

### Business Description

Richardson Electronics, Ltd. is a global provider of engineered solutions, serving the RF, Wireless, & Power Conversion; Electron Device; and Display Systems markets. The Company delivers engineered solutions for its customers' through product manufacturing, systems integration, prototype design and manufacture, testing and logistics.



NASDAQ: RELL  
 PRICE: \$2.75  
 December 11, 2008

### Stock Data

Price	\$2.75
52Wk High	\$7.35
52Wk Low	\$2.57
3mo. Daily Volume	40,000
Market Capitalization	\$49 Mil.
Shares Outstanding	18.1 Mil.
Dividend Yield	2.70%
Book Value	\$7.82
Net Debt-to-Total Capital	12%
EV-to-Sales	0.13

### Financial Data

	OLD	NEW	OLD	NEW
EPS	FY-09E	FY-09E	FY-10E	FY-10E
Q1-Aug	0.20A	.20A		
Q2-Nov	\$0.17	\$0.17		
Q3-Feb	\$0.16	\$0.15		
Q4-May	\$0.27	\$0.25		
FY-May	\$0.80	\$0.78	\$1.00	\$0.95
P/E		3.4		2.8
Revenue	\$590	\$578	\$616	\$601
% Chg	4%	2%	4%	4%
ROIC	10%	11%	12%	13%
Cash	\$40	\$40	\$40	\$40
Assets	\$308	\$310	\$327	\$325
Debt	\$56	\$60	\$56	\$55
Equity	\$155	\$150	\$172	\$168

Note: Figures in \$millions except per share data

**Mark Zinski**  
 414.431.8704  
 mzinski@tfcentury.com

Richardson differentiates itself from other electronics distributors on multiple fronts: 1) exclusive distribution agreements with suppliers 2) “engineered solutions” services which design and integrate electronic components in addition to supplying parts 3) successful in finding growing niche markets such as alternative energy, cellular infrastructure build-outs in China, digital signage, and induction energy applications.

Company has several cost-cutting initiatives underway including demand-shaping and headcount right-sizing. Management is targeting an SG&A percentage of sales of 21%.

Electronics wholesale industry has consistently been outperforming GDP and is highly productive relative to other wholesale industries.

**Deep value stock.** Stock is trading at 35% of Book Value.

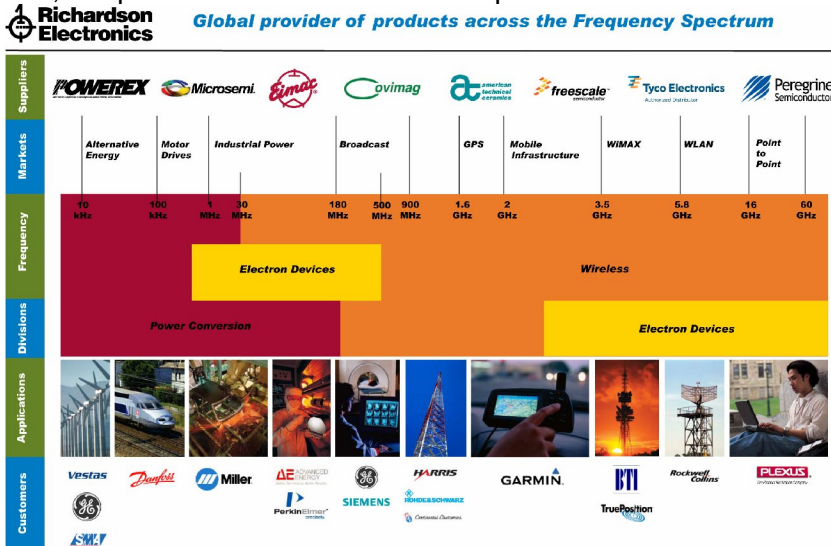
We are forecasting FY09 EPS of \$0.78 and FY10 EPS of \$0.95.



## Company History and Overview

Ed Richardson's father founded Richardson Electronics in 1947. Ed joined the company in 1961 when the company had three employees. He became chairman and CEO in 1974. There are now more than 900 employees worldwide. The company began as a distributor of tubes, including cathode ray, electron, and x-ray tubes. During most of the '70s and '80s, when many electron tube manufacturers were abandoning this business to focus on next-generation, solid state technology, Richardson built a business around this trailing-edge technology. Although the world was moving from electron tube to solid-state technology, Richardson believed the market was not changing as fast as the manufacturers believed it was. Therefore, as one of the only bidders for these businesses, Richardson consolidated this industry on the cheap and became the market share leader in manufacturing and distributing electron tubes. While Richardson has moved into higher growth technology products, the electron tube business still represents about \$100 million in sales annually or 18% of total revenue. The business carries comparatively higher gross margins than its other business segments and is a solid cash flow contributor. One major market for electron tubes is the broadcast industry, where most radio and television stations still use power grid tubes to broadcast their signals. Richardson sells replacement tubes to more than 10,000 broadcast stations globally. Management is using the strong cash flow of this business to move into faster-growth product categories such as RF and wireless components and flat-panel display systems. In fact, sales of products other than electron tubes increased as a percentage of sales from 57% in FY-98 to 82% in FY-08.

Today the company sells approximately 80,000 different products from 50 primary vendors and services over 100,000 active customers via 52 sales offices around the world. Several years ago Richardson transitioned from a product-driven approach to a market-focused strategy in order to further cross-sell its other high-technology products. In the previous organizational structure, as many as three or four different Richardson salespeople may have been calling on the same account. Each rep was selling a different product or service for the company. In the new structure, each salesperson is assigned accounts in a particular market segment and is responsible for cross-selling all strategic business units products into those accounts. The company owns or leases 64 facilities throughout NA, Europe, Latin America, and Asia. It maintains distribution centers in the US, Brazil, Netherlands, Singapore, and China. Through FY08 the company generated approximately 60% of its sales outside of North America, led by Asia Pacific (30%), Europe (27%), and Latin America (3%). The company currently employs about 930 employees worldwide. The company maintains a database of over 940,000 part numbers. It is able to ship more than 80% of its orders the same or next day.



## RF & Wireless and Power Division

The company's RFPD (Radio Frequency Power Division) business unit now comprises roughly 66% of sales. This division's engineers work with customers to design circuits in addition to facilitating prototype testing and assembly. These value-added services, or "engineered solutions", essentially provide the proverbial foot in the door with the customers' design team. The accompanying expertise ultimately results in the selection of electronic components for jobs and products which Richardson supplies via its distribution business. The RFPD division is focused on three areas of wireless technology: wireless networks, wireless infrastructure, and power conversion. Wireless networks consist of short-range interconnections for the home and office. Wireless infrastructure pertains to the physical equipment involved in the transmission of RF signals, like cell towers and base stations for instance. In addition, repeater networks, pico cells, and micro cells have become a major part of the infrastructure business. The power conversion area includes products involved in AC/DC and DC/AC conversions as well as inverter applications for alternative energy. These products are also involved in heat induction processes for industrial processes such as welding.

The actual components themselves are classified as either "passive" or "active". Passive components consume energy vs. producing energy and do not require an external power source. Resistors and capacitors are the two most common types and accomplish the "transmit" and "receive" functions. Active components, conversely, require a power source. These components include transistors, integrated circuits, mixers, switches, amplifiers, oscillators, and RF diodes. Active components are used in such applications as broadcast, cable TV, cellular and personal communications, telephony, satellites, and wide area local networks. Richardson's major suppliers in this segment include ANADIGICS, Advanced Power Technologies, Aavid, Anaren, ATC, Cornell-Dubilier, Freescale, HUBER&SUHNER, M/A-COM, Peregrine, Vishay, and Wakefield, as well as many niche RF and wireless suppliers, resulting in one of the most comprehensive RF and wireless resources in the industry. It is important to note that these components relate to systems and infrastructure in the wireless industry vs. consumer or subscriber products.

The company has successfully tapped into some growing niche markets within the RF industry. The company reported a 20% yoy increase for its infrastructure products in the last fiscal quarter.

### RFPD Sales (in millions)

	FY09-Q1	% Increase	FY08-Q1	
Network Access	\$36.2	12.4%	\$32.2	
Infrastructure	\$26.2	20.2%	\$21.8	
Power Conversion	\$15.1	18.9%	\$12.7	
Passive Interconnect	\$15.2	9.4%	\$13.9	
Other	\$4.2	13.5%	\$3.7	
<b>Total</b>	<b>\$96.9</b>	<b>14.9%</b>	<b>\$84.3</b>	

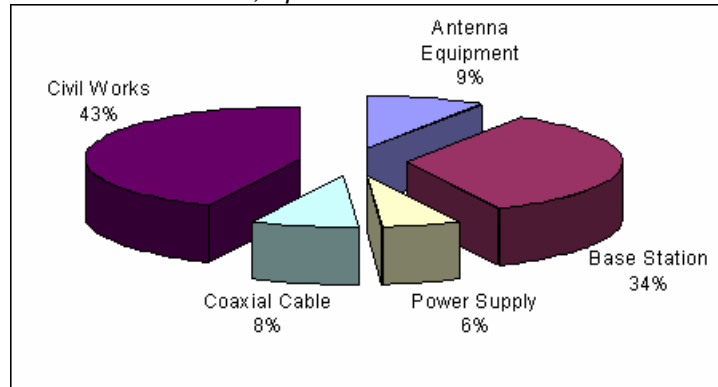
	FY09-Q1	% Sales	FY08-Q1	% Sales
Gross Margin	\$20.9	21.6%	\$20.4	24.2%

This product line is benefiting from the phase 2 roll-out of TD-SCDMA (Time Division-Synchronous Code Division Multiple Access) in China which requires the construction of cell sites, or base stations. The construction costs for these stations typically range from \$200,000-\$400,000 and require extensive electrical components in the form of amplifiers, antennas, receivers, and transmitters for converting radio signals to electric signals. The TD-SCDMA cap ex cycle is expected to begin waning in the third quarter. However, cap ex spending for "wideband", WD-SCMA, is expected to begin in China in late

calendar 2009. The cap ex spending cycle will require similar electrical components. Globally, cellular base station growth is forecasted at a CAGR of 6.5%<sup>1</sup> through 2013.

## Cell Site Cost Distribution

Source: PowerWave, April 2005



China Telecom, which recently acquired the cellular network from China Unicom, has announced that it is planning on investing nearly \$12 billion<sup>2</sup> to upgrade the network.

The company's power conversion product line has also found success in niche markets. The product line grew 18.9% yoy, benefiting from sales into the alternative energy market in Asia/Pacific and North America, specifically the U.S. and Japan. These are typically inverter components for generators which convert wind or solar power into electrical energy for the grid. We believe China also represents a strong market opportunity. Growth of wind power in China has been robust. The government enacted a renewable energy law in 2005 and has provided ongoing tax incentives, subsidies, and pricing regulation to foster the continued growth of wind power. In 2007 the country had 3GW (Giga Watt) of wind turbine manufacturing capacity. This is expected to double in 2008 with further capacity expected to reach 10-15 GW by 2012<sup>3</sup>. Additionally, alternative energy tax credits in the U.S. have been renewed via the latest stimulus bill and are historically related to increased alternative energy investment spending.

The power conversion product line is also benefiting from the trend in induction heating, especially in China. Induction heating is typically applied in welding and steel applications with induction coils stimulated by RF waves. The ensuing heating process is more uniform and is ideal for welding the seams in pipes, also typically resulting in lower consumable costs. Both pre-heating and post-heating applications are also becoming more common as a mechanism for increased energy efficiency to defray increased energy costs. Approximately 54%<sup>4</sup> of the steel consumption in China in 2006 stemmed from the construction industry while 6% originated from the auto industry. Ship and machinery equipment manufacturing are the other primary consumers.

<sup>1</sup> ABI Research

<sup>2</sup> DataMonitor

<sup>3</sup> China Renewable Energy Industries Association

<sup>4</sup> RNCOS

## Typical Applications for Air-Cooled Induction Heating Systems

### On-Shore Transmission Pipelines

- Provides uniform heating around the circumference of higher strength pipe.
- Maintains temperature on large diameter, thick wall pipe where heat input from process cannot maintain minimum interpass temperature.
- Eliminates propane costs.

### Off-Shore Transmission Pipelines (Barge)

- Provides uniform heating around the circumference of higher strength pipe.
- Provides rapid time-to-temperature.
- Eliminates propane costs, storage and transportation.
- Eliminates open flame safety hazard on barge.

### Ship Building

- Provides uniform rapid heating in plate applications.
- Multiple outputs and up to 4 blankets can heat long joints with minimum machines.
- Provides a safer, friendlier work environment for welders and operators. Personnel are not exposed to open flame, explosive gases or hot heating elements.
- Power efficient compared to resistance heating.

### Mining

- Provides uniform heating on high hardness material to prevent cracking.
- Increases productivity by improving welder environment and maintains temperature.
- Multiple outputs and up to 4 blankets can heat long joints with minimum machines.
- Eliminates propane costs.

## EDG-Electron Device Group

The company has maintained its EDG business even though it is predicated upon trailing edge technology. These vacuum tube products utilize thin gases to conduct electricity and are most notably associated with CRT (cathode ray tubes) monitors. Vacuum tubes were ultimately supplanted by the modern day semiconductor but Richardson anticipated that vacuum tubes would still play a viable role, though a more limited one. Common products include magnetrons, hydrogen thyratrons, ignitrons, and oscillator tubes. Vacuum tubes are still employed at the industrial level and exhibit superior operating performance to semiconductors in some circumstances. Vacuum tubes excel at applications which require high power and high frequency for shorter run times. The steel, automotive, textile, plastics, semiconductor manufacturing, and broadcast industries employ this technology. Laser and radar equipment also rely on the technology.

The company expects this unit to potentially post modest annual revenue declines due in large part to the trailing technology condition as well as the analog to digital conversion in the broadcast industry. The slumping semiconductor fabrication industry is also impacting this segment. The EDG segment garners higher gross margins, however, and is a consistent cash flow generator for the company. The company operates this segment as an MRO business and judiciously applies resources. It employs only a few engineers in the field. The company maintains a database of customers with predictable re-order patterns. Vacuum tubes within the broadcast industry, for example, typically need to be replaced after 5,000 hours of use. Inside sales personnel can chart estimated usage by customers and make sales calls near the estimated replacement date. The company's primary suppliers are Amperex, CPI, Draloric, Eimac, General Electric, Hitachi, Jennings, Litton, L3, National, NJRC, and Thales. The company's small manufacturing operations are primarily involved in the EDG product lines.

## DSG-Display Systems Group

DSG, recently re-branded as Canvys, has been transforming from a more commoditized, regional business into a global value-added integrator and manufacturer, specializing in creating comprehensive visual technology solutions for healthcare, Original Equipment Manufacturers (OEMs) and digital signage applications. The Company restructured this segment in Q3, FY08, eliminating more than 30

positions with estimated annual savings in excess of \$3M—nearly 20% of the division’s total SG&A. Most recently the division has been suffering from a decline in sales due to competitive activity from low margin medical monitor distributors.

Canvys’ collaborative approach allows the division to evaluate each customer’s unique needs and craft the right solution—custom-engineered, value-added outsourced, or modified off-the-shelf. In addition, Canvys provides complete post-sale service and support, including installation, maintenance, troubleshooting, calibration and conformance.

Canvys will continue to leverage its strong relationships with leading component and finished-goods manufacturers worldwide. These hardware and software partnerships allow Canvys to maintain a “vendor-agnostic” approach, which enables the utilization of virtually any product or technology to craft the best solution for each customer’s requirements. Primary suppliers include: 3M, AUO, CMO, Eizo, Fimi Philips, HP, IBM, Intel, LG, NEC Displays, Planar Systems, Sharp Electronics, Samsung and WIDE Corporation.

Canvys segments its business into three core areas: Custom/OEM, Healthcare and Digital Signage. As a leader in custom visual technologies, Canvys is able to help Original Equipment Manufacturers (OEMs) meet the rapidly evolving needs of their customers. The division has vast experience in engineering partial and fully customized solutions for applications in:

- Automation / Industrial
- Gaming / Casino
- Military / Defense
- POI / Kiosk
- POS / Cashier
- Security / Surveillance
- Transportation

In addition, the team has extensive knowledge of current and emerging technologies, enabling it to meet virtually any solution requirement — from integrating capacitive touch screens to ruggedized, sunlight-readable displays.

For everything from patient diagnosis, treatment and monitoring to facility administration, advanced visual technology has become an integral part of today’s healthcare industry. As a longtime provider of healthcare solutions, Canvys has the expertise to deliver advanced display systems. The Healthcare team specializes in creating comprehensive solutions for diagnostic and clinical review, 3-D and post processing, surgical suites and modality-specific applications. All solutions meet the most critical agency certifications and calibration standards for patient monitoring, bio-medical displays, ultrasound, cardiac imaging and PACS.

Healthcare services include:

- On-site facility audits to determine unique needs
- Custom engineering and system integration
- Hardware installation
- Management and maintenance of a system throughout its lifecycle

- Component hot-swapping
- On-site user training and calibration

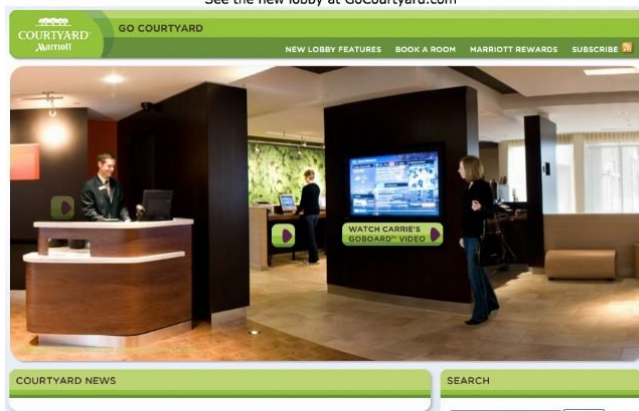
The company's precise exposure to the capital expenditure vagaries of hospitals is unclear. Certainly "big ticket" items are more sensitive to budget cuts, but the company's products do not meet that criteria. Additionally, the size of the hospital and the aging of the present equipment also factor into decisions. Smaller hospitals generally have much older equipment and may be more inclined to upgrade out of necessity and competitiveness. A survey conducted by IMV Medical Information in July of 2008 found that radiology departments in hospitals with 100-199 beds are planning on increasing cap ex spending by 32%<sup>5</sup> in 2009. For hospitals with fewer than 100 beds radiology departments were planning cap ex spending increases of 28%. MRI equipment and CT scanners were the most popular choices for increased spending. Please note that the study was conducted prior to the recent economic slowdown. Lastly, certain departments within hospitals gravitate to the higher levels of preferential hierarchy. For example, cardiac, oncology, molecular diagnostics, and critical care are generally regarded as areas which are more insulated from budget cuts.

Canvys' advanced digital signage systems make it possible to deliver constantly changing information in real time. Controlled from a central workstation, solutions combine full-motion video, photos, text and animation to target and engage the right audiences.

Canvys has developed systems for: healthcare facilities; Auto manufacturers and dealerships; Colleges and universities; Office / hotel / residence lobbies; Quick service restaurants; entertainment venues; Shopping malls; and food chains. Canvys can manage every aspect of a signage solution — from engineering and manufacturing components to installing and maintaining them. The division is more nimble than other digital signage companies, capable of delivering systems in a matter of months - not years.

Custom LCD displays are primarily interactive, touch-screen digital information boards which display information for public use. The "Go Board" found in the lobbies of Marriot hotels is one example. Consumers can find information for restaurants, shopping malls, public transportation, etc., which are in the surrounding area. These boards also flash weather, financial, and other current events information on 5-foot tall LCD touch screens. The company's services integrate hardware and software solutions for the client. It is important to note that the success of this business is not reliant upon advertising dollars.

See the new lobby at [GoCourtyard.com](http://GoCourtyard.com)



---

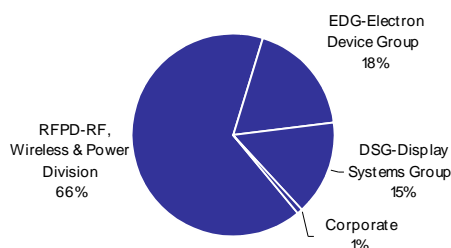
<sup>5</sup> [Healthcaretechguide.com](http://Healthcaretechguide.com)

The table below depicts recent YOY financial performance for DSG. Sales declined as the company deliberately declined potential sales which carried low margins. The positive consequence of this demand shaping was the marked improvement in gross margin. The company expects that sales will eventually return to prior levels.

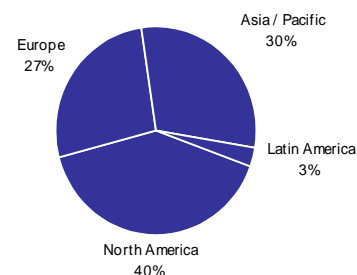
## DSG Sales (in millions)

	FY09-Q1	% Increase	FY08-Q1
Sales	\$17.1	-4.5%	\$17.9
Gross Margin	\$4.3		\$3.8
% of sales	25.1%		21.2%

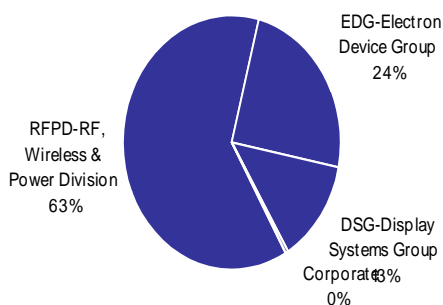
Revenue by Segment  
As of FY08



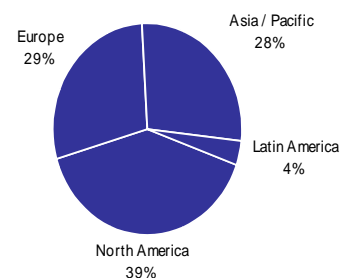
Revenue by Geography  
As of FY08



Gross Margin Contribution by Segment  
As of FY08



Gross Margin Contribution by Geography  
As of FY08

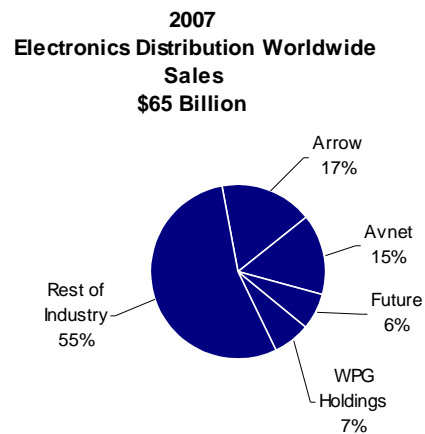
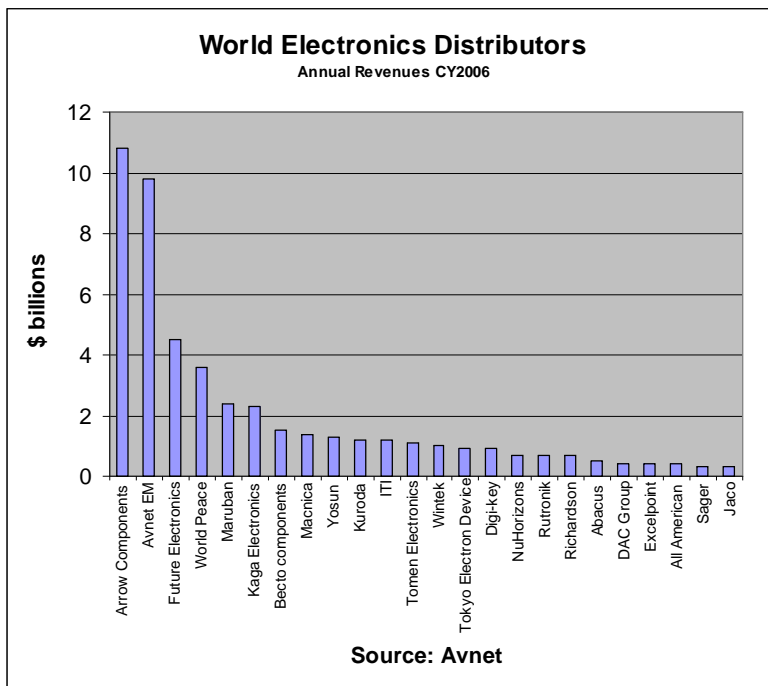


(in millions)	FY-08	YOY % Increase	FY-07	YOY % Increase	FY-06	YOY % Increase	FY-05
<b>Revenue by Segment</b>							
RFPD-RF, Wireless & Power Division	\$376.2	1.7%	\$369.9	10.7%	\$334.1	12.8%	\$296.3
EDG-Electron Device Group	\$103.2	2.0%	\$101.2	7.2%	\$94.4	2.4%	\$92.2
DSG-Display Systems Group	\$84.7	3.2%	\$82.1	-13.7%	\$95.1	21.8%	\$78.1
Corporate	\$4.3	4.9%	\$4.1	-25.5%	\$5.5	-16.7%	\$6.6
<b>Total</b>	<b>\$568.4</b>	<b>2.0%</b>	<b>\$557.3</b>	<b>5.3%</b>	<b>\$529.1</b>	<b>11.8%</b>	<b>\$473.2</b>



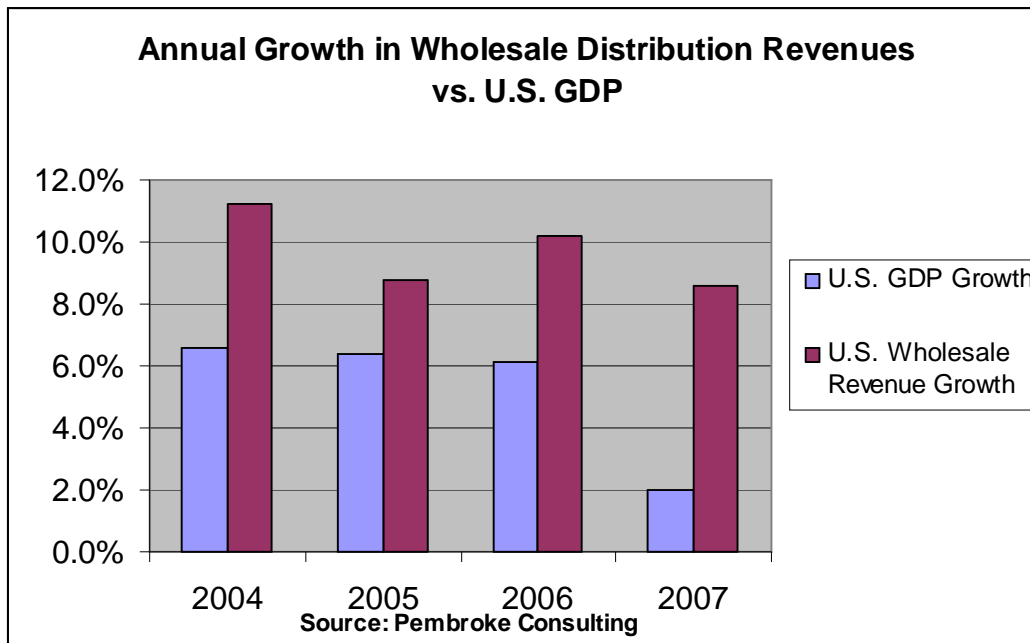
## Industry

The world electronics distribution industry is dominated by a few players. Four major players comprise roughly 45% of the industry with a multitude of smaller companies. Consolidation remains an ongoing trend. The major players are less dominant in the China market, with market share percentages substantially lower than in the North American market. The major players are typically more concentrated in products for the computer, semiconductor, and EMS industries. Additionally, these companies have also incorporated more “value-added” services into their customer offerings including more logistics-oriented services for major OEM customers. Experience in handling and shipping delicate electronic components is a strategic advantage over mainstream third-party logistics providers.



## Wholesale Industry Has Been Consistently Outperforming GDP

The U.S. wholesale industry has performed comparatively better than overall GDP growth over the past four years. Relative to other industries within the wholesale space, electronics wholesalers have performed especially well.



\*Please note that the wholesale revenue growth numbers are somewhat skewed due to recent commodity price inflation, particularly in the oil and gas and agricultural sectors.

	Real Revenues* (2007)	Actual Revenues (2007)
Computer Equipment and Software Wholesale Distributors	21.8%	10.3%
<b>Electrical and Electronics Wholesalers</b>	<b>8.6%</b>	<b>8.3%</b>
Grocery and Foodservice Wholesale Distributors	6.3%	13.2%
Oil and Gas Products Wholesale Distributors	5.0%	16.9%
Beer, Wine and Liquor Wholesalers	4.8%	7.9%
Chemicals and Plastics Wholesale Distributors	4.8%	7.9%
Commercial Equipment and Supplies Wholesale Distributors	4.4%	5.8%
Industrial Distributors	4.0%	7.8%
Apparel and Piece Goods Wholesale Distributors	3.8%	4.8%
Agricultural Products Wholesale Distributors	3.6%	40.1%
Furniture and Home Furnishing Wholesale Distributors	3.4%	5.3%
Miscellaneous Durable Goods Wholesale Distributors	1.6%	10.6%
Motor Vehicles and Motor Vehicle Parts Wholesale Distributors	0.8%	1.4%
Pharmaceutical Wholesalers	0.6%	3.7%
Other Consumer Products Wholesale Distributors	-0.4%	8.5%
Hardware, Plumbing, and Heating Equipment/Supplies Wholesalers	-1.6%	3.6%
Office Product Wholesalers and Paper Merchants	-2.3%	1.2%
Metal Service Centers	-4.2%	4.4%
Building Material and Construction Wholesale Distributors	-11.2%	-12.9%

\*Adjusted for product inflation

Source: 2008 Wholesale Distribution Economic Report

The essence of wholesaling is to balance product demand uncertainty with fixed cost allocation. Wholesalers typically maintain a hyper sensitivity to cost-cutting measures and efficiency improvements. The electronics wholesale industry has proven itself to be relatively more adept at controlling costs and maintaining productivity. Wholesalers have also benefited from the advances in internet technology which enables customers to perform more self-service functions. The number of orders received electronically versus phone or fax has increased substantially in recent years.

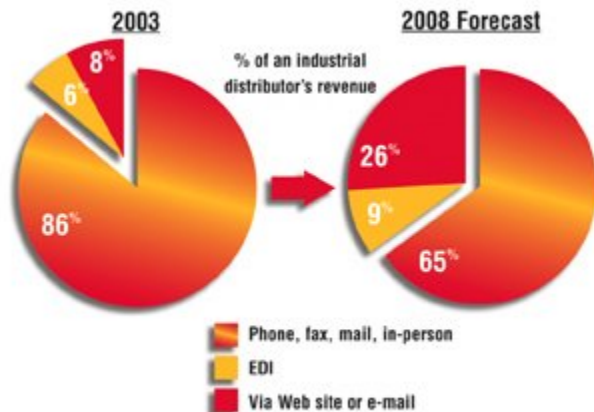


Exhibit 1

## CONTRIBUTION TO TOTAL PRODUCTIVITY GROWTH IN WHOLESALE, 2001-2005

Sub-sector (by major product type)	Contribution	% of total growth
Computer hardware and software	1.61%	27.80%
Motor vehicles and motor vehicle parts	0.84%	14.50%
<b>Electrical products and electronics</b>	<b>0.78%</b>	<b>13.60%</b>
Pharmaceuticals	0.74%	12.80%
Industrial products	0.48%	8.30%
Commercial equipment and supplies	0.42%	7.30%
Office products and paper	0.21%	3.60%
Apparel and piece goods	0.16%	2.80%
Other consumer products	0.15%	2.60%
Miscellaneous durable goods	0.11%	2.00%
Metals	0.10%	1.80%
Furniture and home furnishings	0.09%	1.60%
Building materials	0.08%	1.40%
Oil and gas products	0.03%	0.50%
Agricultural products	0.01%	0.20%
Chemicals and plastics	0.00%	0.00%
Hardware, plumbing and heating equipment and supplies	-0.01%	-0.10%
Beer, wine and liquor	-0.01%	-0.20%
Grocery and foodservice	-0.03%	-0.50%
Average Annual Growth in Wholesale Trade, 2001-2005	5.80%	100.00%

Source: Pembroke Consulting

## **Risks**

### **Foreign Currency Exposure**

The company's extensive international business makes it susceptible to foreign currency fluctuations, especially the Euro of late. The company records both sales and expenses in foreign currencies. A strengthening U.S. dollar generally has a negative impact on sales and margins. The company recorded a foreign currency gain in the quarter ending August 31, 2008.

### **Macro-Economic Sensitivity**

The company can be vulnerable to downturns in the overall economy. Thus far its most acute exposure is its semiconductor fabrication equipment products. Though not a significant portion of its overall business, this slowing subset of the semiconductor industry has been in decline in recent years and impacts the overall performance of the company's EDG business segment. Additionally, the company may be subject to delayed capital spending and push-outs of projects related to its telecommunications customers.

### **Significant Inventory Balances**

The company continuously maintains high levels of inventory. If the company mismanages inventory by overestimating demand, the company could be forced to sell inventory at discounted prices which will negatively impact operating results. Conversely, if the company fails to stock appropriate levels it may lose market share to competitors.

### **Single Stockholder With Significant Share Ownership**

Edward J. Richardson, President, CEO, and Chairman, owns 99% of the Class B common stock. His total stock ownership enables voting power over 67% of the common stock. This voting power allows Mr. Richardson to exert control over most of the major corporate decisions that are voted upon.

## **Financial Analysis**

The company guided for Q2-FY09 revenue of \$140-\$145 million and FY09 back-half growth of 3-4% following its Q1 earnings announcement in early October. Please note that the world financial crisis has escalated since the company's latest guidance. However, the company remains committed to carefully monitoring its cost structure and cash position during the economic slowdown.

In terms of sales, the China infrastructure project will contribute meaningfully to sales in Q2 but diminish in the back-half of the fiscal year as TD-SCMA projects wind down. WD-SCMA projects in China are expected to begin in late 2009 and should provide a replacement revenue stream. The EDG and DSG segments are expected to post modest revenue decreases yoy. While DSG sales may decline due to demand shaping, gross margin is expected to continue yoy improvement as the company foregoes lower margin sales. Our FY10 revenue estimate assumes a general rebound in the economy.

Management's stated goal for SG&A is 21% or lower for FY09. Assumed in this estimate are ongoing severance costs and incremental IT expenses related to the company's Web upgrade. Headcount currently stands at 920 but may be further reduced to around 900 in FY09. Foreign currency effects remain an unpredictable contributor to EPS. The company expects gross margin to improve sequentially as product mix changes. The company has been demonstrating disciplined working capital management. Inventory turns increased from 4.5 to 5.4 yoy in the latest quarter. The company offers internal financial incentives for working capital performance. We are forecasting FY09 EPS of \$.78 and FY10 EPS of \$.95. We have assumed greater shares outstanding than our previous forecasts. We maintain that the inherent strength in the business model is its adaptability capability. The company is

quickly able to alter its cost structures. Additionally, it can pursue growing market niches with little start-up resistance.

The company's current long-term debt balance is \$55.6 million. The debt consists of one convertible subordinated senior note for \$44.6 million due December 2011 carrying an interest rate of 7.75%. The other portion of long-term debt is another convertible subordinated senior note for \$11 million at 8% with a due date of June 2011. The company also maintains revolving credit facilities in the U.S., Europe, and Singapore for a total of \$40 million in available credit. Interest is calculated based on the LIBOR plus a premium.

### **Valuation**

The stock is trading at a discount to its peers based on the following valuation metrics: EV/Sales, Price/Book value, and calendar 2009 PE. The company's gross margin is comparatively higher than the peer group but its operating margin is lower. The members of the peer group generally generate substantially higher revenues and hence achieve greater economies.

### **Disclaimers & Disclosures**

Information, opinions, or recommendations contained in the reports and updates are submitted solely for advisory and information purposes. The reports and updates are not intended to be construed as an offering or a solicitation of an offer to buy or sell the securities mentioned or discussed. The factual statements in the reports and updates have been taken from generally recognized public sources believed reliable but such statements of fact have not been independently verified and are made without any representation as to accuracy, completeness, or otherwise. The research, analysis, financial projections, and opinions expressed in the reports and updates are those of the analyst and are subject to change without notice. Additionally, the information in this report may become outdated and there is no obligation to update any information contained in this report. 21<sup>st</sup>. Century Equity Research and the covering analyst receive cash compensation for research coverage directly from the subject company. The subject company has the opportunity to review the reports and updates for historical factual accuracy, but has no influence over the analysis, financial projections, or opinions made by the analyst.

**Peer Group Comparison**  
(in thousands)

Ticker	Name	Price	Sales	Sales Per Employee	GM%	OM%	NM%	ROE	ROA	Net Debt Ratio	A/R Turns	Inv Turns	A/P Turns	Days in Sales	Days in Inv	Days in Pur	Cash Conv Cycle	EV / Sales	EV / EBITDA	P/BV	P/E	P/E- CY08E	P/E- CY09E
ARW	Arrow Electronics	\$15.38	\$17,090,264	\$1,356	13.9%	3.7%	2.2%	10.9%	4.9%	20.9%	5.5	8.6	5.7	66.0	44.1	71.5	38.6	0.16	3.9	0.5	5.1	5.2	7.0
AVT	Avnet	\$14.93	\$14,348,439	\$1,121	16.5%	4.9%	3.4%	13.6%	6.6%	16.3%	4.5	6.4	5.1	83.5	58.2	80.9	60.8	0.21	4.0	0.6	4.7	5.1	5.7
WCC	Wesco International Inc.	\$17.33	\$6,170,228	\$845	5.1%	6.0%	3.8%	40.5%	8.1%	43.3%	6.7	9.0	8.2	55.5	40.8	46.3	50.0	0.21	3.2	1.0	3.3	3.4	4.2
NUHC	NuHorizons Electronics	\$1.26	\$763,232	\$1,090	15.9%	0.7%	0.2%	0.9%	0.5%	27.1%	5.4	4.8	8.3	70.2	77.5	50.8	96.9	0.11	11.7	0.2	15.8	8.4	3.3
	<b>Median</b>		<b>\$10,259,334</b>	<b>\$1,106</b>	<b>14.9%</b>	<b>4.3%</b>	<b>2.8%</b>	<b>12.2%</b>	<b>5.7%</b>	<b>24.0%</b>	<b>5.5</b>	<b>7.5</b>	<b>7.0</b>	<b>68.1</b>	<b>51.1</b>	<b>61.2</b>	<b>55.4</b>	<b>0.19</b>	<b>3.9</b>	<b>0.5</b>	<b>4.9</b>	<b>5.2</b>	<b>4.9</b>
RELL	Richardson Electronics	\$2.75	\$577,900	\$628	23.0%	2.1%	-0.8%	-3.2%	-1.5%	11.7%	5.6	4.1	6.1	68.2	82.1	67.4	82.9	0.12	4.0	0.4	NA	NA	3.1

Note: All figures based on trailing 12-months, except P/E-08 and PE/-09 based on consensus estimates  
Prices as of 12/10/08

Income Statement (in millions)	2007	Q1-08	Q2-08	Q3-08	Q4-08	2008	Q1-09	Q2-09E	Q3-09E	Q4-09E	2009E	2010E
Sales	\$557.3	\$129.5	\$145.0	\$138.9	\$155.1	\$568.4	\$138.9	\$142.5	\$140.0	\$156.6	\$578.0	\$601.0
COGS	\$424.9	\$96.8	\$111.2	\$107.6	\$117.2	\$432.8	\$106.2	\$108.7	\$106.6	\$119.0	\$440.6	\$455.6
Gross Profit	\$132.4	\$32.6	\$33.8	\$31.2	\$37.9	\$135.6	\$32.7	\$33.8	\$33.3	\$37.6	\$137.4	\$145.4
Operating Expenses	\$124.6	\$30.0	\$31.3	\$31.9	\$32.1	\$125.4	\$28.3	\$29.2	\$29.0	\$31.0	\$117.5	\$120.2
EBIT	\$7.8	\$2.7	\$2.5	(\$0.7)	\$5.8	\$10.2	\$4.5	\$4.6	\$4.3	\$6.6	\$19.9	\$25.2
Interest Expense, Net	\$5.3	\$2.7	\$1.6	\$1.4	\$1.2	\$6.9	\$1.2	\$1.2	\$1.2	\$1.2	\$4.8	\$4.8
Other Expense, Net	\$0.4	\$0.1	\$1.1	(\$0.2)	\$11.1	\$12.0	(\$1.3)	(\$0.3)	(\$0.3)	(\$0.3)	(\$2.2)	(\$1.2)
Pretax Income	\$2.2	(\$0.1)	(\$0.2)	(\$1.9)	(\$6.5)	(\$8.7)	\$4.6	\$3.7	\$3.4	\$5.7	\$17.3	\$21.6
Income Tax	\$0.6	\$0.3	\$0.5	\$0.3	(\$1.3)	(\$0.2)	\$0.9	\$0.6	\$0.6	\$0.9	\$3.0	\$3.7
Net Income	\$1.5	(\$0.4)	(\$0.7)	(\$2.2)	(\$5.2)	(\$8.5)	\$3.7	\$3.0	\$2.8	\$4.8	\$14.4	\$18.0
Shares Outstanding-Diluted	17.7	17.9	17.8	17.9	17.7	17.8	18.1	18.4	18.7	19.0	18.6	19.0
EPS - Diluted	\$0.09	(\$0.02)	(\$0.04)	(\$0.12)	(\$0.30)	(\$0.48)	\$0.20	\$0.17	\$0.15	\$0.25	\$0.78	\$0.95
Dividend per Share	\$0.16	\$0.04	\$0.04	\$0.02	\$0.02	\$0.12	\$0.02	\$0.02	\$0.02	\$0.02	\$0.08	\$0.08
<b>% of Sales</b>												
Sales	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
COGS	76.2%	74.8%	76.7%	77.5%	75.6%	76.1%	76.5%	76.3%	76.2%	76.0%	76.2%	75.8%
Gross Profit	23.8%	25.2%	23.3%	22.5%	24.4%	23.9%	23.5%	23.7%	23.8%	24.0%	23.8%	24.2%
Operating Expenses	22.4%	23.1%	21.6%	23.0%	20.7%	22.1%	20.3%	20.5%	20.7%	19.8%	20.3%	20.0%
EBIT	1.4%	2.1%	1.7%	-0.5%	3.7%	1.8%	3.2%	3.2%	3.1%	4.2%	3.4%	4.2%
Interest Expense, Net	0.9%	2.1%	1.1%	1.0%	0.8%	1.2%	0.8%	0.8%	0.9%	0.8%	0.8%	0.8%
Other Expense, Net	0.1%	0.1%	0.7%	-0.1%	7.1%	2.1%	-0.9%	-0.2%	-0.2%	-0.2%	-0.4%	-0.2%
Pretax Income	0.4%	-0.1%	-0.1%	-1.4%	-4.2%	-1.5%	3.3%	2.6%	2.5%	3.6%	3.0%	3.6%
Income Tax Rate	29.1%	-413.2%	-214.8%	-14.1%	19.4%	2.5%	19.1%	17.0%	18.0%	15.0%	17.1%	17.0%
Net Income	0.3%	-0.3%	-0.5%	-1.6%	-3.4%	-1.5%	2.7%	2.1%	2.0%	3.1%	2.5%	3.0%
<b>Revenue by Segment</b>												
RF, Wireless & Power Division	\$369.9	\$84.3	\$95.5	\$93.4	\$103.0	\$376.2	\$96.9	\$98.4	\$94.8	\$105.1	\$395.1	\$413.6
Electron Device Group	\$101.2	\$24.6	\$27.4	\$24.8	\$26.5	\$103.3	\$25.1	\$24.6	\$24.8	\$26.5	\$101.0	\$103.0
Display Systems Group	\$82.1	\$19.4	\$20.9	\$19.6	\$24.8	\$84.7	\$17.1	\$18.8	\$19.6	\$24.3	\$79.8	\$82.2
Corporate	\$4.1	\$1.2	\$1.2	\$1.0	\$0.8	\$4.3	(\$0.1)	\$0.7	\$0.7	\$0.8	\$2.2	\$2.3
Total	\$557.3	\$129.5	\$145.0	\$138.9	\$155.1	\$568.4	\$138.9	\$142.5	\$140.0	\$156.6	\$578.0	\$601.0
<b>Revenue Growth (Year / Year)</b>												
Total	NA	NA	NA	NA	NA	2.0%	7.3%	-1.7%	0.8%	1.0%	1.7%	4.0%

Fiscal Year End - May

(\$ in millions, except per share data)

\* Sold Security Systems Division in FY-07

Balance Sheet	2007	Q1-08	Q2-08	Q3-08	Q4-08	2008	Q1-09	Q2-09E	Q3-09E	Q4-09E	2009E	2010E
<b>Assets</b>												
Cash	\$79.3	\$21.8	\$20.2	\$30.5	\$40.0	\$40.0	\$37.1	\$39.9	\$39.2	\$37.6	\$37.6	\$39.1
Accounts Receivable	\$105.7	\$97.3	\$104.3	\$104.5	\$109.5	\$109.5	\$105.8	\$104.9	\$104.6	\$113.6	\$113.6	\$118.6
Inventories	\$110.2	\$118.1	\$115.8	\$107.4	\$93.9	\$93.9	\$100.1	\$99.2	\$102.0	\$105.9	\$105.9	\$111.1
Other Current Assets	\$7.5	\$7.2	\$7.5	\$7.1	\$6.4	\$6.4	\$7.9	\$8.0	\$8.0	\$8.0	\$8.0	\$8.5
Current Assets	\$302.7	\$244.5	\$247.8	\$249.6	\$249.8	\$249.8	\$250.9	\$252.0	\$253.7	\$265.1	\$265.1	\$277.2
Net Property, Plant, and Equipment	\$29.7	\$30.1	\$30.9	\$29.9	\$28.6	\$28.6	\$27.5	\$30.9	\$29.9	\$28.6	\$28.6	\$30.9
Goodwill & Other Assets	\$16.6	\$16.2	\$17.3	\$16.2	\$7.8	\$7.8	\$7.3	\$16.0	\$16.0	\$16.0	\$16.0	\$15.5
Total Assets	\$349.1	\$290.8	\$295.9	\$295.7	\$286.2	\$286.2	\$285.7	\$298.9	\$299.6	\$309.7	\$309.7	\$323.6
<b>Liabilities and Stockholders' Equity</b>												
Current Debt	\$65.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Accounts Payable	\$55.5	\$64.3	\$67.8	\$58.0	\$58.9	\$58.9	\$62.0	\$62.1	\$62.1	\$66.7	\$66.7	\$71.1
Accrued Expenses	\$34.1	\$20.9	\$20.4	\$19.2	\$21.8	\$21.8	\$20.1	\$22.0	\$21.5	\$22.5	\$22.5	\$24.0
Current Liabilities	\$155.3	\$85.2	\$88.2	\$77.1	\$80.7	\$80.7	\$82.1	\$84.1	\$83.6	\$89.2	\$89.2	\$95.1
Long-term Debt	\$55.7	\$59.9	\$55.7	\$65.7	\$55.7	\$55.7	\$55.7	\$70.2	\$68.7	\$68.4	\$68.4	\$58.3
Deferred Taxes & Other Long-term Liabilities	\$1.5	\$8.5	\$8.5	\$8.3	\$8.4	\$8.4	\$7.8	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5
Total Liabilities	\$212.5	\$153.6	\$152.4	\$151.2	\$144.8	\$144.8	\$145.7	\$155.9	\$153.8	\$159.1	\$159.1	\$155.0
Shareholder Equity	\$136.5	\$137.2	\$143.5	\$144.5	\$141.4	\$141.4	\$140.0	\$143.0	\$145.8	\$150.7	\$150.7	\$168.6
Total Liabilities and Equity	\$349.1	\$290.8	\$295.9	\$295.7	\$286.2	\$286.2	\$285.7	\$298.9	\$299.6	\$309.7	\$309.7	\$323.6
<b>Book Value Per Share</b>	<b>\$7.73</b>	<b>\$7.67</b>	<b>\$8.04</b>	<b>\$8.10</b>	<b>\$7.98</b>	<b>\$7.97</b>	<b>\$7.73</b>	<b>\$7.77</b>	<b>\$7.80</b>	<b>\$7.93</b>	<b>\$8.12</b>	<b>\$8.88</b>
<b>Asset Utilization and Efficiency</b>												
Accounts Receivable Turnover	5.0	4.8	5.2	5.1	6.4	5.3	5.5	5.5	5.4	5.6	5.2	2.9
Days' Sales in Receivables Outstanding	69.2	68.6	65.6	68.6	64.4	70.3	69.5	67.0	68.0	66.0	71.7	72.0
Inventory Turnover	3.5	3.4	3.8	3.9	4.7	4.3	4.4	4.0	4.1	4.8	4.2	4.0
Days' Sales in Inventory Outstanding	94.6	111.3	95.0	91.1	73.1	79.2	86.0	83.0	87.0	81.0	87.8	89.0
Accounts Payable Turnover	7.6	6.5	6.7	6.8	8.0	7.4	7.0	6.7	7.1	7.6	6.8	6.6
Days' Purchases in Payables Outstanding	47.7	60.6	55.6	49.2	45.8	49.6	53.3	52.0	53.0	51.0	55.3	57.0
Cash Conversion Cycle (Days)	116.2	119.3	105.0	110.6	91.7	99.8	102.2	98.0	102.0	96.0	104.2	104.0
<b>Capital Structure</b>												
Total Debt-to-Total Capital Ratio	47.1%	30.4%	28.0%	31.2%	28.2%	28.2%	28.5%	32.9%	32.0%	31.2%	31.2%	25.7%
Total Debt-to-Equity Ratio	88.9%	43.7%	38.8%	45.4%	39.4%	39.4%	39.8%	49.1%	47.1%	45.4%	45.4%	34.6%
Fiscal Year End - May												
(\$ in millions, except per share data)												





# 21<sup>st</sup> Century Equity Research

ROIC and Free Cash Flow	2007	Q1-08	Q2-08	Q3-08	Q4-08	2008	Q1-09	Q2-09E	Q3-09E	Q4-09E	2009E	2010E
<b>NOPAT</b>												
EBIT	\$7.8	\$2.7	\$2.5	(\$0.7)	\$5.8	\$10.2	\$4.5	\$4.6	\$4.3	\$6.6	\$19.9	\$25.2
Cash Taxes on EBIT	(\$0.9)	\$11.4	\$3.9	\$0.5	(\$1.5)	(\$0.4)	\$0.6	\$0.4	\$0.4	\$0.7	\$2.1	\$2.9
NOPAT	\$8.7	(\$8.7)	(\$1.5)	(\$1.2)	\$7.3	\$10.6	\$3.8	\$4.1	\$3.9	\$5.9	\$17.8	\$22.4
<b>Cash Taxes on EBIT</b>												
Income Tax Provision	\$0.6	\$0.3	\$0.5	\$0.3	(\$1.3)	(\$0.2)	\$0.9	\$0.6	\$0.6	\$0.9	\$3.0	\$3.7
Tax Deduction on Interest Expense	\$1.5	(\$11.1)	(\$3.5)	(\$0.2)	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.8	\$0.8
Cash Taxes on EBIT	(\$0.9)	\$11.4	\$3.9	\$0.5	(\$1.5)	(\$0.4)	\$0.6	\$0.4	\$0.4	\$0.7	\$2.1	\$2.9
<b>Invested Capital</b>												
Total Debt	\$121.4	\$59.9	\$55.7	\$65.7	\$55.7	\$55.7	\$55.7	\$70.2	\$68.7	\$68.4	\$68.4	\$58.3
Stockholders' Equity	\$136.5	\$137.2	\$143.5	\$144.5	\$141.4	\$141.4	\$140.0	\$143.0	\$145.8	\$150.7	\$150.7	\$168.6
Total Cash & Short-term Investments	\$79.3	\$21.8	\$20.2	\$30.5	\$40.0	\$40.0	\$37.1	\$39.9	\$39.2	\$37.6	\$37.6	\$39.1
Invested Capital	\$178.6	\$175.3	\$179.0	\$179.7	\$157.1	\$157.1	\$158.6	\$173.4	\$175.3	\$181.5	\$181.5	\$187.9
<b>Return on Invested Capital</b>												
Return on Invested Capital (Average)	4.5%	-19.7%	-3.3%	-2.6%	17.4%	6.3%	9.7%	10.0%	9.0%	13.2%	10.5%	12.9%
Note: Quarterly Figures Have Been Annualized												
<b>Free Cash Flow</b>												
Net Income (Loss)	\$1.5	(\$0.4)	(\$0.7)	(\$2.2)	(\$5.2)	(\$8.5)	\$3.7	\$3.0	\$2.8	\$4.8	\$14.4	\$18.0
Adjustments:												
Depreciation	\$6.0	\$1.3	\$1.3	\$1.3	\$1.3	\$5.5	\$1.3	\$1.2	\$1.3	\$1.3	\$5.3	\$4.9
Amortization of Intangibles and Financing Costs	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Deferred Income Taxes	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Loss from Disposition of a Business	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Provision for Inventory Obsolescence	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Other Charges	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Goodwill and Other Intangible Assets Impairment, Net	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Other Non-cash Items in Net Income	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Adjustments	\$6.0	\$1.3	\$1.3	\$1.3	\$1.3	\$5.5	\$1.3	\$1.2	\$1.3	\$1.3	\$5.3	\$4.9
Changes in Working Capital, Net of Currency Translation Effects and Business Acquisitions:												
Decrease (Increase) in Accounts Receivable	\$10.0	\$8.4	(\$7.0)	(\$0.2)	(\$5.1)	(\$3.8)	\$3.7	\$0.9	\$0.4	(\$9.0)	(\$4.1)	(\$5.0)
Decrease (Increase) in Inventories	\$7.1	(\$8.0)	\$2.4	\$8.3	\$13.6	\$16.3	(\$6.2)	\$0.9	(\$2.8)	(\$4.0)	(\$12.1)	(\$5.1)
Decrease (Increase) in Other Current Assets	(\$2.2)	\$0.3	(\$0.3)	\$0.4	\$0.7	\$1.1	(\$1.5)	(\$0.1)	\$0.0	\$0.0	(\$1.6)	(\$0.5)
(Decrease) Increase in Accounts Payable	\$3.0	\$8.8	\$3.5	(\$9.8)	\$0.9	\$3.3	\$3.2	\$0.1	(\$0.0)	\$4.6	\$7.8	\$4.4
(Decrease) Increase in Other Current Liabilities	\$3.5	(\$13.2)	(\$0.5)	(\$1.3)	\$2.6	(\$12.2)	(\$1.7)	\$1.9	(\$0.5)	\$1.0	\$0.7	\$1.5
Total Changes in Operating Assets and Liabilities	\$21.4	(\$3.7)	(\$1.9)	(\$2.5)	\$12.8	\$4.7	(\$2.5)	\$3.7	(\$2.9)	(\$7.4)	(\$9.2)	(\$4.7)
Net Cash Flow from Operations	\$29.0	(\$2.7)	(\$1.2)	(\$3.4)	\$8.9	\$1.7	\$2.5	\$7.9	\$1.2	(\$1.2)	\$10.5	\$18.2
Capital Expenditures	(\$6.8)	(\$1.9)	(\$1.9)	(\$0.3)	(\$1.0)	(\$4.5)	(\$0.1)	(\$0.3)	(\$0.3)	(\$0.3)	(\$1.0)	(\$3.0)
Free Cash Flow	\$22.2	(\$4.6)	(\$3.1)	(\$3.7)	\$7.9	(\$2.8)	\$2.3	\$7.6	\$0.9	(\$1.5)	\$9.4	\$15.2
Free Cash Flow per Share	\$1.26	(\$0.26)	(\$0.18)	(\$0.21)	\$0.44	(\$0.16)	\$0.13	\$0.41	\$0.05	(\$0.08)	\$0.51	\$0.80
Fiscal Year End - May (\$ in millions, except per share data)												