

# Investor Presentation

August 2018





# WEEBIT NANO AT A GLANCE



Listed on the ASX in August 2016



Targeting the non-volatile memory market estimated at > USD\$60B



R&D and HQ in Israel, R&D partnership with CEA-Leti, France

Business & Tech partners – CEA-Leti France & Rice University, USA



Developing next-gen solution based on Silicon Oxide (SiOx) ReRAM

Patents Registered in the USA



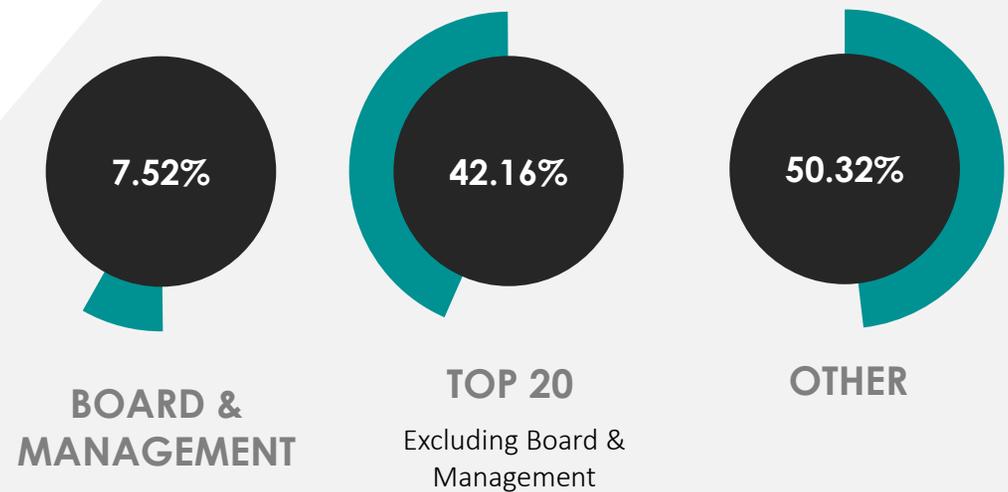
# SHARE INFORMATION

## CAPITAL STRUCTURE

01	ASX Code: WBT
02	Share price: 5.1c <sup>1</sup>
03	Shares on issue: 1451m <sup>1</sup>
04	Options: 141m <sup>1&amp;2</sup>
05	Market cap: A\$74.02m <sup>1</sup>
06	Cash: A\$3.36m <sup>3</sup>

1. As of 28 August 2018
2. Including performance shares
3. As of 30 June 2018

## SHAREHOLDING BREAKDOWN



# LEADERSHIP TEAM

EXECUTIVE DIRECTOR



**Yoav  
Nissan-Cohen**

PhD. in Applied Physics,  
focus on SiOx memories

CEO of Tower  
Semiconductor for 9 years

Board member,  
Saifun Semiconductor  
(NROM Flash)

CHAIRMAN



**David Perlmutter**

Ex-Intel EVP  
IEEE Fellow

Led Intel into the  
Data Center

Brought to Market:  
Centrino™ mobile  
technology

CEO



**Coby Hanoach**

Extensive management  
and sales experience

38 years in the  
semiconductor domain

Heavily involved in  
Verisity and Jasper  
acquisitions

CTO



**Amir Regev**

Two decades in  
Semiconductor engineering

45nm NOR Flash  
Technology Development  
at Micron

Was part of Automotive  
division at Intel

CFO



**Alla Felder**

20 Years CPA experience

Senior Manager at  
PWC Israel

Active Board member of  
multiple companies in  
TASE and NASDAQ

# NON-EXEC/ADVISORY TEAM

DIRECTOR



**Fred Bart**

Chairman and major shareholder of Electro Optics Systems (EOS)

Chairman of Audio Pixels (AKP)

Owns a wide variety of companies worldwide

DIRECTOR



**Ashley Krongold**

15 years in Investment Banking

Founding member of Investec Bank Australia

Founding General Partner, OurCrowd

DIRECTOR



**Yossi Keret**

Extensive management and financial experience

Led the financial teams at a number of publicly traded international companies

Strong experience in equity raisings for public companies

INVENTOR



**Prof. James Tour**

Scientist of the Year 2013 R&D magazine

Inducted to the National Academy of inventors

Feynman prize in Nano science

# WEEBIT RERAM TECHNOLOGY

Next generation memory technology



**Faster and more efficient than flash memory**



**Prototype 40nm 1Mb array achieved – comparable with current embedded memory technology**



**Key differentiator: WBT uses silicon oxide – the most commonly used material in the semiconductor industry**



**Silicon oxide enables lower cost and shorter time to market**

Confidential

# RERAM VS. FLASH

The parameters needed for the next generation memory solution are:

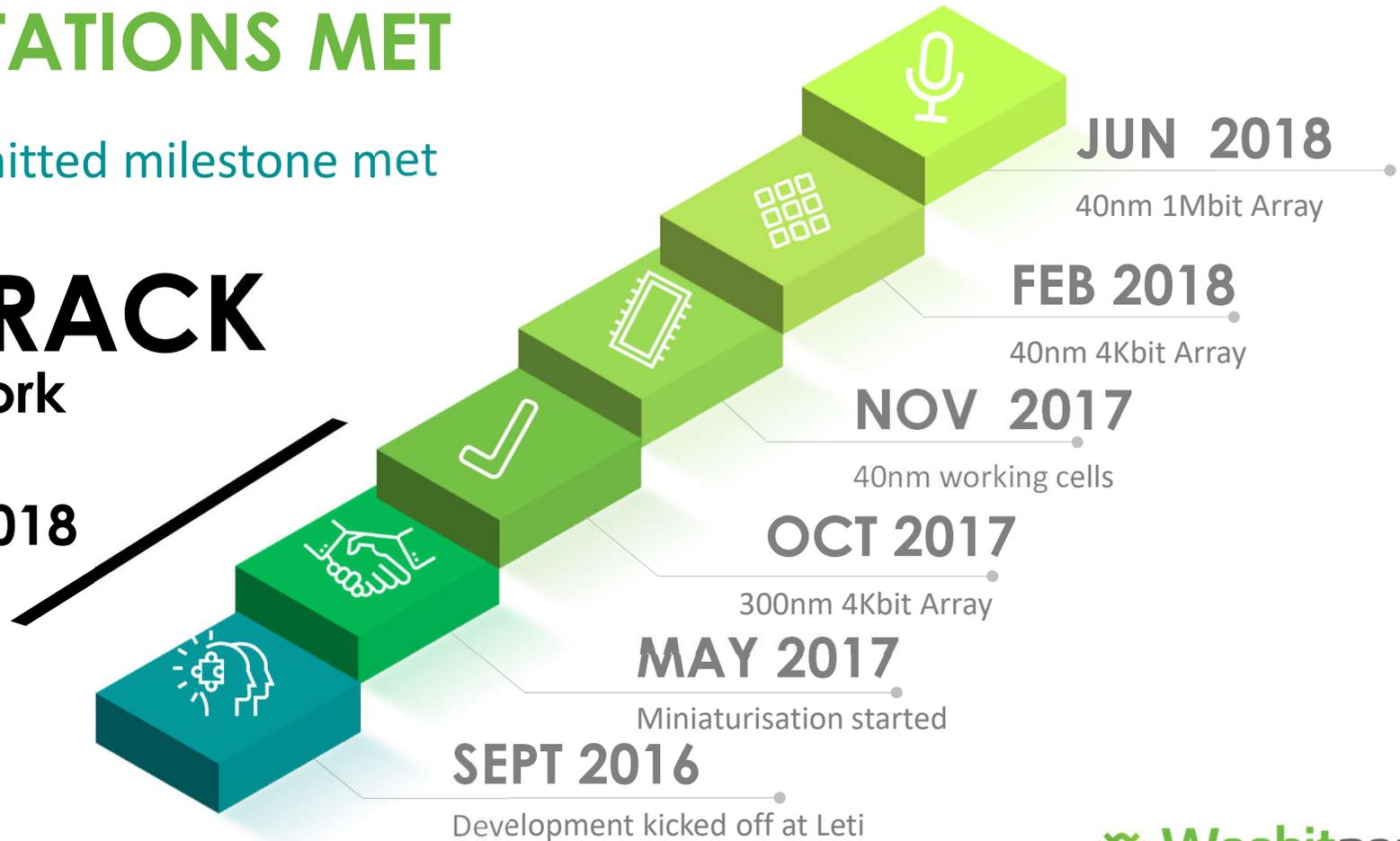
	Flash (3D-NAND)		Weebit's ReRAM	
<b>Speed</b>	Does not provide any speed improvement for tomorrow's needs	X	~1000X faster programming and read operations	✓
<b>Energy Efficiency</b>	No power improvement per bit, consumes higher energy	X	~1000X more energy efficient by low voltage and fast write	✓
<b>Manufacturability</b>	Very challenging manufacturing process, not compatible with standard logic process (very difficult to embed)	X	Simple process, utilises standard material and machinery – compatible with standard logic process	✓
<b>Density</b>	Provides increased capacity for the near future	✓	Scalability allows higher future density	✓
<b>Reliability</b>	High error rate and limited endurance	X	10-100X higher endurance	✓

# EXPECTATIONS MET

Every committed milestone met

## ON TRACK

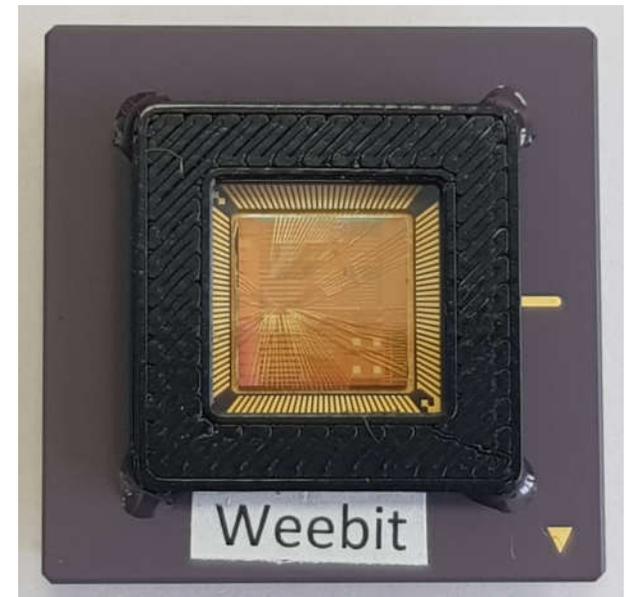
to start work  
on 28nm  
by end-2018



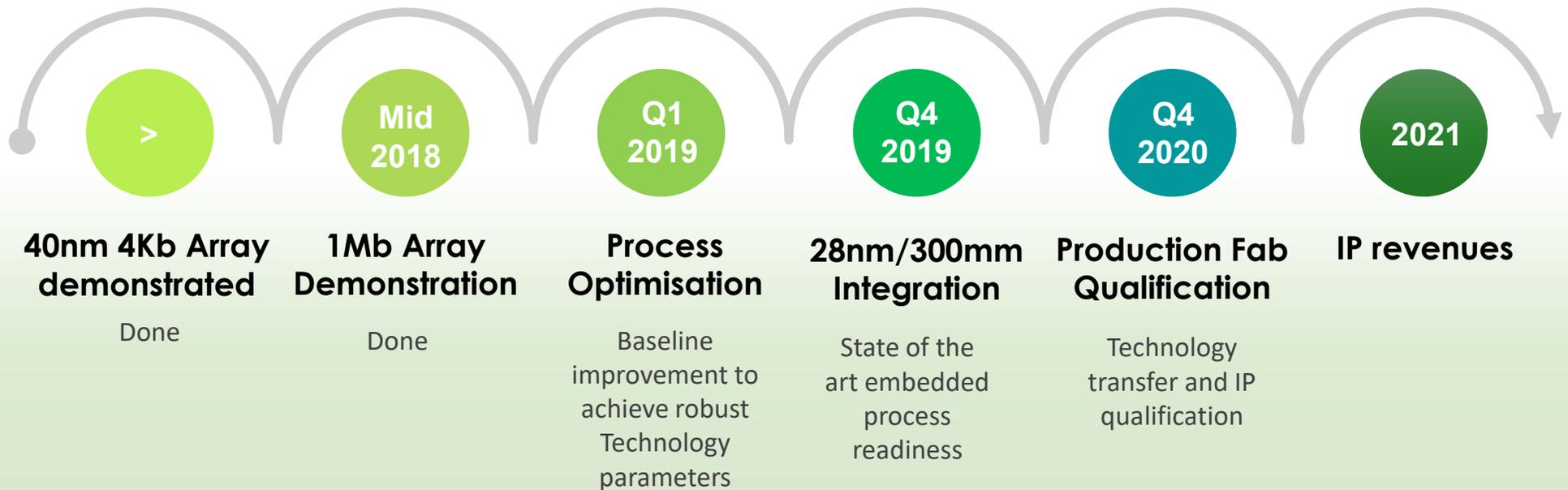
# FIRST MEMORY CHIP PACKAGED

## Moving closer to commercialisation

- First packages of SiOx 1Mb 40nm memory chips now ready
  - Memory chips are in the form of existing memory chips being used by customers in phones, PCs or storage devices
- Enables additional testing as the company moves closer to commercialisation
- Technology can now be shipped to potential partners for evaluation
  - Will assist in potential commercial partnership discussions
- Universities can begin neuromorphic computing research (used for Artificial Intelligence) using WBT's technology



# STEPS TOWARDS COMMERCIALISATION



\* Timeline refers to calendar year

# ALLIANCE WITH CEA – LETI\*

A real partnership, with ideal mix of expertise, innovation and flexibility

France-based research institute for electronics and information technologies  
Leti assists companies to bridge the gap between research and manufacturing



## FROM PROTOTYPES TO PRODUCTION

Proven international track record in moving from R&D to production



## MEMORY EXPERTISE

Over 10 years of experience in memory technology development



## NANOTECHNOLOGY SPECIALIST

State of the art industrial tools



## MANUFACTURING ALLIANCES

Over 330 industrial partners



## INNOVATION HUB

60+ start-ups in semiconductor, architectures or software



## COLLABORATION

Working on 40nm SiO<sub>x</sub> development since September 2016



## CUSTOMERS

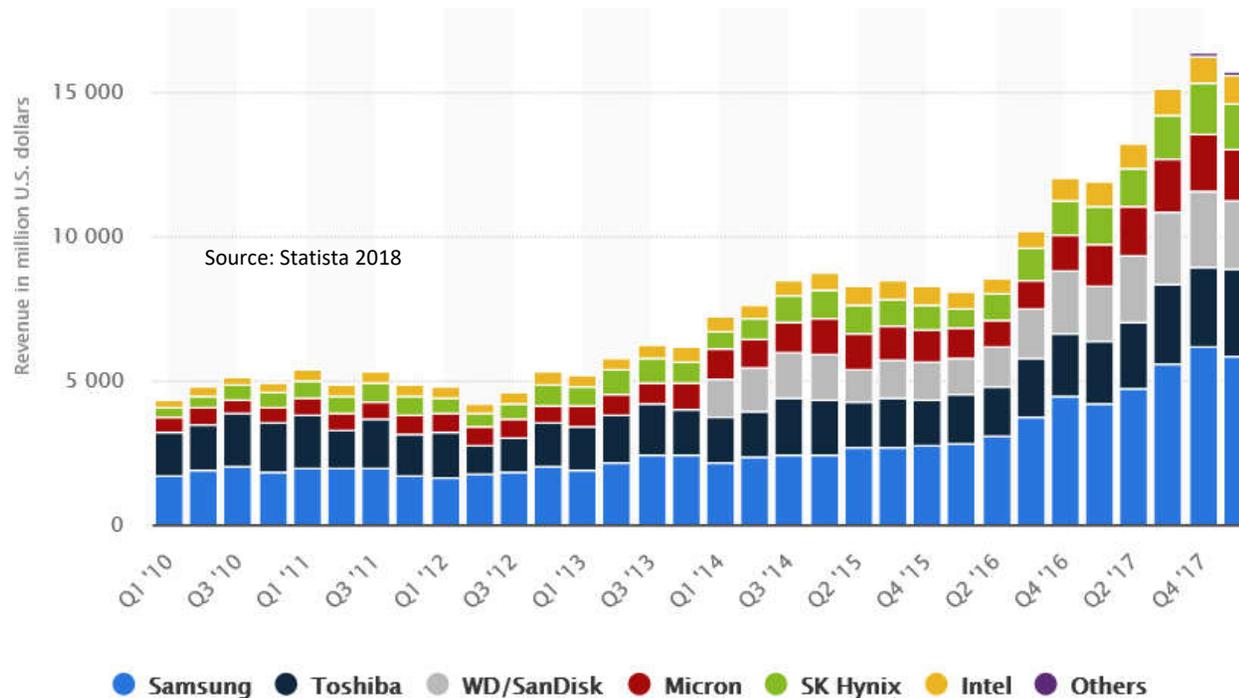
Intel, ST Microelectronics, Global foundries



\*LETI, A SUBSIDIARY OF FRANCE'S NUCLEAR AND RENEWABLE ENERGY COMMISSION COMMISSION. [HTTP://WWW.LETI-CEA.COM/CEA-TECH/LETI/ENGLISH/PAGES/WELCOME.ASPX](http://www.leti-cea.com/cea-tech/leti/english/pages/welcome.aspx)

# FLASH MARKET OVERVIEW

## Quarterly NAND Flash manufacturers' revenue worldwide



- Large market experiencing exponential growth
- Over US\$60B/year

# ReRAM: FORECAST FOR EXPONENTIAL GROWTH IN MARKET VALUE

Emerging Non-Volatile Memory Forecast by Technology  
(in \$M)

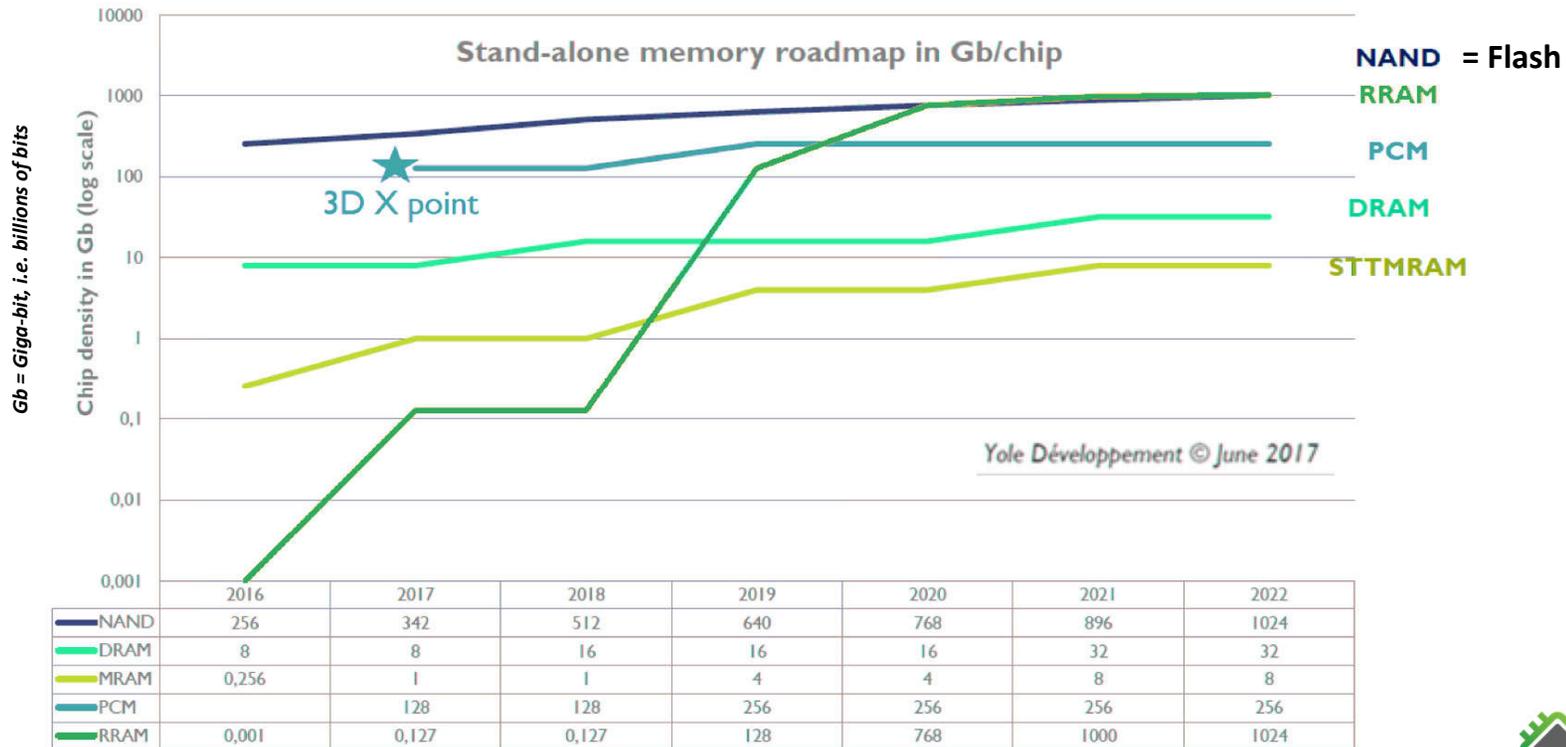


	2016	2017	2018	2019	2020	2021	2022	CAGR 2016-2022
<b>TOTAL in \$M</b>	\$51	\$161	\$361	\$898	\$1,523	\$2,581	\$3,891	106%
PCM	\$-	\$90	\$162	\$413	\$721	\$1,077	\$1,409	0%
RRAM	\$16	\$28	\$132	\$365	\$561	\$1,010	\$1,727	119%
MRAM/STT MRAM	\$35	\$43	\$66	\$120	\$242	\$493	\$754	67%
— % emerging NVM vs total memory market	0.1%	0.2%	0.4%	1.0%	1.6%	2.7%	3.9%	

- Emerging memory technologies forecast for significant growth
- ReRAM technology expected to be the fastest growing emerging memory technology with a CAGR of 119%
- ReRAM forecast growth due to competitive cost/performance in both storage class memory and mass storage applications

# RERAM DENSITY EXPECTED TO MATCH FLASH

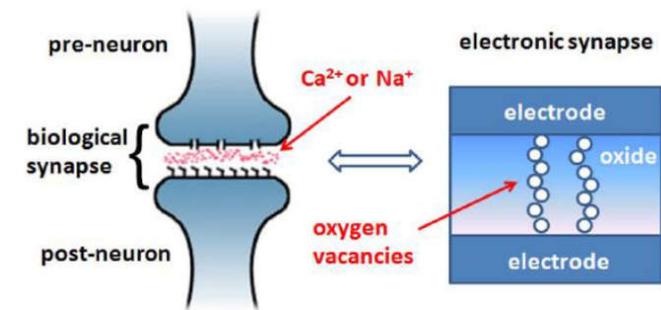
Highest capacity memory chips best address Storage Class Memory



# NEUROMORPHIC COMPUTATION

## ReRAM well positioned for significant growth in Artificial Intelligence

- ReRAM's operation mimics the biological computation at the synaptic level
  - Physical similarities lead to functional similarities
  - Combines memory and processing units using synapse and neuron like cells
  - **ReRAM for AI is significantly more energy efficient than today's data centres, and significantly smaller**
- ReRAM is therefore very well placed to capitalise on the emergence of AI capabilities



Ions migration leads to resistivity modulation

**ReRAM technology enables brain-inspired AI systems**

# WEEBIT'S COMPETITIVE ADVANTAGE

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## Speed to market is a significant competitive advantage

- Weebit's ReRAM is based on standard Silicon-Oxide (SiOx) – the material used in the Semiconductor industry for decades
- Doesn't require special tools or processes – easy & fast implementation in any semiconductor fab
- Enables achieving high yields (working parts) faster – directly translates into profits

*“Compared to other competing technologies, it (**Silicon Oxide**) offers **higher stability, greater resistance contrast, ease of process integration**, and the potential to minimise the requirement for cell selector elements. While there remain some challenges ahead to fully realise SiOx-based ReRAM memory chips or neuromorphic systems, silicon oxide is rapidly emerging as one of, if not **the most, suitable contenders in the race to exploit resistance-switching technologies.**”*

Adnan Mehonic et al., Advanced Materials Progress Report, 2018

# KEY PRIORITIES FOR NEXT 12 MONTHS

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## TECHNICAL

- Bring the technology to production-level requirements
- Start working on 28nm technology

## BUSINESS

- Sign first cooperation agreement with a key industry player in Q4 2018

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**THANK YOU**