**
- ✓ **Demonstrated record improvement in speed and endurance**
- ✓ 4DS is the most advanced Interface Switching ReRAM
- ✓ **The most promising Interface Switching ReRAM cell for Storage Class Memory**
- ✓ Joint development agreement with Western Digital subsidiary HGST since 2014
- ✓ Strategic collaboration with imec signed in November 2017
- ✓ 28 granted US patents wholly owned and 4 pending or filed
- ✓ Strengthened board and management
- ✓ Sale Incentive Pool in place for eligible US management
- ✓ A\$ 7.585 million in cash as of September 2020

SEVEN YEAR PARTNERSHIP WITH HGST.

HGST is a subsidiary of Western Digital Corporation (US\$ 13.5 billion market cap), one of the largest global leaders in digital storage

- ✓ Strategic innovator in emerging high growth technologies
- ✓ Commenced JDA in 2014 – **Renewed in 2015, 2016, 2017, 2018, 2019 and 2020**
- ✓ Insight into what is important in a data-centric world
- ✓ **Now actively involved with 4DS / imec and remains committed to Storage Class Memory**
- ✓ Siva Sivaram, President of Technology and Strategy at Western Digital , commented “**We are committed to ReRAM, it is scalable with greater density, lower cost and latency and longer endurance**”*



IMEC. WORLD # 1 AND 4DS PARTNER.

imec is the **world's #1** independent semiconductor development institute

- ✓ Collaborates with the who's who of electronic products and systems
- ✓ Collaborates with makers of high-volume high-density memories
- ✓ Has a world leading track record in the transfer of semiconductor processes
- ✓ Uses the same tools as industry for high-volume production of high-density memories
- ✓ Has a proven megabit memory platform to fast-track development of megabit chip
- ✓ Used this platform to explore a wide range of emerging memories



COLLABORATION OBJECTIVES.

- ✓ Develop a **fully transferable** fabrication compatible process, using 300mm wafers
- ✓ Mimic industry standard high-volume production on industry equipment
- ✓ **On track** to incorporate new technical developments into Second Non – Platform and Second Platform wafers*
- ✓ End goal is to demonstrate the ability to fabricate a **4DS Interface Switching megabit chip with fully functioning Storage Class Memory characteristics and / or complete a corporate transaction in 2021**



imec

*See ASX announcement 28/10/2020

CAPITAL STRUCTURE.

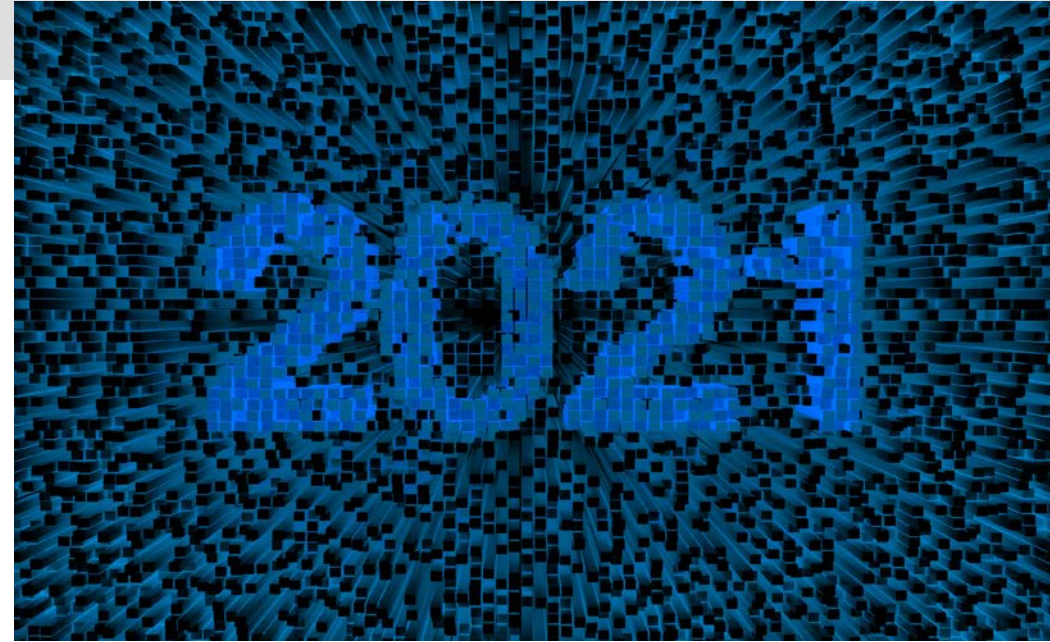


ASX Code	4DS
Market Cap (Fully Diluted)	A\$ 200 Million*
Ordinary Shares on Issue	1,310 Million
Unlisted Options	70 Million
Cash	~A\$7.585 Million – September 2020

*As at 24 November 2020

VALUE PROPOSITION.

- ✓ 4DS is developing a **breakthrough Interface Switching ReRAM Storage Class Memory** solution
- ✓ Recently produced pivotal data applicable for **Storage Class Memory** and best to date
- ✓ Seven-year strategic partnership with HGST, **leader in digital storage**
- ✓ **imec** - strategic collaboration to develop megabit chip with the **world # 1 developer in nano electronics**
- ✓ **Strong patent portfolio with 28 granted patents** wholly owned and developed in-house
- ✓ **World-class team** of memory specialists, material scientists and test engineers
- ✓ Board experienced in founding, building and **exiting high tech companies, with Incentive Sale Pool now in place**
- ✓ **Sufficient cash to meet current objectives – a megabit chip or corporate transaction in 2021**

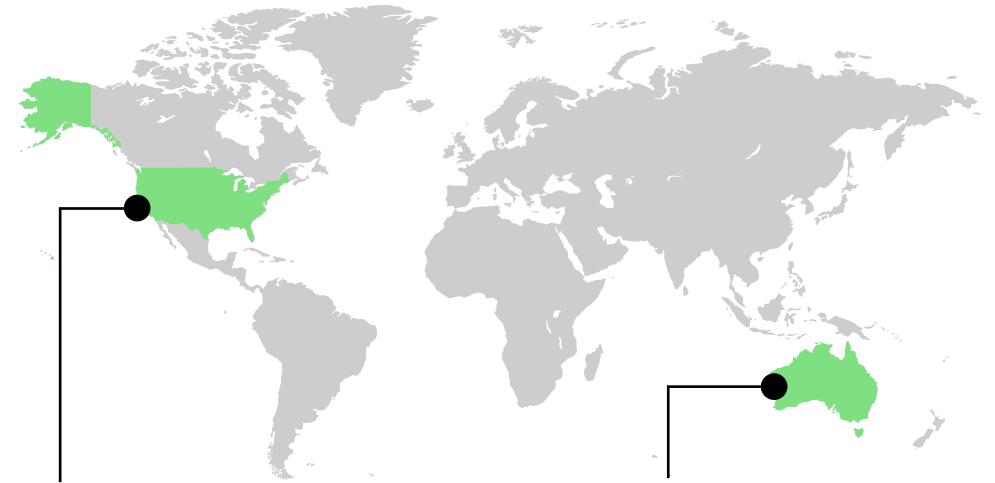


4DS is addressing the massive memory demands of tomorrow



THANK YOU.

ABN 43 145 590 110
ASX Code: 4DS
www.4dsmemory.com



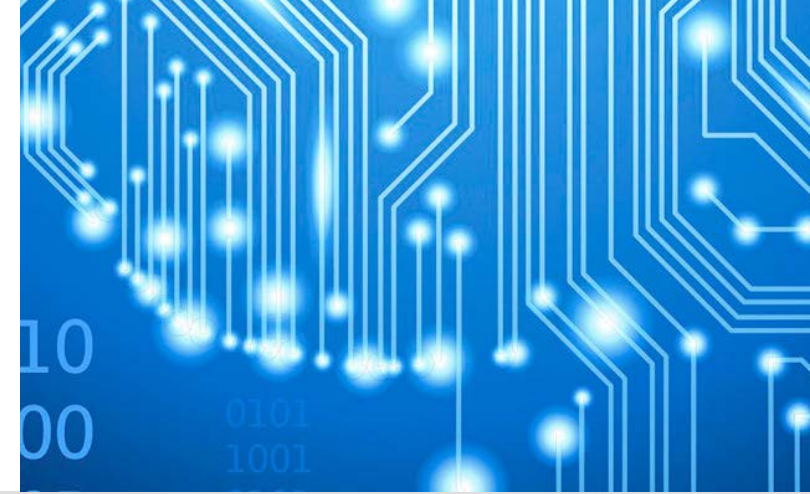
SILICON VALLEY

3155 Skyway Court
Fremont CA 94539
UNITED STATES

AUSTRALIA

Level 2, 50 Kings Park Road
West Perth WA 6005
AUSTRALIA

SALE INCENTIVE POOL.



Upon a liquidity event occurring, Dr Guido Arnout, Drs. Wilbert van den Hoek and US based employees (“Eligible Participants”) will each be entitled to receive a proportion of the Sale Bonus Pool. **Dr Guido Arnout will be entitled to receive 30%, Drs. Wilbert van den Hoek will be entitled to receive 25%,** with the balance to be allocated to Eligible Participants at the discretion of the Board.

	Sale Bonus Pool
Sale Value of US\$120m to US\$350m	5.0% of the Sale Value
Sale Value of US\$350m to US\$550m	US\$17.5m plus 6.25% of the excess above US\$350m
Sale Value above US\$550m	US\$30.0m plus 7.5% of the excess above US\$550m

BOARD AND MANAGEMENT.*



Global expertise in
founding and building
high-tech companies.



Jim Dorrian
Non-Executive
Director

- Served as CEO of several Silicon Valley companies
- Extensive M&A experience
- Partner at VC firm Crosspoint Venture Partners



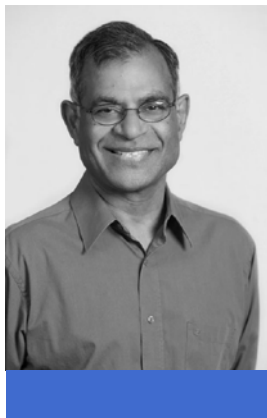
Dr Guido Arnout
CEO &
Managing Director

- 30+ years in commercialising electronics technology
- Successes include, Power-Escape, CoWare, CrossCheck Technology and Silver-Liso



Howard Digby
Non-Executive
Director

- Former senior roles at IBM, Adobe, Gartner and the Economist Group
- Director of Vortif Ltd, Cirralto Ltd, Elisight Ltd and Hearmeout Ltd
- Advisor to a number of technology companies



Dr Seshubabu Desu
Chief Technology
Officer

- Expert in thin films, semiconductor processing and non-volatile memories
- Professor, Dean and Head of Electrical Engineering at various universities



David McAuliffe
Executive Director

- Experienced company director
- Involved in numerous capital raisings and in-licensing of technologies
- Founder of several companies in Australia, France and the UK, many of which are now ASX listed. The most recent - Invex Therapeutics



Michael Van Buskirk
Chief Engineering
Officer

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

* Drs. Wilbert van den Hoek will be Chairman post AGM

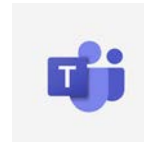
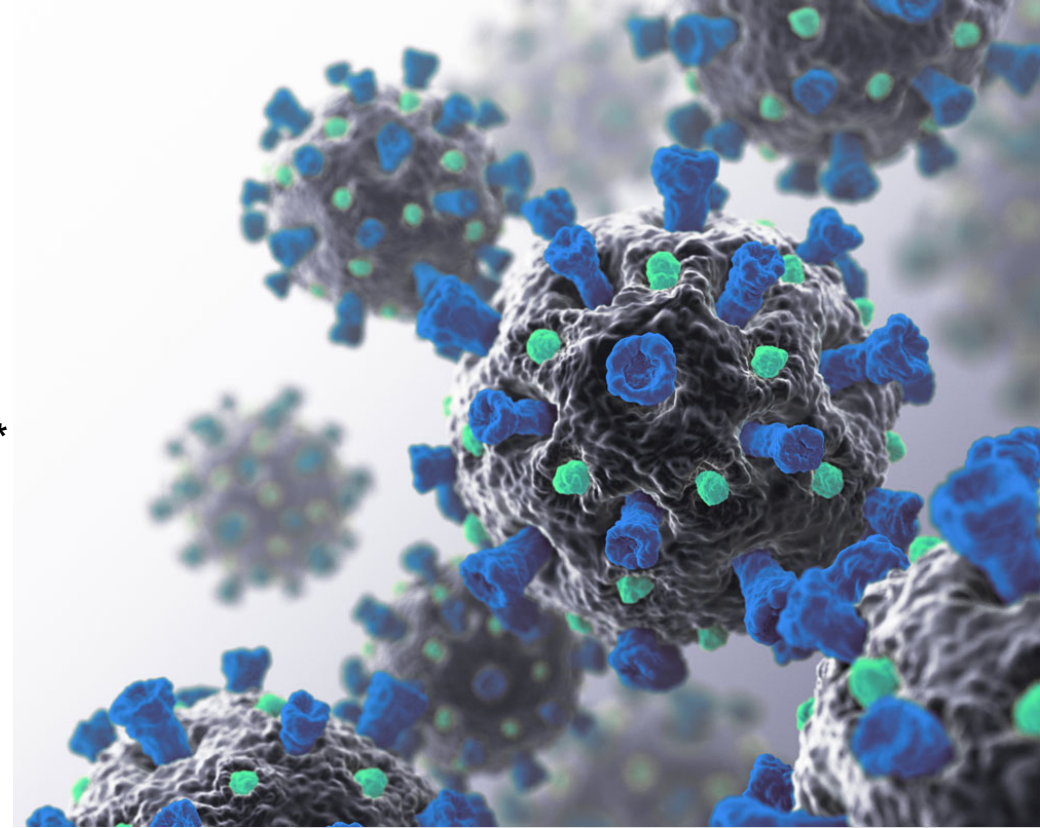
2020 DATA EXPLOSION.

COVID-19 lockdowns have seen exponential increase in data usage*

- 3,800 years of Google Meet sessions in one day
- 50,000 years – the amount of media Americans streamed in one day
- 2.7 billion Teams meeting minutes in a single day
- 2,900% increase in daily Zoom participants since end of 2019
- 775% increase in Microsoft cloud service usage

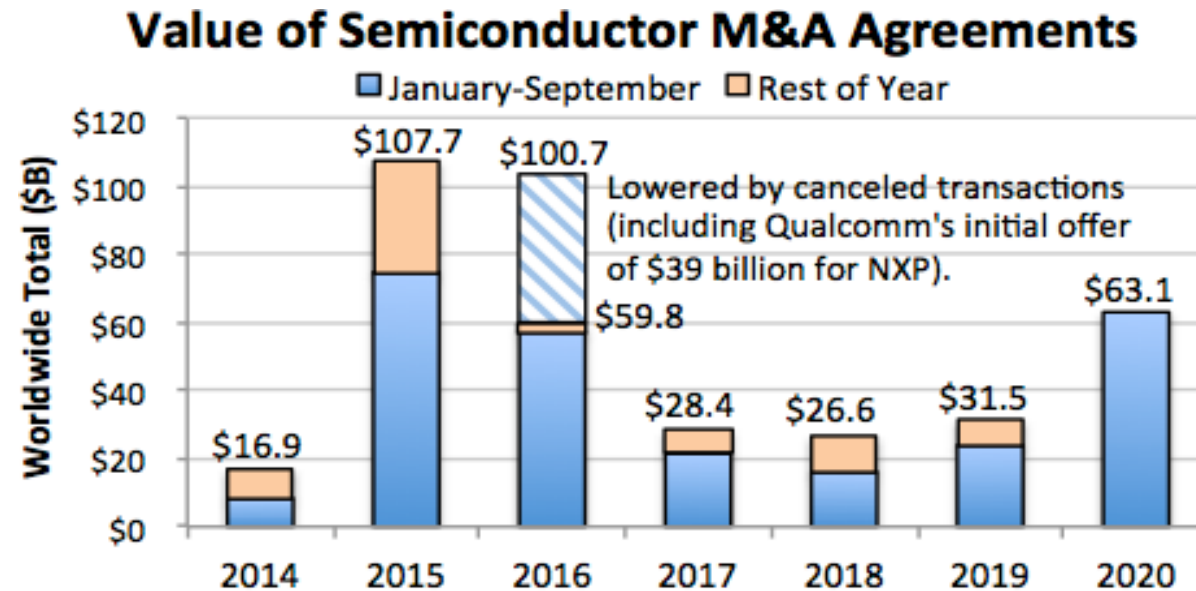


4DS' Storage Class Memory technology is emerging as a leading new category to extend the memory hierarchy, which is needed going forward now more than ever.



*<https://www.digitalinformationworld.com/2020/06/internet-data-usage-increases-amid-the-covid-19-infographic.html>

M&A: SECOND LARGEST IN HISTORY.



Source: IC Insights

