



March 8, 2018

CURRENT PRICE: \$5.81
RATING: BUY
PRICE TARGET: \$10
CURRENT YIELD: N/A

EPS Estimates - GAAP

	DEC 17A	DEC 18E
1Q	(\$0.32)	(\$0.18)
2Q	(\$0.28)	(\$0.13)
3Q	(\$0.37)	(\$0.02)
4Q	(\$0.24)	(\$0.11)
	(\$1.22)	(\$0.44)

Trading Data

52-WEEK PRICE RANGE: \$6.61-\$4.29
 SHARES OUTSTANDING: 37.2(M)
 MARKET CAP: \$216.1(M)
 AVG. DAILY TRADING VOLUME: 0.2(M)
 S&P 500: 2,739

Valuation Data

BOOK VALUE: \$2.04
 PRICE TO BOOK: 2.85x
 DIVIDEND: n/a

MAXWELL TECHNOLOGIES, Inc. (NSDQ: MXWL)

Potential 2018 Turnaround?

Highlights

- 4Q17 GAAP earnings of (\$0.24)/share vs.(\$0.38)/share during 4Q16
- Management sees potential future revenue/earnings growth
- Potential materialization of revenue growth in 2H18
- “Pipeline Opportunities” in auto, grid, & wind sectors
- Maintain BUY rating & \$10/share price target

Investment Thesis

The recent sell-off in this stock has created an attractive entry point for speculative/aggressive investors seeking above average appreciation potential, from MXWL’s shares during the next 6-18 months. We believe MXWL is a revenue/earnings growth story, based on rising demand for the company’s products on both a short-term and long-term basis. Specifically, increased demand for the company’s ultracapacitor products could drive earnings growth as auto/truck/rail industries move towards “greener” options to increase mileage and lower vehicle emissions.

Company Summary

Maxwell Technologies (MXWL-\$5.81), headquartered in San Diego CA, develops, manufactures, and markets advanced energy storage/power delivery products. These products are used in the transportation, renewable energy, industrial, information technology sectors and the company also offers microelectronic products for space/satellite applications. MXWL’s produces two primary items; ultracapacitors and high-voltage capacitors. Internal manufacturing is done at facilities in Phoenix AZ and Rossens Switzerland. Low-cost offshore assembling of MXWL’s ultracapacitor products is done by Belton Technology (Hong Kong China) and Lishan Battery Company (Tianjin China). Sales offices are located in San Diego CA, Norfolk UK, Rossens Switzerland, Munich Germany, and Shanghai China.

For Important Disclosure information regarding the Firm’s rating system, valuation methods and potential conflicts of interest, please refer to the last two pages of this report.

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BUSINESS OVERVIEW

MXWL has two primary products: Ultracapacitors and High-Voltage Capacitors.

Ultracapacitors (UC) are energy storage devices which possess high power density (having the ability to charge/discharge energy at a fast rate) and a long operational life. MXWL's ultracapacitor cells and multi-cell packs/modules supply high energy storage/power delivery solutions for application in many industries. These products are used in the transportation, energy, consumer, industrial electronics, and information technology industries. Ultracapacitors are the "lion's share" of MXWL's business comprising 62% of 2011's sales.

High-Voltage Capacitors (HVC) are devices designed/manufactured to perform reliably in all types of climates for electric utility infrastructures for long periods of time. This product group includes grading/coupling capacitors and capacitive voltage dividers used for safety, and reliability, in electric utility infrastructures. Other applications for this product group are used in the transmission, distribution, and measurement of high-voltage electrical energy.

In 2016 MXWL sold its Radiation-Hardened Microelectronic Products business to Data Device Corporation for approximately \$21 million in cash.

MXWL completed its 2017 purchase of Nesscap Energy Business for \$23.75 million. The acquisition was paid for with newly issued shares of MXWL stock. Nesscap produces smaller sized UC products and could compliment sales of MXWL's larger UC products.

MXWL unveiled a new Generator Starting Solutions (GSS) product line geared to start commercial/industrial standby/backup generators.

MXWL TRANSITIONING SALES/GROWTH EFFORTS

During the past 4 years there has been a change in MXWL's management team and sales strategy with the objective of diversifying its targets markets and grow revenues. CEO, Dr. Franz Fink joined the company in May 2014 and hired a new CFO, David Lyle, and employed new people for key/strategic positions. Dr. Henning Hauenstein became MXWL's Vice President of Strategy/Marketing after working at Infineon Technologies for 10 years as Senior Vice President /General Manager of the automotive business segment.

MXWL believes its turnaround may come from the auto and electrical grid market opportunities, as well as "pipeline opportunities". The three primary drivers will be 1) renewable power generation, 2) vehicle electrification, and 3) changes in the electric battery market.



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One potential area for revenue growth is the electric grid business as grid owners seek to save more energy generated and decrease down time for these systems. There are two parts to this sector-global OEMs dealing with transmission lines and at the distribution level (i.e., micro grid). In the transmission line business, MXWL may have a positive announcement in this area on the presumption a global OEM will use the company's products in one of its systems in 2018. This could be beneficial to revenues if the OEM leverages the use of MXWL's products in other grids during the next 2-5 years.

The energy storage area offers another, but smaller, revenue opportunity as MXWL's products could be used in energy storage devices. For example, a manufacturing center could need electric storage capabilities, to handle its own supply needs, when electricity is hard to come by, during peak demand times for the local utility. Potentially, MXWL's UCs could be used in these energy storage systems and would be offered by its larger partner, which is selling these items to electrical grid operators/owners. MXWL believes revenues from "micro grid" orders could materialize in 2019-2020.

The wind turbine markets could add \$50 million - \$80 million in revenues over the next few years. Over the short run, management believes ~\$10 million in additional wind revenues could materialize as wind farm maintenance contracts will be expiring and these operators could move towards MXWL's ultracapacitors to replace them during the next 1 ½ -2 ½ years. Thus, there may be some increase in wind revenues in 2018 and more could materialize in 2019-2020.

Another area MXWL sees as a potential new avenue of revenues is in the dry electrode battery technology area. Management's objective is to partner with automotive and energy storage industry leaders. Hopes are this area could "unlock new application forms" in this area for MXWL products and generate a new revenue stream beginning in 2022.

MXWL is finishing the "proof-of-concept" process for its dry battery electrode product. Management estimates this product could either allow up to 10%-20% more per battery charge, or allow battery producers to decrease the size of auto batteries but maintain the current amount of charging power. Partners are currently testing the product and potentially, assuming no problems, could finish the process during 1Q18. If this product enters the battery market, in 2021 or 2022, MXWL believes revenues will be produced from royalty agreements as it is introduced into the hybrid auto markets, either by an OEM or a large sales supplier.

MXWL management also saw the need to shift MXWL away from the Chinese government subsidy-dependent hybrid bus business and diversify into other sectors moving towards mandated energy efficient standards set for 2020. These other sectors include electric/utility grid systems, wind generation, railroad systems, automotive, and truck sectors. To this end, plans are to work with existing customers and establish new strategic partnerships to assist funding of key technologies/ solutions to accelerate the broader commercialization of MXWL's products. For example, agreements have been signed with Corning (GLW-\$29.33) to develop/market MXWL", and with Duke Energy (DUK-\$75.40) and US and foreign railroad systems to employ products in their electrical grid systems.

Management announced it was expanding the partnership with China Railway Rolling Stock Corporation (CRRC). The expansion will localize manufacturing of MXWL's ultracapacitor-based modules for use in the China green energy bus market during 2H17. CRRC will exclusively use MXWL's 2.7-volt and 3-volt ultracapacitor cells in local production lines and manufacture the products



An interesting statement, during a recent meeting with CEO Dr. Franz Fink, was his belief that for years MXWL had been chasing industries to use its products. Now however, given new energy conservation regulation taking effect in 2020, Dr. Fink believes the industry will now be coming to MXWL for its products. If he is correct, MXWL could see a significant ramp of revenues, and produce positive earnings during the next 2-3 years.

RECENT EARNINGS

MXWL reported 4Q17 GAAP earnings of (\$0.24)/share vs. (\$0.38)/share during 4Q16. The improvement came from higher revenues, increased gross margins, and lower total operating expenses. Revenues rose to \$30.8 million from \$26.4 million as a rise in UC sales (\$20.8 million vs. \$12.7 million) offsetting lower High Voltage revenues (\$9.9 million vs. \$13.7 million). Total operating expenses decreased to \$14.3 million from \$15.6 million as lower R&D expense (\$4.3 million), and an absence of a \$1.3 million restructuring charge taken during 4Q16, more than offset a rise in SGA (\$9.7 million vs. \$9.6 million). 4Q17 non-GAAP earnings improved to (\$0.14)/share from (\$0.23)/share. FY17 GAAP earnings decreased to (\$1.22)/share from (\$0.74)/share during FY16 and FY17 non-GAAP earnings improved slightly to (\$0.65)/share from (\$0.67)/share.

When comparing 4Q17 to 4Q16, GAAP gross profit margins rose to 24.0% from 21.6%, while non-GAAP's rose to 25.6% from 22.4%. This was due to higher profit margins from high voltage product sales as UC margins were as expected, as timing issues delayed a \$1 million order from 3Q17 to 4Q17. Non-GAAP gross margins exclude \$349,000 of stock based compensation expense, \$157,000 of net calculated intangible authorization, and inventory step-up expense. Given the factors mentioned above, EBIT improved to (\$6.9 million) from (\$9.9 million) and EBITDA's loss decreased to (\$8.2 million) from (\$9.9 million).

A sequential comparison of 4Q17 to 3Q17 shows revenues declining to \$30.8 million from \$35.8 million as the 4Q is typically a slow quarter for MXWL along with 1Q. Total operating expenses fell to \$14.3 million from \$20.7 million, mainly due to SG&A decreasing to \$9.7 million from \$14.5 million. EBIT improved to (\$6.9 million) from (\$13.2 million) as did EBITDA of (\$8.2 million) vs. (\$13.3 million).



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Our Thoughts

MXWL's 4Q17 GAAP earnings actually improved to (\$0.24)/share vs. (\$0.38)/share during 4Q16. The improvement came from higher revenues, increased gross margins, and lower total operating expenses. Revenues rose to \$30.8 million from \$26.4 million as a rise in UC sales (\$20.8 million vs. \$12.7 million) offsetting lower High Voltage revenues (\$9.9 million vs. \$13.7 million). These results may be setting the stage for the beginning of an earnings turnaround during 2H18- 2019, longed hope for by investors.

Management believes breakeven EBITDA could materialize during 2H18, and set the stage for positive quarterly earnings during the next couple of years. This positive scenario would come from MXWL's recent efforts to reduce operating costs and develop products needed by automotive, wind, rail, electric grid, and battery technology, as new regulations take effect in 2020. 2H18-1H19 may be the inflexion point for MXWL as these sectors increase demand for MXWL products, thereby generating revenue growth, improve profit margins, and potentially lead towards positive quarterly earnings in 2019-2020. Our 2018 earnings estimates is for MXWL to narrow per share losses during 2018 to (\$0.44)/share from (\$1.22)/share in 2017, and potentially lead to positive quarterly earnings results sometime during 2H19-1H20.

If this occurs, demand for MXWL's shares could increase as momentum investors, anticipating positive earnings, move into MXWL's stock after breakeven or positive EBITDA is generated on a quarterly basis, causing the stock to appreciate towards our target price. This stock is rated BUY and recommended for aggressive/speculative investors. Our price target is \$10/share, equating to MXWL trading at 7.1x our Enterprise Value/Revenues multiple based on our 2018 revenue estimate.



Risks

There are no guarantees MXWL will be able to grow future earnings. Declining customer orders, increasing commodity prices, and rising operating costs could negatively affect the company's profits. Economic slowdowns, or political change, in Europe and Asia could have adverse effects on earnings. Given the majority of its revenues come from overseas, fluctuations in currency values could impact MXWL's profitability. New products from competitors, or changing industry trends, are risks for MXWL's ability to sell its products. Negative equity markets, rising interest rates, terrorist attacks, and failure to comply with the Sarbanes Oxley Act could cause a decline in MXWL's share price. Given the relatively small amount of daily trading activity in MXWL's stock, any increase in trading volume could significantly accelerate the volatility of its share price movement.

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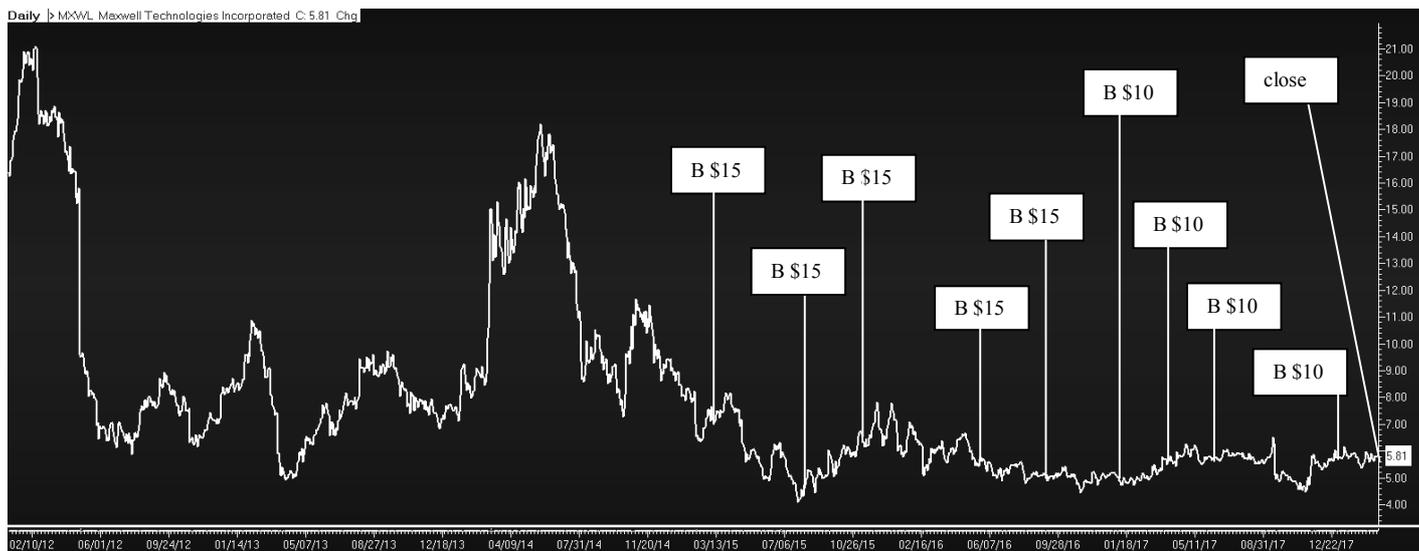
EQUITY RESEARCH

MAXWELL TECHNOLOGIES, INC. & SUBSIDIARIES
condensed consolidated statements of operations
(in thousands, except per share data - unaudited)

	1Q17	2Q17	3Q17	4Q17	2017	1Q18e	2Q18e	3Q18e	4Q18e	2018e
Revenue	\$26,686	\$37,103	\$35,816	\$30,763	\$130,368	\$32,446	\$39,458	\$39,154	\$32,189	\$143,247
Cost of revenue	20,049	29,276	28,420	23,832	101,573	23,523	29,199	26,625	22,854	102,201
Gross profit	6,191	7,827	7,396	7,381	28,795	8,923	10,259	12,529	9,335	41,046
Operating expenses:										
Selling, general, & administrative	9,540	12,070	14,514	9,694	45,818	9,883	9,727	8,318	8,415	36,343
Research & development	7,686	4,430	4,891	4,344	18,351	5,174	4,446	4,286	4,354	18,260
Amortization of intangibles										
Restructuring/exit costs	997		1,251	34	2,282					
Asset Impairment charges				240	240					
Total operating expenses	15,223	16,500	20,656	14,312	66,691	15,057	14,173	12,604	12,769	54,603
Income/(loss) from operations	-9,032	-8,673	-13,260	-6,931	-37,896	-6,137	-3,914	-75	-3,434	-13,560
Gain on asset sale										
Interest expense, net	63	97	152	1,043	1,355	625	626	628	624	2,503
Other Income	1	52	14	18	85	38	15	22	36	111
Amort of debt discount/prepaid debt costs										
Debt discount amort/prepaid debt costs										
For: Currency loss, gain	97	19	65	256	306	67	34	59	146	306
Income before income taxes	-9,191	-8,736	-13,333	-8,212	-39,472	-6,654	-4,491	-622	-3,876	-15,643
Income taxes	1,208	1,382	527	540	3,657	110	404	189	412	1,115
Net income	(\$10,399)	(\$10,118)	(\$13,860)	(\$8,752)	(\$43,129)	(\$6,764)	(\$4,895)	(\$811)	(\$4,288)	(\$16,758)
Net income per share (diluted)	(\$0.32)	(\$0.28)	(\$0.37)	(\$0.24)	(\$1.22)	(\$0.18)	(\$0.13)	(\$0.02)	(\$0.11)	(\$0.44)
Shares outstanding (diluted)	32,200	35,526	37,008	37,115	37,115	37,500	37,500	37,500	37,500	37,500

Important Disclosures

Daily | MXWL Maxwell Technologies Incorporated C:5.81 Chg



5/1/12 \$9.58 initiate BUY & \$13 price target
 4/2/13 \$4.98 lower to HOLD
 9/9/13 \$9.12 raise to BUY & \$13 price target
 4/8/14 Raise price target to \$15
 1/5/17 Lower price target to \$10
 Ratings-
 BUY: B
 HOLD: H
 SELL: S

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Our price target is \$10/share, equating to 7.1x our Enterprise Value/Revenue multiple based on our 2018 revenue estimate

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- (2) Hold – The stock's total return including dividends is expected to be in line with the industry or market average of +/- 10% over the next twelve months.
- (3) Sell – The Stock's total return including dividends is expected to be below the industry or market average by 10% or more over the next twelve months.

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