

Palo Alto Networks (PANW)

\$255.37 (As of 08/27/20)

Price Target (6-12 Months): \$268.00

| Long Term: 6-12 Months | Zacks Recommendation: | Neutral | | |
|------------------------|------------------------------------|-------------|--|--|
| | (Since: 02/24/20) | | | |
| | Prior Recommendation: Underperform | | | |
| Short Term: 1-3 Months | Zacks Rank: (1-5) | 4-Sell | | |
| | Zacks Style Scores: | VGM:B | | |
| | Value: D Growth: B | Momentum: A | | |

Summary

Palo Alto's fourth-quarter fiscal 2020 results reflect several deal wins and increasing adoption of the company's next-generation security platforms, attributable to the rise in remote work environment and need for stronger security. Growing traction in Prisma and Cortex offerings also acted as a tailwind. Palo Alto also continued to acquire new customers and increase wallet share with existing customers. Increase in revenues from each geographical segment was tailwinds. However, bottom-line results were affected by the negative impact of sales incentives related to Next-Generation Security products. Moreover, high acquisition related expenses are denting the margins. Additionally, competition from the likes of Fortinet and Cisco are perpetual woes. Shares of the company have underperformed the industry over the past year.

Data Overview

| 52 Week High-Low | \$275.03 - \$125.47 |
|----------------------------|-----------------------------|
| 20 Day Average Volume (sh) | 1,252,794 |
| Market Cap | \$25.5 B |
| YTD Price Change | 10.4% |
| Beta | 1.21 |
| Dividend / Div Yld | \$0.00 / 0.0% |
| Industry | Security |
| Zacks Industry Rank | Bottom 29% (178 out of 252) |

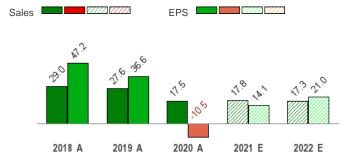
| Last EPS Surprise | 6.5% |
|---------------------------|------------|
| Last Sales Surprise | 3.0% |
| EPS F1 Est- 4 week change | 14.0% |
| Expected Report Date | 11/23/2020 |
| Earnings ESP | 0.0% |
| | |

| P/E TTM | 52.2 |
|---------|------|
| P/E F1 | 45.9 |
| PEG F1 | 2.0 |
| P/S TTM | 7.5 |

Price, Consensus & Surprise



Sales and EPS Growth Rates (Y/Y %)



Sales Estimates (millions of \$)

| | Q1 | Q2 | Q3 | Q4 | Annual* |
|------|---------|---------|---------|---------|---------|
| 2022 | 1,078 E | 1,129 E | 1,182 E | 1,280 E | 4,710 E |
| 2021 | 921 E | 967 E | 1,017 E | 1,107 E | 4,014 E |
| 2020 | 772 A | 817 A | 869 A | 950 A | 3,408 A |

EPS Estimates

| | Q1 | Q2 | Q3 | Q4 | Annual* |
|------|----------|----------|----------|----------|----------|
| 2022 | \$1.55 E | \$1.65 E | \$1.65 E | \$2.00 E | \$6.74 E |
| 2021 | \$1.34 E | \$1.33 E | \$1.34 E | \$1.54 E | \$5.57 E |
| 2020 | \$1.05 A | \$1.19 A | \$1.17 A | \$1.48 A | \$4.88 A |

^{*}Quarterly figures may not add up to annual.

The data in the charts and tables, including the Zacks Consensus EPS and Sales estimates, is as of 08/27/2020. The reports text is as of 08/28/2020.

Overview

Santa Clara, CA-based Palo Alto Networks, Inc. offers network security solutions to enterprises, service providers and government entities worldwide.

The company's next generation firewall products deliver natively integrated application, user, and content visibility and control through its operating system, hardware and software architecture. It serves the enterprise network security market, which includes Firewall, Unified Threat Management (UTM), Web Gateway, Intrusion Detection and Prevention, and Virtual Private Network technologies.

Through its products and subscription services, Palo Alto provides integrated protection against dynamic security threats while simplifying the IT security infrastructure. Its solutions incorporate application-specific integrated circuits, hardware architecture, operating system, and associated security and networking functions.

The company's network security gateways protect customer data, reduce security complexities and lower total cost of ownership. Customers can implement their security policies on traffic between internal networks and the Internet, as well as between internal and private networks shared with partners.

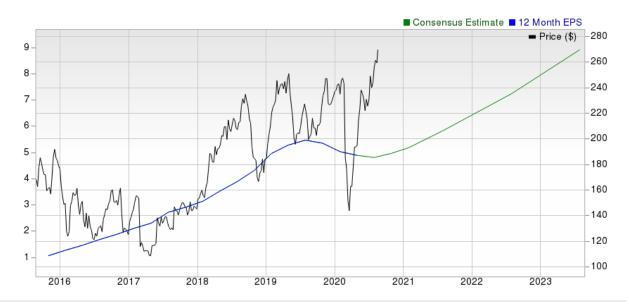
The company has a single operating segment. However, the company announces its revenues from products and services separately. For

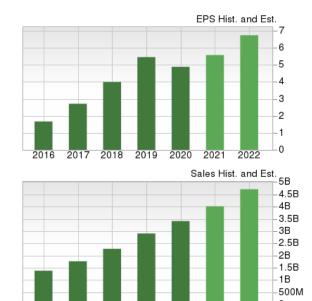
fiscal 2020, the company reported total revenues of \$3.41 billion, which grew 18% year over year.



Further, Palo Alto operates across different geographic regions, including the Americas, Europe, the Middle East, and Africa (EMEA) and the Asia-Pacific and Japan (APAC).

The company faces competition from large companies like Cisco and Juniper, independent security vendors such as Symantec, Check Point, Fortinet, FireEye and several other small companies.





Reasons To Buy:

▲ Cyber security has become a mission-critical, high-profile requirement as financial well being, brands and reputation of enterprises are exposed to sophisticated cyber threats. Palo Alto is growing rapidly in this space on the back of its innovative next-generation security platforms. The company's security platforms have innovative traffic classification engine that helps it in identifying network traffic by application, user and content. As a result, organizations have indepth visibility into all traffic and applications which help them to control usage, content, risks and cyber threats at the user level. Therefore, Palo Alto's security platforms simplify security infrastructure for organizations by eliminating the need for multiple, stand-alone security appliances and software products. This reduces the total cost of ownership thereby giving the organization a competitive edge.

Product ramp ups, deal wins, continuous growth of the network security market and expected benefits from the ongoing investments are the positives.

- ▲ Palo Alto has made strategic acquisitions to boost growth. The buyout of LightCyber expanded the company's Next-Generation Security Platform. Over the last few years, it also completed several important acquisitions to broaden its portfolio and global reach. Buyouts of Morta Security and Cyvera expanded its product portfolio and the customer base. Another acquired company, CirroSecure's resources and expertise has helped Palo Alto in boosting the functionality of its enterprise security platform and guard the SaaS collaboration products of Salesforce.com, Google Drive, Box and Dropbox better. Moreover, the company expanded its endpoint detection and response (EDR) capabilities with the acquisition of Secdo. Moreover, the RedLock buyout extended its leadership in cloud security. Its buyout of Demisto is helping Palo Alto incorporate Al and ML to enhance the automation of its customers' security operations. Container security company Twistlock, and serverless security firm PureSec, are expected to help Palo Alto better protect customers' journey to the cloud. Its impending acquisition of machine identity-based micro-segmentation company Aporeto will bring micro-segmentation capabilities in Prisma Cloud, further fortifying it.
- A Palo Alto has made strategic partnerships to expedite growth. The company formed the NextWave Technology Partner Program under which an organization can join as strategic or integration partner. Over the last one year, it has expanded its strategic partnership with VMware to address cloud and mobile security needs of organizations. Apart from this, Palo Alto has made strategic alliance with Aruba Networks to offer security solutions tailored for mobile users. Furthermore, with another partnership with Splunk, Palo Alto is offering solutions to effectively coordinate detection, incident investigation, and response for advanced threats. Moreover, by integrating its solutions with Citrix, the company offers security solutions to cloud networking platforms. These strategic partnerships bring in customers for Palo Alto thereby boosting the top line.
- ▲ The exponential growth in the amount of data, complexity of data formats and the need to scale resources at regular intervals has led to a tremendous surge in demand for cloud computing software and applications. This trend, on the other hand, has made it necessary for companies to enforce stricter data security measures. Therefore, looking at the industry's trends, Palo Alto is currently focusing on cloud-based protection services. The company currently offers a subscription-based cloud protection service WildFire which helps end-customers in identifying malware on any network and takes preventive measures automatically. Moreover, Palo Alto has launched several new subscription-based services in the last few months AutoFocus, Aperture, GlobalProtect cloud service and Logging Service which have expanded its cloud protection capabilities.
- ▲ Palo Alto is currently focusing on selling more subscription-based services. This unique business model is helping it to generate stable revenues while expanding margins. Subscription-based service is a high gross-margin business (approximately 80%) compared with the hardware-centric model. We believe that the strategy will continue to improve the company's top line and bottom line. Palo Alto has been witnessing tremendous customer growth for its subscription-based services like WildFire and Trap. Further, the company's subscription-based services AutoFocus, Aperture, Traps and Virtual continue to witness solid growth. We believe that continued focus on subscription-based products and services and product upgrades will boost the company's top line.
- ▲ Palo Alto has a cash healthy balance sheet. As of Jul 31, 2020, the company had cash and cash equivalents of nearly \$3.75 billion, which is higher than its debt (long-term including current maturities) of approximately \$3.42 billion. Since it has net cash available on its balance sheet, the existing cash can be used for pursuing strategic acquisitions and investment in growth initiatives.

Reasons To Sell:

▼ We note that Palo Alto currently has a trailing 12-month Price/Book Value (P/B) ratio of 34.2. This level compares unfavorably with what the industry witnessed in the last year. Hence, valuation looks slightly stretched from a P/B perspective. Intensifying competition, an uncertain economic environment and currency headwinds remain concerns.

- Near-term prospects for Palo Alto are not promising as customer changing behavior has recently hit several other players in this space. For the past few months, various competitors in the cyber security space noticed that the companies have been breaking their cybersecurity investment plans into phases and implementing the same over longer periods of time, instead
 - investment plans into phases and implementing the same over longer periods of time, instead of making a single large investment. This makes us slightly cautious about the company's near-term performance.
- ▼ Palo Alto faces stiff competition from several big and small players in the security application market. Further, over the past few years, the demand for IT security has been on the rise driven by increasing awareness and cyber attacks, making the market more attractive for new players. Also, there are some established players in the adjacent markets like Cisco and Juniper that can cross sell security products and include security into their existing product lines, further intensifying competition in the space. Therefore, companies must deliver prompt and advanced technologies to suit customer requirements and expedite product launch to stay afloat.
- ▼ To survive in the highly competitive cyber security market, each player must continually invest in broadening its capabilities. Over the past few years, Palo Alto has invested heavily to enhance its sales and marketing capabilities, particularly by increasing the sales force. This has negatively impacted its operating margins. Furthermore, though the company foresees these investments to garner benefit over the long run, we note that there is uncertainty about the payback period.

Last Earnings Report

Palo Alto Networks reported fourth-quarter fiscal 2020 non-GAAP earnings of \$1.48 per share, which surpassed the Zacks Consensus Estimate \$1.39. Moreover, the bottom line compares favorably with the year-ago quarter's earnings of \$1.47 per share.

The company's revenues of \$950.4 million improved 18% year over year. The figure also beat the Zacks Consensus Estimate of \$920.9 million.

The top line was primarily aided by several deal wins and increasing adoption of the company's next-generation security platforms on the rising remote-working trend and heightening need for stronger security. Growing traction in the Prisma and Cortex offerings also acted as a tailwind.

| Quarter Ending | 07/2020 |
|------------------|--------------|
| Report Date | Aug 24, 2020 |
| Sales Surprise | 3.03% |
| EPS Surprise | 6.47% |
| Quarterly EPS | 1.48 |
| Annual EPS (TTM) | 4.89 |
| | |

Quarterly Details

Product revenues remained flat year over year at \$305.6 million and contributed to 32% of the total revenues. The company's subscription and support revenues, which accounted for 68% of the total revenues, improved 28.9% to \$644.8 million.

Further, billings improved 32% year over year to \$1.4 billion. Deferred revenues also jumped 32% to \$4.3 billion.

Additionally, Palo Alto's non-GAAP gross margin contracted 320 basis points (bps) on a year-over-year basis to 74.3%. In addition, non-GAAP operating margin shrunk 180 bps to 19.8%.

Palo Alto exited the fiscal fourth quarter with cash, cash equivalents and short-term investments of \$3.75 billion compared with the \$2.2 billion recorded at the end of the previous quarter. The company's balance sheet does not carry any long-term debt.

During the quarter, it generated cash flow from operations of \$333.7 million and free cash flow of \$301.9 million. In fiscal 2020, the company generated operating and free cash flows of \$1.04 billion and \$821.3 million, respectively.

Guidance

For first-quarter fiscal 2021, Palo Alto anticipates year-over-year revenue growth of 19-20%, which comes in between \$915 million and \$925 million. Billing growth is anticipated between 15% and 17%, (\$1.03 billion-\$1.05 billion).

Non-GAAP earnings per share are estimated in the range of \$1.32-\$1.35.

Recent News

On Aug 27, Palo Alto announced that its board of directors has appointed John M. Donovan as an independent director.

On Aug 24, Palo Alto announced that it has entered into a definitive agreement to acquire The Crypsis Group.

On Aug 4, Palo Alto introduced a marketplace for Cortex XSOAR, its extended security orchestration, automation and response platform that empowers security teams by simplifying and harmonizing security operations across their entire enterprise.

On Jun 23, Palo Alto announced the appointment of Luis Felipe Visoso to the position of chief financial officer (CFO).

On June 22, Palo Alto announced the departure of chief financial officer (CFO) Kathy Bonanno.

On June 17, Palo Alto introduced ML-Powered Next-Generation Firewall, to identify and eliminate threats and secure IoT devices.

On Apr 22, Palo Alto completed the acquisition of software-defined wide area network (SD-WAN) provider — CloudGenix — for approximately \$420 million.

On Feb 24, Palo Alto launched Cortex XSOAR, an extended security orchestration, automation and response platform to provide security leaders with improved capabilities against threats across their entire enterprise.

On Jan 6, Palo Alto announced that the Prisma Cloud has been deemed "In Process" for the Federal Risk and Authorization Management Program (FedRAMP). Moreover, it has been added to Palo Alto Networks Government Cloud Services.

On Dec 23, 2019, Palo Alto completed the buyout of machine identity-based micro segmentation company, Aporeto, in order to reinforce its cloud native security platform delivered by Prisma Cloud.

Valuation

Shares of Palo Alto have increased 10.4% in the year so far and up 27.5% over the trailing 12-month period. Stocks in the Zacks sub-industry have increased 12.3% while the Zacks Computer & Technology sector increased 27.6%, year-to-date (YTD). Over the past year, the Zacks sub-industry and the sector have gained 27.6% and 43.2%, respectively.

The S&P 500 Index has gained 8.2% YTD and 19.4% in the past year.

The stock is currently trading at 6.35X forward 12-month sales, which compares to 7.69X for the Zacks sub-industry, 4.31X for the Zacks sector and 3.82X for the S&P 500 index.

Over the past five years, the stock has traded as high as 11.98X and as low as 3.51X, with a 5-year median of 6.31X. Our Neutral recommendation indicates that the stock will perform in-line with the market. Our \$268 price target reflects 6.67X forward 12-month sales.

The table below shows summary valuation data for PANW

| Valuation Multiples - PANW | | | | | | | |
|----------------------------|---------------|-------|--------------|--------|---------|--|--|
| | | Stock | Sub-Industry | Sector | S&P 500 | | |
| | Current | 6.35 | 7.69 | 4.31 | 3.82 | | |
| P/S F12M | 5-Year High | 11.98 | 8.35 | 4.31 | 3.82 | | |
| | 5-Year Low | 3.51 | 5.32 | 2.32 | 2.53 | | |
| | 5-Year Median | 6.31 | 6.63 | 3.14 | 3.05 | | |
| | Current | 34.06 | 27.63 | 24.04 | 19.34 | | |
| EV/FCF TTM | 5-Year High | 46.52 | 28.60 | 24.20 | 33.53 | | |
| | 5-Year Low | 11.73 | 14.80 | 12.37 | 13.90 | | |
| | 5-Year Median | 19.28 | 19.77 | 19.47 | 20.44 | | |
| | Current | 7.28 | 8.22 | 5.01 | 3.42 | | |
| EV/Sales TTM | 5-Year High | 15.86 | 9.00 | 5.05 | 3.46 | | |
| | 5-Year Low | 3.35 | 4.89 | 2.59 | 2.15 | | |
| | 5-Year Median | 7.04 | 6.80 | 3.64 | 2.88 | | |

As of 08/27/2020

Industry Analysis Zacks Industry Rank: Bottom 29% (178 out of 252)

■ Industry Price Industry Price

Top Peers

| Company (Ticker) | Rec Rank |
|---|-----------|
| Check Point Software Technologies Ltd. (CHKP) | Neutral 3 |
| Cisco Systems, Inc. (CSCO) | Neutral 3 |
| CyberArk Software Ltd. (CYBR) | Neutral 4 |
| FireEye, Inc. (FEYE) | Neutral 2 |
| Fortinet, Inc. (FTNT) | Neutral 3 |
| Juniper Networks, Inc. (JNPR) | Neutral 3 |
| Proofpoint, Inc. (PFPT) | Neutral 2 |
| Qualys, Inc. (QLYS) | Neutral 2 |

| Industry Comparison Industry: Security | | | | Industry Peers | | |
|--|-----------|------------|-----------|----------------|-----------|-----------|
| | PANW | X Industry | S&P 500 | СНКР | FEYE | FTNT |
| Zacks Recommendation (Long Term) | Neutral | - | - | Neutral | Neutral | Neutra |
| Zacks Rank (Short Term) | 4 | - | - | 3 | 2 | 3 |
| VGM Score | В | - | - | С | С | Α |
| Market Cap | 25.46 B | 4.19 B | 23.67 B | 18.57 B | 3.31 B | 21.37 B |
| # of Analysts | 15 | 10 | 14 | 13 | 10 | 13 |
| Dividend Yield | 0.00% | 0.00% | 1.64% | 0.00% | 0.00% | 0.00% |
| Value Score | D | - | - | С | D | D |
| Cash/Price | 0.08 | 0.09 | 0.07 | 0.09 | 0.28 | 0.07 |
| EV/EBITDA | 57.43 | 31.81 | 13.33 | 17.17 | -39.28 | 36.57 |
| PEG Ratio | 1.96 | 2.63 | 3.05 | 2.64 | 5.44 | 3.14 |
| Price/Book (P/B) | 34.19 | 9.81 | 3.18 | 5.45 | 5.01 | 39.25 |
| Price/Cash Flow (P/CF) | 50.53 | 42.03 | 12.81 | 21.48 | NA | 45.34 |
| P/E (F1) | 45.95 | 44.02 | 21.68 | 19.33 | 59.88 | 44.02 |
| Price/Sales (P/S) | 7.47 | 7.47 | 2.50 | 9.16 | 3.61 | 9.08 |
| Earnings Yield | 2.18% | 2.23% | 4.43% | 5.17% | 1.70% | 2.27% |
| Debt/Equity | 2.45 | 0.74 | 0.74 | 0.00 | 1.52 | 0.00 |
| Cash Flow (\$/share) | 5.05 | 2.13 | 6.94 | 5.94 | -0.18 | 2.91 |
| Growth Score | В | - | - | C | Α | Α |
| Hist. EPS Growth (3-5 yrs) | NA% | 10.74% | 10.41% | 9.71% | NA | 122.35% |
| Proj. EPS Growth (F1/F0) | 14.17% | 11.46% | -4.94% | 7.73% | 390.00% | 21.46% |
| Curr. Cash Flow Growth | 119.25% | 45.71% | 5.22% | -0.22% | -24.85% | 45.71% |
| Hist. Cash Flow Growth (3-5 yrs) | 69.30% | 37.87% | 8.50% | 4.14% | 13.41% | 46.74% |
| Current Ratio | 1.29 | 1.65 | 1.35 | 1.44 | 1.66 | 1.37 |
| Debt/Capital | 70.98% | 50.57% | 43.86% | 0.00% | 60.30% | 0.00% |
| Net Margin | -7.83% | 7.12% | 10.25% | 41.21% | -26.68% | 17.46% |
| Return on Equity | -9.26% | 5.88% | 14.66% | 24.29% | -16.21% | 40.58% |
| Sales/Assets | 0.50 | 0.49 | 0.50 | 0.36 | 0.33 | 0.67 |
| Proj. Sales Growth (F1/F0) | 17.76% | 6.89% | -1.43% | 2.68% | 3.35% | 17.48% |
| Momentum Score | Α | - | - | С | В | Α |
| Daily Price Chg | -3.06% | -1.23% | 0.43% | -1.02% | -2.36% | -3.75% |
| 1 Week Price Chg | 3.94% | 2.26% | -1.45% | 3.57% | -0.34% | 3.22% |
| 4 Week Price Chg | 1.42% | -3.42% | 3.75% | 3.31% | -4.12% | -3.42% |
| 12 Week Price Chg | 12.65% | 9.17% | 3.95% | 17.25% | 12.41% | -5.38% |
| 52 Week Price Chg | 27.59% | 18.77% | 2.75% | 18.77% | 9.56% | 69.39% |
| 20 Day Average Volume | 1,252,794 | 758,930 | 1,887,168 | 1,156,901 | 3,488,971 | 1,362,382 |
| (F1) EPS Est 1 week change | 14.00% | 0.00% | 0.00% | 0.02% | -0.45% | 0.57% |
| (F1) EPS Est 4 week change | 14.00% | 5.35% | 0.79% | 0.02% | 27.36% | 10.06% |
| (F1) EPS Est 12 week change | 14.00% | 5.91% | 3.43% | 4.31% | 37.13% | 12.67% |
| (Q1) EPS Est Mthly Chg | NA% | 5.08% | 0.00% | -0.01% | 36.36% | 10.57% |

Zacks Stock Rating System

We offer two rating systems that take into account investors' holding horizons: Zacks Rank and Zacks Recommendation. Each provides valuable insights into the future profitability of the stock and can be used separately or in combination with each other depending on your investment style.

Zacks Recommendation

The Zacks Recommendation aims to predict performance over the next 6 to 12 months. The foundation for the quantitatively determined Zacks Recommendation is trends in the company's estimate revisions and earnings outlook. The Zacks Recommendation is broken down into 3 Levels; Outperform, Neutral and Underperform. Unlike many Wall Street firms, we have an excellent balance between the number of Outperform and Neutral recommendations. Our team of 70 analysts are fully versed in the benefits of earnings estimate revisions and how that is harnessed through the Zacks quantitative rating system. But we have given our analysts the ability to override the Zacks Recommendation for the 1200 stocks that they follow. The reason for the analyst over-rides is that there are often factors such as valuation, industry conditions and management effectiveness that a trained investment professional can spot better than a quantitative model.

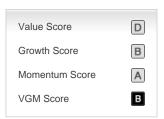
Zacks Rank

The Zacks Rank is our short-term rating system that is most effective over the one- to three-month holding horizon. The underlying driver for the quantitatively-determined Zacks Rank is the same as the Zacks Recommendation, and reflects trends in earnings estimate revisions.

Zacks Style Scores

The Zacks Style Score is as a complementary indicator to the Zacks rating system, giving investors a way to focus on the highest rated stocks that best fit their own stock picking preferences.

Academic research has proven that stocks with the best Value, Growth and Momentum characteristics outperform the market. The Zacks Style Scores rate stocks on each of these individual styles and assigns a rating of A, B, C, D and F. We also produce the VGM Score (V for Value, G for Growth and M for Momentum), which combines the weighted average of the individual Style Scores into one score. This is perfectly suited for those who want their stocks to have the best scores across the board.



As an investor, you want to buy stocks with the highest probability of success. That means buying stocks with a Zacks Recommendation of Outperform, which also has a Style Score of an A or a B.

Disclosures

This report contains independent commentary to be used for informational purposes only. The analysts contributing to this report do not hold any shares of this stock. The analysts contributing to this report do not serve on the board of the company that issued this stock. The EPS and revenue forecasts are the Zacks Consensus estimates, unless indicated otherwise on the reports first page. Additionally, the analysts contributing to this report certify that the views expressed herein accurately reflect the analysts personal views as to the subject securities and issuers. ZIR certifies that no part of the analysts compensation was, is, or will be, directly or indirectly, related to the specific recommendation or views expressed by the analyst in the report.

Additional information on the securities mentioned in this report is available upon request. This report is based on data obtained from sources we believe to be reliable, but is not guaranteed as to accuracy and does not purport to be complete. Any opinions expressed herein are subject to change.

ZIR is not an investment advisor and the report should not be construed as advice designed to meet the particular investment needs of any investor. Prior to making any investment decision, you are advised to consult with your broker, investment advisor, or other appropriate tax or financial professional to determine the suitability of any investment. This report and others like it are published regularly and not in response to episodic market activity or events affecting the securities industry.

This report is not to be construed as an offer or the solicitation of an offer to buy or sell the securities herein mentioned. ZIR or its officers, employees or customers may have a position long or short in the securities mentioned and buy or sell the securities from time to time. ZIR is not a broker-dealer. ZIR may enter into arms-length agreements with broker-dealers to provide this research to their clients. Zacks and its staff are not involved in investment banking activities for the stock issuer covered in this report.

ZIR uses the following rating system for the securities it covers. **Outperform-** ZIR expects that the subject company will outperform the broader U.S. equities markets over the next six to twelve months. **Neutral-** ZIR expects that the company will perform in line with the broader U.S. equities markets over the next six to twelve months. **Underperform-** ZIR expects the company will underperform the broader U.S. equities markets over the next six to twelve months.

No part of this report can be reprinted, republished or transmitted electronically without the prior written authorization of ZIR.