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Tech Trader Daily

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September 18, 2013, 2:02 P.M. ET

OLED: Oppenheimer Reassured on Product, Patent Promise

By Tiernan Ray

Oppenheimer & Co.'s **Andrew Uerkwitz** today offers up some details of his firm's first-ever "**emerging innovations**" conference, held yesterday in New York.

Among the presenters was **Universal Display** (<u>OLED</u>), maker of organic light-emitting diode technology, whose shares Uerkwitz rates Outperform. He writes today that his conversation with chief financial officer Sidney Rosenblatt left him "more confident" about the stock as one of his top picks.

Uerkwitz writes the discussion involved a review of Universal's wins with **Samsung Electronics** (<u>005930KS</u>) in mobile phones, and the prospect of further business with **LG Display** (<u>LPL</u>):

Over the past six months, we've seen the following models adopt UDC technology: the Galaxy series, the Note 3, the Galaxy Gear Watch, Moto X, Nokia, and Blackberry Q10. Additionally, we discussed the impact of LG Display's expansion as it expects to open a dedicated Gen 8 plant by 2H14. Assuming full production.

He also notes that he was impressed with discussion of the company's patents:

We continued our discussion around the patent portfolio and became more confident in its strength. For example, we were reminded that prior to signing a license agreement, Samsung spent considerable time reviewing the validity of UDC's patent portfolio. Additionally, UDC's core patents haven't been challenged in US federal courts—we believe this would be one of the first places we'd see any serious threat to its portfolio. And finally, after reviewing recent cases, we do not believe anything new has been recently disclosed to negatively affect our view. As a reminder, the company holds 1,493 issued patents and 1,601 pending patents, which covers all phosphorescent OLED devices.

Noted short-seller **Manuel Asensio** continued his attack on Universal's patent position in a Web posting, writing that the company needs to provide further disclosure about its claims to own rights to key underlying technologies of OLEDs. Among his arguments, "Where is the physical basis UDC relies on to justify its claims that the company "owns" phosphorescent OLED?"

I have a message in to Uerkwitz's office for any commentary he has regarding Asensio's claims.

Other interesting notes from Uerkwitz's report are a bunch of comments about the emerging trends in **displays** for products of various sorts, from wearable technology (e.g., smart watches) to television sets:

Display as Interface: Hyped trends such as wearable electronics, ubiquitous mobile computing, and social networking are putting head-up display back to the focus of device development. Display design largely determines the functionality and usability of a piece of wearable electronics. Innovations around display will be critical to the adoption and success of wearable electronics. Ecosystem: Most panelists agree that superior display performance no longer guarantees the product success. Ecosystem support including software (apps), developer community, content and easy access to content are among the top concerns. 1080 HD Is So Yesterday. Above and Beyond Display: Display enhancement technologies/materials such as OLED, LED, quantum dots are not limited to producing displays as a pure information output device. Size, texture, and power consumption will have a significant impact consumer behavior and social interaction. Above and Beyond Current Display Market: Display technology does not stop at giant 4K OLED TVs. Panelist offers multiple versions of future displays. As research and development matures for materials such as OLED, quantum dots, and LEDs, future displays will come in much more varied forms and sizes. Example cited are flexible/unbreakable display, conformable and bendable display, display that offers much better color gamut (120% NTSC vs. current 60-70% NTSC), and display that potentially consumes 10x less power and is 5x brighter than current LCD displays. No Simple Replacement: New materials such as copper metal mesh, silver nanowires, and carbon nanotubes not only offer the potential for cheaper and better performing replacement of ITO, the mainstream sensor material of today, but also provide new possibilities for touch-enabled displays. New touch sensor materials allows for flexible and bendable displays and large-sized touch screens. Adoption Hurdles: ITO is not going to be replaced over night. Major hurdles include: 1) resistance from current incumbents, who have spent hundreds of millions of dollars developing necessary infrastructure and supply chain; 2) new sensor material providers are smaller companies who have not yet developed capacity suitable for mass production, which also increase the risk of not being able to achieve desired yield at true commercial scale; and 3) concerns for single source.

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