VGM:C

Momentum: D



Western Digital (WDC) \$43.09 (As of 04/27/20) Price Target (6-12 Months): \$48.00 Long Term: 6-12 Months | Zacks Recommendation: Neutral (Since: 04/02/20) Prior Recommendation: Outperform Short Term: 1-3 Months | Zacks Rank: (1-5) 3-Hold

Summary

Western Digital is expected to gain from improving demand for higher capacity enterprise drives and enterprise Solid State Drive (SSD). This, in turn, is likely to bolster revenues from the Data center devices and solutions segment, which is a positive. Particularly, the growing clout of 20 terabyte (TB) Ultrastar Hard Disk Drive (HDD) and 18TB Ultrastar HDD is praiseworthy. Moreover, the rising trend in PC shipments is a boon. Markedly, the coronavirus crisis in China will likely aid the company as it is projected to create a constrained near-term NAND supply, favoring its financial performance in the process. Notably, shares have outperformed the industry in the past year. However, high debt levels have been troubling Western Digital for quite some time. Also, macroeconomic woes and softness in NAND flash pricing are headwinds.

Price, Consensus & Surprise



Zacks Style Scores:

Growth: D

Value: A

Data Overview

04/28/2020.

52 Week High-Low	\$72.00 - \$27.40
20 Day Average Volume (sh)	5,437,525
Market Cap	\$12.9 B
YTD Price Change	-32.1%
Beta	1.80
Dividend / Div Yld	\$2.00 / 4.6%
Industry	Computer- Storage Devices
Zacks Industry Rank	Top 27% (68 out of 253)

Last EPS Surprise	10.7%
Last Sales Surprise	0.5%
EPS F1 Est- 4 week change	-4.6%
Expected Report Date	04/30/2020
Earnings ESP	-11.3%

P/E TTM	33.2
P/E F1	13.8
PEG F1	6.9
P/S TTM	0.8

Sales and EPS Growth Rates (Y/Y %)



Sales Estimates (millions of \$)

*Quarterly figures may not add up to annual.

	Q1	Q2	Q3	Q4	Annual*
2021	4,416 E	4,585 E	4,496 E	4,618 E	18,273 E
2020	4,040 A	4,234 A	4,195 E	4,271 E	16,761 E
2019	5,028 A	4,233 A	3,674 A	3,634 A	16,569 A

EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2021	\$1.17 E	\$1.36 E	\$1.51 E	\$1.71 E	\$6.12 E
2020	\$0.34 A	\$0.62 A	\$0.94 E	\$1.23 E	\$3.13 E
2019	\$3.04 A	\$1.45 A	\$0.17 A	\$0.17 A	\$4.84 A

The data in the charts and tables, including the Zacks Consensus EPS and Sales estimates, is as of 04/27/2020. The reports text is as of

Overview

Western Digital Corporation (WDC), headquartered in Irvine, CA, is one of the largest hard disk drive (HDD) producers in the U.S. The company designs, develops, manufactures and markets a broad range of HDDs used in desktop PCs, servers, network-attached storage devices, video game consoles, digital video recorders and a host of other consumer electronic devices.

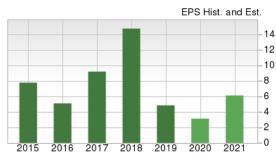
The acquisition of SanDisk enabled the company to venture into the flash drive storage technology space.

Western Digital sells hard drives of 3.5-inch and 2.5-inch form factors with storage capacities ranging from 30 gigabytes (GB) to 6 terabytes (TB).

The company's solid-state drives (SSDs) include 2.5-inch, mSATA, MO-297 and CompactFlash form factors, with storage capacities ranging from 128 megabytes (MB) to 400 GB.

The company also provides WD software applications, such as WD Photos and WD 2GO to the mobile computing market. The company's solutions are compatible with Apple's iOS, Google's Android and Microsoft's Windows Platforms.

The company markets its products and solutions through original equipment manufacturers (OEMs), distributors and retailers.





Page 2 of 9

On Sep 19, 2019, Western Digital inked a deal with DDN, a supplier of big data storage worldwide, to divest its IntelliFlash business in a bid to optimize Data Center Systems portfolio. Per the deal, both the companies have agreed on a multi-year strategic partnership wherein DDN will buy Western Digital's HDD and SSD storage devices.

Western Digital mainly competes with companies like Intel, Micron, Samsung Electronics Co. Ltd., Seagate Technology and Toshiba Corporation.

The company competes with other hard drive manufacturers with offerings in the desktop, notebook, enterprise computer, consumer electronic devices and external storage markets.

Western Digital reported revenues of \$16.57 billion in the fiscal 2019.

Geographically, Americas, Asia, and Europe and Middle East and Africa (EMEA), contributed 26%, 19% and 55%, respectively to fiscal 2019 revenues.

During fiscal 2019, about 45% of total revenue came from its top 10 customers.



Reasons To Buy:

▲ Western Digital has been active on the acquisition front. The Amplidata, sTec, Inc., Velobit, Inc. Arkeia Software Solutions and Virident Systems Inc. acquisitions have not only strengthened its small-to-medium sized business solutions but also expanded its SSD product portfolio. These strategic takeovers are expected to provide the company with a competitive edge. The acquisition of SanDisk has opened new avenues of growth for Western Digital and will help it boost market traction in the newer storage technology – SSD. The merger will lead to economies of scale, lower costs, greater market reach and acquisitions of new technologies, among other synergies. The company will also be able to offer competitive solutions in cloud-based computing, which has taken over digital storage solution space over the past couple of years. Notably, after completing the SanDisk acquisition, Western Digital posted year-over-year revenue growth for the first time in the past seven quarters.

The shift toward non-PC applications, secular growth of digital data and growing exposure to the SMBs space are expected to aid Western Digital in improving financial performance.

- ▲ With the acquisition of SanDisk, Western Digital has forayed into NAND products. NAND flash chips are critical for portable electronic devices. The improving prices for NAND chips make us optimistic about the company's near-term performance. As per various sources, NAND prices have improved primarily due to a better product mix optimization and stronger-than-expected demand for PCs, servers and mobiles. This can be further substantiated by the fact that HP, during its latest earnings conference, has hinted that there may be a shortage of DRAM and Flash memory chips. Any shortage in supply will push prices up, thereby boosting Western Digital's near-term results. Furthermore, the company is expected to benefit from strong demand for NAND flash memory chips, which is used in smartphones and tablets. Driven by new tablet products and greater adoption of solid state drive (SSD), total demand in the NAND flash memory industry could surpass manufacturing capacity, leading to a periodic shortage and higher pricing in the near term.
- ▲ Prominent storage players, like Western Digital have been expanding into the SSD storage market due to the decline in the PC market. SSDs are faster and more energy efficient than traditional hard drives. They also occupy less space making them more suitable for mobile computing devices. The emergence of thinner laptops and tablets over the past few years has created an ideal market for SSDs, which are therefore entering the higher end of the market. SSDs are also being used in servers due to the reduction in latency, which in turn facilitates faster response to real-time applications. E-Commerce and financial enterprises need quicker response time and thus data centers serving these clients are opting for SSDs. The secular growth of digital data, modest growth in the TAM and higher demand for storage will remain the growth catalysts for storage in general and especially for SSDs. This is what led TechNavio to project enterprise SSD market to grow at a CAGR of 17% during 2016–2020. The SSD segment's growth potential is a major positive for Western Digital because this could offset the losses stemming from the secular decline in the PC market, which does not necessarily use SSDs.
- ▲ The company is expected to get good mileage from its cloud-based business. Cloud-based storage has become the order of the day. Consumers are increasingly using software like Google Drive, Microsoft Skydrive, Dropbox and iCloud, which provide the convenience of accessing content through different gadgets such as smartphones, tablets and personal computers. The access to content on multiple devices is possible because the data is stored in the cloud. This in turn is pressuring the cloud servers, resulting in a growing need to make them more efficient. For this purpose, Western Digital is developing drives filled with helium that consume 23% less power while increasing the storage capacity by 40%. The company has expanded its My Cloud solutions with My Cloud EX4, a broader portfolio of network attached storage (NAS) hard drives. My Cloud EX4 enables users to manage huge volumes of digital data, which in turn helps them to store, organize and secure photos, videos, music and important documents from computers and mobile devices. My Cloud EX4 will help the company meet growing business needs with improved flexibility and security, and can be accessed through iOS and Android operating systems allowing users to access their files via smartphones or tablets. Given the massive increase in cloud activity, the company is expected to find a number of takers for these products.
- ▲ Western Digital generates solid cash flow, which allows management the opportunity to invest in product innovations, acquisitions and business development. At the same time, the company has historically returned significant cash through a combination of share repurchases and dividend to reward shareholders with risk-adjusted returns. Western Digital generated \$257 million in cash from operations second-quarter fiscal 2020 compared with \$253 million reported in the previous quarter. Free cash flow came in at \$377 million compared with \$294 million in the prior quarter. During the quarter, the company paid out dividends worth \$149 million. The company's ability to generate solid free cash flow is expected to help it sustain current dividend payout level, at least in the near term.

Reasons To Sell:

- ▼ Customer concentration is a major risk for Western Digital. During fiscal 2019, about 45% of total revenue came from its top 10 customers compared with 42% in fiscal 2018. The high level of customer concentration in a market with a few buyers and very low switching costs means that it is relatively easy to lose a customer. Moreover, the loss of a single order or customer affects the operating performance significantly. Therefore, the company is always under pressure to improve and maintain customer relations.
- Western Digital faces stiff competition from Seagate, Hitachi, Samsung and Intel in the storage market and from SSD pureplays such as SanDisk and Micron. The competition has resulted in a decline in the average selling price (ASP). Any decline in ASP will impact the results if shipments do not improve considerably.
- Customer concentration, leveraged balance sheet and stiff competition from other major storage players remain major concerns limiting the growth prospects of Western Digital.
- ▼ The disk drive market is highly competitive and has experienced drastic pricing pressure due to supply/demand volatility. In the near future, hard disk companies might be exposed to pressures as customers such as tablet PC makers choose flash cards for storage purposes instead of the customary hard disks. The situation may compel companies to cut hard disk prices, which may in turn hurt margins.
- ▼ PCs continue to be the biggest users of HDDs, and Western Digital still derives the bulk of its revenues from these devices. Per Gartner's preliminary data, PC shipments in first-quarter 2020 declined 12.3% year over year to 51.6 million units. Going by the IDC report, shipments were down 9.8% on a year-over-year basis and totaled 53.2 million in the period under review. A declining trend in PC shipments negatively impacted business prospects of Western Digital, which continues to depend substantially on PC sales.
- ▼ Western Digital has a leveraged balance sheet. As of Dec 31, 2019, net debt amounted to \$6.849 billion, compared with \$6.96 billion reported in the previous quarter. Moreover, debt-to-equity stands at 104.8% much higher than technology sector's 67.2%.

Last Earnings Report

Western Digital Q2 Earnings Top, Revenues Lag Estimates

Western Digital Corporation reported second-quarter fiscal 2020 non-GAAP earnings of 62 cents per share, which beat the Zacks Consensus Estimate by 10.7%. However, the figure declined 57.2% year over year.

Revenues of \$4.234 billion remained flat year over year.

Uncertain macroeconomic environment and softness in NAND flash pricing trends impacted year-over-year results.

Quarter Ending	12/2019		
Report Date	Jan 30, 2020		
Sales Surprise	0.49%		
EPS Surprise	10.71%		
Quarterly EPS	0.62		
Annual EPS (TTM)	1.30		

Segment Revenue Details

Client devices (42.4% of total revenues) declined 18.8% year over year to \$1.797 billion due to decrease in total addressable market (TAM) for notebook and desktop hard drives. However, the figure was up 11% sequentially due to increased demand for client Solid State Drive (SSD), Smart Video, Mobility and desktop hard drives.

Management noted that decline in revenues from Client Hard Disk Drive (HDD) and softness in flash pricing hurt the segment results.

Notably, Western Digital's SanDisk launched Smart Photo Manager, ibi capable of 1TB of storage for \$129.99 in the to-be reported quarter.

Additionally, Western Digital announced shipping of high-capacity HDD samples to enterprise OEMs and hyperscale customers worldwide. These include 20TB Ultrastar DC HC650 SMR HDDs and 18TB Ultrastar DC HC550 CMR HDDs.

Client solutions (22.4%) remained flat year over year at \$948 million. However, the figure increased 6% sequentially driven by strength in demand for hard drives and external SSDs.

Notably, the company continues to bear the brunt of unfavorable NAND flash pricing, which is currently on the decline thanks to oversupply and weaker-than-expected growth in end-market demand.

Data center devices and solutions (35.2%) jumped 38.6% year over year to \$1.489 billion, driven by rising demand witnessed for capacity enterprise drives and enterprise SSD. However, the figure was down 3% sequentially due to the company's exit from storage system business.

Other Metrics

The company shipped 29.2 million HDDs at an average selling price (ASP) of \$81. The reported shipments were lower than the year-ago figure by 3.3%.

On quarter-over-quarter basis, HDD Exabytes sales declined 1%. Flash exabytes sales increased 24%. Total exabytes sales (excluding non-memory products) improved 1% sequentially.

Considering revenues by product group, HDD revenues (56.6% of total revenues) increased 16.3% from the year-ago quarter to \$2.396 billion. Flash revenues (43.4%) fell 15.4% from the year-ago quarter to \$1.838 billion.

ASP/Gigabytes (excluding non-memory products) was down 8% sequentially.

Margins

Non-GAAP gross margin of 25.9% contracted 540 basis points (bps) on a year-over-year basis, while it expanded 110 bps sequentially.

The year-over-year decline can be attributed to softness in Flash pricing, which more than offset improvement in HDD gross margin. Notably, non-GAAP Flash gross margin was down to 19.5% from 35.1% reported in the year-ago quarter. Meanwhile, non-GAAP HDD gross margin expanded 340 bps year over year to 30.8%.

Non-GAAP operating expenses increased 3.7% from the year-ago quarter to \$765 million. Management remains focused on undertaking strict spending measures.

Non-GAAP operating income came in at \$333 million, which decreased 43.5% year over year. As a percentage of revenues, non-GAAP operating margin of 7.9% contracted 600 bps on a year-over-year basis.

Balance Sheet & Cash Flow

As of Dec 31, 2019, cash and cash equivalents were \$3.137 billion, down from \$3.248 billion reported at the end of the previous quarter.

Total debt (including current portion) was \$9.986 billion as of Dec 31, down from \$10.21 billion as of Oct 4, having repaid debt of \$388 million in the second quarter.

Western Digital generated \$257 million in cash from operations compared with \$253 million reported in the previous guarter.

Free cash flow came in at \$377 million compared with \$294 million in the prior quarter.

During the quarter, the company paid out dividends worth \$149 million.

On Nov 14, Western Digital's board of directors approved a cash dividend of 50 cents per share that was paid out on Jan 21.

Guidance

For third-quarter fiscal 2020, revenues are expected to be in the range of \$4.1-\$4.3 billion.

Non-GAAP gross margin is anticipated in the range of 28.5-29.5%.

Non-GAAP operating expenses are expected between \$740 million and \$760 million. Interest and other expenses are estimated between \$80 million and \$85 million.

Management projects non-GAAP earnings between 85 cents and \$1.05 per share.

From the Flash industry perspective, Western Digital revised estimates for bit supply growth at around low to 30% range in calendar 2020.

Recent News

On Mar 18, 2020, Western Digital announced that its Ultrastar Data60 and Ultrastar Data102 hybrid storage platforms have been adopted by Acronis to meet its storage capacity needs.

On Mar 17, 2020, it was announced that Quantum Corp. concluded the acquisition of Western Digital's ActiveScale business.

On Mar 5, 2020, Western Digital announced appointment of David Goeckeler as Chief Executive Officer and a member of the company's Board of Directors, effective Mar 9, 2020.

On Feb 13, 2020, Western Digital announced quarterly cash dividend of 50 cents per share, payable on Apr 17, 2020 to shareholders on record as on Apr 3, 2020.

On Feb 3, 2020, Western Digital announced a deal to divest ActiveScale business to Quantum Corp. The transaction is expected to conclude by Mar 31, 2020. Financial terms of the agreement have been kept under wraps.

On Jan 30, 2020, Western Digital unveiled its fifth-generation 3D NAND technology, BiCS5 built on triple-level-cell (TLC) and quad-level-cell (QLC) technologies. The company commenced initial production of BiCS5 TLC in a 512-gigabit (Gb) chip.

On Jan 6, 2020, Western Digital announced that it will unveil new product innovations in its storage solutions at CES 2020. The company will also demonstrate high capacity, sleek and portable SSD prototype.

Valuation

Western Digital shares are down 30.7% in the year-to-date period and 11.2% over the trailing 12-month period. Stocks in the Zacks sub-industry and Zacks Computer & Technology sector are down 24.5% and 5.2%, respectively, in the year-to-date period, respectively. Over the past year, the Zacks sub-industry is down 22%, while the sector is up 2.5%.

The S&P 500 index is down 11.5% in the year-to-date period and 2.2% in the past year.

The stock is currently trading at 7.7X forward 12-month earnings, which compares to 11.91X for the Zacks sub-industry, 22.15X for the Zacks sector and 20.21X for the S&P 500 index.

Over the past five years, the stock has traded as high as 30.07X and as low as 3.89X, with a 5-year median of 9.87X. Our Neutral recommendation indicates that the stock will perform in line with the market. Our \$48 price target reflects 8.58X forward 12-month earnings.

The table below shows summary valuation data for WDC

Valuation Multiples - WDC					
		Stock	Sub-Industry	Sector	S&P 500
	Current	7.7	11.91	22.15	20.21
P/E F12M	5-Year High	30.07	16.45	22.15	20.21
	5-Year Low	3.89	9.68	16.71	15.19
	5-Year Median	9.87	12.22	19.22	17.45
	Current	0.72	1.02	3.41	4.81
P/S F12M	5-Year High	1.55	1.43	3.59	4.81
	5-Year Low	0.47	0.82	2.32	2.54
	5-Year Median	1.06	1.16	3.09	3.01
	Current	9.14	9.66	11.07	10.37
EV/EBITDA TTM	5-Year High	12.98	13.19	12.85	12.87
	5-Year Low	1.8	2.77	7.56	8.27
	5-Year Median	5	5.48	10.61	10.78

As of 04/27/2020

Industry Analysis Zacks Industry Rank: Top 27% (68 out of 253) Industry ■ Price -110

Top Peers

Company (Ticker)	Rec	Rank
Netlist, Inc. (NLST)	Outperform	1
Intel Corporation (INTC)	Neutral	3
Micron Technology, Inc. (MU)	Neutral	3
NetApp, Inc. (NTAP)	Neutral	4
Pure Storage, Inc. (PSTG)	Neutral	3
Qumu Corporation (QUMU)	Neutral	3
Seagate Technology PLC (STX)	Neutral	3
Teradata Corporation (TDC)	Neutral	3

Industry Comparison Industry: Computer- Storage Devices			Industry Peers			
	WDC	X Industry	S&P 500	MU	NTAP	STX
Zacks Recommendation (Long Term)	Neutral	-	-	Neutral	Neutral	Neutra
Zacks Rank (Short Term)	3	-	-	3	4	3
VGM Score	С	-	-	В	A	Α
Market Cap	12.88 B	1.15 B	19.77 B	50.36 B	9.44 B	12.79 E
# of Analysts	7	7	14	9	9	7
Dividend Yield	4.64%	0.00%	2.13%	0.00%	4.50%	5.30%
Value Score	Α	-	-	Α	Α	В
Cash/Price	0.26	0.32	0.06	0.15	0.32	0.13
EV/EBITDA	9.49	5.18	12.09	3.84	5.18	7.15
PEG Ratio	7.11	1.45	2.36	2.09	0.90	8.13
Price/Book (P/B)	1.37	3.15	2.70	1.36	33.49	7.14
Price/Cash Flow (P/CF)	4.25	9.89	10.70	3.98	8.51	6.88
P/E (F1)	14.22	11.43	18.72	21.45	10.68	9.83
Price/Sales (P/S)	0.83	1.23	2.12	2.57	1.69	1.23
Earnings Yield	7.26%	6.08%	5.19%	4.66%	9.37%	10.18%
Debt/Equity	1.02	0.16	0.72	0.15	4.06	2.28
Cash Flow (\$/share)	10.15	0.07	7.01	11.36	5.02	7.12
Growth Score	D	-	-	D	C	С
Hist. EPS Growth (3-5 yrs)	-19.53%	-3.86%	10.88%	69.73%	26.08%	11.81%
Proj. EPS Growth (F1/F0)	-35.42%	12.76%	-5.87%	-66.75%	-11.53%	3.44%
Curr. Cash Flow Growth	-53.72%	-28.62%	5.92%	-35.35%	21.12%	-13.19%
Hist. Cash Flow Growth (3-5 yrs)	-1.49%	6.16%	8.55%	15.84%	2.57%	-6.14%
Current Ratio	1.92	1.49	1.23	2.74	1.20	1.49
Debt/Capital	50.44%	40.71%	43.90%	13.61%	80.25%	69.54%
Net Margin	-7.66%	-2.58%	11.32%	11.72%	18.19%	17.57%
Return on Equity	1.01%	0.46%	16.60%	7.16%	123.49%	62.81%
Sales/Assets	0.59	0.90	0.55	0.40	0.71	1.17
Proj. Sales Growth (F1/F0)	1.16%	0.00%	-1.15%	-14.73%	-11.87%	2.00%
Momentum Score	D	-	-	В	В	Α
Daily Price Chg	5.90%	0.82%	2.63%	2.54%	-0.84%	0.82%
1 Week Price Chg	-3.85%	1.57%	-1.74%	-3.37%	2.16%	-5.52%
4 Week Price Chg	-0.97%	4.86%	8.71%	1.71%	4.86%	-1.68%
12 Week Price Chg	-35.92%	-19.82%	-17.57%	-15.81%	-20.98%	-15.39%
52 Week Price Chg	-14.62%	-25.00%	-11.60%	7.53%	-41.42%	9.10%
20 Day Average Volume	5,437,525	352,634	2,734,148	27,133,114	1,999,533	2,652,871
(F1) EPS Est 1 week change	0.00%	0.00%	0.00%	0.00%	0.00%	1.07%
(F1) EPS Est 4 week change	-4.56%	-3.17%	-6.57%	0.00%	-1.89%	0.63%
(F1) EPS Est 12 week change	31.95%	-3.28%	-12.64%	-10.28%	-8.40%	1.84%
(Q1) EPS Est Mthly Chg	-5.03%	-3.16%	-10.33%	0.00%	-7.12%	2.67%

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.

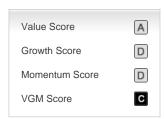
Zacks Rank

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.