MICRON TECHNOLOGY INC
Form 10-K
October 28, 2016

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K
(Mark
One)

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended September 1, 2016
OR

o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to
Commission file number 1-10658
Micron Technology, Inc.
(Exact name of registrant as specified in its charter)

Delaware	75-1618004
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)
8000 S. Federal Way, Boise, Idaho	83716-9632
(Address of principal executive offices)	(Zip Code)
Registrant's telephone number, including area code	(208) 368-4000

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value $0.10 per share	NASDAQ Global Select Market
Common Stock Purchase Rights	

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes T No ¨

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ¨ No T

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes T No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes T No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant’s knowledge, in definitive proxy or

information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act:

Large Accelerated Filer x	Accelerated Filer o	Non-Accelerated Filer o (Do not check if a smaller reporting company)	Smaller Reporting Company o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No x

The aggregate market value of the voting stock held by non-affiliates of the registrant, based upon the closing price of such stock on March 3, 2016, as reported by the NASDAQ Global Select Market, was approximately $9.3 billion. Shares of common stock held by each executive officer and director and by each person who owns 5% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of outstanding shares of the registrant's common stock as of October 21, 2016, was 1,041,537,057.

DOCUMENTS INCORPORATED BY REFERENCE: Portions of the Proxy Statement for the registrant’s Fiscal 2016 Annual Meeting of Shareholders to be held on January 18, 2017, are incorporated by reference into Part II and Part III of this Annual Report on Form 10-K.

Definitions of Commonly Used Terms

As used herein, "we," "our," "us," and similar terms include Micron Technology, Inc. and our consolidated subsidiaries, unless the context indicates otherwise. Abbreviations, terms, or acronyms are commonly used or found in multiple locations throughout this report and include the following:

Term	Definition	Term	Definition
2014 Notes	1.875% Convertible Notes due 2014	Intel	Intel Corporation
2022 Notes	5.875% Senior Notes due 2022	Japan Court	Tokyo District Court
2022 Term Loan B	Senior Secured Term Loan B due 2022	LPDRAM	Mobile Low-Power DRAM
2023 Notes	5.250% Senior Notes due 2023	MAI	Micron Akita, Inc.
2023 Secured Notes	7.500% Senior Secured Notes due 2023	MCP	Multi-Chip Package
2024 Notes	5.250% Senior Notes due 2024	Micron	Micron Technology, Inc. (Parent Company)
2025 Notes	5.500% Senior Notes due 2025	MSTW	Micron Semiconductor Taiwan Co. Ltd.
2026 Notes	5.625% Senior Notes due 2026	MLC	Multi-Level Cell
2027 Notes	1.875% Convertible Notes due 2027	MMJ	Micron Memory Japan, Inc.
2031 Notes	2031A and 2031B Notes	MMJ Companies	MAI and MMJ
2031A Notes	1.500% Convertible Senior Notes due 2031	MMJ Group	MMJ and its subsidiaries
2031B Notes	1.875% Convertible Senior Notes due 2031	MMT	Micron Memory Taiwan Co., Ltd.
2032 Notes	2032C and 2032D Notes	MP Mask	MP Mask Technology Center, LLC
2032C Notes	2.375% Convertible Senior Notes due 2032	Photronics	Photronics, Inc.
2032D Notes	3.125% Convertible Senior Notes due 2032	Qimonda	Qimonda AG
2033 Notes	2033E and 2033F Notes	R&D	Research and Development
2033E Notes	1.625% Convertible Senior Notes due 2033	RLDRAM	Reduced Latency DRAM
2033F Notes	2.125% Convertible Senior Notes due 2033	SG&A	Selling, General, and Administration
2043G Notes	3.00% Convertible Senior Notes due 2043	SLC	Single-Level Cell
Aptina	Aptina Imaging Corporation	SSD	Solid-State Drive
Elpida	Elpida Memory, Inc.	TAIBOR	Taipei Interbank Offered Rate
Gb	Gigabit	Tera Probe	Tera Probe, Inc.
HMC	Hybrid Memory Cube	TLC	Triple-Level Cell
IMFT	IM Flash Technologies, LLC	VIE	Variable Interest Entity
Inotera	Inotera Memories, Inc.		

PART I

ITEM 1. BUSINESS

The following discussion contains trend information and other forward-looking statements that involve a number of risks and uncertainties. Forward-looking statements include, but are not limited to, statements such as those made regarding the acquisition of the remaining shares of Inotera, increased sales of DDR4 products, growth in demand for NAND Flash products and SSDs, production of 3D NAND Flash and 3D XPoint™ memory, and the transition to smaller line-widths and other process technologies. Our actual results could differ materially from our historical results and those discussed in the forward-looking statements. Factors that could cause actual results to differ materially include, but are not limited to, those identified in "Item 1A. Risk Factors." All period references are to our fiscal periods unless otherwise indicated.

Overview

Micron Technology, Inc., including its consolidated subsidiaries, is a global leader in advanced semiconductor systems. Our broad portfolio of high-performance memory technologies, including DRAM, NAND Flash, and NOR Flash, is the basis for solid-state drives, modules, multi-chip packages, and other system solutions. Our memory solutions enable the world's most innovative computing, consumer, enterprise storage, networking, mobile, embedded, and automotive applications. We market our products through our internal sales force, independent sales representatives, and distributors primarily to original equipment manufacturers and retailers located around the world. We face intense competition in the semiconductor memory market and in order to remain competitive we must continuously develop and implement new technologies and decrease manufacturing costs. Our success is largely dependent on market acceptance of our diversified portfolio of semiconductor products, efficient utilization of our manufacturing infrastructure, successful ongoing development of advanced product and process technologies, and generating a return on R&D investments.

We obtain products for sale to our customers from our wholly-owned manufacturing facilities and our joint ventures. In recent years, we have increased our manufacturing scale and product diversity through strategic acquisitions and various partnering arrangements.

We make significant investments to develop the proprietary product and process technologies that are implemented in our worldwide manufacturing facilities and joint ventures. We generally reduce the manufacturing cost of each generation of product through advancements in product and process technologies, such as our leading-edge line-width process technology. We continue to introduce new generations of products that offer improved performance characteristics, including higher data transfer rates, reduced package size, lower power consumption, improved read/write reliability, and increased memory density. To leverage our significant investments in R&D, we have formed, and may continue to form, strategic joint ventures that allow us to share the costs of developing memory product and process technologies with joint venture partners. In addition, from time to time, we also sell and/or license technology to other parties. We continue to pursue additional opportunities to monetize our investment in intellectual property through partnering and other arrangements.

Proposed Acquisition of Inotera

In the second quarter of 2016, we entered into agreements to acquire the remaining interest in Inotera for 30 New Taiwan dollars per share in cash (equivalent to approximately $0.95 per share, assuming 31.7 New Taiwan dollars per

U.S. dollar, the exchange rate as of September 1, 2016). As of September 1, 2016, we held a 33% ownership interest in Inotera, Nanya and certain of its affiliates held a 32% ownership interest, and the remaining ownership interest in Inotera was publicly held. Based on the exchange rate as of September 1, 2016, we estimate the aggregate consideration payable for the 67% of Inotera shares not owned by us would be approximately $4.1 billion.

On March 29, 2016, the transaction was approved by the shareholders of Inotera, including Nanya and certain of Nanya's affiliates (which approval was provided pursuant to voting and support agreements). Under the voting and support agreements, the parties have further agreed not to transfer any of their Inotera shares so long as the voting and support agreements are in effect. These agreements will terminate automatically upon the termination of the agreement to purchase the Inotera shares. On October 11, 2016, the Inotera board set the date for the closing of the transaction to be December 6, 2016. There can be no assurance that the Inotera transaction will be consummated, which is subject to certain termination rights and various conditions, including but not limited to:

- the receipt of necessary regulatory approvals from authorities in Taiwan, which have been received;
- the consummation and funding of the Term Loan Facility (described below); and
- unless we determine otherwise, the consummation and funding of the Private Placement (described below).

Acquisition Financing: On October 11, 2016, we and Inotera, as co-borrowers, entered into a single-draw term loan facility (the "Term Loan Facility"), from which proceeds will be used to pay a portion of the acquisition consideration and any related transaction costs and to provide working capital for Inotera. In the second and third quarters of 2016, we entered into agreements with Nanya pursuant to which we have the option to issue a combination of shares of our common stock (the "Micron Shares") and 2.00% convertible senior notes due 2021 (the "2021 Convertible Notes") to Nanya, which is subject to regulatory approvals and various other conditions.

Term Loan Facility: The Term Loan Facility can be made in a single draw on or prior to July 10, 2017, subject to the satisfaction of customary conditions, up to a maximum aggregate borrowing amount of 80 billion New Taiwan dollars in cash (equivalent to $2.5 billion). The loan will bear interest at a variable rate equal to the three-month or six-month TAIBOR, at our or Inotera's option, plus a margin of 2.05% per annum, payable monthly in arrears. The loan will mature five years from the date it is made and principal is payable in six equal semi-annual installments, commencing thirty months after such loan is made.

The Term Loan Facility will be collateralized by certain assets including a real estate mortgage on Inotera's main production facility and site, a chattel mortgage over certain equipment of Inotera, all of the stock of our MSTW subsidiary and the approximately 80% of the stock of Inotera held by MSTW following the consummation of the acquisition. Micron will guarantee all of Inotera's and MSTW's obligations under the Term Loan Facility.

The Term Loan Facility contains affirmative and negative covenants which are customary for financings of this type, including covenants that limit or restrict the ability to create liens in or dispose of collateral securing obligations under the Term Loan Facility, mergers involving MSTW and/or Inotera, loans or guarantees to third parties by Inotera and/or MSTW, and MSTW's distribution of cash dividends (subject to satisfaction of certain financial conditions). The Term Loan Facility also contains financial covenants as follows, which are tested semi-annually:

- MSTW must maintain a consolidated ratio of total debt to EBITDA not higher than 5.50x in 2017 and 2018; and not higher than 4.50x through 2019 to 2021.
- MSTW must maintain consolidated tangible net worth of not less than 4 billion New Taiwan dollars (equivalent to $126 million) in 2017 and 2018; not less than 6.5 billion New Taiwan dollars (equivalent to $205 million) in 2019 and 2020; and not less than 12 billion New Taiwan dollars (equivalent to $378 million) in 2021.
- On a consolidated basis, we must maintain a ratio of total debt to EBITDA not higher than 3.50x in 2017; not higher than 3.00x in 2018 and 2019; and not higher than 2.50x in 2020 and 2021.
- On a consolidated basis, we must maintain tangible net worth not less than $9 billion in 2017; not less than $12.5 billion in 2018 and 2019; and not less than $16.5 billion in 2020 and 2021.

If one or more of the required financial ratios is not maintained at the time the ratios are tested, the interest rate will be increased by 0.25% until such time as the required financial ratios are maintained. In addition, if MSTW fails to maintain a required financial ratio for two consecutive semi-annual periods, such failure will constitute an event of default that could result in all obligations owed under the Term Loan Agreement being accelerated to be immediately due and payable. Our failure to maintain a required consolidated financial ratio will only result in an increase to the applicable interest rate and will not constitute an event of default under the Term Loan Facility. The Term Loan Facility also contains customary events of default.

Micron Shares: We have the option to issue Micron Shares in an amount up to 31.5 billion New Taiwan dollars (equivalent to $991 million) (the "Private Placement"), which would be used to fund a portion of the acquisition consideration. The per-share selling price for the Micron Shares would be equal to the greater of the New Taiwan dollar equivalent of (i) the average of the closing sale price of our common stock during the 30 consecutive trading day period ending on and including the 30th calendar day prior to the consummation of the Inotera acquisition or (ii) $10.00.

2021 Convertible Notes: We have the option to issue 12.6 billion New Taiwan dollars (equivalent to $396 million) in 2021 Convertible Notes in lieu of a corresponding value of Micron Shares so long as we also issue Micron Shares to Nanya of at least 6.3 billion New Taiwan dollars (equivalent to $198 million) pursuant to the Private Placement.

Technology Transfer and License Agreements with Nanya: In the second quarter of 2016, we entered into technology transfer and license agreements pursuant to which Nanya has the option to require us to transfer to Nanya certain technology and deliverables related to the next DRAM process node generation (the "1X Process Node") after our 20nm process node and the next DRAM process node generation after the 1X Process Node for Nanya's use. Under the terms of the agreements, Nanya would pay royalties to us for a license to the transferred technology based on revenues from products utilizing the technology, subject to an agreed cap, and we would also receive an equity interest in Nanya upon the achievement of certain milestones. Nanya's option becomes exercisable upon the closing of the Inotera acquisition transaction.

Business Segments

We have the following four business units, which are our reportable segments:

Compute and Networking Business Unit ("CNBU"): Includes memory products sold into compute, networking, graphics, and cloud server markets.
Storage Business Unit ("SBU"): Includes memory products sold into enterprise, client, cloud, and removable storage markets. SBU also includes products sold to Intel through our IMFT joint venture.
Mobile Business Unit ("MBU"): Includes memory products sold into smartphone, tablet, and other mobile-device markets.
Embedded Business Unit ("EBU"): Includes memory products sold into automotive, industrial, connected home, and consumer electronics markets.

For more information regarding our segments, see "Part II – Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Segment Information."

Products

DRAM

DRAM products are high-density, low-cost-per-bit, random access memory devices that provide high-speed data storage and retrieval with a variety of performance, pricing, and other characteristics. Sales of DRAM products were 58%, 64%, and 68% of our total net sales in 2016, 2015, and 2014, respectively.

DDR3 and DDR4 DRAM are standardized, high-density, high-volume, DRAM products, which offer high speed and high bandwidth at a relatively low cost. DDR3 and DDR4 products are primarily targeted at computers, servers, networking devices, communications equipment, consumer electronics, automotive, and industrial applications. In 2016, we offered DDR3 and DDR4 products in 1Gb to 8Gb densities. Sales of DDR4 products increased significantly in 2016 and we expect further increases in 2017 as they replace DDR3 DRAM products in many applications. Sales of DDR3 and DDR4 DRAM products were 31%, 38%, and 40% of our total net sales in 2016, 2015, and 2014, respectively.

LPDRAM products offer lower power consumption relative to other DRAM products and are used primarily in smartphones, tablets, automotive applications, laptop computers, and other mobile consumer devices that require low power consumption. We offer DDR4, DDR3, DDR2, and DDR versions of LPDRAM. Sales of LPDRAM products were 18%, 18%, and 20% of our total net sales in 2016, 2015, and 2014, respectively.

We also offer other DRAM products targeted to specialty markets including DDR2 DRAM, DDR DRAM, GDDR5 and GDDR5X DRAM, SDRAM, and RLDRAM. These products are used primarily in networking devices, servers, consumer electronics, communications equipment, computer peripherals, automotive and industrial applications, and computer memory upgrades. We offer HMC products, which are semiconductor memory devices where vertical stacks of DRAM die that are connected using through-silicon-via interconnects are placed above a small, high-speed logic layer. HMC enables ultra-high system performance and is targeted primarily at networking and high performance computing applications.

Non-Volatile Memory

Non-Volatile Memory includes NAND Flash and 3D XPoint™ memory. Through 2016, substantially all of our Non-Volatile Memory sales were from NAND Flash products. NAND Flash products are electrically re-writeable, non-volatile semiconductor memory devices that retain content when power is turned off. NAND Flash sales were 37%, 33%, and 27% of our total net sales in 2016, 2015, and 2014, respectively. NAND Flash is ideal for mass-storage devices due to its fast erase and write times, high density, and low cost per bit relative to other solid-state memories. Embedded NAND Flash-based storage devices are utilized in smartphones, SSDs, tablets, computers, automotive and industrial applications, networking, and other consumer applications. Removable storage devices, such as USB and Flash memory cards, are used with applications such as PCs, digital still cameras, and smartphones. The market for NAND Flash products has grown rapidly and we expect it to continue to grow due to increased demand for these and other embedded and removable storage devices.

Our NAND Flash products feature a small cell structure that enables higher densities for demanding applications. We offer high-speed SLC, MLC, and TLC planar NAND Flash products that are compatible with advanced interfaces in 1Gb to 128Gb densities. MLC and TLC products have two and three times, respectively, the bit density of SLC products. In 2016, we began selling commercial volumes of new products featuring our new 3D NAND Flash technology, which stacks layers of data storage cells vertically to create storage devices with three times higher capacity than competing planar NAND Flash technologies. This enables more storage in a smaller space, bringing significant cost savings, low power usage and high performance to a range of mobile consumer devices as well as the most demanding enterprise deployments. We are currently in production of MLC and TLC versions of 3D NAND Flash and we expect 3D NAND to be the majority of our NAND Flash output beginning in the first quarter of 2017. Our current 3D NAND Flash products feature 32 layers and we expect to offer next generation 3D NAND Flash products with 64 layers in 2017.

We offer client and enterprise SSDs which feature higher performance, reduced-power consumption, and enhanced reliability as compared to typical hard disk drives. Our client SSDs are targeted at notebooks, desktops, workstations, and other consumer applications. Increasingly our SSDs are being utilized in large scale cloud environments. Using our 3D NAND Flash process technology, our SSDs deliver read and write speeds that help improve boot and application load times and deliver higher performance than hard disk drives. Our client SSDs, including our newest line of 3D NAND SSDs, deliver world-class data storage, endurance, power efficiency, reliability, and performance for corporate users and are offered in a 2.5-inch, M.2, SATA, and PCIe NVMe solutions, with densities up to 2 terabytes. Our enterprise SSDs are targeted at server and storage applications and incorporate our Extended Performance and Enhanced Reliability Technology ("XPERT") architecture, which closely incorporates the storage and controller through highly optimized firmware algorithms and hardware enhancements. The end result is a set of market-focused enterprise features that deliver ultra-low latencies, improved data transfer time, power-loss protection, and cost-effectiveness, along with higher capacities and power efficiency. We offer enterprise SSDs with PCIe NVMe, SAS, and SATA interfaces and capacities up to 3.2 terabytes. We expect that demand for both client and enterprise SSDs will continue to increase significantly over the next several years.

We also offer MCP products, which incorporate our NAND Flash. We offer MCP products that combine NAND Flash with LPDRAM to enable small form-factor solutions that combine storage and execution memory. We also offer managed NAND Flash MCP products including e-MMC, e-MCP, and embedded USB. Our e-MMC products combine NAND Flash with a logic controller that performs media management and Error Code Correction ("ECC"), which provides reduced ECC complexity, better system performance, improved reliability, easy integration, and lower overall system costs. Our e-MCP products combine e-MMC with LPDRAM on the same substrate, which improves overall functionality and performance while simplifying system design. MCP products are used in smartphone, automotive, industrial, and other consumer applications.

Through our Lexar® brand, we sell high-performance digital media products and other flash-based storage products through retail and original equipment manufacturer channels. Our digital media products include a variety of flash memory cards and JumpDrive® products with a range of speeds, capacities, and value-added features. We offer flash memory cards in a variety of speeds and capacities and in all major media formats, including CompactFlash®, Memory Stick®, and Secure Digital ("SD") formats. CompactFlash and Memory Stick products sold by us incorporate our patented controller technology. Other products, including SD memory cards and some JumpDrive products, incorporate third-party controllers. We also manufacture products that are sold under other brand names and resell flash memory products that are purchased from other NAND Flash suppliers.

In 2015, we introduced 3D XPoint technology, a new category of non-volatile memory. 3D XPoint memory's innovative, transistor-less, cross point architecture creates a three-dimensional checkerboard where memory cells sit at the intersection of word lines and bit lines, allowing the cells to be addressed individually. As a result, data can be written and read in small sizes, leading to fast and efficient read/write processes. We began production of 3D XPoint memory products in 2016 and expect to significantly increase production in 2017.

Other

Other products included primarily NOR Flash, which are electrically re-writeable, semiconductor memory devices that offer fast read times and are used in automotive, industrial, connected home, and consumer applications.

Partnering Arrangements

The following is a summary of our partnering arrangements as of September 1, 2016:

Entity	Member or Partner	Ownership Interest	Formed/ Acquired	Product Market
Consolidated entities				
IMFT (1)	Intel Corporation	51%	2006	Non-Volatile
Equity method investments				
Inotera				