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Zacks Small-Cap Research

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LED Medical Diagnostics (V.LMD)

V.LMD: Since Apteryx Gross Margin, Op Loss Greatly Improved. Cash Flow Positive in Q2

Our DCF-generated price target remains at approximately $0.30/share.

Current Price (08/31/2017)	$0.06
Valuation	**$0.30**

OUTLOOK

Based on the significant improvement in gross margin, operating loss and cash flow since the acquisition, it appears Apteryx is already making a significantly positive contribution to the financials. The apparent early success of XVWeb in the DSO segment and potential synergies for other of LED's products in this customer channel could offer a new and potentially significant growth catalyst.

We have updated our model following Q2 results which include upward revisions to gross margin as a result of greater and more rapid improvement from Apteryx-related contribution. While our model remains subject to change, upward revisions to gross margin and what we now think may be more moderate growth in OpEx, has us now forecasting much more significant improvement in operating loss in 2017 (vs. 2016). And while we continue to expect some seasonality in revenue (favoring Q4) mostly related to capital purchasing, Apteryx's software licensing and recurring revenue business model should help smooth this relative to prior years.

SUMMARY DATA

52-Week High	**$0.14**
52-Week Low	**$0.05**
One-Year Return (%)	**-30**
Beta	**0.42**
Average Daily Volume (sh)	**529,300**
Shares Outstanding (mil)	**373**
Market Capitalization ($mil)	**22**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**N/A**
Insider Ownership (%)	**N/A**
Annual Cash Dividend	**N/A**
Dividend Yield (%)	**N/A**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2017 Estimate	**N/A**
P/E using 2018 Estimate	**N/A**
Zacks Rank	**N/A**

Risk Level	**N/A**
Type of Stock	**Large-Growth**
Industry	**Med/Dental-Supp**

ZACKS ESTIMATES

Revenue
(in '000)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2016	$2153 A	$3661 A	$2489 A	$1865 A	$10169 A
2017	$2098 A	$3704 A	$4039 E	$4737 E	$14579 E
2018					$17594E
2019					$20839 E

Earnings per Share

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2016	-$0.02 A	-$0.01 A	-$0.01 A	-$0.01 A	-$0.05 A
2017	-$0.00 A	$0.00 A	-$0.00 E	-$0.00 E	-$0.00 E
2018					$0.00 E
2019					$0.00 E

Zacks Projected EPS Growth Rate - Next 5 Years % **N/A**

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Q2 2017 Financials: *Gross Margin, Op Loss Greatly Improve With Apteryx. Cash Flow Positive in Q2!…*

LED reported Q2 financial results on August 17th. This was the first full quarter including contribution from Apteryx. As a reminder, much of the rationale for the acquisition was its expected accretion to not only revenue but also to net income and EBITDA. The Q2 numbers suggest the acquisition may already be highly accretive on all these metrics. Perhaps most importantly is the apparent very positive contribution to cash flow - which we discuss in more detail below.

Q2 revenue was $3.70M, compared to $3.66M (+1%) in Q2 2016 and $2.1M in Q1 2017 (+77%). As the prior-year period included zero contribution from Apteryx, the 1% (or $43k) yoy topline growth was perhaps somewhat underwhelming, although it nonetheless did top our $3.4M estimate. (Apteryx, per a Business Acquisition Report filed with SEDAR on June 9th, generated revenue of $4.9M in 2016, or ~$1.25M quarterly average). While LED does not disclose revenue by segment, footnotes in the Q2 filing indicate that VELscope related sales fell approximately 35% yoy (or about $196k) - given that Q2 benefitted from the addition of Apteryx, we think it is likely that the digital imaging segment also experienced a contraction in revenue.

Meanwhile the Q2 filing notes that sequential revenue growth (i.e. from Q1 2017) was attributable to increased sales from digital imaging products and Apteryx. As a reminder, the acquisition closed around mid-February and as such, Apteryx contributed only about 6 weeks' worth of sales in Q1. Based on our calculations, it appears that VELscope also contributed (although much more marginally as compared to digital imaging and Apteryx) to some of the total revenue growth from Q1 to Q2.

Management indicates in their Q2 shareholder letter that Apteryx's XVWeb software (i.e. advanced diagnostic and treatment planning SaaS software) and the Dental Service Organization (DSO) customer channel have already contributed and represent growth catalysts. Specifically, the company mentions that they recently signed a significant agreement with a new DSO customer with several hundred practices. In LED's August investor presentation they cite as customers Dental Care Alliance, CoastDental and American Dental Partners. Dental Care Associates includes 260 affiliated practices and CostalDental spans more than 180 locations. While we were unable to find specifics in terms of the number of practices affiliated with American Dental Partners, their website indicates that they have locations in at least 20 states including CA, FL and TX.

DSOs Growing At 3x Industry Average

DSO's help to reduce the operational and management burden of running a practice, specific benefits (to the individual dentist) can include administrative, accounting and human resources support, quality assurance programs, purchasing power, information technology, marketing resources and access to capital, among others. In addition, DSOs help to provide dentists with new technology, including the dental imaging, software and VELscope products that LED sells.

Studies have also shown that DSOs can enable dental practices to lower costs and increase patient flow. In fact, a study by DSO organization, Kool Smiles, found that per-patient Medicare expenditures were 33% lower among DSOs as compared to non-DSOs. The benefits of DSOs, combined with implementation of Obamacare and expansion of Medicaid (which have expanded dental care access to lower income populations) have resulted in rapid growth of the DSO (versus individual practice) model. According to Dental Care Alliance, while the dental industry (i.e. # of dental industry personnel) as a whole has grown at a CAGR of about 5% over the last several years, DSO membership has increased at an annual rate of 18% over the same time.

Gross margin has also been highly positively effected by the inclusion of Apteryx - while this was initially apparent in Q1, it has become even more so with the release of Q2 results. While gross margin in Q1 came in at 49.0%, which was the highest level in 11 quarters, the benefit of Apteryx's high margin contribution for the full quarter helped push this up another 750 basis points to **56.5% in Q2** - a level that LED hasn't seen since Q3 2013. And while we had expected substantial improvement in gross margin as a result of the contribution from Apteryx's higher margin software products, we may have underestimated the significance.

Gross margin through **1H 2017 averaged 53.8%**. VELscope's consumables also carry a relatively high margin - incremental sales growth of which has also likely contributed to the margin expansion through the first six months

of 2017. For some context of how relatively strong the current margin level is and how the addition of the (lower margin) digital imaging product portfolio had been a drag on margins, it's worth revisiting a little bit of history.

- **2012**: in 2012 the company was only selling their (healthy margin) VELscope products - in that year they generated $6.3M in revenue on gross margin of **56.5%**. This was the highest annual revenue during when they were only marketing VELscope - this is also the highest gross margin in any year to-date
- **2013**: revenue then cratered 60% in 2013 to $2.5M as a result of distribution-related restructuring - the lower revenue and fewer higher-margin consumables (i.e. treatment tips) sales also reduced economies of scale and resulted in gross margin falling to **46.5%** in that year
- **2014**: was the first year in which LED began selling digital imaging products - while revenue jumped 256% to $9.0M ($3.9M, or 43%, of which was from digital imaging products), which was the highest in history up to that point, the low reseller-type digital imaging product margins resulted in gross margin falling to **38.6%**
- **2015**: revenue grew 47% in 2015 to $13.1M. While this is the highest in company history it was a result of 138% growth of digital imaging product sales with VELscope sales falling 24%. With the sales mix highly skewed towards lower margin products (70% digital imaging, 30% VELscope), gross margin was crimped and fell to just **27.2%** in 2015
- **2016**: revenue fell 23% to $10.2M. The sales mix (based on our calculations which are based on disclosures in the SEDAR filing footnotes) was even more skewed towards digital imaging (83% digital imaging, 17% VELscope). Gross margin in 2016 fell to **24.4%**, the lowest since LED has been a publicly traded company (2011)

Operating expenses in Q2 were $2.4M (or 64% of revenue), up from $2.1M in the prior-year period and up from $1.8M in Q1 of this year. But it is below the $2.7M we had expected. Operating expenses were $4.2M, or 71% of revenue, through the first six months of 2017. For context, operating expenses as a percentage of revenue were 191% in 2013, 102% in 2014, 67% in 2015 and 75% in 2016.

The sequential increase in OpEx mostly relates to SG&A functions, although R&D did tick up slightly as a result of additional Apteryx-related software development costs. Total headcount at the end of Q2 was 54, compared to; 49 at the end of Q1 2017, 29 at 12/31/16 and 35 at 6/30/16. Most of the increase in headcount since close of the Apteryx acquisition is in R&D and support functions with some additional personnel also added to sales/marketing. We do expect operating expenses to increase from this level, however, given likely continued software development activities as well as an increase in commissions from growing sales. However, there should be opportunities for operational synergies given the complementary nature of the hardware and software products which share similar call points. As such, and combined with upside in gross margin and revenue growth, we model fairly regular improvement (although with the possibility of some quarterly lumpiness) in operating loss.

Operating loss was just $260k in Q2, improved from $760k in Q1 2017 and from $1.0M in Q2 2016. This is the best showing in operating loss since Q3 2013 (also $260k). Operating loss was $1.0M through 1H 2017, which is an overall best over the first six months of any year since the company has been public.

Cash used in operating activities was $1.1M in Q2 and $2.5M in 1H 2017. But excluding changes in working capital - which is a better gauge of cash used or generated by the business, **LED actually generated 85K in cash in Q2** and used just $772 in 1H 2017. For context and how this compares to the respective year-earlier periods, cash used in operating activities (ex-changes in working capital) was $1.8M in Q2 2016 and $2.7M in 1H 2016. The significant improvement, we think, is a result of the inclusion of Apteryx and resultant substantial increase in gross margin, coupled with overall expense control. This may suggest LED is near the point of generating consistently positive cash flow.

We also note that CapEx has been minimal - with just $74k in capital expenditures (related to the purchase of equipment), excluding the cost of the acquisition, through the first six months of 2017. Cash balance at Q2 quarter-end was $1.5M.

While much of the current excitement lies with the Apteryx acquisition and related improvement in profitability and cash flow, LED's existing business lines remain poised for continued growth. The company had some recent operational-related "wins" in both their dental imaging and VELscope segments which have the potential to provide meaningful revenue tailwinds through the remainder of 2017 and beyond.

As it relates to digital imaging, we think the recent launch of the RAYSCAN Alpha Plus Imaging System, announced in late September 2016, should be a meaningful revenue contributor given the success of the legacy RAYSCAN system. This next-gen product has the potential to add to their success which includes several upgrades to the legacy system. Functionality includes;

- Light-guided field-of-view superimposed on patients face which simplify and optimize patient positioning
- Customizable FOV (field of view) from 4x3cm to 16x10cm while many systems only allow for a limited number of preset field of view options
- Provides for 3D images among the highest resolution in the industry
- Only CT and cone beam system utilizing remote control functionality allowing clinician to interact with patient and control the system simultaneously
- Cephalometric module allows for both scanning and single-shot image capture – affording even less risk of distortion and lower radiation exposure

Rayscan Alpha Plus Imaging System



SOURCE: ledental.com

The addition of RAYSCAN Alpha Scan Plus is one of the more recent among a fairly regular flow of new products into LED's digital imaging product portfolio. This includes the addition of the Tuxedo digital intraoral radiography system which in March 2016 received FDA 510(k) clearance, allowing it to be sold in the U.S. Tuxedo is billed as providing some of the highest image quality of any intraoral sensors on the market. Tuxedo, like most of LED's imaging portfolio, looks to exploit the rapid digital imaging market growth driven by the shift from analog dental film and imaging.

And while the digital imaging segment has been responsible for much of the company's recent revenue growth, we think there are several potential catalysts that could facilitate additional growth of the **VELscope Vx business**. These include additional distribution and entry into new geographic territories (including China) as well as additional published clinical data supporting the use of autofluorescence in the early diagnosis of oral cancer as well as in improving survival of patients undergoing oral cancer surgery.

VELscope Launches In China, Distributed By Largest Dental Equipment Supplier in China…
Relative to expansion of the commercial VELscope footprint, in November 2016 LED announced the launch of VELscope Vx in China. In June 2016 signed an exclusive distribution agreement for China with Biocare Health Supply. British Columbia-based Biocare Health Supply is partnered with National Medicines Prospect Dentech Co of Beijing. Prospect Dentech, one of the largest dental equipment suppliers in China, will supply VELscope Vx to dentists and other clinicians.

LED also noted that Prospect Dentech initiated an aggressive marketing campaign around VELscope which includes targeting their network of Key Opinion Leaders in China. The official China launch of VELscope happened in October 2016 at DenTech China which (per dentech.com) is billed as “China’s leading professional event for the dentistry technology industry”.

Given the relatively massive population of China (plus Hong Kong), the modernizing of health care systems and practices and higher incidence of oral cancer in that region of the world, we think entry into these geographic areas could provide meaningful revenue growth opportunity for VELscope Vx. And, the indicated distribution reach and related capabilities, contacts and customer “Rolodex” of Prospect Dentech provides additional support in that regard.

Additional Clinical Data Published Supporting Role of Autofluorescence in Diagnosis of Oral Cancer…
Approximately two dozen clinical and case studies using VELscope have been performed and respective manuscripts published in peer-reviewed publications since 2006. In addition, several studies that pre-date these have been done using natural tissue fluorescence for the detection of oral cancer with largely positive results, indicating tissue fluorescence has significant utility in oral cancer detection applications (refer to our January 24, 2014 Initiation report on LMD.V for a more in-depth discussion of VELscope/autofluorescence clinical data).

Most recently, a meta-analysis of 24 prior studies encompassing almost 2,800 oral lesions assessing the use of autofluorescence in the diagnosis of oral cancer was published online in July 2016 in Scientific Reports, a journal affiliated with Nature. The goal of the study, titled "Accuracy of Autofluorescence in Diagnosing Oral Squamous Cell Carcinoma and Oral Potentially Malignant Disorders: A Comparative Study with Aero-Digestive Lesions" (Luo et al.), was to assess the accuracy of autofluorescence in diagnosing oral squamous cell carcinoma (OSCC) and oral potentially malignant disorders (OPMD) as well as to investigate the applicability of technology for general practice.

Investigators determined that sensitivity and specificity of autofluorescence in detection of OSCC (the most common form of oral cancer) and OPMD (which may precede oral cancer) were 0.89 and 0.80, respectively. In addition, it was found that (this relatively high accuracy) could be improved further with additional algorithms. The investigators concluded that, “With relatively high accuracy, autofluorescence could be potentially applied as an adjunct for early diagnosis of OSCC and OPMD”.

Studies such as this, as well as the surgical margin study (discussed below), supporting the use of VELscope / autofluorescence for diagnosis of oral cancer is critical, in our opinion, to facilitate further and more widespread adoption of the technology. As such, the more clinical data demonstrating the benefits of VELscope, particularly as it relates to use as an adjunct to conventional oral exams, the greater opportunity for related revenue growth both in the U.S. and internationally.

Surgical Margins Study Published Online in *JAMA – Otolaryngology – Head and Neck Surgery* :
Results of a 246-patient retrospective study assessing the utility of fluorescence visualization (FV) via VELscope in reduction of locoregional recurrence of cancer and improving overall survival in patients undergoing oral cancer surgery was recently published online in the *Journal of the American Medical Association – Otolaryngology – Head and Neck Surgery.*

FV was used to determine surgical margins. It is important to determine exactly where the lesion should be excised as the majority of oral cancer surgeries inadvertently leave some cancerous tissue behind, due in large part to the fact that some tissue is beneath the surface and not visible to the naked eye of the surgeon. Patients 18 years and older diagnosed with high grade lesions or squamous cell carcinoma of less than 4cm and which underwent oral surgery were included. 154 of the 246 underwent surgery with FV guidance while the other 92, the control group, underwent conventional surgery. There were no significant differences between the FV and control groups in age, smoking history, anatomical site of the lesion, tumor size, and previous oral cancer.

Results: The use of fluorescence visualization in determining surgical margin significantly reduced the rate of localized cancer recurrence in high grade and early stage oral cancers.

Per JAMA Otolaryngology Head Neck Surg. Published online January 14, 2016. doi:10.1001/jamaoto.2015.3211 (http://bit.ly/1WXRldE): Among the 156 patients with squamous cell carcinoma , the 92 patients in the FV group showed significant reduction in the 3-year local recurrence rate, from 40.6% (26 of 64 patients) to 6.5% (6 of 92 patients) (P□<□.001). Among the 90 patients with high-grade lesions, the 62 patients in the FV group showed a reduction in local recurrence rate from 11 of 28 patients (39.3%) to 5 of 62 patients (8.1%) (P□<□.001). The data

also indicated that, compared with conventional surgery, the FV-guided approach for squamous cell carcinoma was associated with less regional failure (14 of 92 patients [15.2%] vs 16 of 64 [25.0%]; P□=□.08) and death (12 of 92 patients [13.0%] vs 13 of 64 [20.3%]; P□=□.22), although these differences were not statistically significant.

This study provides additional validation of the utility of VELscope in identifying the presence of cancer. And while commercial use VELscope has been mostly to aid dentists with identification of oral mucosal abnormalities, including those associated with oral cancer, there is a growing body of evidence to suggest it may have broader applications. This includes with identifying surgical margins.

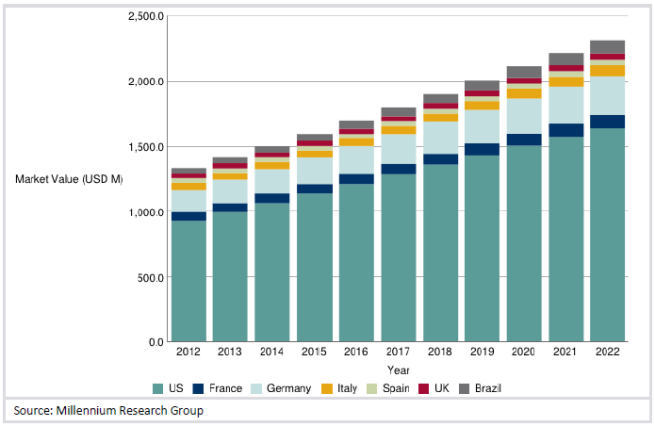
Along with this recently published study, Dr. Catherine Poh was also the lead investigator of *Fluorescence Visualization Detection of Field Alterations in Tumor Margins of Oral Cancer Patients,* a study published in Clinical Cancer Research in 2006. This was one of the first studies offering substantial evidence that VELscope can significantly improve on normal white light visualization of detection of oral cancer.

The study compared VELscope to assessment under normal lighting to determine the surgical margins. The respective margins determined by normal light and by VELscope were marked with a surgical pen. 122 oral mucosa biopsies were obtained from 20 surgical specimens (20 from the clinically apparent tumors, 36 from the margins determined to be abnormal by VELscope, and 66 from margins determined to be healthy by VELscope). Results showed that 32 of the 36 abnormal identified margins did indeed show histological changes (7 squamous cell carcinoma, 10 severe dysplasia, and 15 mild-to-moderate dysplasia). Meanwhile 65 of the 66 healthy identified margins were indeed normal with one showing mild-to-moderate dysplasia. Of the 20 clinically apparent tumors, 19 had abnormal margins that extended beyond what was clinically apparent (i.e. apparent under normal light). In addition, the investigators found that if a conventional 10mm clearance of the clinical tumor had been used, 50% of the tumors in the study would have had cancer or dysplasia at the margin, 30% of which showed severe dysplasia or carcinoma in situ (i.e. abnormal cells that may become cancer).

Dr. Poh notes in the January 26, 2016 press release that they are now working with head and neck surgeons in Canada to conduct a larger surgical margin study. The JAMA article also notes that "An ongoing multicenter, phase 3, randomized surgical trial has completed accrual, and the data will be used to validate the results of this study." If and when a larger, randomized trial completes – and assuming positive results, this potentially could eventually lead to broader indications for VELscope and open it up to an additional and sizeable market.

LED Exploiting Growth in Dental Digital Imaging

Market research supports LED's view of a changing landscape in dental imaging, specifically an ongoing shift to greater demand for digital imaging. The U.S., LED's major focus, is also where the bulk the opportunity lies as it is the largest dental imaging market and is expected to grow from $991M in 2012 to $1.6B in 2022 (per Millennium Research Group).



CBCT Fastest Growing Dental Imaging Modality, LED Riding the Wave…

Cone beam computed tomography, or CBCT, are extraoral (i.e. - outside the mouth) scanners which rotate around the head during an exam, providing a 360^0 view and with 3D images. Extraoral imaging is used to examine both the teeth and bones of the face and jaw, largely for the purposes of implantology (i.e. - assessment and planning of dental implants) and orthodontics. CBCT's ability to provide 3D images is viewed as a significant advantage to the 2D images provided by conventional extraoral imaging modalities. Unlike 2D X-rays, 3D

imaging provides the benefit of viewing adjacent and anomalous structures which provides better accuracy and allows for improved visualization and treatment planning, particularly for more complex diagnoses.

A paper published in the October 2010 issue of The Journal of The American Dental Association titled *Practical Applications of Cone-Beam Computed Tomography in Orthodontics*[1] cites several advantages of CBTC over conventional 2D imaging in orthodontics which provide for improved diagnosis and planning. And relative to utility in implantology, in June 2012 the American Academy of Oral and Maxillofacial Radiology updated their guidelines for dental implant imaging, recommending CBCT as the preferred method for presurgical assessment of dental implant sites.

In September 2013 Millennium Research Group published a research study on dental imaging industry trends titled G*lobal Markets for Dental Imaging Systems 2014*. The authors expect growth in the dental implant market and increasing demand for higher quality images will drive future sales of CBCT systems, which they predict will expand at a CAGR of approximately 15% globally and 16% in the U.S. over the ten year period of 2012 - 2022. The report further notes that CBCT is the fastest growing segment in dental imaging and is expected to continue to be so as dental professionals

LED began to capitalize on the expected significant growth in demand for CBCT systems in 2014 when the entered an agreement with Ray Co, Ltd, a former subsidiary of Samsung, to sell that company's RAYSCAN-Expert CBCT instrument in North America. And with roughly 60% of all CBCT systems residing in the U.S., the domestic market is where the lion's share of the business is.

Then in September 2016 LED announced the launch of the RAYSCAN Alpha Plus Imaging System (product video: https://youtu.be/WEyP6T1OBdg). While LED does not break out revenue by product, it is clear that the RAYSCAN line has been a significant contributor to the company's recent sales growth. This next-gen product has the potential to add to their success which includes several upgrades to the legacy system. Functionality includes;

- Light-guided field-of-view superimposed on patients face which simplify and optimize patient positioning
- Customizable FOV (field of view) from 4x3cm to 16x10cm while many systems only allow for a limited number of preset field of view options
- Provides for 3D images among the highest resolution in the industry
- Only CT and cone beam system utilizing remote control functionality allowing clinician to interact with patient and control the system simultaneously
- Cephalometric module allows for both scanning and single-shot image capture – affording even less risk of distortion and lower radiation exposure

Rayscan Alpha Plus Imaging System



SOURCE: ledental.com

[1] Mah JK., et al. Practical Applications of Cone-Beam Computed Tomography in Orthodontics. JADA, OCt 2010 141,7S-13S

Film-Based Imaging Being Replaced By Digital Imaging…
According to the 2013 Millennium Research Group report the global market for dental imaging will grow from $1.4B in 2012 to $2.3B in 2022, a CAGR of 5.5% which will be driven in part by the transition of film-based to digital-based imaging. Other factors also expected to facilitate this growth are greater demand for technologies that can increase patient flow (which also relates to the switch from film to digital imaging) as well as growing popularity of cosmetic dentistry procedures, such as veneers and orthodontics.

Intraoral imaging is used for the detection of cavities, to look at the roots of the tooth and to evaluate the health of area around tooth. There are two types of digital intraoral imaging systems; photostimulable phosphor plate systems (PSP plate systems) and digital X-ray sensors. PSP plate systems are indirect and involves a small plate (that is used in place of film) that is inserted into the mouth and then removed and digitally scanned. Digital sensors are direct, meaning that the sensor sends the data directly to a computer. PSP plate systems are more economical in terms of upfront costs but have disadvantages to digital sensors including that while sensors provide immediate results, scanning time with PSP plate systems can take up to two minutes.

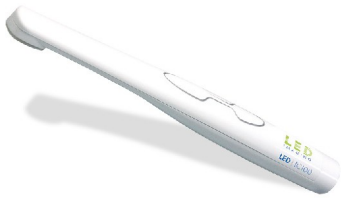
Millennium Research expects film based modalities to be replaced by digital systems and for PSP plate systems to increase at a CAGR of about 2.6% in the U.S. over the next ten years. However, as practitioners are increasingly demanding improved workflow and patient throughput, the minutes lost waiting for scanning via PSP will drive even greater interest in digital X-ray sensors. Another advantage of digital X-ray sensors is their easy integration with electronic medical record systems. Millennium expects these advantages to push the U.S. digital X-ray sensor market up at a CAGR of about 4.4% over the next ten years.

LED is also participating in this market. In May 2014 the company announced the introduction of LED IS100, a digital intraoral sensor, which the company is distributing in the U.S. The sensor is manufactured by Owandy, a France-based digital imaging company which has a presence in Europe but insignificant sales in the U.S., providing LED with a wide-open opportunity to exploit the domestic market. LED also introduced two intraoral cameras, IC100 and IC200.

Intraoral Sensor



IC100 Intraoral Camera *(SOURCE: leddental.com)*



Ray Co.and LED Dental expect a fairly regular flow of new product introductions and in April 2015 launched RIOSensor Digital Radiography System.



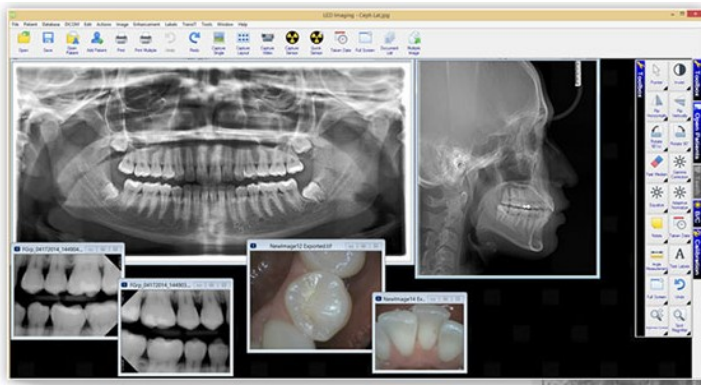
Then in March 2016 they announced that their new Tuxedo digital intraoral radiography system received FDA 510(k) clearance, allowing it to be sold in the U.S. Tuxedo is as billed as providing some of the highest image quality of any intraoral sensors on the market.

As noted above, the most recent addition to the dental imaging segment was the RAYSCAN Alpha Plus Imaging System, launch of which was announced in September.

Imaging Software Ties In Intraoral / Extraoral Imaging

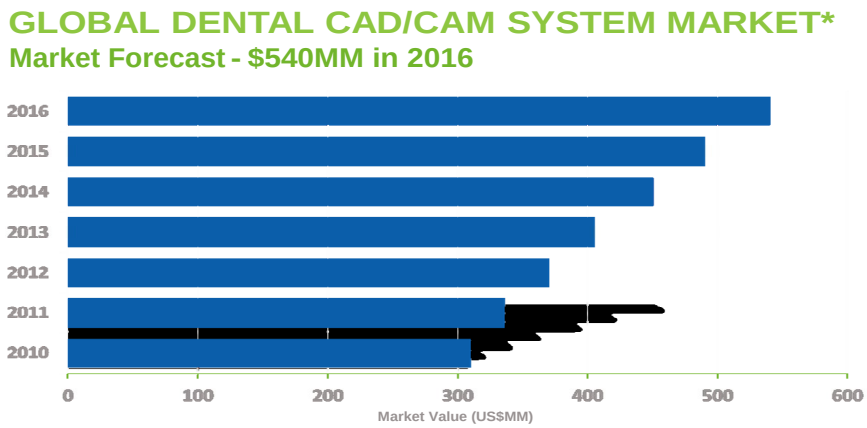
Imaging software is used to generate and store the images produced by intra- and extra-oral imaging modalities. In April 2014 LED announced the launch of open-architecture imaging software. The software is compatible not only with RAYSCAN-Expert but also with intraoral and extraoral devices from a variety of manufacturers. It also can be seamlessly integrated with any dental practice management suite.

LED Imaging Software *(SOURCE: leddental.com)*



And as a complement to their software, April 2015 LED announced the launch of "LED Imaging Cloud" which provides dentists secure and easily accessible cloud storage of patient records and clinical data. Similar to personal and business computing, onsite data storage of medical and dental records via hard drives and servers is undergoing a rapid and massive shift to the cloud given the benefits of ease of access from any location, security and greater capacity. LED Imaging Cloud is compatible with both 2D and 3D data, allows for housing of all patient records on all workstations in one location and can be integrated with most imaging systems.

Software is a key piece in patient diagnosis and treatment planning. It is also used for computer-aided design/computer-aided manufacturing (CAD/CAM), a rapidly growing area in dentistry. CAD/CAM is used to design dental restorations such as veneers, crowns and prostheses but is still considered to be in the early adoption phase, leaving significant room for growth. Millennium Research expects the global CAD/CAM market to grow from approximately $320M in 2010 to $540M in 2016 (9% CAGR).



SOURCE: Millennium Research Group

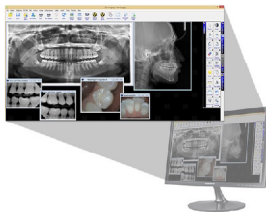
LED, with the acquisition of **Apteryx** in February 2017, has positioned themselves to directly benefit from the growth in dental imaging software. Apteryx looks like it could be a great fit for LED given that there appears to be

some potential significant synergies among the companies' product portfolios and customer call points. Apteryx brings the dental imaging and database software that supports LED's digital imaging hardware – providing a one-stop-shop for dental practices. Apteryx's software licensing and recurring revenue business model will also provide welcome diversity and smoothing to LED's capital product sale revenue stream – which is typically highly seasonal and based on the dental industry's capex purchasing patterns. And beyond the current benefits, which apparently also includes profitable operations, Apteryx brings a sizeable patent portfolio and software development experience which can be expected to be leveraged for future growth including from further expansion of their product offerings.

Apteryx 's Product Portfolio: Their products are sold through resellers (such as LED Medical) as well as through their own website. Their suite of products are compatible with hardware of many different manufacturers and designed for businesses of all sizes - from small, single-office practices to large, multi-office organizations. The following product descriptions are from Apteryx's website (www.apteryx.com):

- **XrayVision**: was first launched in 1996 and has become the industry's leading open-architecture digital image management program. XrayVision will capture, enhance and display all of your dental images. Supporting image capture from the majority of the different digital intraoral sensors available today, XrayVision also integrates with phosphor plate scanners, digital panoramic and cephalometric imaging, flatbed scanners, intra-oral and extra-oral cameras, 3D conebeam tomography and many other digital sources.
- **XVWeb**: In addition to being a web application used to view the images, XVWeb is a fully-functional DICOM server that can accept images from any DICOM-compliant imaging software. Although any DICOM-enabled application can be utilized, Apteryx DCV and XrayVision4 are specifically designed to work seamlessly with XVWeb.

XrayVision



- **XVlite**: XVlite will capture, enhance and display all of your dental images. XVlite supports image capture from a majority of the different digital hardware in today's market. XVlite incorporates the latest advancements in imaging technology and Apteryx's patented STB (Secure Tagged Block) file format, an unmodifiable, secure and "loss-less" imaging format. XVlite also exports to a number of common image file formats, including TIFF, JPEG, and BMP for universal viewing.

XVWeb



- **XrayVision DCV**: XrayVision DICOM Capture View, known as DCV, is a DICOM-based dental imaging suite that is scalable to any size organization. DCV is used to standardize the capture, storage, retrieval, and viewing of images across an entire organization. DCV supports most all imaging devices utilized in dentistry, including: Intra-oral sensors, Phosphor Plate Scanners, Panoramic / Cephalometric units, 3D / CAT scan, Tomography, Intra-oral Cameras, Extra-oral Cameras, Endo scopes, and Flatbed Scanners. DCV can act as a full enterprise standalone PACS or can serve as the capture modality that will automatically forward to an existing PACS. DCV's open architecture enables the freedom to use a wide variety of capture devices, while maintaining the industry standards. The US Army and US Navy currently use DCV as their global solution for managing all of their dental clinics worldwide, which allows for centralized storage of all images to provide global access to patient information. XrayVision DCV has numerous bridging capabilities from a standard command line integration, data extraction and auto importing patient demographic, barcode scanning, DICOM Worklist, HL7, and custom data bridges.

OUTLOOK / VALUATION

Based on the significant improvement in gross margin, operating loss and cash flow since the acquisition, it appears Apteryx is already making a significantly positive contribution to the financials. The apparent early success of XVWeb in the DSO segment and potential synergies for other of LED's products in this customer channel could offer a new and potentially significant growth catalyst.

We have updated our model following Q2 results which include upward revisions to gross margin as a result of greater and more rapid improvement from Apteryx-related contribution. While our model remains subject to change, upward revisions to gross margin and what we now think may be more moderate growth in OpEx, has us now forecasting much more significant improvement in operating loss in 2017 (vs. 2016). And while we continue to expect some seasonality in revenue (favoring Q4) mostly related to capital purchasing, Apteryx's software licensing and recurring revenue business model should help smooth this relative to prior years.

Our DCF-generated price target remains at approximately $0.30/share.

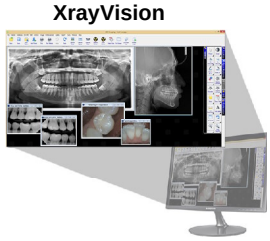
APPENDIX

Apteryx Brings Diversified/Synergistic Portfolio, IP, Expanded Customer Base and Profitability

Apteryx
In mid-February 2017 LED acquired Apteryx, Inc., an Ohio-based company which develops and sells software primarily for the dental industry. Apteryx, located in Akron, Ohio, was founded in 1995 by Kevin Crucs. The company develops software primarily for the dental and medical imaging markets. The company's competitive positioning includes development of custom software applications to meet the needs of their customers and to do so in a relatively short turnaround time. Per the company's website, "Apteryx specializes in image processing; synthetic imaging and generation; data and image compression; encryption and data security; neural networking; check processing systems, network and communication applications and services; tools and utility applications and services; real-time video imaging; hardware and peripheral integration; proficient in several programming languages for a number of different hardware platforms; design and implementation of several networking and distributed systems applications for inventory management and other large-scale programs; large-scale software projects."

Apteryx 's Product Portfolio: Their products are sold through resellers (such as LED Medical) as well as through their own website. Their suite of products are compatible with hardware of many different manufacturers and designed for businesses of all sizes - from small, single-office practices to large, multi-office organizations. The following product descriptions are from Apteryx's website (www.apteryx.com):

XrayVision



- **XrayVision**: was first launched in 1996 and has become the industry's leading open-architecture digital image management program. XrayVision will capture, enhance and display all of your dental images. Supporting image capture from the majority of the different digital intraoral sensors available today, XrayVision also integrates with phosphor plate scanners, digital panoramic and cephalometric imaging, flatbed scanners, intra-oral and extra-oral cameras, 3D conebeam tomography and many other digital sources.

XVWeb



- **XVWeb**: In addition to being a web application used to view the images, XVWeb is a fully-functional DICOM server that can accept images from any DICOM-compliant imaging software. Although any DICOM-enabled application can be utilized, Apteryx DCV and XrayVision4 are specifically designed to work seamlessly with XVWeb.
- **XVlite**: XVlite will capture, enhance and display all of your dental images. XVlite supports image capture from a majority of the different digital hardware in today's market. XVlite incorporates the latest advancements in imaging technology and Apteryx's patented STB (Secure Tagged Block) file format, an unmodifiable, secure and "loss-less" imaging format. XVlite also exports to a number of common image file formats, including TIFF, JPEG, and BMP for universal viewing.
- **XrayVision DCV**: XrayVision DICOM Capture View, known as DCV, is a DICOM-based dental imaging suite that is scalable to any size organization. DCV is used to standardize the capture, storage, retrieval, and viewing of images across an entire organization. DCV supports most all imaging devices utilized in dentistry, including: Intra-oral sensors, Phosphor Plate Scanners, Panoramic / Cephalometric units, 3D / CAT scan, Tomography, Intra-oral Cameras, Extra-oral Cameras, Endo scopes, and Flatbed Scanners. DCV can act as a full enterprise standalone PACS or can serve as the capture modality that will automatically forward to an existing PACS. DCV's open architecture enables the freedom to use a wide variety of capture devices, while maintaining the industry standards. The US Army and US Navy currently use DCV as their global solution for managing all of their dental clinics worldwide, which allows for centralized storage of all images to provide global access to patient information. XrayVision DCV has numerous bridging capabilities from a standard command line integration, data extraction and auto importing patient demographic, barcode scanning, DICOM Worklist, HL7, and custom data bridges.

Highlights of Apteryx Acquisition:

- Immediately accretive: expected to be significantly accretive to revenue, EBITDA and net income in 2017
- Software margins: while LED has yet to provide specifics, software margins are typically significant and results through 1H 2017 already suggest that inclusion of Apteryx is significantly benefitting margins as well as cash flow

- Recurring revenue: software licensing and recurring revenue business model provides diversity and smoothing to LED's capital product sale revenue stream which is typically highly seasonal
- One-stop-shop: LED can now provide a full digital imaging product solution, including software and hardware
- Synergies: complementary products which share similar customer call points should provide operational synergies
- Familiarity: the companies' management have known each other for ~15 years and LED is a customer of Apteryx's products. The long affiliation provides for operational and relationship related risk-mitigation, particularly given that Kevin Crucs joins as part of LED's management team
- Expands customer base: immediately bolts on a significantly greater installed base to cross-sell to
- Growth opportunity: Apteryx brings a sizeable patent portfolio and software development experience which can be expected to be leveraged for future growth including from further expansion of their product offerings

FINANCIAL MODEL

LED Medical Inc.

	2016 A	Q1A	Q2A	Q3E	Q4E	2017 E	2018 E	2019 E	2020 E
Revenue	$10,169	$2,098	$3,704	$4,039	$4,737	$14,579	$17,594	$20,839	$23,549
YOY Growth	*-22.6%*	*-2.5%*	*1.2%*	*62.3%*	*153.9%*	*43.4%*	*20.7%*	*18.4%*	*13.0%*
Cost of sales	$7,690	$1,070	$1,610	$1,870	$2,525	$7,074	$7,495	$8,731	$9,655
Gross Income	$2,479	$1,029	$2,094	$2,169	$2,212	$7,504	$10,099	$12,107	$13,894
Total Gross Margin	*24.4%*	*49.0%*	*56.5%*	*53.7%*	*46.7%*	*51.5%*	*57.4%*	*58.1%*	*59.0%*
SG&A	$7,461	$1,629	$2,105	$2,371	$2,615	$8,720	$9,993	$11,274	$12,528
% SG&A	*73.4%*	*77.6%*	*56.8%*	*58.7%*	*55.2%*	*59.8%*	*56.8%*	*54.1%*	*53.2%*
R&D	$132	$162	$249	$266	$285	$962	$755	$781	$833
% R&D	*1.3%*	*7.7%*	*6.7%*	*6.6%*	*6.0%*	*6.6%*	*4.3%*	*3.7%*	*3.5%*
Operating Income	($5,114)	($762)	($260)	($468)	($688)	($2,178)	($649)	$53	$533
Operating Margin	*-50.3%*	*-36.3%*	*-7.0%*	*-11.6%*	*-14.5%*	*-14.9%*	*-3.7%*	*0.3%*	*2.3%*
Total Other Income	($259)	($326)	$1,165	($163)	($163)	$513	($540)	($176)	($164)
Pre-Tax Income	($5,373)	($1,088)	$905	($631)	($851)	($1,665)	($1,189)	($123)	$369
Taxes (benefit)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Tax Rate	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Net Income	($5,373)	($1,088)	$905	($631)	($851)	($1,665)	($1,189)	($123)	$369
Net Margin	*-52.8%*	*-51.8%*	*24.4%*	*-15.6%*	*-18.0%*	*-11.4%*	*-6.8%*	*-0.6%*	*1.6%*
EPS	($0.05)	($0.00)	$0.00	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	$0.00
YOY Growth	*-7.1%*	*-91.1%*	*-157.1%*	*-169.7%*	*29.1%*	*-89.9%*	*-39.7%*	*-91.1%*	*-398.8%*
Diluted Shares O/S	113,130	256,358	373,442	373,610	390,000	348,353	413,000	480,000	480,000

Brian Marckx, CFA

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