RAYMOND JAMES

Technology

Industry Report

EQUITY RESEARCH

June 17, 2004

The IT Supply Chain

Second Quarter IT Demand Survey

- IT product shipments through distribution advanced at a double-digit pace for the third consecutive quarter. Although the year-over-year pace is still a robust 12.7%, this is slower compared with a much better-than-expected 16.6% in Q1. An estimated 4% decline quarter-over-quarter is worse than seasonally normal, but is partly explained by currency.
- Momentum reversed geographically with European distribution shipments slowing sharply on both a nominal and constant currency basis. We estimate a 14.1% rise in European shipments equal to approximately 8.2% on a constant currency basis. This should be somewhat offset by improving conditions in North America, where we estimate a 12.2% year-over-year gain, up from a 9.9% pace in Q1.
- Gradual improvement in IT spending among large corporate customers from a very depressed level is helping domestic sales. Sales to SMB (small and mid-sized business) remain steady and are estimated to advance 5.6% over last year. The sharp fall in European sales momentum is more difficult to explain, but is believed to be due to tough comparisons with better-than-expected fourth and first quarters, currency, and higher energy prices.
- Strongest product categories included systems and software. Weakest categories included printers and storage. Systems ASPs (average selling prices) are once again declining.
- On the back end, year-over-year rates remain quite solid. We are forecasting EMS revenue to increase 4% sequentially (+24% Y/Y). Coincidentally, passives are expected to post the exact same gains (+4% and +24% respectively), while PCB sales will lag behind at +2% sequentially (but +40% Y/Y). Shipments through component distributors are projected to be up 25%, but bookings not as strong.
- Looking to the second half, shipment and currency comparisons become more difficult and a double-digit growth rate will be hard to sustain. On the other hand, large corporate account spending is improving in the U.S., which should help to maintain long-term, IT industry growth at a high-single-digit pace.

Technology Distribution

Robert P. Anastasi, CFA
(727) 567-2286
Bob.Anastasi@RaymondJames.com

Brian G. Alexander, CPA
(727) 567-2312
Brian.Alexander@RaymondJames.com

Electronic Manufacturing Services/Components

Shawn Severson
(727) 567-2682
Shawn.Severson@RaymondJames.com

J. Steven Smigie
(727) 567-2557
Steve.Smigie@RaymondJames.com

Semiconductors & Enterprise Hardware

Ashok Kumar, CFA
(650) 614-4007
Ashok.Kumar@RaymondJames.com

Please read Investment Risks/Analyst Certification on page 25 and disclosure information on page 26.

The Raymond James Financial Center, 880 Carillon Parkway, St. Petersburg, FL 33716
Institutional clients may call for additional information:
Research 800-237-5643 • Trading 800-237-8426

RAYMOND JAMES & ASSOCIATES, INC.

Distributor Shipments	➚	Strong at 12.7% versus last year but slower than a very robust Q1. Europe slowed sharply, but U.S. improved.
Commercial/Gov't. Reseller Shipments	↑	Large corporate account spending improving from depressed level. SMB steady. Federal softer. State, local, and education O.K.
Commercial Channel Inventory	→	One-day rise insignificant as 27 days is healthy.
EMS Sales Trends	↑	We are forecasting a 4% sequential increase (+24% Y/Y) in sales for the June quarter. The "bounce" up from March is somewhat subdued due to the less severe than usual seasonal decline in the first quarter.
EMS Inventory Trends	→	The dollar value of inventory is expected to remain relatively flat following a 10% gain in the March quarter. Inventory levels have been running too lean throughout most of the channel, and we believe that the March increase was a necessity given the long lead times. DIOs should tick down slightly from 44 days to 42 days.
Power Semiconductor Sales Trends	↑	We anticipate that revenue growth in the power semiconductor industry will be 6% sequentially. End demand should continue to be strong across the major end markets showing more evidence of the pickup. The strong demand has led to extending lead times. We believe this also has led to the price increases in the quarter.
Power Semiconductor Inventory Trends	→	We expect DIOs to remain flat in the quarter, with inventory increasing slightly more than the increase in COGS (cost of goods sold), as inventory is built for the seasonally strong second half. Inventory in the distribution channel remains lean, with some suppliers still at multi-quarter lows.
Component Distributor Sales Trends	➚	Sales through electronic component distributors estimated to be up 25% year-over-year in Q2, an acceleration from the 20% pace in Q1. Bookings growth is likely to have moderated from the torrid pace in Q4 and Q1, in-line with seasonality and not reflective of a broader slowdown, as end demand remains healthy and capacity additions remain in check.
Passive Component Sales Trends	↑	We are forecasting a 4% sequential increase (+24% Y/Y) in sales for the June quarter as most companies have seen the momentum built up in the March quarter continue into the April/May timeframe. The pricing environment has improved dramatically with the extension of lead times.
Passive Component Inventory Trends	→	No significant changes expected for June. DIOs should remain relatively flat in the 83-day range.
PCB Sales Trends	→	The most notable hiccup in the June quarter was at Merix. However, we believe that Merix's woes were mostly customer-specific. We expect a top-line gain of +2%. Seasonality at Rogers is also expected to account for a good chunk of the slowdown in revenue growth.

IT Spending Rebound Moderates Slightly. Europe Slows. U.S. Improves.

Our second quarter survey of demand trends along the IT Supply Chain showed solid growth but a moderation of the surprisingly strong rebound seen over the past two quarters. Thus far, moderating trends appear to be confined to Europe. North American sales through distribution in fact appear to have improved once again. On a worldwide basis, we estimate that IT shipments through distribution will rise by 12.7% compared with last year. Although a robust figure on its own, this represents a slowdown from the 15% to 17% pace seen in the past couple of quarters.

It is not clear why European shipments through distribution slowed dramatically this quarter but contributing factors appear to be currency, tough comparisons, and higher energy prices. The good news is that North American shipments through distribution gained momentum and are projected to increase by 12% versus last year. Adjusted for currency, North American IT shipments are now outpacing European shipments. This is a key underlying, and perhaps not fully appreciated, positive in the often-fragile tech stock environment.

U.S. IT demand is being supported by stability in the SMB sector, gradual improvement (from a depressed level) in the large corporate account sector, and a shift toward enterprise products. This is in addition to an improved macroeconomic picture.

In a recent survey of IT spending habits of 700 U.S. companies, Raymond James analyst Ashok Kumar concluded that we are still on the growth side of the cycle but that spending preference would shift to enterprise products. That appears to be the case this quarter as servers were one of the strongest product lines. In addition to systems, software was also cited as strong. Weaker categories included printers and storage.

Further back in the supply chain, news is steady, although sometimes mixed. Electronics manufacturing services companies' shipments are projected to grow 24% versus last year. This is a rate similarly robust to that in Q1. Electronic component distributor shipments are expected to rise by 25%, ahead of an already strong pace, although bookings were not as strong.

Similarly, sales growth for passives and power semiconductor are expected to be strong at 24% and 33%, respectively. On the other hand, shipments from Tier One motherboard vendors are expected to decline more than seasonally normal in Q2 versus Q1.

Looking to the back half of the year, we will repeat last quarter's statement that in our opinion the IT spending recovery is sustainable but, ***not*** at a double-digit pace. The reasons that we believe the recovery to be sustainable are:

- An improved U.S. economy is helping to lift large corporate account spending.
- Enterprise product spending is on the rebound.
- Wireless deployment will continue to spur the replacement of lower cost desktops with more expensive portables.

On the other hand, the reasons that we believe the current double-digit pace is not sustainable are:

- Shipment comps get more difficult in the second half.
- Currency comps become more difficult.
- Component prices and ASPs are beginning to decline at a more normal pace compared with the stable ASP environment in recent months.

Our IT channel survey covers the largest public and privately held computer resellers and distributors, which collectively account for nearly $80 billion annually in shipments of PCs, peripherals, and software. Our data are regularly adjusted for additions and deletions, acquisitions, divestitures, major product launches, and other distortions. Because resellers and distributors are "downstream" in the Supply Chain, our sales data measure sell-through and are not affected by inventory changes.

To get a more complete picture of the IT Supply Chain, we also include Electronic Manufacturing Services (EMS) providers, electronics component distributors, and component manufacturers in our survey. Much in the way that distributors are the front end of the IT Supply Chain, EMS providers comprise the back end, since they manufacture product for hundreds of IT vendors. The EMS providers surveyed collectively account for nearly $100 billion in IT-related shipments.

Shipment Growth Through IT Distribution Moderates to a Still Robust 12.7% versus Last Year But Declines by a Worse Than Normal 4.0% versus Last Quarter As Europe Slows

For the three-month period ending June 30, 2004, we now expect IT shipments through distribution to increase by 12.7% versus last year but to decrease 4.0% versus last quarter, as shown in Figure 1.

The 12.7% pace, while still solid, is well below the better-than-expected 15% to 17% pace of the past two quarters. The better-than-expected pace of the fourth and first quarters was attributable to Europe, which was in turn somewhat driven by currency. The daily average value of the euro declined by 3.6% in Q2 versus Q1, explaining perhaps half of the change in pace this quarter. For example, on a constant currency basis, we estimate a sequential decline of 2.6% (instead of 4.0%), which is closer to a seasonally normal decline of 0% to 2%.

Figure 1

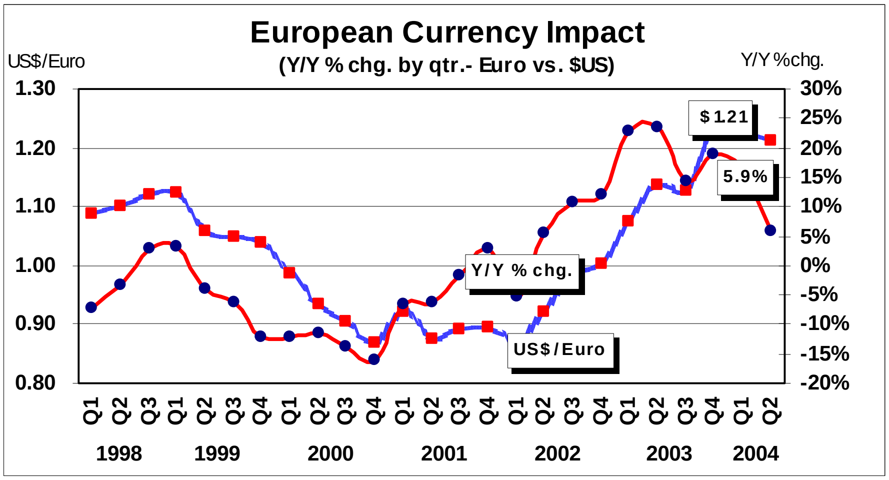
IT Sales Through WW Distribution
(All Products, All Customer Segments, All Geographies)

	Y/Y % Chg.	Seq. % Chg.
Q1-99	14.2	2.0
Q2-99	16.2	2.8
Q3-99	13.6	5.3
Q4-99	14.5	7.9
Q1-00	9.7	-1.9
Q2-00	3.6	-2.1
Q3-00	3.3	-0.4
Q4-00	-0.2	4.1
Q1-01	-9.2	-10.6
Q2-01	-20.3	-14.5
Q3-01	-21.1	-0.1
Q4-01	-20.6	5.6
Q1-02	-19.3	-8.9
Q2-02	-7.4	-1.8
Q3-02	-4.5	1.1
Q4-02	-2.2	7.4
Q1-03	-0.9	-7.7
Q2-03	0.3	-0.6
Q3-03	1.9	3.4
Q4-03	14.6	20.7
Q1-04	16.7	-6.0
Q2-04E	**12.7%**	**-4.0%**

Source: RJ&A research.

By region, North American shipments through distribution are estimated to rise by 12.3% versus last year and by 2.9% versus Q1. If correct, this would be the best sequential performance, since 1999 would be perceived as stronger than expected, in our opinion. European shipments, on the other hand, weakened noticeably and are estimated to rise by 14.1% versus last year but to decline by a worse than seasonally normal 16.7%. In fairness, this follows two quarters of much stronger-than-normal European shipments driven directly and indirectly by currency. During the second quarter, the euro appreciated 5.9% on an average daily basis versus last year but declined by 3.6% versus last quarter, as shown in Figure 2. Using the euro to adjust (not 100% accurate due to country mix and non-euro countries), we estimate constant currency growth of 8.2% versus last year. This is a sharp drop from constant currency growth of 14.7% in Q1 and 11.5% in Q4, as shown in Figure 3. In addition to difficult comparisons and currency, European growth may be impacted by higher energy prices.

Figure 2



Source: Bloomberg.

Figure 3

European Shipments Through Distribution			
	Nominal Y/Y % Chg.	Euro % Chg. Vs. U.S. Dollar	Y/Y % Chg. Constant Currency
Q1-02	-10.0	-5.3	-4.7
Q2-02	6.7	5.3	1.4
Q3-02	7.9	10.6	-2.7
Q4-02	5.4	11.9	-6.5
Q1-03	12.3	22.9	-10.6
Q2-03	10.8	23.6	-12.8
Q3-03	11.4	14.4	-3.0
Q4-03	30.4	18.9	11.5
Q1-04	31.1	16.4	14.7
Q2-04E	**14.1%**	**5.9%**	**8.2%**

Source: RJ&A research.

By month, April is believed to have been poor in Europe and also in the U.S. This helps to explain the disappointing revenue guidance for the June quarter provided by some distributors. Based on NPD shipment data, U.S. activity is believed to have improved in May. Based on comments from distributors, European shipments remained soft. June is believed to have started stronger, but that would be normal.

By product sector, systems and software were the strongest categories. NPD data suggests that desktop shipments are rising at an 11% pace versus last quarter, notebooks at an 8% pace, and servers at a 10% pace. Software is as strong or stronger, driven by applications and security. Microsoft and Symantec were cited as strong. Networking products are described as average to better than average. NPD data suggests a 7% increase versus Q1. Weaker-than-average categories are storage and printers, which, according to NPD, rose by only 1% and 3% respectively compared with Q1.

Commercial and Government Reseller Shipments Estimated to Rise by 5.8% versus Last Year and by 6.0% versus Last Quarter as Large Corporate Account Spending Continues to Improve

The reseller component of our survey includes corporate resellers and resellers serving the SMB and government markets. Corporate resellers sell brand-name computer systems and provide services directly to Fortune 1000-class organizations and, therefore, tend to be a direct reflection of domestic corporate PC demand. That "reflection" has been complicated over the past couple of years by Dell's significant market share gains and, more recently, by a shift back toward direct sales by traditionally indirect-selling PC original equipment manufacturers (OEMs). Direct marketers and value-added resellers (VARs), on the other hand, sell a broader range of products and focus on SMB customers. The combination provides a comprehensive view of commercial and government PC sales.

For the three-month period ending in June, sales for the largest resellers (corporate, government, and SMB-focused) are expected to rise by 5.8% year-over-year and by 6.0% compared with March, as shown in Figure 4.

Within the reseller space, SMB (as reflected by the commercial sales of direct marketers) continues to be a source of stability. We estimate a 5.6% increase for SMB-related sales compared with last year and a 1.4% increase compared with last quarter.

Figure 4

IT Sales Through Commercial and Government Resellers
(All Products, Commercial and Govt. Markets)

	Y/Y % Chg.	Seq. % Chg.
Q1-99	6.2	-7.0
Q2-99	9.1	5.5
Q3-99	6.0	1.4
Q4-99	-4.2	-2.3
Q1-00	3.4	-3.3
Q2-00	2.3	6.4
Q3-00	6.4	5.9
Q4-00	4.6	-3.2
Q1-01	-5.1	-12.9
Q2-01	-14.5	-4.5
Q3-01	-22.7	-4.0
Q4-01	-20.7	-0.8
Q1-02	-15.5	-7.2
Q2-02	-6.2	6.1
Q3-02	3.2	5.6
Q4-02	-2.0	-5.3
Q1-03	-4.9	-9.1
Q2-03	-4.5	5.2
Q3-03	-4.6	5.3
Q4-03	4.6	3.9
Q1-04	5.0	-8.8
Q2-04E	**5.8%**	**6.0%**

Source: RJ&A research.

Large corporate account spending, as reflected by sales through corporate resellers, improved again, albeit from a very low level. We continue to believe that this is the softest, yet one of the most important, customer segments. By any measure, sales to large corporate accounts are improving. At one extreme, Dell indicates that its sales to large corporate accounts are growing in excess of 10%. At the other extreme, large corporate account sales through the channel have been hurt by Dell's share gains and a direct sales shift by HP, and are believed to be roughly flat with last year.

Public sector sales are a bit more difficult to gauge. Feedback suggests that state-, local-, and education-related sales are steady but there has been weakness on the federal side. On balance, the public sector is still one of the more robust customer segments.

Channel Inventory Projected to Rise by a Day to a Still-Healthy 26.8 Days

Channel inventory has been running at a healthy 24 to 28 days for the past three years. We do not envision a change as this appears to be the level of inventory required to achieve high fill rates and there appears to be a lack of end-of-quarter deals big enough to "move the needle." With that said, a two-day swing in channel inventory equates to a 2% to 3% lift in orders for OEMs supplying the channel. The projected 1.2-day rise this quarter will provide only modest sales help for OEMS in Q2 (1% or so).

At the back end of the supply chain, EMS inventory has been substantially reduced from the ridiculous levels of three years ago and is reasonably steady at 42 days, as shown in Figure 6.

Similar to last quarter, leaner inventory and improved demand has not translated into product shortages except for LCD monitors.

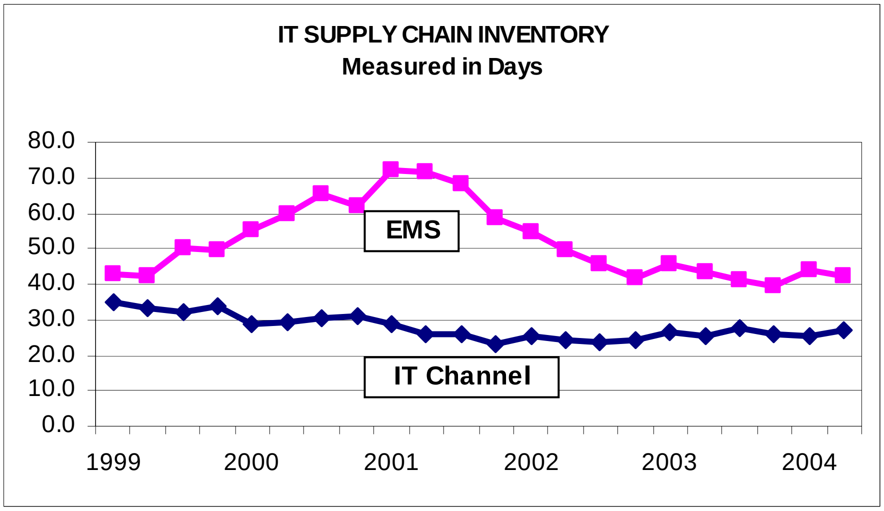
Figure 5

IT Commercial Channel Inventory
(measured in days)

	Inventory Days	Seq. % Chg
Q1-99	34.8	-11
Q2-99	33.5	-4
Q3-99	32.0	-4
Q4-99	34.0	6
Q1-00	28.8	-15
Q2-00	29.1	1
Q3-00	30.2	4
Q4-00	31.1	3
Q1-01	28.7	-8
Q2-01	26.2	-9
Q3-01	25.7	-2
Q4-01	22.9	-11
Q1-02	25.5	12
Q2-02	24.0	-6
Q3-02	23.8	-1
Q4-02	24.0	1
Q1-03	26.4	10
Q2-03	25.3	-4
Q3-03	27.6	9
Q4-03	25.9	-6
Q1-04	25.6	-1
Q2-04E	**26.8**	**5%**

Source: RJ&A research.

Figure 6



Source: RJ&A research.

Sales Trends for Major Product Lines and Vendors

Stronger-than-average product lines this quarter included all systems categories, software, and networking. Weaker-than-average categories were printers and storage.

In the desktop space, HP appears to have re-embraced the distribution channel and its market share through distribution has stabilized and perhaps improved in recent weeks, according to NPD. Interestingly, feedback from respondents suggests that IBM is still gaining share. Apple sales through distribution appear to have softened thus far through Q2 compared with Q1, according to NPD.

In the portables space, IBM appears to be gaining share from most vendors and is becoming the dominant brand in the U.S. For the most part, that share is coming from Toshiba and Sony, and to a lesser degree HP. In Europe, Acer is the strongest brand through distribution.

Servers were one of the strongest categories in Q2. HP's stronghold in this area is intact, but IBM continues to chip away at HP's share of sales through distribution as was the case this quarter.

Software was described as one of the strongest, if not the strongest, categories this quarter. Strength in applications and security were noted with Microsoft and Symantec highlighted as strong vendors.

Networking products were a better-than-average category, but market share did not appear to shift noticeably with Cisco's share steady.

Printers have been a weak category for the past few quarters and the same was true this quarter. HP's dominant share of sales through distribution remained intact. Xerox appears to be gaining share from a low base and Lexmark's share appears to have declined slightly. This might be explained by Dell's rapid ramp in printer shipments, which are not captured in channel sales.

Storage was one of the weaker product categories. Within the weaker category, NPD data suggests that Seagate and Western Digital sales through distribution were softer thus far through Q2 versus Q1 and that Maxtor was slightly better.

Average selling prices are declining once again. ASPs on desktops appear to be down 2% to 5% versus Q1. ASPs on portables, however, are up 1% to 2% compared with Q1.

Economic Overview

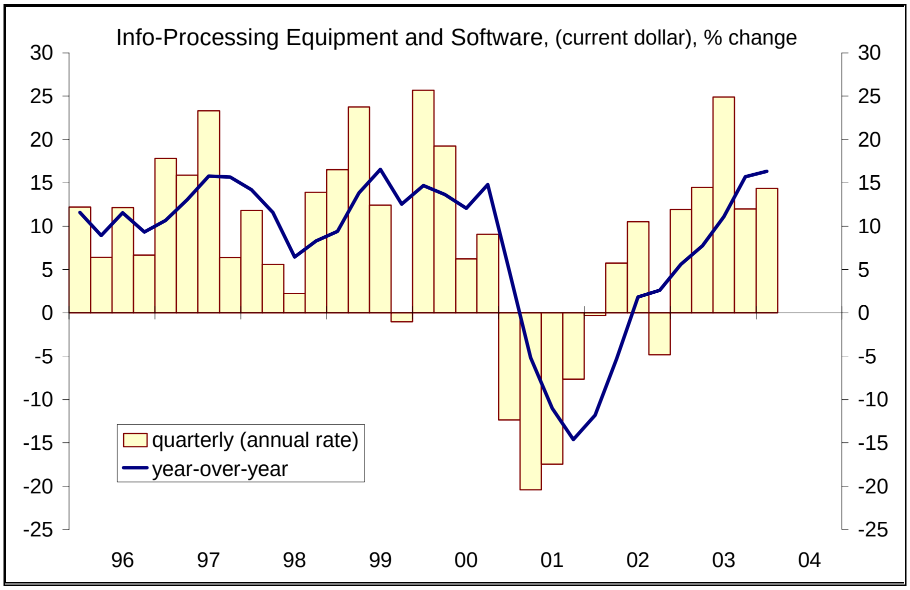
Scott Brown, Ph.D., Raymond James' chief economist, offers the following observation with respect to economic growth and the outlook for capital spending.

Job growth picked up sharply in the last few months, which will provide a more sustainable foundation for the economy. Wage income growth should continue to improve, adding support to consumer spending (taking the place of the transitory stimulus of tax cuts and mortgage refinancings). Higher gasoline prices have not been a major constraint on consumer finances, but the impact hits lower income households more significantly (and with a bit of a lag). Labor productivity appears to be slowing to some extent, creating less of a restraint on new hiring – however, unit labor costs have begun to move up, putting some upward pressure on inflation. Federal Reserve officials signaled in early May that the pace of short-term interest rate increases was expected to be "measured." Recently, however, Chairman Greenspan and other policymakers have suggested that rates could be raised more rapidly if needed. If inflation (as measured by the core PCE price index) were 1.5% to 2.0%, a "neutral" Fed funds rate would be 3.5% to 4.0% (vs. 1.0% currently) – so the Fed has some work to do. Long-term interest rates should move moderately higher through the end of the year, but not as much as short-term rates. While the economic outlook remains promising, the prospect of higher interest rates is likely to weigh against investor sentiment in the near term.

Interest rates are an important factor in capital spending. All else equal, higher rates will lead to slower growth in business spending. However, as we saw in the 1990s, spending on technology is less dependent on interest rates. While the cost of borrowing is important, decisions to invest in technology are driven largely by other concerns, such as the need for innovation. At the same time, interest rates are likely to be a bigger factor in decisions to invest in more mature technologies.

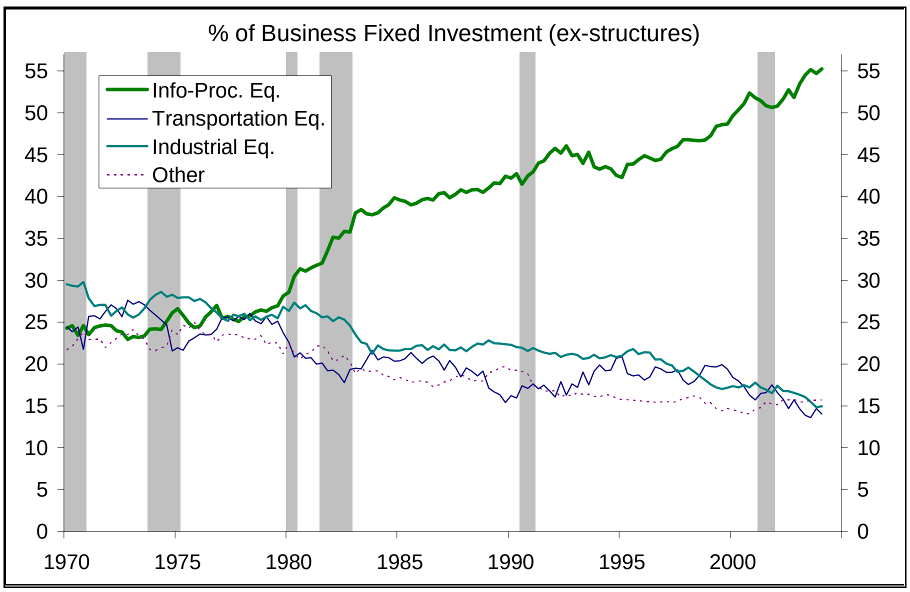
The global economic outlook remains promising. However, higher energy costs are likely to have a dampening effect on growth in the near term. The impact will depend on the duration as well as the magnitude of the increase in crude oil prices, and the restraint will be felt much more in Europe and Japan than in the U.S. In addition, China's economy, which had been running "hot" in recent quarters, may slow more than desired.

Figure 7



Source: Bureau of Economic Analysis.

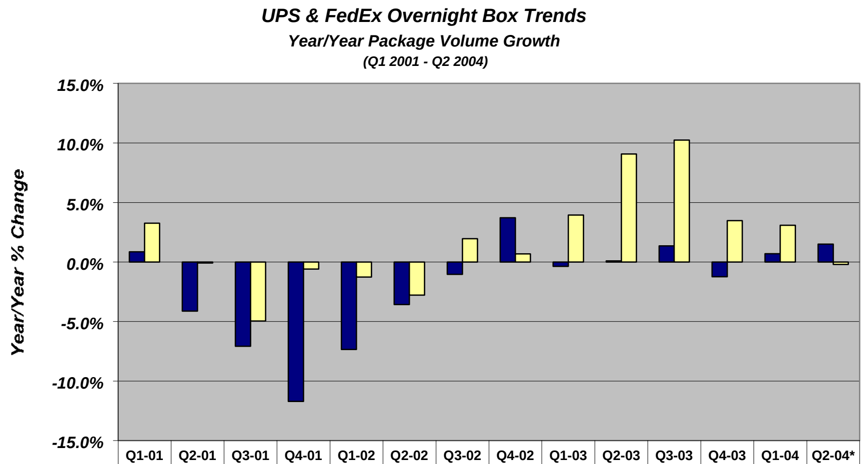
Figure 8



Source: Bureau of Economic Analysis.

A look at overnight shipment estimates for UPS and Federal Express supports our conclusion that U.S. IT shipments are gradually improving, as shown in Figure 9. The year-over-year UPS comparison is distorted by high mortgage refinancing activity last year. Interestingly, international estimates for FedEx show an increase in Q2 in contrast to our observation of slower activity.

Figure 9

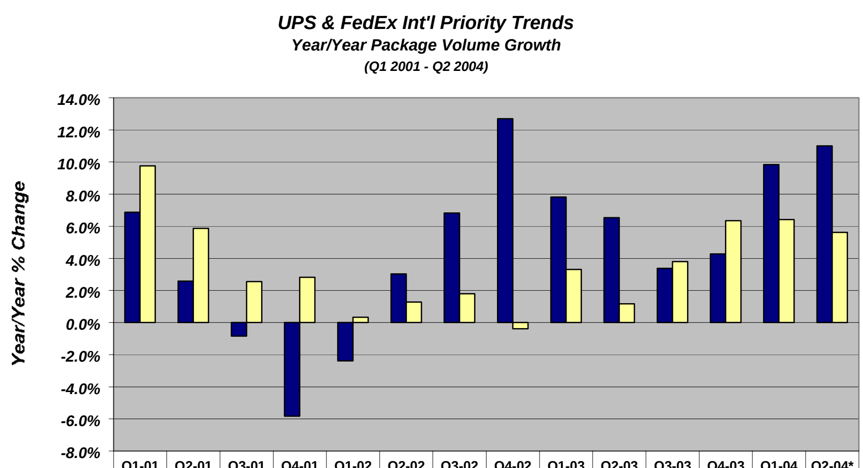


	Q1-01	Q2-01	Q3-01	Q4-01	Q1-02	Q2-02	Q3-02	Q4-02	Q1-03	Q2-03	Q3-03	Q4-03	Q1-04	Q2-04*
FDX Overnight Box	0.9%	-4.1%	-7.1%	-11.7%	-7.4%	-3.6%	-1.0%	3.7%	-0.4%	0.1%	1.4%	-1.2%	0.7%	1.5%
UPS Next Day Air	3.3%	-0.1%	-5.0%	-0.6%	-1.3%	-2.8%	2.0%	0.7%	3.9%	9.1%	10.2%	3.5%	3.1%	-0.2%

Notes: * Q1-04 data based on RJ estimates.
UPS Q3-02 and FDX Q4-02 data influenced by abnormal comparisons due to 9/11 events.
UPS Q2-03 & Q3-03 comparisons influenced by 2002 Teamsters-related diversions and refinancing-driven letter volumes.
UPS Q2-04 estimate incorporates tough comparison against 2002 mortgage refinancing boom.

Source: Company reports and RJ&A research.

Figure 10



	Q1-01	Q2-01	Q3-01	Q4-01	Q1-02	Q2-02	Q3-02	Q4-02	Q1-03	Q2-03	Q3-03	Q4-03	Q1-04	Q2-04*
FDX Int'l Priority	6.9%	2.6%	-0.8%	-5.8%	-2.4%	3.0%	6.8%	12.7%	7.8%	6.5%	3.4%	4.3%	9.8%	11.0%
UPS International	9.8%	5.9%	2.6%	2.8%	0.3%	1.3%	1.8%	-0.4%	3.3%	1.2%	3.8%	6.3%	6.4%	5.6%

Notes: * Q2-04 data based on RJ estimates.
UPS Q3-02 and FDX Q4-02 data influenced by abnormal comparisons due to 9/11 events.
UPS Q2-03 & Q3-03 comparisons influenced by 2002 Teamsters-related diversions.

Source: Company reports and RJ&A research.

Upward Trends Continue for Back End of Supply Chain

The upstream segment of our supply chain survey is comprised of three basic categories. The first is the Electronic Manufacturing Services, or EMS, sector. The second is the Electronic Component segment, which is comprised of three general subsets: passive electronic components (capacitors, resistors, cables, connectors, etc.), printed circuit boards (PCBs), and power and discrete semiconductors. The third is the Electronic Component Distributors.

The combination of good fundamentals and poor stock performance has left investors with some serious questions. Aside from the obvious interest rate and geopolitical concerns, the back end our supply chain universe is facing some specific variables. The most noteworthy are: ***"Are we approaching a cyclical peak in the second half of this year?"*** *and* ***"Does the March inventory build bode poorly for the upstream supply chain in the June quarter?"*** Both questions have to be approached from the standpoint that the market will always try to price equities six to nine months ahead of the fundamentals. With that in mind, the idea of the second half being a cyclical peak is a challenging one, but one that is increasingly reflected in the equity markets. We believe that many parts of the supply chain will experience peak year-over-year percentage gains in 2004, but the question of absolute growth in 2005 is simply a best guess. We side with the opinion that growth will continue next year, albeit at a more moderate pace. For example, we expect our EMS universe will see top-line growth rates in 2005 of around 15% versus the 20%-plus we expect in 2004. This should translate into even better EPS growth, as we expect operating leverage and margin expansion will continue into next year, when we believe they will stabilize or "peak." Based on that conclusion, we still believe the market has legs in the second half of this year, and is in fact especially compelling given the monumental pullback in recent months, in the face of solid earnings reports and outlooks. However, the inventory issue, which we will discuss later, has created some skepticism regarding the true fundamentals in March.

Specifically regarding the June quarter, we expect results will be in the middle to higher end of management ranges and not likely to see the upside experienced in the March quarter. Our general takeaway is that business conditions are good considering the neutral to negative seasonal factors, but not so robust that estimates will be easily beat. This is likely to result in a relatively benign June quarter as results are not likely to turn heads. However, with valuations back to more reasonable levels versus the first part of this year, we believe the risk-reward opportunity in our segment of the supply chain is compelling as we move into the second half of the year.

End Markets: Higher-End Applications Continue to Outperform

Before moving on to the specific segments of the upstream supply chain, our review begins with the basic end-market conclusions aggregated from our survey across the upstream portion of the supply chain. Beginning with the communications category, June is on track to be up slightly from March, but absent was the broad-based enthusiasm experienced in our March survey. Specifically, networking equipment is expected to show a slight improvement, but with a bias toward the higher-end spectrum. Wireless infrastructure has been a bright spot in the past couple of quarters, and June is no exception. However, the June quarter is tough seasonally and some of our key respondents expect infrastructure to only show a modest improvement this quarter. The primary driver for this sector continues to be 3G wireless rollouts in Europe. Long-haul wireline is still stagnant and is not likely to have an impact on the quarter.

Within the computing space, overall feedback remained optimistic considering the first half of the year is usually less than spectacular. On track was enterprise storage, which was again noted as the strongest both in relative terms as well as in "strength of recovery." As we noted in last quarter's survey, the optimism transcends across the product spectrum, but with higher-end applications seeing the greatest positive delta. This is noteworthy in that it could indicate that the second half of the year could be better for Unix hardware. Following the tradition of the past few surveys, enterprise computing was noted as slightly less robust than enterprise storage, but not to any meaningful degree. The most salient takeaway from this quarter's survey of the enterprise computing sector is that the optimism and outlook for the high-end spectrum is gaining steam. In the personal computer space, desktops once again did not generate excitement and responses were muted, although the month of June seems to be showing some recovery. Notebooks continue to outpace desktops, but as with desktops, responses were neutral and we did not perceive any meaningful change.

The consumer market produced neutral feedback, which is not surprising given we are in a seasonally weak period for this category. The brightest spot in our survey of consumer products was found in handsets despite some market chatter that inventories were building in Europe. None of our respondents were able to corroborate the chatter about inventories, in fact most executives felt handsets would be at worst a neutral factor in the June quarter with seasonal builds gaining steam in late summer.

North America and Asia Still Ahead, But Europe is Catching Up

As we have stated in the past, the transfer of production out of high-cost areas including North America and Europe to countries such as China is boosting the regional strength of Asia at the expense of other geographies, and we expect this trend to continue in the foreseeable future. This is especially true for component suppliers, which are following their EMS customers to Asia, where production is increasing for both export as well as local consumption in China and other growing Asian nations. Looking at each respective region, there was little change from last quarter. North America was indicated as relatively strong and building on the strength of the past couple of quarters. Europe was again cited as the weakest, but with growing optimism. This is an important data point as Europe could give legs to the recovery in North America and make the upswing global. Given the region generally lags the U.S. by six to 12 months, we expect to see some improvement given where we are in the recovery cycle. Asia still seems to be faring the best and generated enthusiastic responses across the board. Furthermore, the aforementioned transfer of production to low-cost geographies is clearly helping to drive the relatively stronger performance of the Asia region.

EMS Revenue Expected to be Up 4%, Even After Strong March

Revenue in the RJ_EMSI (RJ Electronics Manufacturing Services Index) fell by 2% sequentially in the March quarter, which was ahead of our expectations of a 6% drop. This translated into a 23% year-over-year gain. A number of EMS providers exceeded our sales forecasts including Celestica, Flextronics, Jabil, and Solectron. The common thread across all of this upside was a less severe than normal seasonal decline in the March quarter. We estimate that the aggregate exposure of the leading EMS companies for the March quarter was as follows: Communications 33%, High-End Computing 18%, PCs 12%, Handheld 11%, Industrial/Medical 8%, Consumer 7%, and Peripherals 7%. Although seasonal factors were relatively subdued this time around, handhelds, PCs, and consumer products still gave up some ground compared to the December quarter. High-end computing did not lose any “share,” but seasonality was still present in this sector as revenue dropped slightly from quarter to quarter. Looking ahead to the June quarter, we expect these categories to begin to rebound in preparation for a strong second half of the year. Furthermore, we expect the communications arena to maintain its positive momentum. As a result, we are forecasting a 4% sequential increase in EMS revenues (+24% Y/Y). Although this is only slightly better than the sequential gains of approximately 3% in each of the last two years, we emphasize that in both cases they were coming off of weaker March quarters (-12% and -5% sequentially in 2003 and 2002 respectively).

Figure 11

EMS Provider Sales Survey

	Y/Y % Chg	Seq. % Chg.
Q1-99	33	2
Q2-99	42	10
Q3-99	39	8
Q4-99	44	18
Q1-00	50	7
Q2-00	62	18
Q3-00	74	17
Q4-00	75	19
Q1-01	46	-11
Q2-01	7	-13
Q3-01	-17	-10
Q4-01	-31	-1
Q1-02	-26	-5
Q2-02	-13	3
Q3-02	-3	1
Q4-02	2	4
Q1-03	-4	-11
Q2-03	-4	3
Q3-03	0	5
Q4-03	10	15
Q1-04	23	-2
Q2-04E	**24%**	**4%**

Source: RJ&A research.

Inventory Concerns Overblown; Necessary to Support Robust Outlook for Demand

In regards to the inventory situation, we recognize that there is clearly a build in inventory. In the EMS sector alone, inventories were up 10% sequentially in the March quarter versus of expectations of a 2% decline. This follows a sequential increase of 8% in the December quarter. On a DIO basis, inventories went to 44 days from 39 days in December, which was also above our forecast of 40 days. Furthermore, flagship companies like Cisco also showed an inventory build in the most recent quarter (+20% sequentially).

It is important to emphasize, however, that pickup in inventory was not due to disappointment on the revenue line. Over the past couple of quarters, the supply chain has been operating under extremely tight conditions and, in fact, the channel was having a hard time accommodating any upside. As a result, a moderate inventory build was inevitable given the relatively robust demand outlook. As such, we are not hitting the panic button yet on the inventory situation, although the market certainly has been skittish. Indeed, we expect inventory in dollar terms to remain relatively flat in the June quarter. When combined with our forecast of 4% revenue growth, this translates into a roughly two-day improvement in DIOs to 42 days.

Another key factor to keep sight of is the trend toward vendor-managed inventory, or VMI, which is essentially the pushing of inventory onto the component suppliers and off the balance sheet of the EMS company. In this practice, a component supplier such as Molex would have a “cage” on the premises of a large EMS company and the inventory in that cage is technically on Molex’s balance sheet until the EMS company physically removes it, where it becomes work in-process (WIP). This is an industry sea change we are tracking closely in our analysis of inventory conditions throughout the channel.

Figure 12

EMS Provider Inventory Data

	Days of Inventory	Inv. As a % of Sales
Q1-99	42.7	42
Q2-99	42.1	42
Q3-99	50.1	50
Q4-99	49.5	49
Q1-00	55.4	55
Q2-00	59.8	60
Q3-00	65.1	65
Q4-00	61.9	62
Q1-01	72.1	72
Q2-01	71.5	72
Q3-01	68.4	70
Q4-01	58.6	60
Q1-02	54.6	56
Q2-02	49.7	51
Q3-02	45.5	47
Q4-02	41.5	43
Q1-03	45.8	47
Q2-03	43.4	45
Q3-03	41.1	43
Q4-03	39.2	41
Q1-04	43.7	45
Q2-04E	**42.3**	**44%**

Source: RJ&A research.

Power Semi Sales Trends Expected to be Strong Again in the June Quarter

Heading into the second quarter of 2004, the power semiconductor industry saw tight capacity on the discrete side with several suppliers at or near full capacity. This tightness caused an extension of lead times (out to 18 weeks at the extreme) and selective increases in prices, which we believe has continued into the second quarter. Further, the tightness led a number of suppliers to again announce the need for additional capacity. While some plans for these adds have already been implemented, we believe additional incremental capacity will continue to be added, but the adds are still relatively small and rational – with the fears of last cycle still well in mind. On the analog side, demand levels are also strong, although capacity utilization rates remain at lower levels and we have not seen lead-time extensions to the degree we have seen on the discrete side. End demand was strong across all the major end markets, which seems to be the hallmark of this recovery – that is, a broad-based multi-market upturn versus the narrow tech/telecom driver of last cycle. We expect strength to continue through the second quarter with growth above seasonally normal levels.

As a result, we anticipate that revenue growth in the power semiconductor industry will be 6% sequentially. This follows 9% sequential growth in the third quarter, which was ahead our estimate of 5% growth as stronger-than-seasonal demand came from a number of segments and applications and from some necessary increases of inventory in the EMS and OEM channels. The positive end demand appears to be continuing, but we do not expect to see the outperformance relative to our expectations that we saw in Q1.

With a seasonally strong second quarter for a number of power semiconductor suppliers and a positive outlook for the back half of the year, 2004 continues to look like a strong year for the sector. As we noted starting in the third quarter of 2003, the attitude of OEMs shifted, becoming more aggressive in their assessment of demand. This trend has continued, and OEMs appear to be offering better forecasts in order to insure supply – however, OEM lead times to EMS providers still remain weeks shorter than lead times of power semiconductor providers to the EMS providers.

Figure 13

Power Semiconductor Sales
(All Product Types)

	Y/Y % Chg.	Seq. % Chg.
Q1-99	2	-2
Q2-99	10	9
Q3-99	23	9
Q4-99	30	9
Q1-00	40	7
Q2-00	42	11
Q3-00	41	5
Q4-00	32	-1
Q1-01	-5	-18
Q2-01	-30	-18
Q3-01	-38	-10
Q4-01	-37	1
Q1-02	-20	4
Q2-02	1	6
Q3-02	17	3
Q4-02	14	-2
Q1-03	9	-1
Q2-03	4	1
Q3-03	1	2
Q4-03	10	8
Q1-04	21	9
Q2-04E	**33%**	**6%**

Source: RJ&A research.

Power Semi DIOs Will Likely Remain Flat in Q2.

Inventory conditions improved in the March quarter, with DIOs dropping 1% sequentially, roughly in-line with our estimate of a 2% drop. COGS increased with the surge in sales, but the inventory build was slightly stronger than we expected relative to the COGS. We believe the DIOs will stay flat at 80 days in the second quarter, but expect slightly more inventory to be built than COGS for the seasonally strong second half. Inventory in the distribution channel appears lean, with some suppliers still at multi-quarter lows. We believe distributors continue to need to stock higher levels of MOSFETs (metal-oxide semiconductor field-effect transistors) power ICs (integrated circuits), and other higher performance analog. Certain packages, and particularly Trench MOSFETs, remain in high demand and we believe that especially in these high-demand parts distributors were unable to build meaningful buffer stock during the first quarter and we believe they will be unable to do so during the second quarter as well.

Figure 14

Power Semiconductor Inventory (measured in days)		
	Inventory Days	**Seq. % Chg.**
Q1-99	71.9	-14
Q2-99	73.0	2
Q3-99	72.1	-1
Q4-99	69.8	-3
Q1-00	68.6	-2
Q2-00	68.1	-1
Q3-00	64.9	-5
Q4-00	72.5	12
Q1-01	78.9	9
Q2-01	89.7	14
Q3-01	98.0	9
Q4-01	95.4	-3
Q1-02	91.9	-4
Q2-02	88.2	-4
Q3-02	89.6	2
Q4-02	90.9	1
Q1-03	87.3	-4
Q2-03	86.4	-1
Q3-03	87.2	1
Q4-03	80.7	-7
Q1-04	79.8	-1
Q2-04E	**79.9**	**0%**

Source: RJ&A research.

Component Distributors: Moderating Bookings Growth Likely a Mid-Cycle Adjustment

After posting back-to-back quarters of double-digit sequential growth, we expect sales growth for the electronic component distributors to moderate this quarter and be more flattish on a sequential basis. First quarter 2004 sales growth of 20% year-over-year-year and 12% sequentially was well ahead of our estimates of 13% and 5.6%, respectively, and can be largely attributed to substantial growth in Europe due to customer inventory replenishment following stronger-than-expected sell-through in December. Growth in North America and Asia, although better than expected, was more modest although growth in Asia was in-line, with overall semiconductor sales growth in Asia for the second consecutive quarter, indicating that the largest component distributors continue to gain traction in penetrating this important region.

We expect 2Q sales growth to accelerate year-over-year for the fourth consecutive quarter and mark the sixth consecutive quarter of year-over-year growth. As shown on the following page, we estimate that electronic component distributor sales will rise nearly 25% versus last year, although we expect sequential growth to be just over 1%. The June quarter is normally a seasonally slower quarter for distributors, particularly in Europe.

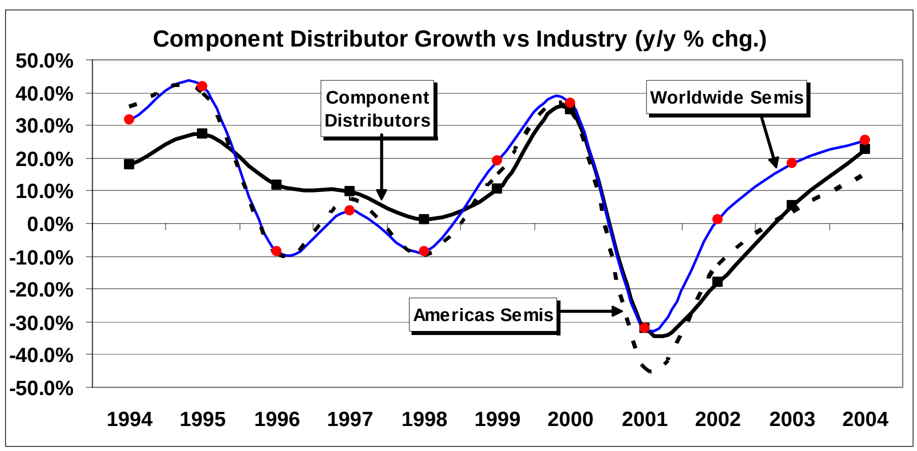
Importantly, we believe that the gap between distributor growth and the overall semiconductor industry should narrow for the third consecutive quarter, as shown in Figure 15. We estimate this gap to be 8.6%, down from 12.0% in Q1 and 15% last year. We expect this trend to continue, as our view again is that distributors benefit later in the cycle due to different end-market and geographic exposures than the broader industry. As Figure 17 shows, consumer spending has played a larger role in leading the semiconductor industry recovery to this point vis-à-vis corporate capital spending. With the exception of some indigenous business in Asia, electronic component distributors are much more dependent on business capital expenditure-driven end markets like industrial, telecommunications, and medical equipment. Because these end markets are becoming more important drivers of semiconductor consumption, we expect electronic component distributors to participate more broadly in the recovery.

Figure 15

Electronic Component Distributors		
	Y/Y % Chg.	**Seq. % Chg.**
O1-00	33.7	16.5
Q2-00	30.7	11.1
Q3-00	42.4	5.1
Q4-00	32.0	-1.1
Q1-01	2.2	-7.3
Q2-01	-34.0	-29.2
Q3-01	-48.0	-18.9
Q4-01	-48.2	-4.8
Q1-02	-44.9	-3.0
Q2-02	-23.6	-0.2
Q3-02	-8.0	-0.2
Q4-02	-5.5	-2.3
Q1-03	4.0	6.8
Q2-03	1.7	-2.4
Q3-03	2.2	0.4
Q4-03	14.6	9.6
Q1-04	20.3	12.1
Q2-04E	**24.9%**	**1.3%**

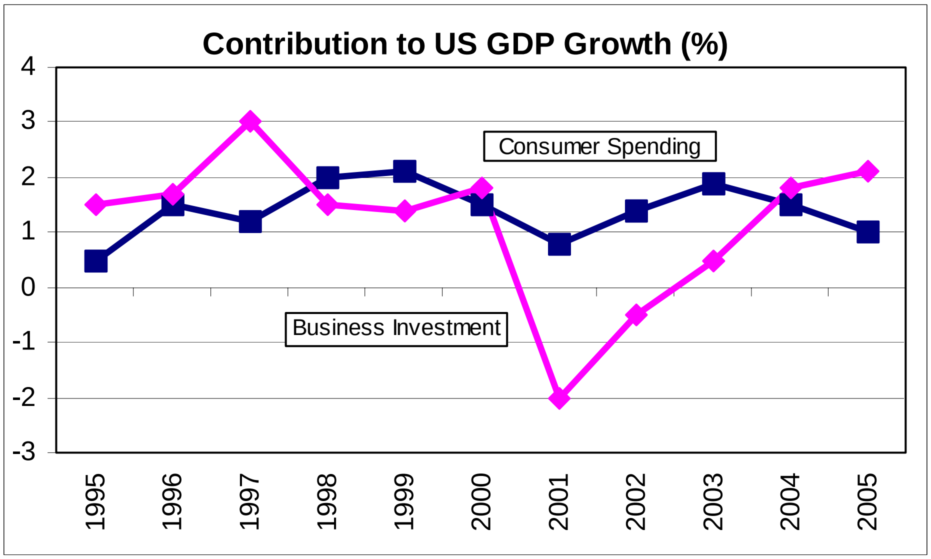
Source: RJ&A research.

Figure 16



Source: RJ&A research.

Figure 17



Source: US Commerce Department. Forecast: Reed Research Group.

While some investors have expressed concern about recent data points suggesting moderating book-to-bills for electronic component distributors, we believe that bookings growth remains healthy and book-to-bills remain above 1.0 outside of Asia Pacific and well above 1.0 in Asia. Book-to-bill moderation is a function of customers not building buffer stock as aggressively in the June quarter as they did in the December and March quarters when fears of component shortages may have been running at a higher level and OEM/EMS customers were concerned about their abilities to meet customer demand. Because end-market demand has seasonally softened over the past few months, it is only natural that OEM and EMS customers have become less desperate to build buffer stock. We view the current "adjustment" in bookings as healthy for the industry longer term, as aggressive orders may later result in higher-than-expected cancellations and reschedules if demand does not materialize. This phenomenon has led to a moderation of book-to-bill ratios, which we estimate have pulled back from over 1.1 in Q1 to slightly over 1.0 in Q2. Lead times have stabilized at 10 to 14 weeks, on average, although some parts have lead times that stretch beyond 20 weeks. Stable lead times have also resulted in stable pricing, so we would not expect distributors to experience much, if any, expanding ASPs or gross margins this quarter. It is also important to note that distributors have not experienced any meaningful cancellations or rescheduled orders, and the overwhelming majority of customer backlog is within 90 days, which is a relatively visible backlog. As backlog stretches beyond 90 days, it becomes much less reliable and more susceptible to cancellation or rescheduling. It is this point that gives us comfort with our mid-cycle adjustment thesis, and that we are not witnessing any major deterioration in industry conditions.

Investors should become more cognizant of seasonal factors, as we believe that seasonality is likely to play a larger role in this cycle than prior cycles given the maturation of the end markets that drive semiconductor consumption. As long as end-market demand does not deteriorate in the second half of 2004, we expect the cycle to move on, as it does not appear that capacity is coming online in any significant way this year.

Passive Component Sales Expected to Increase Further in Q2

Revenue in the RJ_ECI (Raymond James Electronic Components Index) also exceeded our expectations for the March quarter. Altogether, these companies posted an aggregate sequential revenue gain of 6% (+21% year-over-year) versus our 2% forecast. As was the case last quarter, cables/connectors were a major contributor to the upside in sales as both Amphenol and Molex saw revenue rise by 4% sequentially, whereas we had expected revenue to remain relatively flat. Vishay also played an important role with a 13% increase in revenue compared to our +8% forecast. Vishay's gains were more or less evenly split between passives and actives.

Our forecast for the June quarter calls for a 4% sequential increase (+24% year-over-year) as most component companies have seen the momentum built up in the March quarter continue into the April/May timeframe. Lead times have continued to stretch out and, although double-ordering is clearly a major concern for investors, we would note that sell-through rates remain strong and OEMs/EMS/distributors will find it quite difficult to continue to subsist on the lean inventory stocks they have relied upon so far if the second half of the year generates the normal seasonal strength. Given the extension of lead times, pricing pressure has also eased considerably in recent months and, in fact, some companies are planning to push through ASP increases in the next couple of months.

Figure 18

Passive Sales Survey

	Y/Y % Chg	Seq. % Chg.
Q1-99	8	4
Q2-99	15	7
Q3-99	20	7
Q4-99	29	9
Q1-00	38	11
Q2-00	48	14
Q3-00	50	9
Q4-00	39	1
Q1-01	9	-13
Q2-01	-32	-29
Q3-01	-46	-13
Q4-01	-46	2
Q1-02	-37	1
Q2-02	-6	7
Q3-02	10	1
Q4-02	6	-3
Q1-03	8	-1
Q2-03	4	3
Q3-03	5	2
Q4-03	17	9
Q1-04	22	6
Q2-04E	**24%**	**4%**

Source: RJ&A research.

Passive Component Inventory Trends Stable in June

Turning briefly to inventory, the dollar value of inventory in the RJ_ECI increased 3% from December to March. While outweighed by the 6% increase in sales, COGS were only up by 3% as margins improved substantially in the component sector. As a result, DIOs remained stable at 83.5 days for the March quarter, which was in-line with our expectations. After topping out at almost 130 days in 3Q01, inventory has improved steadily, and remains at its lowest levels since the third quarter of 2000. We expect little change in the June quarter; our forecast is for DIOs of approximately 83 days.

Figure 19

Passive Inventory Data

	Days of Inventory	Inv. as a % of Sales
Q1-99	93.1	74
Q2-99	88.9	70
Q3-99	85.8	66
Q4-99	82.7	63
Q1-00	81.1	59
Q2-00	77.5	53
Q3-00	79.8	53
Q4-00	88.1	59
Q1-01	101.0	70
Q2-01	125.6	97
Q3-01	129.1	107
Q4-01	122.5	103
Q1-02	112.6	95
Q2-02	106.2	89
Q3-02	103.7	86
Q4-02	103.8	88
Q1-03	100.7	85
Q2-03	97.8	82
Q3-03	89.5	76
Q4-03	82.8	69
Q1-04	83.5	68
Q2-04E	**83.1**	**67%**

Source: RJ&A research.

PCB Sales Expected to Slow; Company- and Customer-Specific Issues Responsible

Not one to be left behind, the RJ_PCBI (Raymond James Printed Circuit Board Index) also beat our expectations. The 9% sequential revenue gain in the March quarter was nearly double our 5% estimate. With the exception of Parlex (which suffered from seasonality in Asia and model changeovers by its largest customer), all companies in the index exceeded our top-line expectations, with major upside coming from DDi (10% growth vs. our 5% forecast), Merix (19% vs. 15%), and Rogers (14% vs. 4%). These companies all cited either strength on the higher end of the technology spectrum (especially in communications) and/or greater demand for compressed lead time (i.e. quick-turn) work as catalysts for the upside. Certainly some of this has been sold into the rising inventories in the EMS sector, but overall it was still an exceptional quarter. Pricing has also been favorable, but due more to improved mix in favor of advanced technology products. Overall, we would say that favorable pricing trends are not as robust as we would have expected at this juncture given their low starting base. We attribute the more intense pricing pressure to increased Asian competition in high-end PCBs and sub-optimal utilization at Sanmina.

The most notable hiccup in the June quarter was at Merix. However, we believe that Merix's pre-release was not necessarily indicative of broader weakness in the PCB industry and that most of its troubles are customer-specific (likely Cisco due to their inventory build). At the same time, the company's comments regarding a slowdown in demand for premium work (i.e. compressed lead time orders) warrant greater vigilance. Specifically, we expect a top-line gain of 2%. Seasonality at Rogers is also expected to account for a good chunk of the slowdown in revenue growth. Excluding Rogers, our revenue forecast would be for 4% growth, even after accounting for the negative Merix pre-release.

Figure 20

PCB Sales Survey	
	Seq. % Chg.
Q1-99	-4
Q2-99	6
Q3-99	8
Q4-99	1
Q1-00	3
Q2-00	16
Q3-00	17
Q4-00	9
Q1-01	-14
Q2-01	-35
Q3-01	-14
Q4-01	-8
Q1-02	3
Q2-02	3
Q3-02	-2
Q4-02	0
Q1-03	-6
Q2-03	-3
Q3-03	9
Q4-03	16
Q1-04	9
Q2-04E	**2%**

Source: RJ&A research.

Conclusions and Thoughts on Stocks

We drew the following conclusions from our second quarter survey:

First, IT shipments through distribution advanced at a double-digit pace for the third consecutive quarter. The bad news is that the year-over-year pace slowed to 12.7% compared with a much better-than-expected 16.6% in Q1. An estimated 4% sequential decline is below seasonally normal but partly explained by currency.

Second, momentum reversed geographically with European sales through distribution slowing sharply on both nominal and constant currency bases. We estimate a 14.1% rise in European shipments, equal to approximately 8.2% on a constant currency basis. This is somewhat offset by improving conditions in North America, where we estimate a 12.2% year-over-year gain, up from a 9.9% pace in Q1. The U.S. is now outpacing Europe!

Third, gradual improvement in IT spending from a very depressed level is helping domestic sales. Sales to SMB remain steady and are estimated to advance 5.6% over last year. The deterioration in European sales momentum is more difficult to explain, but is believed to be due to tough comparisons with much better-than-expected fourth and first quarters, currency, and higher energy prices.

Fourth, strongest product categories include systems and software products. Weakest categories include printers and storage.

Fifth, on the back end of the supply chain, year-over-year growth rates remain quite solid. We are forecasting EMS revenue to increase 4% sequentially (+24% Y/Y). Coincidentally enough, passives are expected to post the exact same gains (+4% and +24% respectively), while PCB sales will lag behind at +2% sequentially (but +40% Y/Y).

Sixth, looking to the second half of 2004, shipment and currency comparisons become more difficult and the current double-digit pace of growth will be hard to sustain. On the other hand, large corporate account spending is improving in the U.S., which should help to sustain long-term, IT industry growth at a high-single-digit pace.

With respect to stocks, we can offer data points within this survey on select companies not contained in our coverage universe and specific recommendations for companies under coverage.

Data points for stocks outside of our universe include the fact that systems and software were the strongest product categories. Within those categories, NPD information and channel feedback suggest that Microsoft, Symantec, IBM, and Acer are experiencing strong sales through distribution this quarter. Weakest product categories include printers and storage, and on the printer side, Lexmark's share of sales through distribution appears to be sliding. This might be fully explained by Dell's rapid ramp in printer shipments as Lexmark is a supplier to Dell.

Within our coverage universe, we offer the following recommendations organized by coverage analyst.

Semiconductors & Enterprise Hardware – **Ashok Kumar**

Intel remains our favorite large cap name for a late semi cycle play. The company is well positioned to benefit from the anticipated seasonal recovery. Manufacturing leverage is expected to play through 2005. The Communication Group swing to profitability will provide additional earnings lift.

In the mid-cap arena, our pick is **Cypress**. Alignment of design wins, end markets, and seasonality should result in financial outperformance in the second half. Along with compelling valuations, Cypress represents an attractive risk/reward profile near term.

Technology Distribution – **Brian Alexander/ Bob Anastasi**

Dell Inc. should benefit from strength in systems sales, improvement in large corporate account spending, and declining average selling prices. Component prices and ASPs had been flat for several months but are once again declining. This is a key variable in Dell's cost advantage and should work to its favor this quarter.

Ingram Micro – Disappointing June quarter guidance hit this stock in late April, but improving domestic sales trends and a modest 30% premium to tangible book value should help over the course of the year.

Tech Data Corporation – The strength in North American sales will likely be offset by weakness in European sales for Tech Data. Instead, the stock is recommended because of improving profitability in the company's large but low-margin European sector.

Insight Enterprises – More encouraging comments about large corporate IT spending bode well for Insight, which generates approximately 35% of sales from this customer segment. Combining this with management's demand commentary from its analyst day, we believe that sales are tracking at least in-line with consensus expectations. We believe expectations for Insight are modest at best based on conversations with investors and the current valuation at 13x 2005 consensus EPS. Catalysts for share price appreciation include meeting/exceeding consensus revenue and EPS estimates, accelerating year-over-year revenue growth and sequential operating margin improvement throughout 2004' and a general redoubling of efforts to grow the business after more than two years of internal focus.

Arrow Electronics – We prefer Arrow Electronics in the electronic component distribution segment given our view that semiconductor sales remain healthy and Arrow has a relatively higher exposure to this segment than Avnet. We believe that component distributor sales growth accelerated this quarter and, although bookings growth may have moderated, industry conditions remain healthy given stable end-market demand and normal inventory levels. While investors should not expect the same degree of upward estimate revisions going forward as in recent quarters, we believe that estimates for 2004 and 2005 are likely to move higher, ultimately allowing Arrow to achieve $2.75 in EPS this cycle. This should translate to a stock price in the low to mid-$30s given previous peak P/E multiples in the 12x to 13x range.

Electronic Manufacturing Services/Components – Shawn Severson/ Steve Smigie

Although we believe that significant upside to estimates will not be as broadly prevalent as in the previous couple of quarters, the overall risk-to-reward proposition still remains compelling. As has been our norm, we would prioritize the companies that have the greatest potential to exceed expectations. On the EMS side, we would focus on Celestica and Flextronics.

Celestica continues to lag behind most peers in margins and earnings. However, we still believe this is some of the appeal as an investment theme, as expectations are low and the potential for improvement is significant given the company's high exposure to the mid- to high end of the IT market. Despite the turmoil at Nortel, we still expect their deal with **Flextronics** to be consummated (hopefully by the end of the summer), and believe it should be a strong positive catalyst as it is integrated into Flextronics' vertical supply chain and as the company captures additional share. Independent of Nortel, leverage in Flextronics' higher-margin vertical integration (IC Design, networking services, ODM, PCBs, and enclosures) business units should also gain steam throughout the rest of 2004 due to improving demand from the IT infrastructure and telecom markets. Furthermore, Flextronics shares tend to outperform the market and its peer group in the latter part of the year as the company benefits from strong seasonal tailwinds.

On the component side, our top pick remains **Vishay**. Exposure to actives (50%) results in more favorable mix compared to AVX and KEMET, and we estimate the contribution margin of each additional dollar of revenue in the range of 40% to 50% on the gross margin line, which should generate strong earnings momentum for the remainder of the year and is especially salient as we are nearing the seasonally strong second half of the year..

International Rectifier - We believe the demand environment remains positive with the majority of International Rectifier's major end markets performing well. As the telecom recovery continues, we believe this will benefit the company as parts for this market carry higher gross margins. In addition to the end-market growth, International Rectifier is able to grow faster than its end markets as dollar content of semis on a multitude of devices is increasing. In addition to increasing dollar content of semis in general, power semiconductors are gaining share as a percent of content as power problems are increasing with increased complexity of electronics and as the world's power needs grow. From a product class perspective, International Rectifier has continued to see strong demand on the discrete side and the analog side. Capacity in the industry remains reasonable. Share price appreciation should be driven by possible upside to earnings over the next several quarters, particularly if pricing continues to improve. Also, we believe the correction in semi stocks has left IRF with a low multiple at just 14x our CY2005 EPS estimate of $2.86.

Specific Investment Risks Related to the Industry or Issuer

Industry Risks
Risks include pricing pressure, strength in capital spending and HP direct initiatives.

For Company Specific Risks please see www.rjcapitalmarkets.com/SearchForDisclosures_main.asp

The views expressed in this report accurately reflect the personal views of the analyst(s) covering the subject securities. No part of said person's compensation was, is, or will be directly or indirectly related to the specific recommendations or views contained in this research report.

Investors should consider this report as only a single factor in making their investment decision.

Public companies mentioned in this report:

Company Name	**Ticker**	**Price** (close on 6/16/04)	**RJ&A Rating** (if Applicable)
Amphenol	APH	$32.08	
Apple	AAPL	32.74	
Arrow Electronics	ARW	26.66	Outperform
Avnet	AVT	22.27	Outperform
AVX, Inc.	AVX	15.29	Underperform
Celestica, Inc.	CLS	19.32	Strong Buy
Cisco Systems	CSCO	23.88	Market Perform
Cypress Semiconductor Corp	CY	14.54	Outperform
DDi Corp	DDIC	8.35	
Dell Inc.	DELL	35.39	Strong Buy
FedEx Corporation	FDX	78.17	Market Perform
Flextronics International Ltd.	FLEX	16.38	Strong Buy
Hewlett-Packard	HPQ	21.50	
IBM	IBM	90.38	
Ingram Micro	IM	14.08	Outperform
Insight Enterprises, Inc.	NSIT	17.49	Strong Buy
Intel	INTC	28.12	Outperform
International Rectifier	IRF	41.18	Outperform
Jabil Circuit, Inc.	JBL	28.05	Outperform
KEMET Corporation	KEM	11.48	Underperform
Lexmark International	LXK	94.26	
Maxtor Corp	MXO	6.98	Underperform
Merix Corp.	MERX	10.80	Market Perform
Microsoft	MSFT	37.32	
Molex, Inc.	MOLX	30.31	Market Perform
Nortel	NT	4.09	
Parlex	PRLX	6.45	
Rogers Corp	ROG	66.11	Strong Buy
Sanmina-SCI Corp.	SANM	9.44	Strong Buy
Seagate	STX	13.85	Underperform
Solectron Corporation	SLR	5.09	Outperform
Sony	SNE	37.28	
Symantec Corp.	SYMC	40.77	Strong Buy
Tech Data Corporation	TECD	39.02	Strong Buy
United Parcel Service	UPS	73.14	Outperform
Vishay Intertechnology, Inc.	VSH	18.00	Strong Buy
Western Digital Corp	WDC	9.03	Market Perform
Xerox Corp	XRX	14.16	

Important Investor Disclosures.

Stock Ratings: Within our four-tiered rating system, Strong Buy means that the stock is expected to appreciate and produce a total return of at least 15% and outperform the S&P 500 over the next six months; *for higher-yielding and more conservative equities, such as REITs and certain MLPs, a total return of at least 15% is expected to be realized over the next 12 months.* Outperform means the stock is expected to appreciate and outperform the S&P 500 over the next 12 months; *for higher-yielding and more conservative equities, such as REITs and certain MLPs, an Outperform rating is used for securities where we are comfortable with the relative safety of the dividend and expect a total return modestly exceeding the dividend yield over the next 12 months*. Market Perform means the stock is expected to perform generally in line with the S&P 500 over the next 12 months and is potentially a source of funds for more highly rated securities; and Underperform means the stock is expected to underperform the S&P 500 or its sector over the next six to 12 months and should be sold.

Out of approximately 566 stocks in the Raymond James coverage universe, 51% have Strong Buy or Outperform ratings (Buy), 38% are rated Market Perform (Hold) and 11% are rated Underperform (Sell). Within those rating categories, 31% of the Strong Buy or Outperform (Buy) rated companies either currently are or have been Raymond James Investment Banking clients within the past three years; 22% of the Market Perform (Hold) rated companies are or have been clients and 15% of the Underperform (Sell) rated companies are or have been clients.

Analyst Holdings and Compensation: Equity analysts and their staffs at Raymond James are compensated based on a salary and bonus system. Several factors enter into the bonus determination including quality and performance of research product, the analyst's success in rating stocks versus an industry index, and support effectiveness to trading and the retail and institutional sales forces. Other factors may include but are not limited to: overall ratings from internal (other than investment banking) or external parties and the general productivity and revenue generated in covered stocks. **The analyst or the research associate owns shares of common stock in DELL and TECD.**

Raymond James Relationships: RJA expects to receive or intends to seek compensation for investment banking services from the subject companies in the next three months. **Raymond James & Associates makes a NASDAQ market in shares of CSCO, DELL, FLEX, INTC, MERX, MOLX, SANM, SYMC, and TECD. Raymond James & Associates or one of its affiliates owns more than 1% of the outstanding shares of Tech Data Corporation. Raymond James & Associates received non-investment banking securities-related compensation from CSCO and TECD within the past 12 months. Raymond James & Associates received non-securities-related compensation from TECD within the past 12 months. Raymond James & Associates participated in a public offering of MERX shares in January 2004. A member of the Board of Directors of Raymond James Financial, Inc. is an employee of Intel Corp.**

Complete Risk and Disclosure information, as well as more information on the Raymond James rating system and suitability categories, is available at www.rjcapitalmarkets.com/SearchForDisclosures_main.asp. Copies of research can be obtained by contacting any Raymond James & Associates or Raymond James Financial Services office (please see www.rjf.com for office locations) or by calling (727) 567-1000 or sending a written request to the Equity Research Library, Raymond James & Associates, Inc., Tower 3, 6th Floor, 880 Carillon Parkway, St. Petersburg, FL 33716.

Additional information is available on request. This document may not be reprinted without permission.

The Raymond James Technology Research Team

Robert P. Anastasi, CFA, Director of Research (727) 567-2286

Brian G. Alexander, Technology Distribution (727) 567-2312

Ashok Kumar, CFA, Semiconductors/Enterprise Hardware (650) 614-4007

Mike Latimore, Communications Software (404) 442-5862

John T. Mahoney, IT Services (727) 567-2565

Chris Quilty, Defense Electronics/Mobile Data & Imaging Technology (727) 567-2602

Jonathan Ruykhaver, CFA, Infrastructure Software (727) 567-2498

Shawn Severson, Electronic Manufacturing Services/Components (727) 567-2682

J. Steven Smigie, Electronic Manufacturing Services/Components (727) 567-2557

Justin Cadman, Sr. Research Associate

Scott Hanson, Sr. Research Associate

Duane Pfennigwerth, Sr. Research Associate

Doug Thompson, Sr. Research Associate

Peter Chung, Research Associate

Greg Lee, Research Associate

David Nazaret, Research Associate

Raymond James Investment Ratings

1. **Strong Buy** — Expected to appreciate and produce a total return of at least 15% and outperform the S&P 500 over the next six months. *For higher-yielding and more conservative equities, such as REITs and certain MLPs, a total return of at least 15% is expected to be realized over the next twelve months.*
2. **Outperform** — Expected to appreciate and outperform the S&P 500 over the next twelve months. *For higher-yielding and more conservative equities, such as REITs and certain MLPs, an Outperform rating is used for securities where we are comfortable with the relative safety of the dividend and expect a total return modestly exceeding the dividend yield over the next twelve months.*
3. **Market Perform** — Expected to perform generally in line with the S&P 500 over the next twelve months and is potentially a source of funds for more highly rated securities.
4. **Underperform** — Expected to underperform the S&P 500 or its sector over the next six to twelve months and should be sold.

Suitability ratings are not assigned to stocks rated Underperform. Projected 12-month price targets are assigned only to stocks rated Strong Buy or Outperform.

Suitability Categories

Total Return (TR)	More conservative investments with dividend yields of 2.5% or more and favorable appreciation prospects.
Growth (G)	Quality companies with well-above-average appreciation potential, quarterly earnings consistency, and possibly a small dividend.
Aggressive Growth (AG)	Companies with rapid growth potential and accompanying higher risks.
Cyclical (C)	Companies with fundamentals that are unusually sensitive to changes in major economic trends.
Speculative (S)	Small companies with high risks including variable earnings, financial and competitive factors as well as liquidity issues.
Venture Risk (VR)	Newer companies with a short, unprofitable operating history, limited revenues, and a much higher-than-normal risk associated with success.