paradigm

THE
GEORGE GILDER
REPORT

Flash Flood Coming!

Leading the Charge in Creating a New Generation of Nonvolatile Memory Technology

INSIDE THIS ISSUE

It's that time of the year when enterprising students leave the beach and outdoor sunshine behind and head back indoors to the classroom. For us, it's the time of the year to organize my autumn of speeches and conferences, from Las Vegas and Knoxville to Bellevue and Seoul.

Last year I launched my new Nanocosm — a wondrous realm of truly astonishing nanoscience and innovation that has the potential to dramatically transform the global economic and financial landscape in the future. The epicenter of the Nanocosm is the pioneering work of James Tour and his students at Rice University in Houston. Tour's talks at my conference last year were scintillating, capturing the minds and hearts of the attendees. If you couldn't attend, you can listen to one of the terrific talks he gave, **here**.

This year we will plunge ever deeper into the heart of Tour's pioneering scientific research and technological invention that is foundational to the Nanocosm. Eminent in the Nanocosm are CEO John Van Leeuwen of Universal Matter; CEO Yossi Keret of Nanorobotics; and Israeli venture investor Ariel Malik, who has been working closely with Tour and his growing ecosystem of nanocosmic enterprises.

Universal Matter, a company I've written about in previous monthly reports, is commercializing Tour's revolutionary "flash" process for making high-quality turbostratic graphene. Nanorobotics is commercializing Tour's cancer-destroying nanobots and pushing the boundaries of molecular medicine. Both companies are privately held and at early stages of commercialization but pregnant with wealth-creating potential.

While I've been busy consummating my new book, tentatively titled *Life After Capitalism*, my nanocosmic research colleague Steve Waite was immersed in a private investor event in Houston hosted by Tour and Malik. Steve has taken the lead in doing the research on the ever-expanding ecosystem associated with Tour's nanoscientific advances and breakthroughs. Given his extensive experience in nanotechnology and graphene, which includes authoring several exploratory books, Steve is the perfect man for the multiyear task.

Tour's investor meeting in Houston featured presentations from nine companies, including Universal Matter, Nanorobotics, H2Blue Tech, Dotz Nano, Xerient Pharma and Cobionix (a startup that is not based on Tour technology but is collaborating with Universal Matter). The event also included an overview by Tour of four new companies in the stage of being launched in the areas of battery recycling, rare earth abundants, urban mining, soil remediation as well as a new technology venture focused on mending severed spinal cords. The table below lists the tech companies and their respective areas of focus.

James Tour Investor Meeting, August 2022

Cobionix	Developing an advanced autonomous robotic platform for medical procedures
Dotz Nano	Carbon particle platform technology for various solutions
H2Blue Tech	Upcycling waste plastic for large-scale CO2 capture
Joule Heating Technologies	Extracting rare earth elements from coal fly ash and bauxite
Nanozymes	Treatment of traumatic brain injury, stroke, and dementia
Nanorobotics	Pushing the boudaries of molecular treatment
Universal Matter	A cleaner, faster, less expensive technology for graphene commencialization
Xerient Pharma	Treatment for pancreatic cancer
Weebit Nano	Next-generation semiconductor memory technology
Spinal Cord Venture	Mending severed spinal cords
Other New Cos	Battery recycling, rare earth abundants, urban mining, soil remediation

Steve's already begun a deeper dive into Nanorobotics, which is pioneering nanotechnology developed by Tour that uses programmable light-activated nanorobots to precisely target and destroy cancer cells. Stay tuned for more on this exciting venture! Of those nine companies that were featured at Tour's investor meeting this month, two are publicly traded: **Dotz Nano (ASX: DTZ)** and **Weebit Nano (ASX: WBT)**.

Researching both companies for the past several months, in July Steve zoomed into a meeting with Weebit's CEO, Coby Hanoch, who is based in Israel. The company is at an exciting stage of development with a slate of next-generation memory technology ready to penetrate the market.

In this month's issue, we feature Steve's analysis of Weebit Nano. While the company hasn't evolved sufficiently to merit consideration for our **Paradigm Portfolio**, it is attractive as a Special Situations play along with other early-stage nanocosmic companies such as **NanoXplore (NNXPF)**.

The Ascent of ReRAM

In technology, memory is any device that stores information. Neuroscientists still do not know precisely where and how memory is stored in humans. But this lack of knowledge has not prevented microchip memory technology from advancing by millionfold leaps and bounds over the past half-century. Since the 1990s, memory technology has become ubiquitous in nearly all electronic devices.

There are two basic types of memory technology: volatile and nonvolatile. Volatile memory is a memory technology that requires an active power connection to maintain its data. Nonvolatile memory (NVM, for short) does not require a connection to a power source to retain information.

There are advantages and disadvantages to both types of memory devices. With volatile memory, data is lost or deleted when the power source is disconnected. An NVM device retains information whether the power source is on or off.

Volatile Versus Nonvolatile Memory *Source: TheyDiffer.com*

Volatile memory	Nonvolatile memory
Requires a power source to retain information.	Does not require a power source to retain information
When power source is disconnected, information is lost or deleted.	When power souce is disconnected, information is not deleted
Often used for temporary retention of data, such as with RAM, or for retention of sensitive data.	Often used for long-term retention of data, such as files and folders

Theoretically, NVM is superior to volatile memory, but volatile does have two major advantages at present: It is fast, and it has unlimited writing capability. While flash memory (the most common NVM today) speeds are slower than volatile, emerging NVM technologies are approaching the speeds of volatile memories. The table above provides a comparison of the two basic types of memory technologies.

One of the first NVM technologies was the Dataram module used with Data General's minicomputer in the late 1960s (see picture nearby). The module employed magnetic "cores" — tiny rings strung together with wires that governed the direction of magnetization and set or sent a bit. The cores held their magnetic bias without power. While useful, this module was massive, standing nearly three feet high and storing only 32 kilobytes of information — quite a feat at the time but a toroid dinosaur compared with today's memories.

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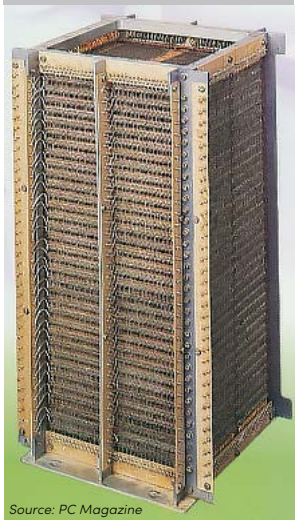
Dataram NVM Module



Source: PC Magazine

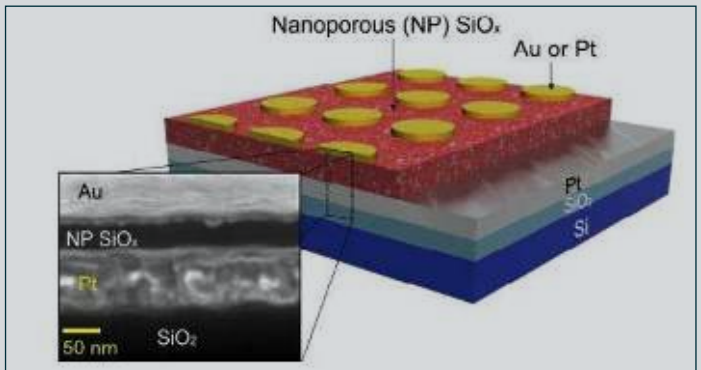
The Dataram module is as dead as the *Tyrannosaurus rex* or Digital Equipment Corp. Nearly every electronic product in use on the planet today requires NVM technology, including ROM, PROM, EPROM, EEPROM, NOR and NAND flash, MRAM, BBSRAM, nvSRAM, F-RAM, 3D XPoint and ReRAM, in an acronymic soup, each with its own advantages that makes it useful for specific applications.

Weebit is a pioneer in an emerging nonvolatile memory technology known as "resistive random-access memory," or ReRAM for short, originating as the brainchild of Professor James Tour at Rice University over a decade ago, back in 2010. While Tour is world-renowned for his work with graphene these days, his fundamental insight was using silicon oxide as a dielectric material for resistive random-access memory technology. Crucial to every silicon microchip, silicon oxide is a porous material that happens to be one of the most studied materials in the history of science.

The basic idea behind Tour's ReRAM is the insertion of porous silicon oxides as a dielectric material — that is, a material that won't typically conduct electricity — between two metal layers. Prior to his discovery of conductive filament pathways in silicon oxide, the material wasn't considered an option for ReRAM. Leave it to Tour's ingenuity as a materials scientist to discover that silicon oxide was indeed an option — a great one, in fact! Tour found that when a sufficiently high voltage is applied across the metal layers, a narrow conduction path can be formed through the silicon oxide. The presence or absence of these conduction pathways can be used to represent the binary 1s and 0s of digital data.

Silicon-Oxide ReRAM

Source: Tour Group/Rice University.



A scanning electron microscope image and schematic showing the initial design and composition of Tour's ReRAM memory devices based on porous silicon oxide.

In Tour's research, his memory technology proved superior to all other two-terminal unipolar resistive memories by almost every metric. In microchips, you want unipolar solutions, since bipolar entails an entirely different set of tools and technologies. In a research paper titled "**Nanoporous Silicon Oxide Memory**," published in the American Chemical Society's journal *Nano Letters* in 2014, he and his colleagues at Rice showed his ReRAM technology exceling more than a dozen competing nonvolatile memory technologies, both from production and performance standpoints.

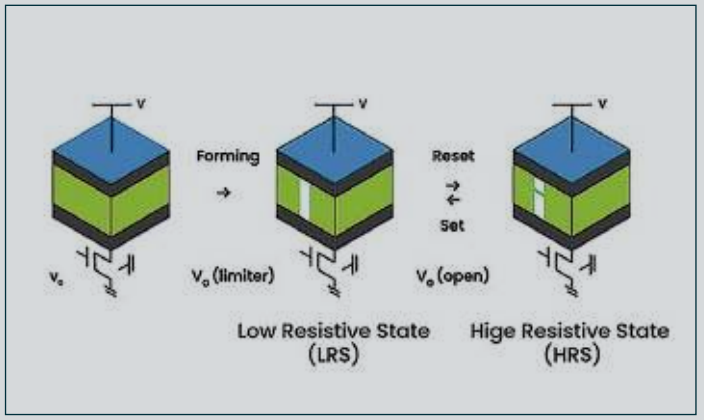
Whereas some memory technology based on exotic materials and futuristic technologies such as carbon nanotubes have had difficulty getting traction in the market, every fab on the planet can work with silicon. This fab-friendly feature makes the new silicon dioxide device ideal for mass commercialization, which is the mission of Weebit Nano today.

ReRAM is a *memristor* technology. A memristor — a name derived from combining the words *memory* and *resistor* — "is a nonvolatile electronic memory device that was first theorized by Leon Ong Chua" in the early 1970s, according to Nanowerk. Chua envisioned the memory device "as the fourth fundamental two-terminal circuit element following the resistor, the capacitor and the inductor."

Weebit's ReRAM cell is comprised of a thin oxide switching layer between two electrodes. Resistance can be programmed using electric voltage. Applying positive and negative voltages causes cells to switch from one state to the other, encoding binary information by creating either a 1 (LRS) or a 0 (HRS) data bit stored in the memory cell. Once formed, the conductive filament can be broken, then reformed and broken again during successive cycles of erasing and setting the memory cell.

Silicon-Oxide ReRAM at Work

Source: Weebit Nano



From Lab to Fab

Since completing a successful public offering on the Australian Stock Exchange (ASX) in 2016, Weebit Nano has been investing aggressively in developing its ReRAM technology with its highly skilled staff in Israel and France, as well as in collaboration with the research institute CEA-Leti. Based in Grenoble, France, Leti is one of the world's largest organizations for applied research in microelectronics and nanotech-

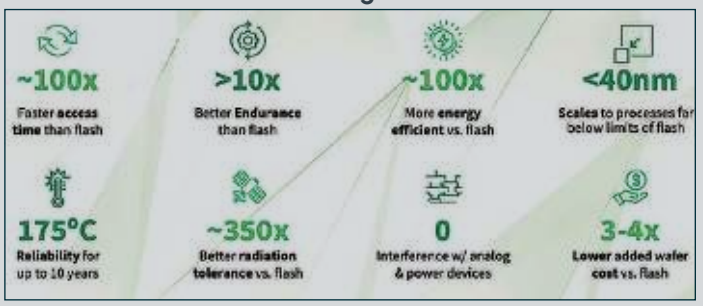
nology. Weebit Nano has been collaborating with Leti for many years and has licensed various technologies from the research institute to enhance the performance of its ReRAM.

Together with Leti, Weebit Nano made significant progress in the development of its ReRAM and can now produce devices that combine the advantages of both RAM and flash with far greater performance and lower cost relative to conventional flash memory. Relative to flash, Weebit's ReRAM is:

- **extremely fast** — 100x faster
- **low-power** — 100x more energy efficient
- **better endurance** — greater than 10x
- **able to scale** to nanometer process levels below the limits of flash
- **cost-effective** — 3–4x lower added wafer cost relative to flash.

The impressive performance and cost characteristics of Weebit's ReRAM versus conventional flash memory make it ideal for a wide range of potential market applications, from smartphones and tablets to enterprise storage, artificial intelligence (AI) and the internet of things (IoT). Within these application areas, ReRAM can be used in a variety of systems, including power management ICs (PMICs), microcontrollers (MCUs) and edge AI.

The Weebit ReRAM Advantage *Source: Weebit Nano*



Consisting of two major segments — embedded devices (such as in IoT) and stand-alone devices (also called "discrete" chips), Weebit Nano currently focuses on embedded devices because of less need for more complex architectures with massive storage capabilities.

In terms of opportunities in embedded devices, Weebit is seeing growing interest today from customers in the analog tech segment — in areas such as power management, analog sensors and others. The low-power characteristic of the company's ReRAM is viewed as highly desirable, as is the fact that the ReRAM is a backend-of-line (BEOL) technology, so the chip design process is not impacted in any meaningful way by the addition of the ReRAM. Being able to fabricate the ReRAM in any foundry around the world is an added attraction to customers.

The key to Weebit Nano's commercialization strategy is to make it easy and simple to bring the ReRAM into any fab while adding little to the overall wafer cost. Since its founding in 2015, the company has focused on developing a ReRAM technology that not only has the best performance on key metrics but is also designed to be extremely cost-effective and easy to integrate into any given CMOS fab.

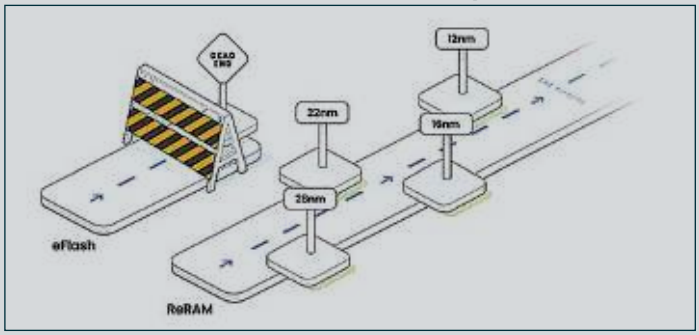
Other emerging memory technologies such as magnetoresistive random-access memory (MRAM), ferroelectric RAM (FRAM) and several other ReRAMs require fabs to make large capital investments for special equipment and exotic materials to produce the devices.
Integrating Weebit's ReRAM into a wafer adds only 5–6% to the total cost versus 10–20% for conventional flash memory devices and 30–40% for devices like MRAM.

While it has taken nearly a decade to ramp up commercialization, the market seems primed for increasing penetration of Weebit Nano's innovative NVM devices. Company CEO Coby Hanoch observes that the major chip foundries around the world are receiving more inquiries today than ever for capabilities that are inherent with its ReRAM technology.

As Weebit Nano memory technology evolves, it has the potential to disrupt the market for conventional flash memory by offering superior speed, lower power and longer endurance. The dominance of conventional flash memory appears to be nearing its end as processes scale down toward the low-double-digit nanometer level and smaller.

Over the past three decades, the flash market has exploded, from *$35 million* to over $60 billion today, and now comprises some 35% of all memory chip revenues. It finds use in such consumer applications as PCs, mobile phones, digital cameras and video games and in enterprise applications such as solid-state drives (SSDs).

The End of the Road for Flash Memory? *Source: Weebit Nano*



Flash comes in different forms, with NAND and NOR being the two most common, named for their respective logic gates. Because of greater density and simplicity, NAND is the more pervasive, garnering nearly 75% of the total flash market. But unlike NAND, NOR memory is random access. Thus, NOR is gaining ground with the proliferation of

billions of connected devices associated with IoT, where it is cumbersome to add intermediate RAM cells.

The end of the road for conventional flash memory is the ultimate longer-term opportunity for Weebit. Working with CEA-Leti, Weebit is designing a novel memory module that integrates a multimegabit ReRAM block that can be fabbed on a 22nm silicon on insulator (SOI) process. After achieving positive results with silicon wafers that integrate its embedded ReRAM module at 130nm, Weebit successfully demonstrated production-level parameters at 28nm. Compared with the top-of-the-line TSMC (Taiwan Semiconductor) processes now down near 3nm for central processing units (CPUs), 28nm or even 22nm may seem unimpressive. But it represents a breakthrough into the Nanocosm for embedded memory that wasn't achieved for dynamic RAMs until a decade ago.

At process nodes near 22nm and beyond, existing embedded flash technology hits a wall, and what might be called a "flash flood" of new markets opens for IoT, 5G, automotive and AI chips.

A Major Milestone Toward Commercialization

Weebit Nano has no revenues yet, but the days of operating the business solely on investor capital are coming to an end. Last month, the company achieved a major milestone toward commercialization with **SkyWater Technology (SKYT)**, a chip foundry based in Minnesota that completed a successful public offering last year. SkyWater's stock was added to the *Moonshots* portfolio earlier this summer. Weebit announced it taped out (i.e., released to manufacturing) demonstration chips integrating its embedded ReRAM module to SkyWater.

The taped-out module consists of a 256Kb ReRAM array, control logic, decoders, input/output communication elements and error correcting code. Featuring such unique advantages as high-temperature data retention for 10 years, super-fast access times and extremely low standby power, the demo chip comprises a full subsystem for embedded applications, with the Weebit ReRAM module, a RISC-V (reduced instruction set) microcontroller (MCU), system interfaces and peripherals.

SkyWater plans to offer Weebit ReRAM as part of its growing portfolio of silicon-proven design IP. The foundry is already seeing interest from customers in areas such as IoT, power management and mixed-signal designs. It is now only a matter of time before the orders begin to flow.

As Weebit begins to commercialize its ReRAM with SkyWater, the company is actively in discussions with other foundries around the world. We wouldn't be surprised to see another foundry deal inked later this year, and more next year.

There are no shortages of opportunities for Weebit today, with the global market for ReRAM expected to grow rapidly over the next several years.

A market survey report published last year by Yole projected the worldwide ReRAM market at just $18 million next year. While small today, the market ReRAM is expected to grow rapidly, rising to well over $1 billion before the end of the decade.

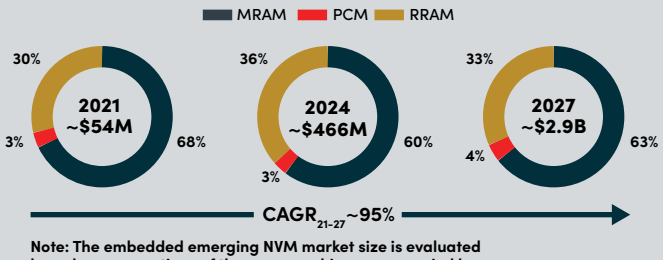
World Nonvolatile Memory (NVM) Market

By Type			By Application	By Industry Verticals	By Geography
Electrically Addressed	Mechanically Addressed	Other	Consumer Electronics	Telecom & IT	North America
ROM	Magnetic Tape	FRAM	Health Care Monitoring Application	Health Care	Europe
NVRAM	Hard-Disk Drive	Zero-RAM	Automotive & Transportation Application	Automotive	Asia-Pacific
Emerging Memory	Optical-Disk Drive	Nanobridge	Enterprise Storage	Energy & Power	LAMEA
	Millipede Memory	Molecular	Industry	Manufacturing Industries	
	Holographic Data Storage		Other	Others	

Source: Allied Market Research

The current size of the ReRAM market may seem insignificant to the big memory players like Samsung, Micron and SK Hynix, but the projected growth of the "flash flood" looms as a transformative opportunity. Even assuming Weebit Nano is able to command only one-third of the total ReRAM market by 2030, it would have a revenue-generation potential more than $300 million, equivalent to the company's stock market capitalization in U.S. dollars today.

Embedded ReRAM Market Growing Fast



Note: The embedded emerging NVM market size is evaluated based on assumptions of the average chip area occupied by a given memory technology

Source: Yole Emerging Non-Volatile Memory 2022

Weebit's balance sheet looks healthy. Management believes it has sufficient cash to fund the business through next year. Weebit hasn't provided any financial guidance but has a business model that has the potential to generate high-margin revenue through licensing deals via major foundries around the world. Unlike Micron with its costly fabs, the asset-light nature of Weebit's current business model is conducive to producing relatively high gross and net margins in the future. Consequently, the company's stock is likely to command a relatively high (double-digit) price-to-sales multiple as the business ramps up over the next 12–24 months.

Guided by an experienced management team led by CEO Hanoch, Weebit commands a stellar board of directors, with tech luminaries as David Perlmutter, former executive vice president and general manager at the Intel Architecture Group (IAG), and also chief product officer for Intel; Dr. Yoav Nissan-Cohen, the founder and CEO of our Moonshot winner Tower Semiconductor (which is now being acquired by Intel). Nissan-Cohen received his Ph.D. researching non-volatile memories under the supervision of none other than the legendary Professor Dov Frohman, who invented the first NVM technology and pioneered Intel's massive presence in Israel. Also on the board is Atiq Raza, former chairman and CEO of NexGen, a company that revolutionized the design of x86 processors. The company was bought by Advanced Micro Devices for close to a billion dollars back in 1995 to spearhead AMD's ultimately successful challenge to Intel. Following the acquisition, Raza became AMD president and COO. James Tour remains a scientific adviser to Weebit but isn't actively involved with the company.

Weebit Nano's stock is currently traded only on the Australian Stock Exchange. However, the Nasdaq is an ideal home for Weebit in the future. We would not be surprised to see the company's stock with a dual listing. The only question is when, unless the company gets acquired, which is always a possibility. Weebit was featured earlier this year at an emerging technology event held by Goldman Sachs. We suspect the company would have little difficulty garnering coverage from research analysts on Wall Street.

The near-term opportunities in embedded memory are sufficient to drive Weebit's top line during the next couple of years. Functional testing of the first demo chips with its embedded ReRAM memory module confirmed its technical parameters. Designed as a system on a chip (SoC), Weebit devices provide potential customers with physical samples of the ReRAM memory technology within fully operational systems. This enables potential customers to begin incorporating Weebit's memory technology within their future product designs. The company is now progressing to characterization and qualification with SkyWater.

Transformative Impact

The SkyWater Technology deal is a major milestone for Weebit. Ross Miller, a vice president in SkyWater's strategic markets and business unit, observes that SkyWater's 130nm process is a sweet spot for a broad range of mixed-signal designs like analog, power management, sensors as well as rad-hard designs. Due to Weebit's ReRAM having relatively low power consumption and integration flexibility, SkyWater sees a great deal of customer interest in the near term in IoT and general mixed-signal/ASIC designs. The exponential growth of data associated with IoT devices requires large numbers of chips to process and manage the data along with a multitude of low-cost, secure and reliable embedded NVM for code storage, sensor trimming, device configuration, security keys and other storage functions. Weebit's ReRAM is a compelling solution for embedded memory for IoT applications due to its superior performance characteristics and low cost as an NVM.

While SkyWater will initially offer Weebit ReRAM to customers as embedded NVM IP on its 130nm CMOS process, Miller notes the technology can also be scaled in the future to several other platforms such as SkyWater's 90nm and other CMOS technologies. SkyWater will leverage Weebit's design capabilities to drive market penetration. Weebit's cutting-edge design capabilities include being able to add ReRAM into the back end of an embedded application for little added cost and a significant enhancement to overall performance. Weebit's focus on design enables the company to work with SkyWater and other foundries to produce customized memory modules to fit the needs of customers.

Weebit's collaboration with SkyWater is likely to be followed by new licensing agreements with other foundries around the world, driven by customer demand for embedded ReRAM applications as a replacement for flash. The days of conventional embedded flash memory technologies are numbered as wafer process nodes scale down in the low double-digits and beyond. This reality is what has attracted major foundries such as **Paradigm Portfolio** company **Taiwan Semiconductor (TSM)** into the ReRAM business. TSMC is currently offering ReRAM at 40nm and qualifying at 22nm, triggering all other fabs to look for a competitive ReRAM solution where Weebit is the dominant alternative.

Since the TSMC ReRAM announcements, the company has seen a significant rise in interest from other foundries. Digging deeper into this intriguing dynamic with Weebit's leadership — which has deep experience and extensive connections with major foundries — there is a consensus that TSMC is legitimizing Weebit's ReRAM technology. When the world's premier semiconductor foundry announces it is jumping into the ReRAM business, those running competing foundries take notice. Weebit is mum on all of the foundries interested in ReRAM but one suspects the list includes major players such as **Tower (TSEM)**, **Intel (INTC)** (which is in the process of acquiring Tower) and Samsung. This favorable dynamic underlies the bullish analyst predictions for the ReRAM market in the years ahead, with embedded ReRAM sales expected to rise over 50X by 2027. Mind you, there's a lot of work ahead for Weebit, TSMC and others as customers begin the process of designing applications suited to leveraging ReRAM characteristics and then deploying them in the market.

The SkyWater collaboration is initially focused on embedded NVM solutions but there is also the potential for discrete ReRAM devices in the future. While TSMC will not be a discrete ReRAM producer (the company has a clear policy not to manufacture any discrete chips of its own), Weebit

clearly has its sights on this market in the future.

Earlier this year, Weebit achieved a key technical milestone with CEA-Leti in the development of discrete NVM chips, demonstrating its first operational kilobit crossbar arrays that combine Weebit's ReRAM technology with a "selector" that protects the memory cells from parasitics and other electrical degradation. The company's crossbar arrays were developed using a one selector one resistor (1S1R) architecture. This type of architecture will enable Weebit's tech to be used as storage-class memory, persistent memory and as a NOR flash replacement, and is also ideal for AI applications (e.g., machine learning in-memory computations and neuromorphic computing).

Paradigm Potential

The investment case for Weebit is inextricably linked to the company's ability to supply superior memory solutions for a wide range of customers today while continuing to push the frontiers of ReRAM development as a potential replacement for chip process nodes scaling down toward the single-digit nanometer level. Weebit's future fortunes are tied to a world-class engineering and design team guided by experienced leadership that knows how to bring game-changing technology to market.

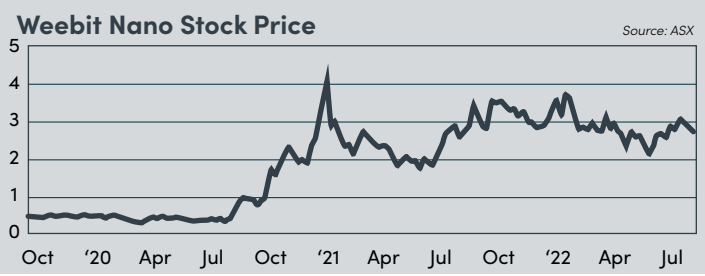
Bringing an innovative memory technology to the market is no small task. Over the past decade, Adesto was able to deliver a conductive bridging RAM (CBRAM) memory technology to market. The company was acquired by Dialog in 2020 for an enterprise value of $500 million. At the time of the acquisition, Adesto was generating revenue of close to $120 million.

Other emerging memory technology innovators, such as Nantero, have struggled. The Woburn, Massachusetts-based enterprise has spent over two decades trying to commercialize a cutting-edge carbon nanotube memory device, with little to show outside of a sale of its government division to Lockheed Martin following a successful space shuttle mission. Nantero's future continues to be cloudy as the company restructures backed by new investors and under guidance from a newly appointed CEO.

There was a time back in the 1980s when Micron's future was in jeopardy, not because of its lack of vision or technical know-how but because of limited access to growth capital. It was Michael Milken's high-yield bonds that provided the crucial growth capital necessary to keep Micron afloat, as discussed in George's book, *The Spirit of Enterprise*. Micron's success in memory technology is legendary today, with the company generating some $10 billion in annual sales and a gorilla-sized stock market capitalization in excess of $60 billion.

Like Micron when it started out, Weebit Nano has big ambitions to revolutionize the market for memory technology. Unlike Micron, Weebit has been able to access the funding required to commercialize its ReRAM. And unlike other emerging memory technology companies pioneering new memory technology with exotic materials, Weebit's ReRAM can be manufactured with standard fabrication equipment in use at any foundry in the world.

It's not a coincidence that Tour's ReRAM technology found a home in Israel. While there is no denying Taiwan's ascent in the technology world and TSMC as the world's pre-eminent chip foundry, Israel is home to the best and brightest scientists and engineers in the world. Nearly every established technology company has a research and development staff in Israel. The country is at the forefront of the next generation of technology, including memory technology. It would not be surprising to see Israel become the home of the best ReRAM in the world.



In considering Weebit's investment potential, it is difficult to make the case it is the next Micron. To ascend to that status, Weebit will have to demonstrate the capability of being able to deliver a new generation of discrete memory devices that are far superior to anything on the market. At present, Weebit's discrete memory technology is still at an early stage of development. In the near term, it is more likely that Weebit's opportunities with embedded memory will generate revenues that rival Adesto's accomplishments before it was acquired. If that occurs, Weebit may well attract the interest of a more established technology company. The semiconductor business is rife with M&A activity these days.

Given Weebit's technological prowess and market positioning, it is not difficult to envision the company's stock market capitalization rising by 50%-plus within the next 12–18 months as revenues begin to ramp. An expected investment return of that magnitude makes Weebit's stock well suited to our Special Situations Portfolio as an emerging play in the Nanocosm. Far greater investment returns are possible over the longer term if Weebit can become the premier supplier of a new generation of discrete ReRAM solutions and ascend to the lofty status of the gorilla that is Micron.

RECOMMENDATION:

Buy Weebit Nano (ASX: WBT) as a Special Situations stock.