



# LRAD Corporation

## Initiating Coverage with BUY and \$3.50 Target

Strong revenue momentum from key contract wins should accelerate profitability growth. Continued product expansion and potential contracts can be major catalyst for the stock.

### COVERAGE INITIATION

### Rating: Buy

Ticker: LRAD

Price: \$2.29

Target: \$3.50

**Initiating with BUY:** We are Initiating coverage of LRAD with a BUY rating. After suffering declining sales in 2015 and 2016 (combined -34%), the company has experienced strong revenue growth the past year (+24% in FY17). The management team has done a good job developing LRAD's core legacy Acoustic Hailing Devices (AHDs) and its newer Mass Notifications systems. This has helped to reverse the declining sales by winning new product contracts and expanding its customer base, and returning the company to strong growth. LRAD has had large share price appreciation of ~+50% in 2017, and we believe this momentum is likely to continue in 2018.

**Recent execution positive:** LRAD's recent financial performance has been positive with strong revenue growth over the past year. In its recent Q4 FY17 report, the company again reported solid results. Q4 revenue was \$7.5 million, up 53% y-o-y, due to major contract wins in the U.S. and international.

**Large market potential:** We believe there is substantial market demand for LRAD's products due to high government needs for improved communications as well as demands from the public for public safety communications and the high value and technology of the communication products that LRAD designs and manufactures.

**Estimates conservative:** For FY18, we expect revenues of \$24 million (+16%) and EPS of \$0.01, while in FY19, we expect revenues growth to slow, but earnings to accelerate. The company does not provide specific financial guidance, but has generally guided for continued growth in 2018. We believe our estimates are conservative, with the high potential for upside.

**However, challenges exist:** LRAD operates in a highly competitive environment and competes against a wide range of other sound technologies and defense related companies. Also as a provider to governments, LRAD also competes with its customers' own budget and spending priorities.

**High government revenue concentration:** A large portion of LRAD's revenue is derived from a few customers, specifically the U.S. government/military. If LRAD were to lose a key customer or product contract, it would have a material negative impact on its business and financials. Sales to the U.S. government are also subject to long and lengthy government budget processes. In Q3 FY17, its 2 largest customers accounted for 60% of revenues.

**Positive valuation:** Our \$3.50 price target is based on a forward P/E multiple of 30x our FY20 EPS estimate of \$0.12. We believe this 30x multiple is reasonable as it is its estimated near-term earnings growth rate (implying a PEG ratio of ~1 (P/E to growth rate)). We believe this valuation appropriately balances out the company's risks with the company's growth prospects and large upside opportunities.

### Company Description

Based in San Diego, CA, LRAD designs and develops proprietary sound technologies and products that are deployed by the military, public safety, and commercial security organizations around the world.

United States  
Technology

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Edward Woo, CFA  
(949) 259-4932  
ewoo@ascendant.com

### Stock Data

Exchange:	NasdaqCM
52-week Range:	\$1.30 – 2.58
Shares Outstanding (million):	32
Market cap (\$million):	\$74
EV (\$million):	\$56
Debt (\$million):	\$0
Cash (\$million):	\$18
Avg. Daily Trading Vol. (\$million):	\$0.1
Float (million shares):	25
Short Interest (million shares):	~0
Dividend, annual (yield):	\$0 (NA%)

### Revenues (US\$ million)

	<u>2017A</u> <u>(Cur.)</u>	<u>2018E</u> <u>(Cur.)</u>	<u>2019E</u> <u>(Cur.)</u>
Q1 Dec	3A	3E	4E
Q2 Mar	6A	7E	7E
Q3 Jun	4A	5E	5E
Q4 Sep	<u>8A</u>	<u>9E</u>	<u>9E</u>
Total	<b>20A</b>	<b>24E</b>	<b>25E</b>
EV/Revs	2.8x	2.3x	2.2x

### Earnings per Share (pro forma)

	<u>2017A</u> <u>(Cur.)</u>	<u>2018E</u> <u>(Cur.)</u>	<u>2019E</u> <u>(Cur.)</u>
Q1 Dec	(0.03)A	(0.04)E	(0.04)E
Q2 Mar	0.01A	0.02E	0.03E
Q3 Jun	(0.02)A	(0.02)E	(0.02)E
Q4 Sep	<u>0.01A</u>	<u>0.05E</u>	<u>0.06E</u>
Total	<b>(0.03)A</b>	<b>0.01E</b>	<b>0.03E</b>
P/E	N/A	231x	77x

### Important Disclosures

Ascendant Capital Markets LLC seeks to do business with companies covered by its research team. Consequently, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making an investment decision.

**For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report, beginning on page 16.**

## Exhibit 1: LRAD's Stock Price (5-Years)



Source: Nasdaq.com

## INVESTMENT THESIS

**We are initiating coverage of LRAD with a BUY rating and a 12-month price target of \$3.50.**

Based in San Diego, CA, LRAD designs and develops proprietary sound technologies and products that are deployed by the military, public safety, and commercial security organizations around the world.

After suffering declining sales in 2015 and 2016 (a combined -34%) due to delays in the award of contracts for both U.S. and international projects, the company has experienced strong revenue growth in the past year (+24% in FY17) with continued solid growth expected in FY18 due to the high level of its current order backlog (\$12 million, up from \$3 million a year ago). The management team has done a good job growing its core legacy Acoustic Hailing Devices ("AHDs") as well as developing and gaining traction with its newer (launched in 2012) ONE VOICE Mass Notification Systems. This has helped to reverse the declining sales by winning new product contracts and returning the company to strong growth. LRAD has had large share price appreciation of ~+50% in 2017, and we believe this momentum is likely to continue in 2018.

By focusing on the highly specialized communication needs of its government, military, and commercial clients, we believe that the company is developing a proprietary niche in sound technologies and communications products. Due to high government needs for improved communications as well as demands from the public for public safety communications and the high value and technology of the communication products that LRAD designs and manufactures, we believe they are better able to compete and add value. By winning major contracts and increasing its customer base, the company should continue to diversify and grow its revenues.

After a turnaround and change in management two years ago (including a new CEO in 2016), the company had strong revenue growth (+24%) in FY17, including ending Q4 with +53% (y-o-y) revenue growth and positive operating income of \$1.1 million. We expect strong revenue growth in FY18, with earnings to grow at an even higher rate over the next several years. LRAD currently trades at 19x our FY20 EPS estimate of \$0.12, below the range of comparable companies despite our view that the company's near term earnings growth rate should be higher (from recent depressed levels). The company's balance sheet has been steady, most recently with \$18 million in cash (~\$0.50/share in cash) and no debt.

Our investment thesis factors in an uncertain product contract proposal process ("RFP") and very competitive industry which is offset by the large potential upside opportunities created from successful product contracts (which can be up to five year duration for a contract win). We believe that the current valuation for LRAD has already factored in many of its risks (principally uncertainty and timing of product contracts) but is under valuing its overall growth prospects and product portfolio, resulting in a positive risk versus reward scenario for an investment in LRAD.

## Exhibit 2: LRAD Investment Highlights (from December 2017 company presentation)



### Value

- **Global Brand Recognition** - LRAD is the de facto standard for Acoustic Hailing Devices
- **NOL of \$46.1 million**

### Technology

- **World Leader in Acoustic Hailing Devices**
- **Advanced Mass Notification Systems**

### Award Winning Products

- *Government Security News* and *American Security Today* awarded LRAD products Best Acoustic Hailing Device and Best Mass Notification System

### Strong Balance Sheet (6/30/17)

- **Cash** - \$14.4 million.
- **Short and Long-term Investments** - \$5.0 million
- **Working Capital** - \$23.0 million
- **Debt** - \$0

### Large Market Opportunities

- **International** – Increasing levels of global security needs driving LRAD product demand
- **Domestic** – Improving outlook for **Law Enforcement, Border Security** and **Defense** funding
- **U.S. Military** – FY17 Army Order \$6.0 million - FY18 to FY22 Army RFP anticipated by year end
- **Mass Notification** – Substantial opportunities to replace 'siren-only' systems with LRAD ONE VOICE systems. Growing demand for new installations from critical infrastructure and industrial facilities.

### Other Highlights

- **Bookings** – Up 48% YTD, 10% higher than all of FY16
- **Backlog** - \$6.5 million at 6/30/17, up to \$9.2 million at 7/31/17
- Expect both business segments and ALL regions to experience growth in fiscal year 2017.

Source: Company reports.

**We believe the current valuation is attractive.**

Our \$3.50 price target is based on a forward P/E multiple of 30x our FY20 EPS estimate of \$0.12. We believe this 30x multiple is reasonable as it is comparable to other publicly traded defense manufacturing companies as well as its estimated near-term earnings growth rate (implying a PEG ratio of ~1 (P/E to growth rate)). Based on our expectations and assumptions, our calculated 12-month price target for shares of LRAD of \$3.50 represents significant upside from the current share price. We believe this valuation appropriately balances out the company’s risks with the company’s growth prospects and large upside opportunities.

**Exhibit 3: LRAD Customer Reach**



**Domestic vs. International Revenue**



Source: Company reports.

**INVESTMENT RISKS**

**Concentrated Revenue**

Historically, a large portion of LRAD’s revenue was derived from a few customers, contracts, and products. LRAD’s customers are concentrated in governments and government related entities, particularly the U.S. military. For FY17, LRAD had only one customer



accounting for 15% of revenues, but this may be understated if we consolidated sales by customer group (i.e. U.S. and international military or police). Quarterly sales can be more concentrated as demonstrated by Q3 2017, which had revenues from two customers accounting for 47% and 13% of total revenues. The receipt of orders will often be uneven due to the timing of approvals or budgets. If LRAD were to lose (or not win) a key customer or product contract, it would have a material negative impact on its business and financials.

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**Exhibit 4: LRAD Markets**



Source: Company reports.

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**High Level of Competition**

LRAD operates in a highly competitive environment and competes against a wide range of other sound technologies and defense related companies. LRAD competes primarily on the superiority of its products, technology and designs, responsiveness to customers and ability to meet their needs based on the quality, durability and performance of its products.

The commercial and government audio industry markets are fragmented and include numerous manufacturers with audio products that vary widely in price, quality and distribution channels. AHD competitors include Ultra Electronics/USSI, IML Sound Commander, while mass notification market competitors include Federal Signal Corporation, Whelen Engineering Company, Hoermann, Acoustic Technology. Many of these competitors are much larger or have greater resources, name recognition, and proprietary technology; which could result in lower projected sales for its products and higher costs, reduced margins, and lowered profitability for the company. Also as a provider to governments and related entities, LRAD also competes with its customers' own budget and spending priorities.

### **Government and Military Spending Risks**

LRAD has historically sold most of its products to the U.S. military and other government related entities. In FY17, direct and indirect sales to the U.S. government accounted for ~15% of total sales, but was 31% in FY16, and 20% in FY15. Sales to U.S. government agencies and organizations are subject to the overall U.S. government budget and congressional appropriation decisions and processes. These spending are driven by numerous factors, including geo-political events and macroeconomic conditions. Efforts to streamline the government or military, could affect future military initiatives and homeland security budgets.

Many military contracts that have been awarded also have terms of indefinite delivery/indefinite quantity terms during the term of the contract, so there are no guaranteed purchases on these contracts. In addition, LRAD's products contracts usually have very defined product technical specifications, but there may be sudden or unanticipated changes to the required products or with new regulations and customer expectations which may have an adverse impact on its products and its revenues.

### **Economic Uncertainty**

While security costs tends to be less correlated with economic activity and income levels due to their nondiscretionary nature, major deterioration in economic conditions tends to result in an overall decline in government, business, and consumer spending. This was demonstrated during the 2008 and 2009 Great Recession and global economic slowdown. While government, business, and consumer spending levels have rebounded, the global macroeconomic environment can change quickly. Economic weakness may result in depressed government budgets and corporate business spending levels; this may have a negative impact on LRAD, and its government and business customers.

## **VALUATION**

We are initiating coverage of LRAD with a BUY rating and a 12-month price target of \$3.50, which is based on a forward P/E multiple of ~30x our FY20 EPS estimate of \$0.12. We believe this 30x multiple is reasonable as it is comparable to other publicly traded defense manufacturing companies (both large and micro-cap) as well as its estimated near-term earnings growth rate (implying a PEG ratio of ~1 (P/E to growth rate)). Because the company is much smaller than its peers and its heavy customer concentration, we believe traditional valuation metrics by themselves are not as useful (NPV or comparable multiples). We also note that multiples vary significantly between comparable companies; the variance is likely reflective of current financial performances and future growth expectations. We believe a forward EPS provides a more accurate valuation as it takes into consideration the potential value of its existing and potential product contract pipeline as well as more normalized profitability.

We do acknowledge that this valuation requires a large number of forward assumptions that we have to estimate that may be imprecise and may vary significantly from actual results. However, we believe our assumptions are fair and provide a reasonable basis for our valuation analysis. As the company is likely to make significant progress in growing its product contracts and gain a wider customer base over the next several years, we believe this will result in much improved visibility into future cash flows.

Even with large share price appreciation of ~+50% in 2017 (based on share price of \$2.49 on 12/29/17 and \$1.71 on 12/30/16), we believe that there is still significant upside to the current share price. We expect valuations for LRAD to improve as revenue grows, profitability improves, and visibility into cash flow generation becomes clearer, resulting in significant upside to the current share price.

### Exhibit 5: Leading and Micro Cap U.S. Publicly Traded Defense Companies

Company	Ticker	Market Cap. (mlns)	Annual Revenues (mlns)	Market Cap. / Revenues	Closing Price (as of 1/12/18)	EPS	P/E
General Dynamics Corporation	GD	\$ 63,000	\$ 31,353	2.0x	\$ 210.59	\$ 9.52	22x
Lockheed Martin Corporation	LMT	\$ 96,000	\$ 47,208	2.0x	\$ 336.25	\$ 12.44	27x
Northrop Grumman Corporation	NOC	\$ 54,000	\$ 24,500	2.2x	\$ 315.15	\$ 12.19	26x
Raytheon Company	RTN	\$ 57,000	\$ 24,069	2.4x	\$ 197.46	\$ 7.44	27x
Ability Inc.	ABIL	\$ 14	\$ 17	0.8x	\$ 0.56	\$ (0.33)	N/A
Comtech Telecommunications Corp.	CMTL	\$ 518	\$ 550	0.9x	\$ 21.98	\$ 0.67	33x
Federal Signal Corporation	FSS	\$ 1,196	\$ 707	1.7x	\$ 19.94	\$ 0.71	28x
Ultralife Corporation	ULBI	\$ 111	\$ 82	1.4x	\$ 7.15	\$ 0.23	31x
			Average	1.7x		Average	28x
			Median	1.9x		Median	27x

Source: Yahoo! Finance, company reports, and Ascendant Capital Markets estimates

### COMPANY

Based in San Diego, CA, LRAD Corporation designs and develops directed and omnidirectional proprietary sound technologies and products. LRAD systems are deployed by the U.S. Army, Navy, Air Force, Marine Corps and Coast Guard, as well as international military, maritime, public safety and commercial security organizations around the world.

### Exhibit 6: LRAD's Financial Highlights

FYE Sep 30						
(in millions except EPS)	2012A	2013A	2014A	2015A	2016A	2017A
<b>Total Revenue</b>	<b>14.792</b>	<b>17.088</b>	<b>24.591</b>	<b>16.784</b>	<b>16.361</b>	<b>20.314</b>
Growth % (y/y)	-44%	16%	44%	-32%	-3%	24%
<b>Operating income (loss)</b>	<b>1.277</b>	<b>0.966</b>	<b>3.323</b>	<b>1.219</b>	<b>(1.593)</b>	<b>(0.808)</b>
<b>Net income</b>	<b>1.462</b>	<b>1.263</b>	<b>3.327</b>	<b>9.688</b>	<b>(1.282)</b>	<b>(0.877)</b>
<b>EPS</b>	<b>\$ 0.04</b>	<b>\$ 0.04</b>	<b>\$ 0.10</b>	<b>\$ 0.29</b>	<b>\$ (0.04)</b>	<b>\$ (0.03)</b>

Source: Company reports

Originally founded in 1980, LRAD was long known as American Technology Corporation and was engaged in electronic technology product development. In the 1990s, LRAD invested significantly in sound technologies and products. Its LRAD products were initially developed for the U.S. Navy to fill a capability gap identified after the October 2000 attack on the USS Cole. LRAD changed its name from American Technology Corporation in March 2010, and spun-off to shareholders in October 2010 its directed audio “Hypersonic Sound” solutions business as Parametric Sound Corporation (now part of Turtle Beach Corporation [HEAR]).

As of September 2017, the company had 50 employees (14 in research and development, 18 in production, 7 in general and administrative, and 11 in sales and marketing).

**Exhibit 7: Company Overview**

**The LRAD Advantage**

- LRAD adds new dimensions to loudspeaker technology:
  - Controlled Sound Dispersion: 30° to 360°
  - Industry Leading Voice Intelligibility
  - Directional Transmission Ranges up to 5.5 Km.
  - Omnidirectional Mass Notification Transmission Ranges up to 14 Sq. Km.

Industry Leading Directional Technology

Unlike conventional loudspeakers, bullhorns and vehicle P.A. systems that disperse sound in all directions, LRAD’s proprietary audio technology focuses sound in a 30° beam in front of its Long Range Acoustic Device®.

**Conventional Loudspeaker**  
Sound disperses in all directions

**LRAD®**  
Proprietary audio technology focuses sound in front of the device and significantly reduces audio levels behind the device and in surrounding areas

LRAD CREATES LARGE STAND-OFF ZONES BETWEEN SECURITY PERSONNEL AND THREATS

Prevent Misunderstandings > Resolve Uncertain Situations > Designed To Save Lives

Source: Company reports



## MANAGEMENT TEAM

**Richard Danforth, age 58, Chief Executive Officer.** Mr. Danforth was appointed CEO in August 2016. Mr. Danforth formed the strategic business consulting firm, RsD Aero, Ltd., in 2014, which provided consulting services for the Defense, Aerospace, Space and Transportation sectors, with an emphasis on M&A and Transatlantic trade. He served at DRS Technologies in various executive roles from 2002 to 2014. Mr. Danforth began his career at Raytheon in 1982 and held various manufacturing, quality assurance program manager, and executive positions until 2000. Mr. Danforth holds a Bachelor of Science in Industrial Technology from the University of Massachusetts Lowell and a Masters in Engineering Management from Western New England College.

**Dennis Klahn, age 59, Chief Financial Officer.** Mr. Klahn was appointed Interim CFO in August 2017 and promoted to CFO in September 2017. Mr. Klahn has more than 30 years of accounting, finance and operations experience. He was most recently a Group Controller at Teledyne RD Instruments, a subsidiary of Teledyne Technologies, between 2011 and August 2017. Prior to that, his experience include ISE Corporation, Overland Storage, Anacomp, International Lottery & Totalizator Systems, and Coopers & Lybrand. He received his B.A. in Accounting from St. Ambrose University.

## PRODUCTS

LRAD specializes in the design, development, and manufacture of directed acoustic and sound reproduction communication systems for use around the world. Through its internal sales force (12 currently) and over 100 worldwide resellers, the company has sold into over 70 countries to governments, militaries, and companies for usage in fixed and mobile military deployments, maritime security, critical infrastructure and perimeter security, commercial security, law enforcement and emergency communications, asset protection, and wildlife preservation.

LRAD has two main product lines (with prices ranging from \$5,000 for small handheld units to over \$100,000 for large LRAD XT Mobile Mass Notification units):

- Acoustic Hailing Devices (“AHDs”) - which project audible broadcasts with intelligibility in a 30° beam from close range to over 5,500 meters.
- ONE VOICE Mass Notification Systems - which project 60° - 360° audible broadcasts with vocal intelligibility from close range to over 14 square kilometers.

LRAD systems broadcast warning tones and live or prerecorded clear voice communications to hail, warn and notify. This allows operators more time and distance to determine the intent, influence the behavior, and gain the compliance of approaching vessels, vehicles or people. LRAD products are designed to create large safety zones for potential security threats as well as for mass notifications for public safety or communications.

Exhibit 8: LRAD Products



## Directional Acoustic Hailing Devices (AHDs)



LRAD 100X
LRAD 300X
LRAD 450XL
LRAD 500X
LRAD 1000Xi
LRAD 1950XL
LRAD 2000X



## ONE VOICE® Omnidirectional Systems



LRAD 360Xm
DS-60XL
LRAD 360XL-MID
Scalable LRAD 360X



## LRAD ONE VOICE 360XT Mobile Mass Notification System

360° Scalable Communication

Fully self-powered & self-contained  
Does not rely on external power or infrastructure



Source: Company reports

## FINANCIALS

LRAD's fiscal year ends on September 30. The company currently generates about half of its revenues in the U.S., but this has varied widely in the past. LRAD's near-term plans for growth is to increase revenue through winning proposals ("RFP") for new products and to expand sales and products to new and existing customers.

- In March 2016, the company received a five-year \$7.4 million firm-fixed-price, indefinite-delivery/indefinite-quantity contract award from the Naval Surface Warfare Center to add LRAD RXL systems to Situational Awareness Systems on Military Sealift Command ships and other Navy and Coast Guard vessels.
- In September 2017, the company announced a \$6.0 million LRAD 500X systems, accessories and spare parts order from the U.S. Army under the Army's AHD program of record. The order is scheduled to ship by December 31, 2017.
- In FY18, the company expects the U.S. Army to release an RFP for its multi-year (FY18 to FY22) program for 800 – 3,500 systems.

### Recent Results (fiscal Q4 ending September 2017)

LRAD's recent financial performance has been positive with strong revenue growth over the past year. In its Q4 FY17 report (on December 12, 2017), the company again reported solid results with strong revenue growth. Q4 revenue was \$7.5 million, up 53% y-o-y, due to the strong growth in mass notification system sales along with several large sales to the U.S. military and in international. Gross margin was 58.8%, up from 47.0% last year due to better revenue leverage. Operating expenses were \$3.3 million, +50% y-o-y due to increased costs from the ramp up in revenue. Net income was \$0.2 million, up from \$(0.5) million last year. Q4 EPS was \$0.01, compared with Q4 FY16's \$(0.02). Overall in FY17, revenue of \$20 million was +24% (from \$16 million) and EPS improved to \$(0.03) (from \$(0.04)).

### Exhibit 9: LRAD's Recent Quarterly Trends

FYE Sep 30 (in millions except EPS)	Jun-15 Q3A	Sep-15 Q4A	Dec-15 Q1A	Mar-16 Q2A	Jun-16 Q3A	Sep-16 Q4A	Dec-16 Q1A	Mar-17 Q2A	Jun-17 Q3A	Sep-17 Q4A
<b>Total Revenue</b>	3.5	4.4	2.8	3.6	5.0	4.9	2.9	5.7	4.1	7.5
Growth % (y/y)	-56%	-40%	-36%	-20%	44%	11%	4%	59%	-18%	53%
<b>Gross margin</b>	48.5%	49.3%	46.0%	45.3%	48.4%	47.0%	41.6%	51.1%	41.4%	58.8%
<b>Operating margin</b>	-3.0%	13.2%	-25.6%	-34.5%	4.8%	2.7%	-45.2%	7.6%	-24.1%	14.4%
<b>EPS</b>	\$ (0.00)	\$ 0.27	\$ (0.01)	\$ (0.02)	\$ 0.01	\$ (0.02)	\$ (0.03)	\$ 0.01	\$ (0.02)	\$ 0.01

Source: Company reports

The company does not provide specific financial guidance (quarterly or annual), but has generally guided for continued growth in 2018. Backlog is a metric the company provides as this represents orders received, but not yet shipped. Its backlog as of September 2017 was \$12 million, up from \$3 million at September 2016, and \$5 million in September 2015. Usually backlog is recognized as revenue within two quarters as product is shipped.

We expect the company to continue to experience strong revenue growth in 2018 as it fulfills its major orders, and to grow more moderately in FY19 from new and existing contracts. We have modeled relatively steady and improving operating costs/leverage

over the next two years, resulting in margins expansion. For FY18, we expect revenues of \$24 million (+16%) and EPS of \$0.01, while in FY19, we expect revenues of \$25 million (+5%) and EPS of \$0.03. We expect strong revenue growth in FY18, with earnings to grow at an even higher rate over the next several years. While it appears that our FY19 revenue growth slows significantly, we are just being conservative in our model until we get better visibility. We expect much more operating leverage in FY20 with EPS of \$0.12.

We believe that the biggest potential variable in our financial model is the ability of the company to get new product contracts/orders. It is these contracts/orders that are ultimately how LRAD will be able to generate and grow revenue. If the company can make significant progress towards gaining new product contracts, then revenue and earnings will likely be able to grow significantly (as high or even higher than it is currently). However, if the company has difficulties in getting new contracts, then revenue and earnings will likely grow at a much more moderate rate (or even decline).

The company's balance sheet is solid with \$18 million in cash and no debt as of September 2017 (fairly steady over the past several years). The company has ~\$47 million of NOLs, so its cash income taxes for the next several years are likely to be minimal. Although the company has paid dividends in the past (last one was \$0.01/share in January 2016), we do not expect any material dividends in the near future. The company currently has a \$4 million share repurchase program though no shares were repurchased in FY17.



## FINANCIAL MODEL

### LRAD Corp.

Income Statement (\$ mils)	2015	Dec-15	Mar-16	Jun-16	Sep-16	2016	Dec-16	Mar-17	Jun-17	Sep-17	2017	Dec-17	Mar-18	Jun-18	Sep-18	2018	Dec-18	Mar-19	Jun-19	Sep-19	2019
Fiscal Year End: September 30	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1E	Q2E	Q3E	Q4E	FY-E	Q1E	Q2E	Q3E	Q4E	FY-E
Product sales	15.801	2.564	3.340	4.754	4.649	15.306	2.702	5.472	3.853	7.221	19.247	3.107	6.566	4.315	8.304	22.292	3.263	6.894	4.531	8.719	23.407
Contract and other	0.983	0.258	0.262	0.288	0.247	1.055	0.239	0.271	0.277	0.280	1.067	0.275	0.325	0.310	0.322	1.232	0.289	0.341	0.326	0.338	1.294
<b>Total Revenue</b>	<b>16.784</b>	<b>2.822</b>	<b>3.602</b>	<b>5.042</b>	<b>4.895</b>	<b>16.361</b>	<b>2.941</b>	<b>5.742</b>	<b>4.130</b>	<b>7.501</b>	<b>20.314</b>	<b>3.383</b>	<b>6.891</b>	<b>4.625</b>	<b>8.626</b>	<b>23.525</b>	<b>3.552</b>	<b>7.235</b>	<b>4.856</b>	<b>9.057</b>	<b>24.701</b>
Cost of Revenues	8.256	1.523	1.971	2.602	2.594	8.689	1.717	2.809	2.420	3.090	10.036	1.894	3.308	2.590	3.450	11.242	1.953	3.401	2.622	3.532	11.509
Gross Profit	8.529	1.298	1.631	2.440	2.301	7.672	1.225	2.934	1.709	4.411	10.279	1.488	3.583	2.035	5.176	12.282	1.598	3.835	2.234	5.525	13.192
Selling, general and administrative	5.281	1.460	2.277	1.568	1.572	6.877	1.966	1.893	2.040	2.687	8.586	2.199	2.205	2.081	2.890	9.375	2.273	2.243	2.185	2.898	9.600
Research and development	2.029	0.561	0.598	0.632	0.597	2.388	0.587	0.605	0.666	0.641	2.500	0.676	0.689	0.648	0.690	2.702	0.675	0.724	0.680	0.679	2.758
Restructuring and other						0.000					0.000					0.000					0.000
Total operating expenses	7.309	2.021	2.874	2.201	2.169	9.265	2.554	2.498	2.706	3.328	11.086	2.874	2.894	2.729	3.580	12.077	2.948	2.967	2.865	3.578	12.357
<b>Operating income (loss)</b>	<b>1.219</b>	<b>(0.723)</b>	<b>(1.243)</b>	<b>0.240</b>	<b>0.133</b>	<b>(1.593)</b>	<b>(1.329)</b>	<b>0.436</b>	<b>(0.997)</b>	<b>1.083</b>	<b>(0.808)</b>	<b>(1.386)</b>	<b>0.689</b>	<b>(0.694)</b>	<b>1.596</b>	<b>0.205</b>	<b>(1.350)</b>	<b>0.868</b>	<b>(0.631)</b>	<b>1.947</b>	<b>0.835</b>
Interest income (expense)						0.000					0.000	0.013	0.015	0.014	0.014	0.056	0.013	0.015	0.015	0.015	0.057
Other income (expense)	0.122	0.033	0.032	0.031	0.030	0.125	0.030	0.032	0.033	0.034	0.129					0.000					0.000
Income before income taxes	1.341	(0.690)	(1.211)	0.270	0.163	(1.468)	(1.299)	0.468	(0.964)	1.116	(0.679)	(1.373)	0.704	(0.680)	1.610	0.261	(1.337)	0.883	(0.617)	1.963	0.892
Income taxes	(8.347)	(0.310)	(0.547)	(0.007)	0.677	(0.186)	(0.487)	0.169	(0.436)	0.951	0.198	(0.069)	0.035	(0.034)	0.081	0.013	(0.053)	0.035	(0.025)	0.079	0.036
Net income (loss)	9.688	(0.380)	(0.665)	0.277	(0.514)	(1.282)	(0.813)	0.298	(0.528)	0.166	(0.877)	(1.304)	0.668	(0.646)	1.530	0.248	(1.283)	0.848	(0.592)	1.884	0.856
Nonrecurring/noncash adjustments						0.000					0.000					0.000					0.000
<b>Net income (pro forma)</b>	<b>9.688</b>	<b>(0.380)</b>	<b>(0.665)</b>	<b>0.277</b>	<b>(0.514)</b>	<b>(1.282)</b>	<b>(0.813)</b>	<b>0.298</b>	<b>(0.528)</b>	<b>0.166</b>	<b>(0.877)</b>	<b>(1.304)</b>	<b>0.668</b>	<b>(0.646)</b>	<b>1.530</b>	<b>0.248</b>	<b>(1.283)</b>	<b>0.848</b>	<b>(0.592)</b>	<b>1.884</b>	<b>0.856</b>
EBITDA	2.077	(0.518)	(1.042)	0.424	0.316	(0.820)	(0.832)	0.643	(0.664)	1.315	0.462	(0.936)	1.139	(0.244)	2.046	2.005	(0.900)	1.318	(0.181)	2.397	2.635
Shares, Basic	33.175	32.462	31.828	31.799	31.799	31.971	31.800	31.800	31.862	31.862	31.855	31.962	32.062	32.262	32.362	32.162	32.462	32.562	32.762	32.862	32.662
Shares, Diluted	33.575	32.462	31.828	31.861	31.861	31.971	31.800	31.800	31.862	31.862	31.855	31.962	32.062	32.262	32.362	32.162	32.462	32.562	32.762	32.862	32.662
EPS Basic (Pro forma)	\$0.29	(\$0.01)	(\$0.02)	\$0.01	(\$0.02)	(\$0.04)	(\$0.03)	\$0.01	(\$0.02)	\$0.01	(\$0.03)	(\$0.04)	\$0.02	(\$0.02)	\$0.05	\$0.01	(\$0.04)	\$0.03	(\$0.02)	\$0.06	\$0.03
EPS Diluted (Pro forma)	\$0.29	(\$0.01)	(\$0.02)	\$0.01	(\$0.02)	(\$0.04)	(\$0.03)	\$0.01	(\$0.02)	\$0.01	(\$0.03)	(\$0.04)	\$0.02	(\$0.02)	\$0.05	\$0.01	(\$0.04)	\$0.03	(\$0.02)	\$0.06	\$0.03
<b>Margins</b>																					
Gross margin		46.0%	45.3%	48.4%	47.0%	46.9%	41.6%	51.1%	41.4%	58.8%	50.6%	44.0%	52.0%	44.0%	60.0%	52.2%	45.0%	53.0%	46.0%	61.0%	53.4%
Selling, general and administrative		51.7%	63.2%	31.1%	32.1%	42.0%	66.9%	33.0%	49.4%	35.8%	42.3%	65.0%	32.0%	45.0%	33.5%	39.9%	64.0%	31.0%	45.0%	32.0%	38.9%
Research and development		19.9%	16.6%	12.5%	12.2%	14.6%	20.0%	10.5%	16.1%	8.5%	12.3%	20.0%	10.0%	14.0%	8.0%	11.5%	19.0%	10.0%	14.0%	7.5%	11.2%
Operating margin		-25.6%	-34.5%	4.8%	2.7%	-9.7%	-45.2%	7.6%	-24.1%	14.4%	-4.0%	-41.0%	10.0%	-15.0%	18.5%	0.9%	-38.0%	12.0%	-13.0%	21.5%	3.4%
Tax rate, GAAP		44.9%	45.1%	-2.4%	415.6%	12.7%	37.4%	36.2%	45.2%	85.2%	-29.1%	5.0%	5.0%	5.0%	5.0%	5.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Net margin		-13.5%	-18.5%	5.5%	-10.5%	-7.8%	-27.6%	5.2%	-12.8%	2.2%	-4.3%	-38.6%	9.7%	-14.0%	17.7%	1.1%	-36.1%	11.7%	-12.2%	20.8%	3.5%
<b>Y/Y % change</b>																					
Total Revenue						-3%	4%	59%	-18%	53%	24%	15%	20%	12%	15%	16%	5%	5%	5%	5%	5%
Gross margin						-10%	-6%	80%	-30%	92%	34%	22%	22%	19%	17%	19%	7%	7%	10%	7%	7%
Selling, general and administrative						30%	35%	-17%	30%	71%	25%	12%	16%	2%	8%	9%	3%	2%	5%	0%	2%
Research and development						18%	5%	1%	5%	7%	5%	15%	14%	-3%	8%	8%	0%	5%	5%	-2%	2%
Operating income (loss)						-231%	84%	-135%	-516%	716%	-49%	4%	58%	-30%	47%	-125%	-3%	26%	-9%	22%	307%
Net income (loss)						-113%	114%	-145%	-291%	-132%	-32%	60%	124%	22%	823%	-128%	-2%	27%	-8%	23%	245%
EPS Diluted (Pro forma)						-114%	118%	-145%	-291%	-132%	-31%	60%	122%	21%	809%	-128%	-3%	25%	-10%	21%	240%

Source: Company reports and Ascendant Capital Markets estimates.

**LRAD Corp.**

Balance Sheet (\$ mils)	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	Sep-19
Fiscal Year End: September 30	Q4A	Q1A	Q2A	Q3A	Q4A	Q1A	Q2A	Q3A	Q4A	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
<b>Assets</b>																	
Cash and cash equivalents	18.316	15.583	14.977	15.547	13.467	14.964	14.564	14.376	12.804	14.982	14.126	14.886	12.590	15.710	14.977	15.950	13.735
Short term investments	1.252	2.642	2.633	2.333	2.936	3.111	3.464	3.614	4.360	4.360	4.360	4.360	4.360	4.360	4.360	4.360	4.360
Accounts receivable, net	2.116	1.942	2.477	2.547	3.409	1.479	3.241	2.384	5.682	1.701	3.889	2.670	6.534	1.786	4.083	2.804	6.861
Inventory	4.926	5.215	5.202	5.182	4.764	5.092	5.120	5.711	5.257	5.618	6.030	6.112	5.870	5.793	6.200	6.188	6.010
Deferred income taxes										0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Prepaid expenses and other	0.566	0.448	0.648	0.581	0.596	0.515	0.697	0.619	0.983	0.593	0.836	0.693	1.131	0.622	0.878	0.727	1.187
<b>Total current assets</b>	<b>27.176</b>	<b>25.829</b>	<b>25.938</b>	<b>26.190</b>	<b>25.171</b>	<b>25.161</b>	<b>27.085</b>	<b>26.704</b>	<b>29.086</b>	<b>27.253</b>	<b>29.241</b>	<b>28.720</b>	<b>30.485</b>	<b>28.271</b>	<b>30.498</b>	<b>30.029</b>	<b>32.153</b>
Long term securities/investments	3.047	2.277	2.277	2.048	2.188	1.922	1.557	1.409	0.711	0.711	0.711	0.711	0.711	0.711	0.711	0.711	0.711
Property and equipment, net	0.472	0.488	0.504	0.507	0.473	0.457	0.472	0.557	0.510	0.710	0.910	1.110	1.310	1.510	1.710	1.910	2.110
Intangibles, net	0.058	0.058	0.061	0.060	0.063	0.063	0.064	0.065	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
Deferred income tax	8.339	8.650	9.197	9.204	8.527	9.014	8.844	9.282	8.331	8.331	8.331	8.331	8.331	8.331	8.331	8.331	8.331
Other	0.579	0.532	0.485	0.438	0.391	0.345	0.258	0.211	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165
<b>Total assets</b>	<b>39.672</b>	<b>37.834</b>	<b>38.462</b>	<b>38.446</b>	<b>36.814</b>	<b>36.960</b>	<b>38.280</b>	<b>38.228</b>	<b>38.858</b>	<b>37.225</b>	<b>39.413</b>	<b>39.092</b>	<b>41.057</b>	<b>39.043</b>	<b>41.470</b>	<b>41.201</b>	<b>43.524</b>
<b>Liabilities and stockholders' equity</b>																	
Accounts payable	0.704	0.478	1.442	1.454	0.575	1.075	1.282	1.798	1.112	1.236	1.539	2.014	1.279	1.298	1.615	2.114	1.343
Accrued expenses	0.871	1.454	2.019	1.900	1.503	1.530	2.189	1.898	2.561	1.759	2.626	2.126	2.946	1.847	2.758	2.232	3.093
Deferred revenue										0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Deferred income tax										0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other										0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Short term debt										0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Total current liabilities</b>	<b>1.574</b>	<b>1.932</b>	<b>3.461</b>	<b>3.354</b>	<b>2.078</b>	<b>2.604</b>	<b>3.471</b>	<b>3.696</b>	<b>3.674</b>	<b>2.995</b>	<b>4.165</b>	<b>4.140</b>	<b>4.225</b>	<b>3.145</b>	<b>4.373</b>	<b>4.347</b>	<b>4.436</b>
Deferred income taxes																	
Other long term liabilities	0.148	0.151	0.174	0.157	0.165	0.139	0.112	0.061		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Long term debt										0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Total other liabilities</b>	<b>0.148</b>	<b>0.151</b>	<b>0.174</b>	<b>0.157</b>	<b>0.165</b>	<b>0.139</b>	<b>0.112</b>	<b>0.061</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
Common stock	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.700	1.050	1.400	1.750	2.100	2.450	2.800
Additional paid-in capital	87.608	86.113	86.168	86.316	86.467	86.932	87.109	87.411	87.957	87.957	87.957	87.957	87.957	87.957	87.957	87.957	87.957
Retained earnings	(49.659)	(50.358)	(51.340)	(51.381)	(51.895)	(52.708)	(52.409)	(52.938)	(52.772)	(54.076)	(53.408)	(54.054)	(52.524)	(53.807)	(52.959)	(53.552)	(51.668)
Accumulated other comprehensive income	(0.000)	(0.005)	(0.001)	(0.000)	(0.002)	(0.008)	(0.004)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Other																	
<b>Total stockholders' equity</b>	<b>37.949</b>	<b>35.751</b>	<b>34.827</b>	<b>34.935</b>	<b>34.571</b>	<b>34.217</b>	<b>34.697</b>	<b>34.470</b>	<b>35.184</b>	<b>34.230</b>	<b>35.248</b>	<b>34.952</b>	<b>36.832</b>	<b>35.899</b>	<b>37.096</b>	<b>36.854</b>	<b>39.088</b>
<b>Total stockholders' equity and liabilities</b>	<b>39.672</b>	<b>37.834</b>	<b>38.462</b>	<b>38.446</b>	<b>36.814</b>	<b>36.960</b>	<b>38.280</b>	<b>38.228</b>	<b>38.858</b>	<b>37.225</b>	<b>39.413</b>	<b>39.092</b>	<b>41.057</b>	<b>39.043</b>	<b>41.470</b>	<b>41.201</b>	<b>43.524</b>

**Balance Sheet Drivers**

	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	Sep-19
	Q4A	Q1A	Q2A	Q3A	Q4A	Q1A	Q2A	Q3A	Q4A	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
Prepaid as % of total rev	3%	16%	18%	12%	12%	18%	12%	15%	13%	18%	12%	15%	13%	18%	12%	15%	13%
Accounts payable as % of total rev	4%	17%	40%	29%	12%	37%	22%	44%	15%	37%	22%	44%	15%	37%	22%	44%	15%
Inventories as % of cost of rev	60%	342%	264%	199%	184%	297%	182%	236%	170%	297%	182%	236%	170%	297%	182%	236%	170%
Accrued expenses as % of total rev	5%	52%	56%	38%	31%	52%	38%	46%	34%	52%	38%	46%	34%	52%	38%	46%	34%
<b>Activity Ratios</b>																	
A/R Days Sales Outstanding	11	62	62	45	63	45	51	52	68	45	51	52	68	45	51	52	68
Inventory Turnover	6.7x	1.2x	1.5x	2.0x	2.2x	1.3x	2.2x	1.7x	2.4x	1.3x	2.2x	1.7x	2.4x	1.3x	2.2x	1.7x	2.4x
A/P Days Payable	8	28	66	50	20	56	41	67	32	59	42	70	33	60	43	73	34
<b>Book &amp; Cash Value (per share)</b>																	
Book Value per Share (diluted)	\$1.13	\$1.10	\$1.09	\$1.10	\$1.09	\$1.08	\$1.09	\$1.08	\$1.10	\$1.07	\$1.10	\$1.08	\$1.14	\$1.11	\$1.14	\$1.12	\$1.19
Cash per Share (diluted)	\$0.67	\$0.63	\$0.62	\$0.63	\$0.58	\$0.63	\$0.62	\$0.61	\$0.56	\$0.63	\$0.60	\$0.62	\$0.55	\$0.64	\$0.62	\$0.64	\$0.57
Net cash per Share (diluted)	\$0.67	\$0.63	\$0.62	\$0.63	\$0.58	\$0.63	\$0.62	\$0.61	\$0.56	\$0.63	\$0.60	\$0.62	\$0.55	\$0.64	\$0.62	\$0.64	\$0.57

Source: Company reports and Ascendant Capital Markets estimates

**LRAD Corp.**

Cash Flow Statement (\$ mils)	2015	Dec-15	Mar-16	Jun-16	Sep-16	2016	Dec-16	Mar-17	Jun-17	Sep-17	2017	Dec-17	Mar-18	Jun-18	Sep-18	2018	Dec-18	Mar-19	Jun-19	Sep-19	2019	
Fiscal Year End: September 30	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1E	Q2E	Q3E	Q4E	FY-E	Q1E	Q2E	Q3E	Q4E	FY-E	
<b>Cash flow from operating activities</b>																						
Net income	9.688	(0.380)	(0.665)	0.277	(0.514)	(1.282)	(0.813)	0.298	(0.528)	0.166	(0.877)	(1.304)	0.668	(0.646)	1.530	0.248	(1.283)	0.848	(0.592)	1.884	0.856	
Depreciation	0.238	0.057	0.041	0.036	0.034	0.168	0.033	0.030	0.031	0.059	0.153	0.100	0.100	0.100	0.100	0.400	0.100	0.100	0.100	0.100	0.400	
Amortization						0.000					0.000					0.000					0.000	
Stock comp	0.619	0.148	0.160	0.148	0.149	0.605	0.465	0.177	0.302	0.172	1.116	0.350	0.350	0.350	0.350	1.400	0.350	0.350	0.350	0.350	1.400	
Provision for bad debts					0.011	(0.011)					0.000					0.000					0.000	
Deferred income taxes	(8.339)	(0.311)	(0.547)	(0.007)	0.677	(0.188)	(0.487)	0.169	(0.437)	0.951	0.196	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Warranty provision	0.043	(0.022)	0.049	(0.026)	0.080	0.080	0.010	0.102	(0.111)	(0.110)	(0.110)					0.000					0.000	
Inventory obsolescence	0.066	0.006	0.005	(0.010)	0.159	0.160	0.000	(0.182)	(0.005)	0.213	0.026					0.000					0.000	
Other gains/losses						0.000					0.000					0.000					0.000	
Other						0.000					0.000					0.000					0.000	
Changes in operating assets and liabilities:																						
Accounts receivable	2.168	0.174	(0.535)	(0.081)	(0.850)	(1.293)	1.930	(1.762)	0.857	(3.298)	(2.273)	3.981	(2.188)	1.219	(3.864)	(0.852)	4.748	(2.297)	1.280	(4.057)	(0.327)	
Inventory	(1.096)	(0.294)	0.007	0.030	0.260	0.002	(0.328)	0.153	(0.586)	0.241	(0.520)	(0.360)	(0.412)	(0.082)	0.242	(0.613)	0.077	(0.406)	0.011	0.179	(0.139)	
Prepaid expenses & other current assets	0.146	0.118	(0.201)	0.068	(0.015)	(0.030)	0.080	(0.182)	0.078	(0.125)	(0.147)	0.391	(0.244)	0.144	(0.438)	(0.147)	0.509	(0.256)	0.151	(0.460)	(0.057)	
Accounts payable	(0.127)	(0.226)	0.964	0.012	(0.880)	(0.129)	0.500	0.208	0.516	(0.686)	0.538	0.123	0.303	0.475	(0.734)	0.167	0.018	0.318	0.499	(0.771)	0.064	
Accrued expenses	(3.228)	0.001	1.171	(0.134)	(0.430)	0.608	0.181	0.360	(0.249)	0.779	1.071	(0.802)	0.867	(0.500)	0.819	0.384	(1.098)	0.910	(0.525)	0.860	0.147	
Warranty settlements	(0.041)	(0.001)	(0.023)	0.024	(0.039)	(0.039)	(0.013)	(0.006)	0.019	(0.068)	(0.068)					0.000					0.000	
Deferred revenue						0.000					0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Other liabilities		0.289	(0.289)			0.000	(0.177)	0.177			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
<b>Net cash (used in) provided by</b>	<b>0.136</b>	<b>(0.394)</b>	<b>0.184</b>	<b>0.395</b>	<b>(1.334)</b>	<b>(1.149)</b>	<b>1.428</b>	<b>(0.371)</b>	<b>(0.067)</b>	<b>(1.657)</b>	<b>(0.667)</b>	<b>2.478</b>	<b>(0.556)</b>	<b>1.059</b>	<b>(1.995)</b>	<b>0.986</b>	<b>3.420</b>	<b>(0.433)</b>	<b>1.273</b>	<b>(1.915)</b>	<b>2.345</b>	
<b>Cash flow from investing activities</b>																						
Purchases of property and equipment	(0.344)	(0.071)	(0.055)	(0.037)	0.001	(0.162)	(0.014)	(0.044)	(0.114)	(0.011)	(0.182)	(0.300)	(0.300)	(0.300)	(0.300)	(1.200)	(0.300)	(0.300)	(0.300)	(0.300)	(1.200)	
Purchases of short-term investments	(4.299)	(0.624)	0.011	0.531	(0.744)	(0.826)	0.085	0.017	(0.003)	(0.045)	0.053					0.000					0.000	
Acquisitions	(0.010)	(0.001)	(0.004)	(0.001)	(0.005)	(0.011)	(0.002)	(0.003)	(0.004)	0.008	0.000					0.000					0.000	
Other						0.000					0.000					0.000					0.000	
<b>Net cash used in investing activities</b>	<b>(4.654)</b>	<b>(0.696)</b>	<b>(0.049)</b>	<b>0.493</b>	<b>(0.748)</b>	<b>(0.999)</b>	<b>0.069</b>	<b>(0.029)</b>	<b>(0.120)</b>	<b>(0.048)</b>	<b>(0.129)</b>	<b>(0.300)</b>	<b>(0.300)</b>	<b>(0.300)</b>	<b>(0.300)</b>	<b>(1.200)</b>	<b>(0.300)</b>	<b>(0.300)</b>	<b>(0.300)</b>	<b>(0.300)</b>	<b>(1.200)</b>	
<b>Cash flow from financing activities</b>																						
Issuance of debt						0.000					0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Repayment of debt						0.000					0.000					0.000					0.000	
Issuance of stock						0.000					0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Repurchase of common stock	(1.565)	(1.643)	(0.105)			(1.748)					0.000					0.000					0.000	
Proceeds from stock option exercise	0.504				0.002				0.133		0.133					0.000					0.000	
Other						0.000					0.000					0.000					0.000	
Dividends and distributions			(0.637)	(0.318)		(0.955)					0.000					0.000					0.000	
<b>Cash provided by (used in) financing activities</b>	<b>(1.060)</b>	<b>(1.643)</b>	<b>(0.742)</b>	<b>(0.318)</b>	<b>0.002</b>	<b>(2.701)</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.133</b>	<b>0.133</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	
Effect of exchange rate on cash						0.000					0.000					0.000					0.000	
<b>Net increase (decrease) in cash</b>	<b>(5.579)</b>	<b>(2.733)</b>	<b>(0.606)</b>	<b>0.570</b>	<b>(2.080)</b>	<b>(4.849)</b>	<b>1.497</b>	<b>(0.400)</b>	<b>(0.187)</b>	<b>(1.573)</b>	<b>(0.663)</b>	<b>2.178</b>	<b>(0.856)</b>	<b>0.759</b>	<b>(2.295)</b>	<b>(0.214)</b>	<b>3.120</b>	<b>(0.733)</b>	<b>0.973</b>	<b>(2.215)</b>	<b>1.145</b>	
<b>Beginning cash and equivalents</b>	<b>23.895</b>	<b>18.316</b>	<b>15.583</b>	<b>14.977</b>	<b>15.547</b>	<b>18.316</b>	<b>13.467</b>	<b>14.964</b>	<b>14.564</b>	<b>14.376</b>	<b>13.467</b>	<b>12.804</b>	<b>14.982</b>	<b>14.126</b>	<b>14.886</b>	<b>12.804</b>	<b>12.590</b>	<b>15.710</b>	<b>14.977</b>	<b>15.950</b>	<b>12.590</b>	
<b>Ending cash and equivalents</b>	<b>18.316</b>	<b>15.583</b>	<b>14.977</b>	<b>15.547</b>	<b>13.467</b>	<b>13.467</b>	<b>14.964</b>	<b>14.564</b>	<b>14.376</b>	<b>12.804</b>	<b>12.804</b>	<b>14.982</b>	<b>14.126</b>	<b>14.886</b>	<b>12.590</b>	<b>12.590</b>	<b>15.710</b>	<b>14.977</b>	<b>15.950</b>	<b>13.735</b>	<b>13.735</b>	

Source: Company reports and Ascendant Capital Markets estimates

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**BUY:** We expect the stock to provide a total return of 15% or more within a 12-month period.

**HOLD:** We expect the stock to provide a total return of negative 15% to positive 15% within a 12-month period.



**SELL:** We expect the stock to have a negative total return of more than 15% within a 12-month period.

Total return is defined as price appreciation plus dividend yield.

### Ascendant Capital Markets, LLC Rating System

*Prior to January 31, 2014, ASCM used the following rating system:*

**Strong Buy:** We expect the stock to provide a total return of 30% or more within a 12-month period.

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**Neutral:** We expect the stock to provide a total return of between minus 10% and plus 10% within a 12-month period.

**Sell:** We expect the stock to provide a total return of minus 10% or worse within a 12-month period.

**Speculative Buy:** This rating is reserved for companies we believe have tremendous potential, but whose stocks are illiquid or whose equity market capitalizations are very small, often in the definition of a nano cap (below \$50 million in market cap). In general, for stocks ranked in this category, we expect the stock to provide a total return of 50% or more within a 12-month period. However, because of the illiquid nature of the stock's trading and/or the nano cap nature of the investment, we caution that these investments may not be suitable for all parties.

Total return is defined as price appreciation plus dividend yield.

### Ascendant Capital Markets, LLC Distribution of Investment Ratings (as of January 12, 2018)

Rating	Count	Percent	Investment Banking Services Past 12 months	
			Count	Percent
Buy	33	94%	2	6%
Hold	2	6%	0	0%
Sell	0	0%	0	0%
Total	35	100%	2	6%

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