



**August 10, 2015**

**CURRENT PRICE:** \$4.95  
**RATING:** BUY  
**PRICE TARGET:** \$15  
**CURRENT YIELD:** N/A

**EPS Estimates - GAAP**

	DEC 14A	DEC 15E
1Q	\$0.01	(\$0.32)A
2Q	(\$0.04)	(\$0.31)A
3Q	(\$0.11)	(\$0.08)
4Q	(\$0.07)	(\$0.07)
	<b>(\$0.21)</b>	<b>(\$0.78)</b>

**Trading Data**

52-WEEK PRICE RANGE: \$12.03-\$4.06  
SHARES OUTSTANDING: 30.2(M)  
MARKET CAP: \$149.5(M)  
AVG. DAILY TRADING VOLUME: 0.5(M)  
S&P 500: 2,104

**Valuation Data**

BOOK VALUE: \$3.96  
PRICE TO BOOK: 1.22x  
DIVIDEND: n/a

**MAXWELL TECHNOLOGIES, Inc. (NSDQ: MXWL)**

*2Q15 Earnings report*

**Highlights**

- 2Q15 earnings of (\$0.31)/share vs.(\$0.04)/share during 2Q14
- Vertex Capital takes a 5.1% position
- Announced restructuring program
- Management expects improvement in 2016
- Maintain BUY rating & \$15 price target

**Investment Thesis**

The recent sell-off in this stock has created an attractive entry point for speculative/aggressive investors seeking 50%-100% appreciation potential, or higher, from MXWL's shares during the next 3-18 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 manufacturers move towards "greener" vehicles, from windmills, and railroad grid infrastructures.

**Company Summary**

Maxwell Technologies (MXWL), 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 three primary items; ultracapacitors, high-voltage capacitors, and radiation-hardened microelectronic products. Internal manufacturing is done at facilities in San Diego CA, and Rossens Switzerland, with a new plant opening in Phoenix AZ later this year. 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.*



## BUSINESS OVERVIEW

MXWL has three primary products: Ultracapacitors, High-Voltage Capacitors, and Radiation-hardened Microelectronic Products.

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.

Radiation-Hardened Microelectronic Products (RMP) include high-performance/high-density power modules, memory modules, and single board computers. These use MXWL's patented/proprietary "RADPAK" packaging/shielding technology and unique architectures enabling MXWL's products to withstand high doses of environmental radiation and provide reliable service while in outer space. RMP are used primarily in orbiting satellites and other space crafts.

## GROWTH STRATEGY

MXWL's primary strategy is to grow revenues and profits during the next 5 years primarily through increased market demand for its ultracapacitor-based energy storage and power delivery products. Over the near-term, management believes the windmill and transit bus businesses could lead to higher revenues. Longer-term, the automotive vehicle and uninterruptable power source businesses could add an influx of new revenues towards Maxwell's operations. To this end, management is expanding manufacturing capacity to meet potential increased future product demand expected during the next two years. Revenue growth, combined with controlling expenses, could lead to significant earnings growth during the next 1-5 years for MXWL.

Continental AG, considered a Global Tier 1 automotive supplier, uses MXWL's ultracapacitors in its "stop-start idle-elimination" product. The "stop-start" product is used in the European hybrid automotive market being installed in PSA autos (Peugeot and Citroen). MXWL believes European market share growth is possible in the future, assuming "stop-start" is deployed by other foreign auto manufacturers. The "stop-start" product improves



miles per gallon for autos by turning off the engine when it would otherwise be idling at a traffic stop. This is achieved as the “stop-start” product provides the power needed, from the ultracapacitor, to restart the vehicle. The product has appeal to auto manufacturers seeking to add a “greener” aspect to their automobiles and comply with increasingly stringent fuel/economy/emission standards.

The US auto market is another potential source of growth for MXWL due to the growing demand from customers for “greener” and more fuel-efficient automobiles. Currently no US automakers are using the company’s products. However, MXWL is hopeful this could change if domestic automakers, and US consumer demand, seek “greener” vehicles. US automakers deployment of the “stop/start” product could generate significant revenue growth for MXWL. To this end, MXWL has opened up a marketing office in Detroit MI., home of the “Big Three” US automakers.

The hybrid bus market is another potential large growth market for MXWL going forward. MXWL’s ultracapacitors are used in regenerative braking/power systems in buses. Ultracapacitors capture and store energy from a bus’s braking-action, which can then be reused to propel the vehicle from a standing stop. Thus, a bus using this product would reduce fuel consumption and corresponding exhaust emissions. This type of system has appeal to overseas bus manufacturers seeking “greener” public transit vehicles and improved urban air quality.

Overseas bus manufacturers, seeking “greener” public transit vehicles and increased fuel efficiency are using MXWL’s ultracapacitor products for metropolitan buses with hybrid-electric drive systems. MXWL has supply agreements with Voith Turbo (leading European/North America drive system integrator), Yutong (China’s largest bus producer), and others. Potentially, other bus manufacturers may gravitate towards the use of MXWL ultracapacitors in its vehicles.

MXWL’s ultracapacitors are presently being used in only 5,000 buses around the world, including pilot-projects in 3 US municipal areas. Over the near term the potential exists for new orders from China and Europe, and longer term there could be an increase in demand from US municipalities.

The heavy truck area is a new potential source of revenue growth. MXWL recently introduced the “Engine Start Module”, an engine start module for 18-wheel trucks. This product, with a 10-year design life, provides energy to start trucks, provide “stop-start idle-elimination” features, and allows the cab to run “hotel” loads off of the capacitor, while eliminating battery drain. This offers the potential to increase fuel efficiency, lower emissions, and extend a truck’s regular battery life. Industry studies estimate the North American battery replacement market for Class 4 – 8 trucks could be approximately \$1 billion, equating to a potential large source of new business for MXWL. Presently, only 1,000 of these units are being used in the North American market. However, a wider acceptance of this product by the trucking industry could be another contributor to MXWL’s revenue growth during the next 2-4 years.

Alternative energy is another growth area for MXWL. Owners of electrical generating windmills have been using the company’s ultracapacitor products. These ultracapacitors are used to rotate the windmill blades in order to protect them from problematic weather conditions. This product replaces batteries (used to change the pitch of



turbine blades), which need to be replaced periodically by servicemen. Currently, MXWL's products are in approximately 20,000 windmills, primarily in China. market sector

HVC are used primarily by the electric utility sector. Grading and coupling capacitors are vital circuit breaker components used to prevent high-voltage arcing which can damage switches, step-down transformers and other equipment involved in the transmission/distribution of high-voltage electricity circulated through utility infrastructures and high-voltage laboratories. Capacitive voltage dividers measure power/voltage levels in overhead transmission lines.

The market for these products consists of the building, expansion, upgrading, and maintenance of existing/new infrastructure systems/installations in developing countries. Recently government spending has slowed in this area due to the recent world economic slowdown. However, improvement in the world economy, or credit markets, could cause an increase in electrical infrastructure spending & provide growth opportunities for MXWL.

RMP are used mainly in the space/satellite industries. Due to high manufacturing costs of satellites/spacecrafts, long-lead times needed to develop products for this area, and relatively limited number of space programs, this is a comparatively small market for MXWL.

## Recent Earnings

MXWL reported an operating loss of \$0.31/share during 2Q15 compared to an operating loss of \$0.04/share during 2Q14. Operating revenues declined 18% to \$37.8 million from \$46.1 million, while the cost of revenues decreased to \$25.6 million from \$29.5 million. The decrease in cost of revenues was not enough to offset falling revenues as the gross profits declined to \$12.2 million from \$16.6 million. Total operating expenses rose to \$18.4 million from \$16.9 million.

The biggest portion of revenue decline when comparing 2Q15 and 2Q14, came from a 31% decrease in ultracapacitor sales (\$23.4 million vs. \$33.9 million) generated by softness in China's bus business due to a shift in government bus subsidies. When comparing 2Q15 to 1Q15, ultracapacitor sales increased 6.8% due to higher results from the Chinese wind and bus sector. Sales of high capacitor products and microelectronic products increased 18% to \$14.3 million from \$12.2 million from 2Q14. When compared to 1Q15 high capacitor products and microelectronics increased 13% from \$12.7 million.

2Q15's operating expenses included a restructuring charge of \$2.5 million (\$1.1 million in employee severance & \$1.4 million in factory consolidation). This charge was related to MXWL's announcement of a restructuring plan to consolidate its US manufacturing operations (CA & AZ) and reduce headcount/operating expenses. Thus



far, the headcount was reduced to 423 from 510. Additionally, the company plans to divest its microelectronics product line.

## RECENT DEVELOPMENTS

Activist investor, Vertex Capital, recently took a 5.1% position in MXWL's stock and MXWL subsequently launched a restructuring plan.

The restructuring program announced by MXWL is designed to reduce headcount, consolidate US manufacturing facilities, and divest the microelectronics product line. This will allow the company to focus on the automotive, truck, wind, transportation grid sectors, and lower operating costs. Management believes the restructuring plan will be completed by the end of 1Q16 and lower its non-GAAP break-even revenue point from \$60 million/quarter to \$40 million/quarter during 2H15. Total charges connected with this plan are estimated at \$4.2 million, with a cash component of \$2.2 million.

David Lyle joined MXWL this past May as Senior VP, CFO, Treasurer and Secretary, replacing Kevin Royal, former CFO.

Rick Bergman, President/CEO of Synaptics, was appointed to MXWL's board of directors.

MXWL completed its sale of approximately \$10 million of its common stock. 1.83 million shares were sold at an average share price of \$5.46/share.

The company obtained a \$25 million revolving credit facility with East West Bank. It will be for three years and used for working capital purposes. East West Bank is a large independent CA bank focused on US and greater China markets.

MXWL was selected as the exclusive capacitive energy storage supplier by China's largest rail company, China Railway Rolling Stock Corporation (CRRC). The long term strategic partnership agreement with CRRC will entail multi-year collaboration activities to jointly develop new application-specific, and next generation capacitive energy storage products that meet the needs of CRRC in the Chinese rail market. This comes at a time when the Chinese government plans to expand spending on the country's rail infrastructure during the next decade emphasizing "green" solutions.

Peterbilt Motors Company, a leading designer/manufacturer of premium trucks, began offering MXWL's UC-powered Engine Start Module (ESM) on new Model 579 and 567 trucks as a factory-installed option. The ESM will replace a traditional battery, reduce weight by 60 pounds, and offer reliable starting for the vehicle.



## Our Thoughts

Following two years of good earnings, MXWL reported declining revenues and a net loss in 2014. As a result, MXWL has a new CEO and CFO following several setbacks associated with China, accounting issues, and lack of revenue growth. The new management team believes recent cost cutting efforts and potential higher revenues, from UC sales, could generate positive earnings beginning in 2016 and ramp-up towards 2020. During the last conference call, MXWL outlined new potential avenues for expanding product sales: the Chinese rail market, rail infrastructure grid systems, automobiles, and trucking fleets.

Investors' confidence in the company has waned severely during the past year as stock has fallen from \$16 to under \$5/share. Given this decline, it is now time for new management to grow the company, and earnings, in order to create interest in its depressed stock, following recent proclamations of better anticipated future results. A potentially new positive influence on MXWL management could be Vertex Capital which recently took a 5.1% position in MXWL's stock and pushed for a restructuring-which subsequently occurred. Given recent events, investors should not underestimate the continued influence of Vertex Capital on the company's direction and strategy during the next 2 years.

If management achieves its profit goals, and restores investor confidence in MXWL's ability to grow revenue/earnings, then this stock offers substantial upside. Our 2015 estimates are based on lower costs aiding 2H15 results and potentially leading to positive 2016 earnings-assuming management executes on its business plan. We rate this speculative stock a BUY with a \$15/share price target equating to 17.9x our Enterprise Value/Revenue multiple based on our 2015 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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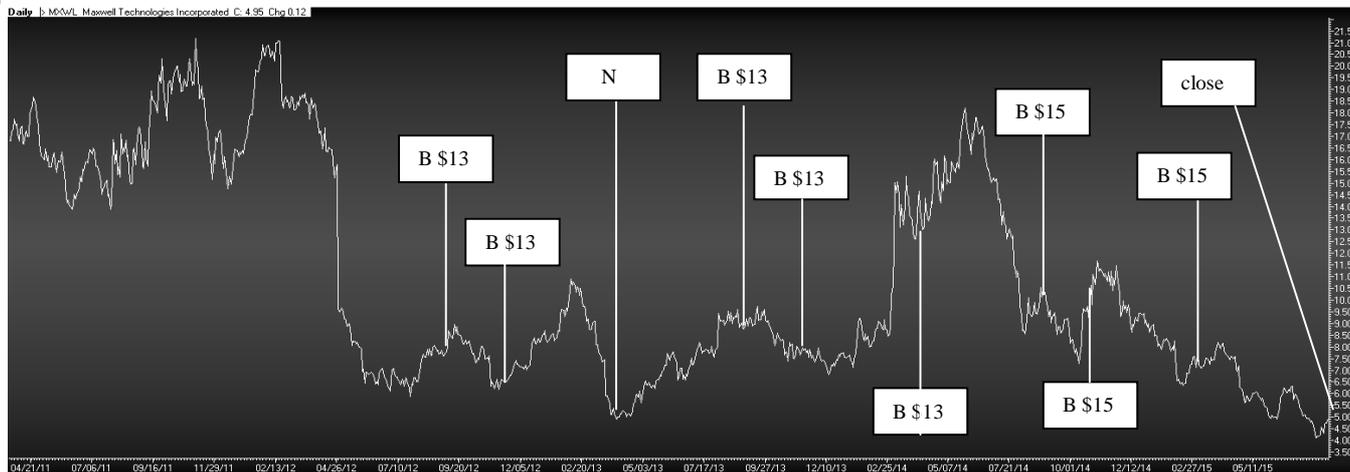


# EQUITY RESEARCH

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

	1Q14	2Q14	3Q14	4Q14	2014	1Q15	2Q15	3Q15e	4Q15e	2015e
Revenue	\$46,001	\$46,074	\$39,818	\$52,918	\$186,586	\$34,670	37,796	41,732	\$42,264	\$156,462
Cost of revenue	28,131	29,474	25,362	34,418	118,146	24,284	25,643	28,169	28,317	106,413
Gross profit	17,870	16,600	14,256	18,500	68,440	10,386	12,153	13,563	13,947	50,049
Operating expenses:										
Selling, general, & administrative	10,939	10,944	10,928	11,151	43,857	11,368	10,142	10,178	10,098	41,786
Research & development	6,171	6,223	6,276	7,003	26,320	7,918	5,930	4,521	4,481	22,850
Amortization of intangibles										
Restructuring/exit costs							2,340	550	915	3,805
Total operating expenses	17,110	17,167	17,204	18,154	70,117	19,286	18,412	15,249	15,494	68,441
Income/(loss) from operations	760	-567	-2,948	346	-1,737	-8,900	-6,259	-1,686	-1,537	18,382
Interest expense, net	-39	-28	-28	-53	-169	-89	-75	-77	-77	-318
Amort of debt discount/prepaid debt costs										
Gain on embedded derivatives & warrants										
Debt discount amort/prepaid debt costs	-5	-5	-7	-5	-22	-5	-2	-5	-5	-17
For: Currency loss, gain							-85			
Income before income taxes	716	-600	-2,983	288	-1,926	-8,994	-6,421	-1,765	-1,619	-18,799
Income taxes	397	581	368	2,406	4,346	347	2,955	648	486	4,436
Net income	\$319	(\$1,181)	(\$3,351)	(\$2,118)	(\$6,272)	(\$9,341)	-9,376	(\$2,413)	(\$2,105)	(\$23,235)
Net income per share (diluted)	\$0.01	(\$0.04)	(\$0.12)	(\$0.07)	(\$0.21)	(\$0.32)	(\$0.31)	(\$0.08)	(\$0.07)	(\$0.78)
Shares outstanding (diluted)	29,216	29,206	29,206	29,301	29,301	29,445	30,232	30,232	30,232	30,232

## Important Disclosures



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

Ratings-

BUY: B

HOLD: H

SELL: S

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Our price target is \$15/share, equating to 17.9x our Enterprise Value/Revenue multiple based on our 2015 revenue estimate

Stock ratings used in this report are defined as follows:

- (1) Buy – The stock's total return including dividends is expected to exceed the industry or market average by at least 10% over the next twelve months.
- (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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