

**iRobot Corporation**  
(NasdaqGS:IRBT)

**Analyst:** Etienne Lehideux  
**Sector:** Consumer Goods

**HOLD**

Price Target: \$40.7

**Key Statistics** as of 4/30/2015

Market Price: \$32.43  
Industry: Appliances  
Market Cap: \$963.5  
52-Week Range: \$28.05-42.00  
Beta: 1.90

**Thesis Points:**

- Incontestable leader in the global robotic vacuum cleaners space with important IP portfolio
- Continued strength in gross margins and lower operating expense
- Attractive valuation for a disruptive company, due to short interest and cyclical revenues

**Company Description:**

iRobot Corporation designs, builds, and markets robots for the consumer, defense and security, telemedicine, and mobile video collaboration markets worldwide. The company operates through two segments, Home Robots, and Defense and Security Robots. It provides consumer products, such as floor vacuuming, automatic floor mopping, floor scrubbing, and pool and gutter cleaning robots. The company also offers defense and security products, including tactical ground robots comprising the combat-tested 510 PackBot; the 310 SUGV robots; the 110 FirstLook small, light, and throwable robots; and the 710 Kobra multi-purpose robots for carrying heavy payloads, as well as remote presence products, such as telemedicine and video collaboration robots. iRobot Corporation sells its products through chain stores and other national retailers; its on-line store; and distributors and resellers, as well as to the U.S. military and other government agencies. The company was founded in 1990 and is headquartered in Bedford, Massachusetts.



## Thesis

iRobot Corporation is the biggest and most advanced player in the fast growing vacuum cleaning robots space. The company leverages from its early market entry and proprietary technologies to remain the leader in North America but also in the EMEA and Asia-Pacific regions. The company also sells unmanned ground vehicles to foreign governments through its Defense and ASecurity segment. iRobot is building a strong brand that will allow the company to keep its leadership position in the robotic industry. The company's third segment targets businesses and health services industry with video collaboration and Telemedicine products. iRobot has an impressive intellectual property portfolio and has made the protection of this latter on of its top priority. The company is experiencing fast growth in revenues, especially outside North America, and the increasing gross and operating margins will attract many investors towards this undervalued and growing company.

## Segments

iRobot Corporation designs and builds robots that empower people to do more, and operates under three segments:

### Consumer Products

Consumer Products segment consists of selling products designed to be used in or around the home. Currently, the consumer products are focused on indoor and outdoor cleaning applications. Their main products are the Roomba floor vacuuming robot, the Braava floor mopping robot, the Scooba floor scrubbing robot, and the Mirra pool cleaning robot.



Their consumer products' segment is the most important with 91.1% of their FY2014 revenues, and 87.8% in FY2013. In Q1 2015, the segment experienced \$111.1 in sales, for a 2.9% increase on a YoY basis. Revenues increased 18.6% during FY2014 and 19.9% during FY2013. The segments' gross profit was 50.5% during

FY2014 versus 49.3% and 51% in FY2013 and FY2012, respectively.

iRobot's consumer products are sold through a network of more than 30 retailers in the United States and Canada. For their international sales, the company has partnerships with distributors that market their product to their respective network of retailers. The company also sells through its own online store, driving approximately 6% of their revenues.

### Defense and Security

Defense and Security segment offers unmanned ground vehicles. Their tactical ground robots include a range of robots that are able to climb stairs, navigate rubble and penetrate inaccessible areas. Their products allow keeping war fighters and public safety officials out of harm's way. The robots can be used for a wide range of activities such as search, reconnaissance, mapping, or bomb disposal.



iRobot's Defense and Security segment only comprised 8% of the company's revenues in FY 2014, versus 10.3% during FY2013. The gross profit for this segment was 46.4% during FY2014, against 50% during FY2013.

These products are sold directly to end users and indirectly through prime contractors and distributors. The majority of this segment's products are sold to various operations within the U.S. federal government but also to state and local agencies, international government organizations, research labs, nuclear and industrial companies and universities. Governments that have bought their products include the U.K., France, Germany, Sweden, Norway, Italy, Brazil, Pakistan, Israel, Australia, Republic of Korea, Singapore, Bosnia, Lithuania, Qatar, Taiwan, South Africa and Canada.

### Remote Presence

Remote presence products consist of two products based on iRobot's Ava mobile robotics platform.

The RP-VITA telemedicine robot allow connecting physicians with patients from anywhere in the world. The product is sold to healthcare customers by Intouch Health, through a strategic alliance between the two companies that originated in 2011.



Their second product is the AVA 500 Video Collaboration robot. It began selling in 2014 and delivers autonomous telepresence to the enterprise market. The product was developed under a joint marketing agreement with Cisco and sells through certified Cisco partners since 2014.

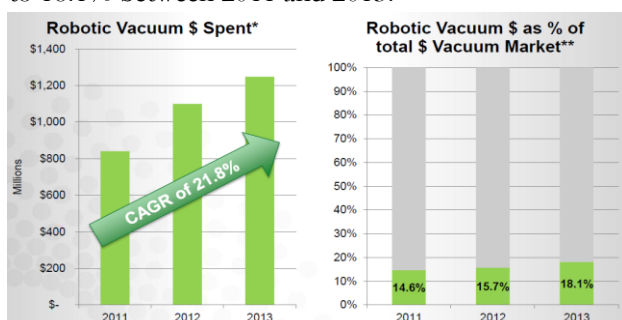


The company began selling these remote presence robots into the healthcare market and the enterprise market in 2013 and 2014, respectively. However, these sales did not generate meaningful revenue in 2014 or 2013.

## Macro environment and competition

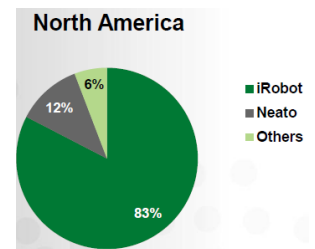
The market for vacuum cleaners worldwide represents a \$7 billion opportunity. In North America, iRobot owns 14% of the \$2.2 billion market and while other robots represent 4% of the market. In EMEA, iRobot owns 14% of the \$2.5 billion market while other robots represent 6%. In Asia-Pacific, iRobot owns 12% of the \$2.2 billion market while other robots represent 4%.

The dollar amount spent in robotic vacuum cleaners passed the \$1.2 billion cap in 2013, and has been growing at a CAGR of 21.8% between 2011 and 2013. Moreover, the share of robotic vacuum cleaners in the global vacuum cleaner market increased from 14.6% to 18.1% between 2011 and 2013.

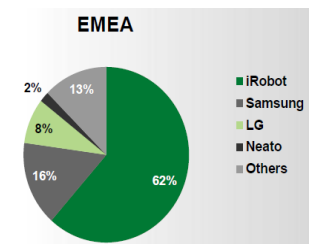


iRobot's competitors include developers of robot floor cleaning products, developers of small unmanned ground vehicles, and developers of mobile robotic platforms and telepresence systems. Considering that more than 90% of their revenues come from the floor cleaning products, the market opportunity really lays on this space as far as now.

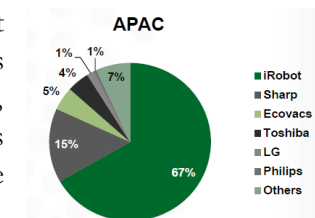
In North America, iRobot's robotic vacuum cleaners compete against Neato's products, which owns a 6% market share of the robotic vacuum retail space, versus 83% for iRobot.



In EMEA, iRobot owns 62% of the market share and mainly competes against diversified electronics providers such as Samsung (16%), or LG (8%).



In Asia Pacific, iRobot owns 67% of the market share and competes against bigger competitors such as Sharp (15%), Toshiba, LG, or Phillips. Asia Pacific is their most competitive geographic area.



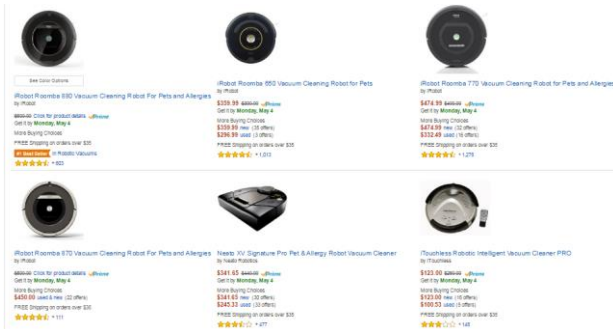
## Competitive Advantage

Their important market share is sustained by strong investments in marketing programs to increase brand awareness. Moreover, iRobot is known for providing superior quality products and a simple Google research proves this point:



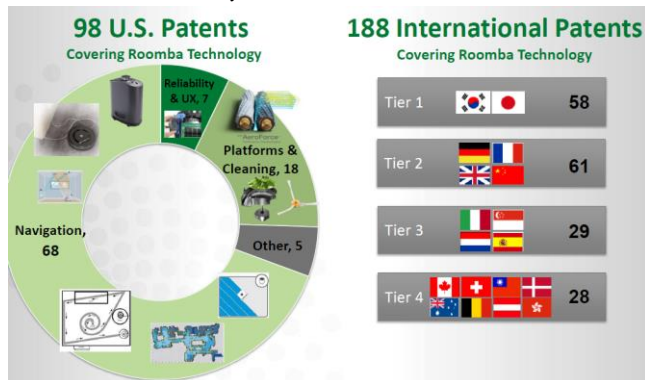
Website Bestreviews shows iRobot's product as the number one robotic vacuum cleaner on the market. The

reviewers note: "We struggle to find significant faults or flaws with this unit". Also, the first 4 products that appear on Amazon's robot vacuum cleaners page are iRobot products:



iRobot's Roomba 770 Vacuum Cleaning Robot has the second most number of reviews with 1,278 reviews and an average 4.5 stars. The most reviewed product is Neato's XV-21 with 1,723 reviews and an average of 4 stars.

iRobot owns a very complete portfolio of intellectual property. As of the end of 2014, the company owned 250 US patents, more than 300 international patents, and more than 400 patents pending worldwide. Their U.S. patents will start to expire in 2019. Their core product Roomba Vacuum Cleaning robot is covered by 98 U.S. patents and 188 international patents. The company was ranked 5<sup>th</sup> overall by the Patent Board for having one of the strongest patent portfolios in the electronics and instruments industry.



## Management & Strategy

Colin Angle is the Chairman of the Board, CEO and Co-Founder of iRobot. He is considered one of the world's leading authorities on mobile robots and he is an industry pioneer with more than two decades of experience. Angle's strategy so far has been to lead iRobot to the top of the home robots industry and building brand awareness. He manages this through heavy R&D spending, investing in key technologies that

extends their market leading position in practical robots. Also, the recurrent marketing programs allow driving growth opportunities. Angle owns 1.73% of iRobot's outstanding shares.

Alison Dean is the executive Vice President and CFO of iRobot. She has more than 25 years of extensive financial experience in the technology and consumer industries. She served several positions in the company, and used to work for 3Com Corporation as vice president and corporate controller and vice president of finance for worldwide sales. The financial strategy is based around a shareholder reward program that was renewed in March 2015. The current share repurchase program ends on April 30 and is being replaced by a new \$50 million stock repurchase program. Dean believes iRobot can take opportunistic advantage of volatile market conditions to buy back their shares while maintaining the flexibility to make strategic investments in the future. Dean owns 0.20% of iRobot's outstanding shares.

## Value Creation

iRobot is one of these companies that consistently create value through solid revenue growth and focus on costs optimization with stable margins.

iRobot's revenues grew 11.73% to \$487.4 million during FY 2013 and 14.25% to \$556.8 million during FY2014. The revenue growth is driven by home robots, which grew 19% in revenues during FY 2014. The management and analysts expect home robots to remain the main revenue driver as we go towards 2015, with most of the results estimated for the second half of the year. The company sees increasing awareness of its Roomba category worldwide, and sees an adoption rate similar to other disruptive household such as the microwave oven or the dishwasher.

iRobot's overall gross margin was 44.55%, 45.37%, and 46.34% during FY2012, FY2013, and FY2014, respectively. The company's EBITDA margins are also increasing steadily with 8.45%, 9.19%, and 11.88% during FY2012, FY2013, and FY2014, respectively. This shows a focus on costs improvement, and the operating costs were effectively 37.57%, 37.32%, and 36.58% during FY2012, FY2013, and FY2014, respectively.

The stability in both revenue growth and cost improvement allows the company to generate significant operating cash flows, which were \$37.9, \$41.9, and \$40.6 million during FY2012, FY2013, and FY2014, respectively. Moreover, the company has \$221 million in cash with no long term debt.

## Risks

iRobot faces several risks associated with operating as an international technology company.

It must be noted that 61% of their FY2014 revenues were generated from international sales outside the U.S. Although iRobots sells to their distributors in dollars, overseas growth may be tempered by macros and currency devaluations. During periods of prolonged currency devaluation, as is currently being experienced in Europe and Japan, there is pressure on pricing and the distributors' ability to invest in marketing, which impacts revenue growth.






With such an important portfolio of patents, the company can easily face litigations linked the protection of their intellectual property. There were 2 patent enforcement actions in Germany that started in the second half of 2013, against a reseller of Chinese goods and a manufacturer of imported robots. The two legal actions do not represent material harm to the company's profitability.

Another risk that is identifies with the company are the bigger competitors such as Samsung or LG, which could heavily invest in R&D and penetrate the home robot space to cannibalize iRobot. However, iRobot manages to lower this risk by building a strong brand identity and focusing on protecting its portfolio of patents.

Finally, it should be noted that the short interest represented 15% of the float in April 2015, which represents a substantial risk. At the same time, the short interest could explain the current low valuation and a short squeeze may be likely to happen.

## Valuation

iRobot's valuation is attractive on a relative basis at less than 9x EV/EBITDA. The table below shows 5 metrics' relative valuation and compares them to a 2 Year historical average.

| Analysis of IRBT US Multiples - Premium to Comps |         |          |      |      |          |   |
|--|---------|----------|------|------|----------|---|
| Current vs 2Yr Average Historical Premium        |         |          |      |      |          |   |
| Metric   | Current | Hist Avg | Diff | # SD | 3M Trend |   |
| <b>Current Price</b>                             |         |          |      |      |          |   |
| 1) NTM P/E                                       | -24%    | 12%      | -36% | -1.7 |          |  |
| 2) NTM EV/EBITDA                                 | -8%     | 22%      | -29% | -1.4 |          |  |
| 3) NTM EV/EBIT                                   | -16%    | 54%      | -70% | -1.3 |          |  |
| 4) NTM EV/Rev                                    | -24%    | 1%       | -25% | -1.6 |          |  |
| 5) LF P/BV                                       | -9%     | 20%      | -29% | -1.8 |          |  |

The proforma on the next page uses assumptions that are in the low range of analysts' expectations and management's guidance. While FY2014 operating costs were 85.8% of revenues, long term operating costs were set to revert towards 90.0% of revenues to keep a safety margin. The explicit period growth in revenues was set to 11.0%, 12.0%, 13.0%, 14.0% and gradually reverts towards a long term growth of 4.0%. 100% of the R&D expenses were capitalized, which represent 12.3% of the company's revenues.

Based on these assumptions, the ROIC UDCF valuation model returns a lower bound 1 year target price of \$40.7, or approximately 25% upside on the lower bound.

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|--|------------------------------------|---|------------------------------------|---------------------------------------|--------------------------------------|--|-----------------------------|--|----------------|-----------------------|
| <b>iRobot Corporation</b>                    |                                    | <b>IRBT</b>                             | <b>Analyst</b><br>Etienne Lehideux | <b>Current Price</b><br>\$32.34       | <b>Intrinsic Value</b><br>\$31.72    | <b>Target Value</b><br>\$40.66           | <b>Divident Yield</b><br>0% | <b>Target Return</b><br>1-y Return: 25.72% | <b>NEUTRAL</b> |                       |
| <b>General Info</b>                          |                                    | <b>Peers</b>                            | <b>Market Cap.</b>                 |                                       | <b>Management</b>                    |  |                             |  |                |                       |
| Sector                                       | Consumer Discretionary             | AeroVironment, Inc.                     | \$597.10                           | <b>Professional</b>                   | <b>Title</b>                         | <b>Comp. FY2012</b>                      | <b>Comp. FY2013</b>         | <b>Comp. FY2014</b>                        |                |                       |
| Industry                                     | Household Durables                 | American Science & Engineering Inc.     | \$276.42                           | Angle, Colin                          | Co-Founder, Chairman and Chief       | \$3,333,680                              | \$3,496,074                 | \$3,558,602                                |                |                       |
| Last Guidance                                | Apr-21-2015                        | API Technologies Corp.                  | \$110.79                           | Dean, Alison                          | Chief Financial Officer, Executive V | \$0                                      | \$1,523,563                 | \$1,384,198                                |                |                       |
| Next earnings date                           | 7/21/2015                          |   |                                    | Pirjanian, Paolo                      | Chief Technology Officer and Exec    | \$0                                      | \$971,343                   | \$1,387,610                                |                |                       |
| <b>Market Data</b>                           |                                    | Kratos Defense & Security Solutions, In | \$318.76                           | Campanello, Russell                   | Executive Vice President of Huma     | \$1,018,736                              | \$973,852                   | \$1,246,690                                |                |                       |
| Enterprise value                             | \$741.67                           |   |                                    | Cerda, Christian                      | Senior Vice President and General    | \$0                                      | \$0                         | \$983,887                                  |                |                       |
| Market Capitalization                        | \$962.58                           |   |                                    | Caffrey, Elise                        | Senior Vice President of Finance &   | \$0                                      | \$0                         | \$0  |                |                       |
| Daily volume                                 | 0.20                               | <b>Current Capital Structure</b>        |                                    | <b>Historical Median Performance</b>  |                                      |  |                             |  |                |                       |
| Shares outstanding                           | 29.69                              | Total debt/market cap                   | 0.00%                              | <b>IRBT</b>                           |                                      | <b>Peers</b>                             |                             | <b>Industry</b>                            |                | <b>All U.S. firms</b> |
| Diluted shares outstanding                   | 30.26                              | Cost of Borrowing                       | #DIV/0!                            | Growth                                | 16.8%                                | 16.8%                                    | 6.6%                        | 6.6%                                       | 7.4%           |                       |
| % shares held by institutions                | 80.14%                             | Interest Coverage                       |                                    | ROIC                                  | 11.7%                                | 7.0%                                     | 10.8%                       | 10.8%                                      | 14.3%          |                       |
| % shares held by insiders                    | 3.47%                              | Altman Z                                |                                    | NOPLAT Margin                         | 9.6%                                 | 8.5%                                     | 5.2%                        | 5.2%                                       | 10.4%          |                       |
| Short interest                               | 14.39%                             | Debt Rating                             | AAA                                | Revenue/Invested Capital              | 1.22                                 | 0.82                                     | 2.06                        | 2.06                                       | 1.37           |                       |
| Days to cover short interest                 | 7.73                               | Levered Beta                            | 1.26                               | Excess Cash/Rev.                      | 37.2%                                | 27.9%                                    | 13.5%                       | 13.5%                                      | 12.9%          |                       |
| 52 week high                                 | \$42.00                            | WACC (based on market value weights)    | 9.78%                              | Total Cash/Rev.                       | 37.2%                                | 27.9%                                    | 12.3%                       | 12.3%                                      | 15.2%          |                       |
| 52-week low                                  | \$28.05                            |   |                                    | Unlevered Beta                        | 1.26                                 | 0.85                                     | 1.34                        | 1.34                                       | 0.95           |                       |
| 5y Beta                                      | 1.82                               |   |                                    | TEV/REV                               | 1.5x                                 | 1.5x                                     | 1.1x                        | 1.1x                                       | 2.5x           |                       |
| 6-month volatility                           | 33.81%                             |   |                                    | TEV/EBITDA                            | 11.5x                                | 20.7x                                    | 10.7x                       | 10.7x                                      | 13.1x          |                       |
| <b>Past Earning Surprises</b>                |                                    | <b>Revenue</b>                          |                                    | <b>EBITDA</b>                         |                                      | <b>Norm. EPS</b>                         |                             |  |                |                       |
| Last Quarter                                 | 1.7%                               | 16.8%                                   |                                    | 7.1%                                  |                                      | 7.1%                                     |                             |  |                |                       |
| Last Quarter-1                               | -2.6%                              | -4.0%                                   |                                    | -13.9%                                |                                      | -13.9%                                   |                             |  |                |                       |
| Last Quarter-2                               | 6.7%                               | 39.6%                                   |                                    | 44.1%                                 |                                      | 44.1%                                    |                             |  |                |                       |
| Last Quarter-3                               | -2.3%                              | 31.8%                                   |                                    | -3.3%                                 |                                      | -3.3%                                    |                             |  |                |                       |
| Last Quarter-4                               | 1.4%                               | 2.5%                                    |                                    | -5.3%                                 |                                      | -5.3%                                    |                             |  |                |                       |
| <b>Proforma Assumptions</b>                  |                                    | <b>Period</b>                           |                                    | <b>Rev. Growth</b>                    | <b>Adj. Op. Cost/Rev</b>             | <b>Invested Capital</b>                  | <b>NOPLAT Margin</b>        | <b>ROIC</b>                                | <b>WACC</b>    |                       |
| Money market rate as of today                | 0.49%                              | LTM                                     | 14.2%                              | 85.8%                                 | \$523.64                             | 12%                                      | 12.2%                       | 9.8%                                       |                |                       |
| Annual increase (decrease) in interest rates | 0.1%                               | NTM                                     | 11.0%                              | 86.2%                                 | \$582.24                             | 13%                                      | 15.7%                       | 9.9%                                       |                |                       |
| Yield Spread acceleration                    | 1.2                                | NTM+1                                   | 12.0%                              | 86.6%                                 | \$636.02                             | 13%                                      | 15.5%                       | 10.0%                                      |                |                       |
| Marginal Tax Rate                            | 37.5%                              | NTM+2                                   | 13.0%                              | 87.1%                                 | \$694.34                             | 12%                                      | 15.6%                       | 10.1%                                      |                |                       |
| Risk-Free rate                               | 2.8%                               | NTM+3                                   | 14.0%                              | 87.5%                                 | \$756.11                             | 12%                                      | 15.8%                       | 10.2%                                      |                |                       |
| Tobin's Q                                    | 0.80                               | NTM+4                                   | 13.0%                              | 87.9%                                 | \$819.76                             | 12%                                      | 15.8%                       | 10.3%                                      |                |                       |
| Op. Cash/Rev.                                | 0%                                 | NTM+5                                   | 12.0%                              | 88.3%                                 | \$884.41                             | 11%                                      | 15.8%                       | 10.4%                                      |                |                       |
| Growth in PPE                                | NPPE Growth follows Revenue Growth | NTM+6                                   | 11.0%                              | 88.7%                                 | \$948.86                             | 11%                                      | 15.7%                       | 10.5%                                      |                |                       |
| Long term Growth                             | 4.0%                               | NTM+7                                   | 9.9%                               | 89.2%                                 | \$1,011.13                           | 11%                                      | 15.6%                       | 10.6%                                      |                |                       |
| Base Year Unlevered Beta                     | is equal to 1.26                   | NTM+8                                   | 8.9%                               | 89.6%                                 | \$1,066.68                           | 10%                                      | 15.4%                       | 10.7%                                      |                |                       |
| Long term Unlevered Beta                     | 1.26                               | Continuing Period                       | 7.9%                               | 90.0%                                 | \$1,444.20                           | 12%                                      | 10.0%                       | 10.8%                                      |                |                       |
| <b>Valuation</b>                             |                                    | <b>Period</b>                           |                                    | <b>Invested Capital x (ROIC-WACC)</b> | <b>Total Debt</b>                    | <b>Other non-interest bearing claims</b> | <b>Shares Outstanding</b>   | <b>Pricing Model</b>                       |                |                       |
| LTM  | \$0.00                             | LTM                                     | \$0.00                             | \$202.26                              | 29.69                                | \$32.05                                  | \$40.06                     | \$31.24                                    | \$32.05        |                       |
| NTM  | \$30.43                            | NTM                                     | \$0.00                             | -\$404.97                             | 29.69                                | \$41.02                                  | \$53.01                     | \$40.73                                    | \$41.02        |                       |
| NTM+1  | \$31.91                            | NTM+1                                   | \$0.00                             | -\$446.44                             | 29.69                                | \$43.69                                  | \$58.59                     | \$43.49                                    | \$43.69        |                       |
| NTM+2  | \$35.06                            | NTM+2                                   | \$0.00                             | -\$492.28                             | 29.69                                | \$46.67                                  | \$65.11                     | \$46.46                                    | \$46.67        |                       |
| NTM+3  | \$38.71                            | NTM+3                                   | \$0.00                             | -\$543.46                             | 29.69                                | \$49.75                                  | \$72.52                     | \$49.53                                    | \$49.75        |                       |
| NTM+4  | \$41.90                            | NTM+4                                   | \$0.00                             | -\$593.34                             | 29.69                                | \$52.79                                  | \$80.03                     | \$52.43                                    | \$52.79        |                       |
| NTM+5  | \$44.56                            | NTM+5                                   | \$0.00                             | -\$648.79                             | 29.69                                | \$55.51                                  | \$87.78                     | \$55.31                                    | \$55.51        |                       |
| NTM+6  | \$46.55                            | NTM+6                                   | \$0.00                             | -\$707.07                             | 29.69                                | \$58.23                                  | \$95.55                     | \$58.05                                    | \$58.23        |                       |
| NTM+7  | \$47.70                            | NTM+7                                   | \$0.00                             | -\$769.98                             | 29.69                                | \$60.79                                  | \$103.27                    | \$60.62                                    | \$60.79        |                       |
| NTM+8  | \$47.85                            | NTM+8                                   | \$0.00                             | -\$837.73                             | 29.69                                | \$62.86                                  | \$110.77                    | \$62.88                                    | \$62.86        |                       |
| Continuing Value                             | -\$136.80                          |   |                                    |                                       |                                      |  |                             |  |                |                       |
| <b>Monte Carlo Simulation Assumptions</b>    |                                    | <b>Base</b>                             |                                    | <b>Stdev</b>                          | <b>Min</b>                           | <b>Max</b>                               | <b>Distribution</b>         | <b>Monte Carlo Simulation Results</b>      |                |                       |
| Revenue Variation                            | 0                                  | 10%                                     | N/A                                | N/A                                   | N/A                                  | Normal                                   | Mean est.                   | \$32.05                                    | \$41.02        |                       |
| Op. Costs Variation                          | 0                                  | 10%                                     | N/A                                | N/A                                   | N/A                                  | Normal                                   | σ(e)                        | \$0.11                                     | \$0.12         |                       |
| Country Risk Premium                         | 6%                                 | N/A                                     | 5%                                 | 7%                                    | Triangular                           | 3 σ(e) adjusted price                    | \$31.72                     | \$40.66                                    |                |                       |
| Long term Growth                             | 4%                                 | N/A                                     | 3%                                 | 17%                                   | Triangular                           | Current Price                            | \$32.34                     |  |                |                       |
|  |                                    |   |                                    |                                       |                                      | Analysts' median est.                    | \$37.33                     |  |                |                       |

