

Universal Display Corporation (NASDAQ: OLED)

Industry: Electronic Equipment, Instruments & Components – Electronic Components

Rating: Buy

Target: USD \$43.87



Date: December 30, 2014

Executive Summary

Business Summary

Universal Display Corporation (UDC) focuses on the research, development, and commercialization of organic light emitting diode (OLED) technology, as well as materials for use in electronic flat panel displays, lighting, and other opto-electronic devices.

Business Drivers

The continued transition from LCD technology to OLED technology has been a major catalyst in the growth of the Universal Display Corporation. The OLED industry consists mostly of rigid OLED displays currently, but flexible OLED displays are considered as the next step forward. Specifically, UDC is responsible for developing OLED layers for the frontplane of OLED displays. UDC works with major display manufacturers, most notably, Samsung Display (SDC) and LG Display (LGD) to develop a functioning product. UDC's success will largely be driven by the growth in sales of OLED displays in phones, tablets, notebooks, televisions, and wearable electronics, such as the Apple iWatch.

Business Risks

The OLED sector's rapid growth lends itself to heavy competition. UDC faces heavy competition from North America, Europe, and Asia. If UDC's technology is not feasible or competitive enough, the company may suffer. Furthermore, UDC's success is reliant on their ability to maintain good relationships with product manufacturers, as well as their ability to protect their licenses and patents.

Valuation Summary

Based on our discounted cash flow analysis and analysis of other qualitative factors, we believe UDC has a 12-month price target of \$43.87, representing a 56.51% gain from its current price. On the principle of conservatism, we assumed a relatively low terminal perpetuity growth rate of 3.0%. Applying that principle throughout the discounted cash flow analysis calculation, we believe \$43.87 is a fair target. It is expected that UDC is able to maintain positive relationships with its key partners, such as OLED display manufacturers. We also assume that UDC slows its change in working capital, more specifically, we expect the company to reallocate its current assets in order to invest in longer-term assets.

Key Statistics

	Current		2012	2013	LTM
Price	\$28.03	Enterprise Value	\$1,187M	\$1,322M	\$1,013M
Date	12 30, 2014	Debt/Enterprise Value	0.0	0.0	0.0
52 Week Range	\$22.69-\$39.72	Debt/Equity	0.0	0.0	0.0
Shares Outstanding	45.67M	Price/Book Value	3.40	3.70	2.92
Market Capitalization	\$1.28B	Price/Earnings	125.00	21.60	15.12
Enterprise Value	\$1,013.12M	Enterprise Value/EBITDA	37.57	25.40	13.54
Beta	0.56				

Balance Sheet (\$USD, millions)	2010	2011	2012	2013	LTM
Cash & Cash Equivalents	\$20.37	\$111.80	\$85.92	\$70.59	\$37.39
Current Assets (Excluding Cash)	\$62.03	\$250.51	\$181.62	\$256.46	\$313.61
Total Assets	\$92.33	\$373.88	\$385.52	\$462.75	\$351.00
Current Liabilities	\$25.04	\$19.52	\$22.30	\$23.23	\$19.89
Total Debt	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Liabilities	\$34.90	\$31.65	\$35.29	\$35.07	\$32.39
Total Equity	\$57.43	\$342.23	\$350.24	\$427.69	\$439.78

Income Statement (\$USD, millions)	2010	2011	2012	2013	LTM
Revenue	\$30.55	\$61.29	\$83.24	\$146.64	\$184.34
EBITDA	-\$7.29	\$7.19	\$20.52	\$51.26	\$75.01
Depreciation & Amortization	\$2.94	\$1.50	\$6.85	\$13.02	\$13.05
Interest	(\$9.83)	(\$3.25)	\$1.19	\$0.76	\$0.74
Tax	\$0.13	\$0.71	(\$5.21)	\$35.04	\$24.91
Net Income	(\$19.92)	\$3.16	\$9.66	\$74.05	\$86.61



Universal Display Corporation: An Overview

Universal Display Corporation is an American-based company which focuses on the research, development, and commercialization of organic light emitting diodes (OLEDs). OLEDs are thin, lightweight, and power-efficient solid-state devices that emit light, making them highly suitable for use in full-color displays and as lighting products.

Their primary business strategy is to (1) further develop and license its proprietary OLED technologies to manufacturers of products for display applications, such as cell phones, portable media devices, tablets, laptop computers and televisions, and specialty and general lighting products; and (2) develop new OLED materials and sell the materials to those product manufacturers. Through their internal research and development efforts in addition to their acquisitions of patents and patent applications, they have established a significant portfolio of proprietary OLED technologies and materials. They currently own, exclusively license or have the sole right to sublicense more than 3,000 patents issued and pending worldwide.

Management

As a developing country in one of its most significant growth periods, it is important that Universal Display Corporation is guided by competent management.

Sherwin Seligsohn: Mr. Seligsohn is the Founder and has been the Chairman since 1995. He served as the CEO of the company from that time through 2007. His wealth of experience in management came early in his career as he founded InterDigital and served as its Chairman from 1972 to 1990. In addition, Mr. Seligsohn was the former Chairman, President, and CEO of Global Photonic Energy Corporation since its inception through 2012.

Steven Abramson: Mr. Abramson has been the company's current President and CEO since 2008. He has served as the COO from 1996-2007. From 1982 to 1991, Mr. Abramson held various positions at InterDigital, including General Counsel, Executive Vice President, and General Manager of the Technology Licensing Division.

Mauro Premutico: Mr. Premutico has been the Vice President of Legal and General Manager of Patents and Licensing since 2012. Prior to joining the company, he was the Managing Vice President and Chief Patent for The Walt Disney Company from 2009 to 2012, Vice President of Intellectual Property and Associate General Counsel for Lenovo from 2005 to 2009.

It is worth noting that Mr. Seligsohn, alone, owns 7.35% of the company. In addition, 15.05% of the company is owned by insiders, with another 12.11% owned by strategic entities, all of which are individuals.

Industry Analysis

Universal Display Corporation is classified as an information technology company under the GICS, where they occupy in the electronic components sub-industry.

To give a general idea of how the electronics components sub-industry has been faring, the S&P Composite 1500 Electronics Components Sub-Index is up 21.8% year-to-date, as of December 30. In comparison, the S&P Composite 1500 Information Technology Index is up 19.36% year-to-date, as of December 30. The S&P Composite 1500 is up 12.57% year-to-date, as of December 30.

Major Product Developments

Mobile phone manufacturers such as Apple, Samsung, LG, and Sony have been the frontrunners in developing technological advances in the industry. The recent spike in the demand for smartphones has allowed for advancements in the sector to flourish. In the recent few years, the main focus in advancements has been on increasing the speed and graphical capabilities of these phones. While that goal has succeeded, it is clear that there are diminishing returns from these advancements. Consumer preferences have shifted towards more practical advancements, such as longer battery life. A major strength of OLED technology is its ability to provide longer battery life, as display's structure is more efficient. With OLED technology being relatively new, there is undiscovered potential associated with it. Universal Display Corporation has been developing its phosphorescent OLED (PHOLED) technology, claiming that it is up to four times more efficient than traditional fluorescent OLEDs. They also state that they have a strong intellectual property portfolio surround their existing PHOLED technologies and materials (under their UniversalPHOLED® brand).

Looking ahead, flexible and transparent mobile devices have been the highlight of "next-generation" technology. Currently, OLED (in the form of AMOLED) and LCD technologies are the main contenders in the mobile display sector. However, OLED technology has the advantage of being likely to be adopted for flexible displays. One of Universal Display Corporation's major developments is their Flexible OLED project (FOLED), which focuses on integrating OLEDs onto non-rigid substrates such as plastic or metal foil. Research and development for this project is done internally, under several of their U.S government programs and in association with the government-sponsored Flexible Display Center at Arizona State University.

Mergers & Acquisitions

Universal Display Corporation (UDC) is still a relatively small company and has not acquired any companies in recent history. Instead, the company focuses on expanding their portfolio of patents in an attempt to gain a competitive advantage in the OLED industry. Their most notable acquisition of patents have been from Motorola and Fujifilm.

Patents Acquired from Motorola

In 2000, UDC entered into a license agreement with Motorola whereby Motorola granted UDC perpetual license rights to what are now 74 issued U.S. patents relating to Motorola's OLED technologies, together with foreign counterparts in various countries. These patents will expire in the U.S. between 2014 and 2018.

In March 2011, UDC purchased these patents from Motorola, including all existing and future claims and causes of action for any infringement of the patents. This effectively terminated their license agreement with Motorola, including any obligation to make royalty payments to Motorola. In consideration for Motorola assigning and transferring the patents to UDC, the company made a one-time cash payment to Motorola of \$440,000, and granted Motorola a royalty-free, non-exclusive and non-sublicensable license under the patents for use by Motorola and its affiliates in their respective businesses.

Patents Acquired from Fujifilm Corporation

In July 2012, we entered into a Patent Sale Agreement (the Agreement) with Fujifilm. Under the Agreement, Fujifilm sold more than 1,200 OLED-related patents and patent applications for a total cost of \$109.1 million. The Agreement contains customary representations and warranties and covenants, including respective covenants not to sue by both parties thereto. The Agreement permitted UDC to assign all of their rights and obligations under the Agreement to their affiliates, and UDC assigned, prior to the consummation of the transactions contemplated by the Agreement, their rights and obligations to UDC Ireland Limited (UDC Ireland), a wholly-owned subsidiary formed under the laws of the Republic of Ireland. The transactions contemplated by the Agreement were consummated on July 26, 2012.

Risks

Customer Diversification

At the end of 2014, Samsung Display accounted for 70% of UDC's revenue. In the future, this may prove to be an issue if UDC fails to diversify and Samsung Display decides to end their partnership with the firm. However, because Samsung Display and UDC signed a 6.5-year agreement in mid-2011, we can expect UDC to still have a majority of their revenue stream until the beginning of 2018. In the near-future, investors should be cautious and looking out for Samsung Display and UDC to sign an agreement to extend their partnership.

To remedy the issue of customer diversification, UDC has recently signed an agreement with LG Display, who made up 22% of UDC's revenue in 2014. This patent license and supplemental purchase agreement runs through the end of 2022, allowing UDC to secure a large portion of their revenue until then.

Developing Industry

The OLED industry is still at a relatively young stage in its growth cycle. Currently, there are 125 LCD fabrication plants in the world, compare that to the 2 OLED fabrication plants and it is evident that the industry still has not completely matured. While this may be beneficial to UDC because they can leverage their position and patents, this could also lead to the entry of competitors diluting UDC's position in the industry.

Discounted Cash Flow Analysis

Assumptions

For our weighted average cost of capital calculation, it is important to note that UDC does not currently have any debt, therefore, our calculation is only based off the cost of equity. We expect UDC to have debt in the future, but we cannot forecast the amount, leading to the possibility that our WACC is skewed.

The cost of equity was calculated using a risk-free rate of 2.25%, which is the yield from a 10-year United States Treasury Bond. Our expected market return was assumed to be 11.0%, which is the historical return of the S&P 500. Using the figures above, our market risk premium was 8.75%. Using a beta value of 0.56 (provided by Google Finance), our WACC came to 5.89, where it is completely based off the cost of equity.

For our discounted cash flow analysis, we chose a forecast period of 5 years due to the fact that the technology sector moves too quickly to reliably forecast 10 years into the future. Our revenue growth rate is estimated at 31.0%. This number is derived from DisplaySearch's forecast of the AMOLED display market, this source was also cited by UDC in their January 2015 investor presentation. We expect depreciation and amortization along with capital expenditure to grow at the same rate.

Looking at UDC's historical figures, we set the projected tax rate at 35.0% because 2013 was an extraordinary case that does not reflect how the company is taxed. Lastly, we expect net working capital to increase due to a conversion of current assets to non-current assets for research and development.

WACC Calculation

Target Capital Structure

Debt-to-Total Capitalization	0%
Equity-to-Total Capitalization	100%

Cost of Equity

Risk-free Rate	2.25	%
Market Risk Premium	8.75	%
Levered Beta	0.56	

Cost of Equity	5.89
WACC	5.89

Appendix

Appendix 1. Discounted Cash Flow Analysis

Unlevered Free Cash Flow Calculation							
	Calendar Year Ending December 31,						CAGR 2014-2018
	2013A	2014P	2015P	2016E	2017E	2018E	
EBIT	\$38.2	\$50.10	\$65.6	\$85.98	\$112.6	\$147.54	31.0%
Plus: Non-deductible Goodwill Amort.	10.97	14.37	18.83	24.67	32.32	42.33	
EBITA	\$49.2	\$64.5	\$84.5	\$110.6	\$144.9	\$189.9	31.0%
Less: Provision for Taxes	35.0	(22.6)	(29.6)	(38.7)	(50.7)	(66.5)	
Unlevered Net Income	\$84.3	\$41.9	\$54.9	\$71.9	\$94.2	\$123.4	31.0%
Plus: D&A (excl. non-deductible GW Amort)	2.0	2.7	3.5	4.6	6.0	7.9	
Less: Capital Expenditures	(5.1)	(6.7)	(8.8)	(11.5)	(15.1)	(19.8)	
Less: Increase in Net Working Capital	(58.6)	(57.1)	(54.3)	(50.2)	(45.2)	(39.5)	
Unlevered Free Cash Flow	\$22.6	(\$19.2)	(\$4.6)	\$14.8	\$40.0	\$72.0	

Projected Tax Rate 35.0%
 Net Debt \$0.0
 Shares 45.670

DCF Analysis (2014-2018): Perpetuity Growth Method									
Total Enterprise Value				Total Equity Value					
Terminal Perpetuity Growth Rate				Terminal Perpetuity Growth Rate					
3.0% 3.5% 4.0%				3.0% 3.5% 4.0%					
WACC	5.89%	\$2,003.5	\$2,418.0	\$3,051.9	WACC	5.89%	\$2,003.5	\$2,418.0	\$3,051.9
Implied Terminal EBITDA Multiple				Total Price Per Share					
Terminal Perpetuity Growth Rate				Terminal Perpetuity Growth Rate					
3.0% 3.5% 4.0%				3.0% 3.5% 4.0%					
WACC	5.89%	17.4x	21.1x	26.9x	WACC	5.89%	\$43.87	\$52.95	\$66.83

(1) Assumes net debt of \$0.0mm as of 12/30/14.
 (2) Assumes outstanding diluted shares of 45.670 million.

Appendix 2. Comparable Companies Analysis

Company	Ticker	Price 1/7/2015	Market Cap	Enterprise Value	Net Debt	Multiples				Operating Metrics					
						EV/Revenue		EV/EBITDA		Revenue		EBITDA		EBITDA Margin	
						LTM	2015E	LTM	2015E	LTM	2015E	LTM	2015E	LTM	2015E
Universal Display Corporation	OLED	\$ 27.75	\$ 1,234.00	\$ 966.00	\$ -	5.2	4.4	12.9	15.9	184	221	75	108	40.6	48.7
Cypress Semiconductor Corporation	CY	\$ 14.05	\$ 2,265.00	\$ 2,393.00	\$ 244.13	3.4	3.1	46.6	15.7	709	766	51	152	7.2	19.8
PMC-Sierra Incorporated	PMCS	\$ 9.95	\$ 1,772.00	\$ 1,693.00	\$ 38.98	3.3	3	23.2	13.1	516	565	72	128	14.1	22.7
Tessera Technologies Incorporated	TSRA	\$ 33.00	\$ 1,741.00	\$ 1,343.00	\$ -	4.9	6.1	41.5	15.6	275	221	32	86	11.7	38.8
Power Integrations Incorporated	POWI	\$ 50.51	\$ 1,491.00	\$ 1,277.00	\$ -	3.6	3.4	15.4	13.5	353	379	83	95	23.5	25
High			\$ 2,265.00	\$ 2,393.00		5.20	6.10	46.60	15.70					40.60	48.70
Mean			\$ 1,700.60	\$ 1,530.40		4.08	4.00	27.92	13.38					19.42	31.00
Median			\$ 1,741.00	\$ 1,343.00		3.60	3.40	23.20	13.50					14.10	25.00
Low			\$ 1,234.00	\$ 966.00		3.30	3.00	12.90	9.00					7.20	19.80

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Wilson Zhu

Analyst

WestPeak Research Association
contact@westpeakresearch.com