



Worth Noting

The Fortnightly Journal of L21 Management Consultants

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Worth Noting is the fortnightly journal of L21 Management Consultants. The aim of the publication is to provide our clients and associates with insights of relevance to their business. It will be distributed every second Monday.

Worth Noting will focus on the three key practice areas of L21, namely:

- Strategy
- Growth
- Business Development

Practice Area: Strategy

Technology Industry: Segment Analysis

In this edition of *Worth Noting*, we will focus on the US-based technology industry leaders. Breaking the industry up into four key segments, we will seek to paint an accurate picture of the real state of the technology business today.

We can add little to the acres of commentary on the technology crash of April 2000. What we will seek to do, however, is ascertain whether things are as bad as the markets would suggest. And further, we will put an argument as to the segment of the industry which is likely to bounce back best.

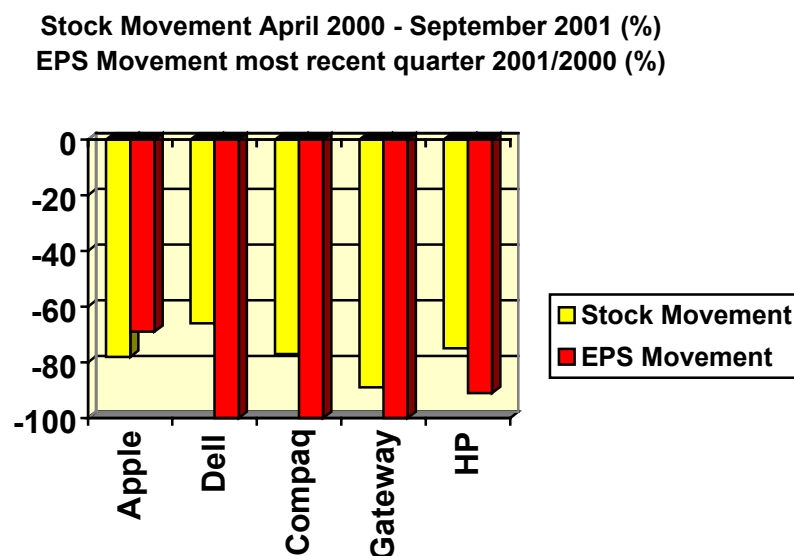
The four segments we will look at are Computer Hardware, Semiconductors, Networking Equipment, and Computer Software.

Computer Hardware

With the exception of consumer-focused Internet companies, the computer hardware market is the hardest hit of any technology segment since the April crash. It is a mature business characterized by heavy competition, product commoditisation, and low margins. There is no question that it is an unattractive industry now – the question is whether it is likely to recover.

While stock prices have been savaged in this segment, remarkably, proportionate falls in earnings have been even worse. When one considers that since April 2000 stock prices in this segment have fallen by more than 75% on average, it becomes clear how bad the market perceives the situation to be.

The following chart focuses on 5 of the 6 key computer manufacturers – Apple, Dell, Compaq, Gateway and Hewlett-Packard. We have excluded IBM as its Global Services division now drives the company rather than the manufacturing of computer hardware. We have looked at the change in stock price between April 2000 and September 21, 2001, and compared these changes to changes in earnings between the most recent 2001 quarter, and the corresponding quarter from 2000.



Source: Hoover's, Company Reports

In cases where negative EPS has been recorded – that is, a loss – we have used a figure of negative 100% to account for the total loss in profitability.

In all cases except Apple, earnings have declined by proportionately more than stock prices. While one can argue about potential future cash flows and whether they are accurately reflected by these valuations, one thing is clear: the computer hardware segment is in a state of genuine crisis.

The computer hardware segment has many characteristics which make it susceptible to a downturn in demand, namely:

- High fixed costs
- High COGS
- Low margins
- Inventory lags

As demand has slowed since mid 2000, the segment's cost structure and lack of flexibility has hit profits hard. Little wonder that two of its leaders – HP and Compaq – are seeking to merge and refocus their business on the services niche which IBM has so successfully carved out.

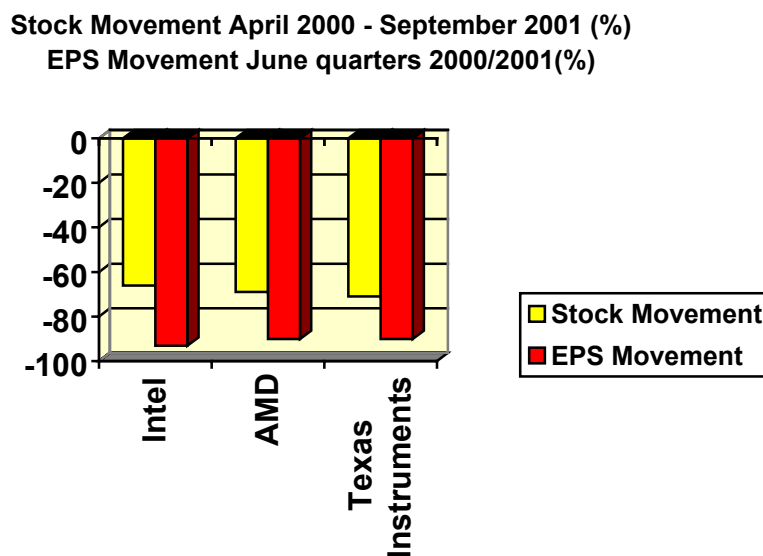
In our view, this segment will consolidate in the next 1-2 years. Regardless of whether or not their merger pans out, HP and Compaq will shift their focus into services. The three “pure” hardware manufacturers – Apple, Dell and Gateway – are likely to increase market share as a result. Margins will likely expand as realism hits the market, and companies exit product lines which produce little or no income.

The computer hardware industry is in a genuine state of crisis – something has to, and will, give.

Semiconductors

One of Wall Street's most keenly followed segments is semiconductors. The chipmaking business saw phenomenal growth during the 90s, as industry giant Intel constantly expanded the processing power of computers through improvements in its products.

The chipmakers have been heavily affected by the technology downturn, as reflected by the following chart.

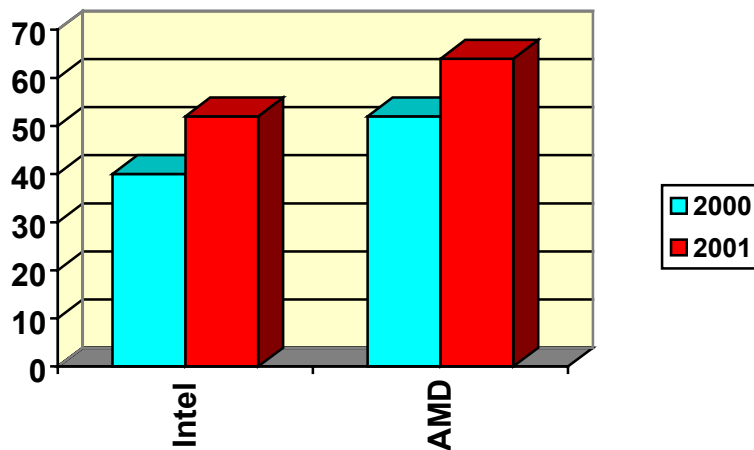


Source: Hoover's, Company Reports

The industry has seen two worrying trends: falling revenues and increasing COGS. Revenues are down by around 20% across the board. Price cutting

is in full swing as Intel and AMD go head to head to reduce inventories as demand falls. Low COGS and high margins have typically characterized this segment. This has provided its leaders with something of a buffer zone – a buffer zone which is rapidly being eroded.

**Semiconductor Leaders COGS as % of Revenue
Most recent quarter 2001/2000**



Source: Hoover's, Company Reports

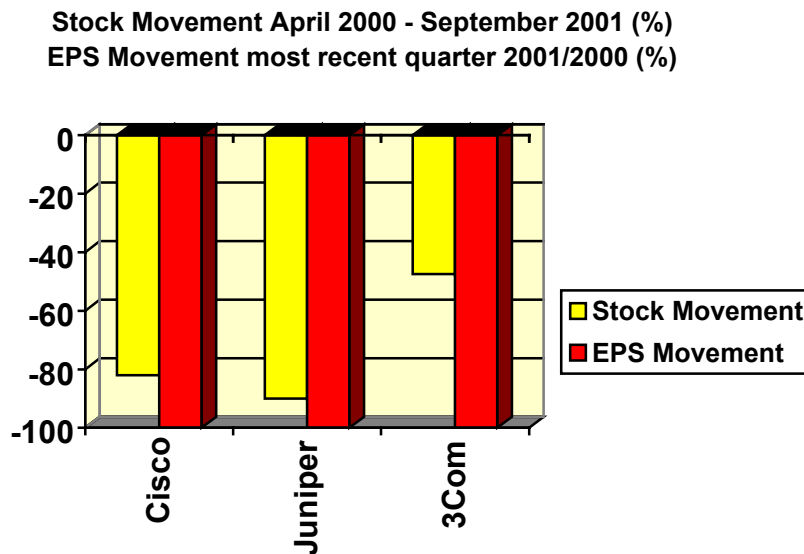
The good news is that the chipmakers started off with relatively low COGS. The bad news is that they have both seen that key metric increase by 12% in the past year.

The outlook for this segment is closely aligned to the outlook for PC sales, as most chips end up inside personal computers. The advantage the semiconductor companies have over the computer hardware companies is their relatively lower COGS and therefore higher margins. As we have seen above, though, this is an advantage which the segment is in the process of losing. AMD has relatively small cash reserves at just over \$1 billion, meaning that it cannot finance a long, value destroying price war. Once prices stabilize, the prospects for this segment appear sound.

Networking Equipment

The term "Networking Equipment" refers to those devices which are used to manage and direct data traffic across a Local Area or Wide Area Network. This is a segment which has been, and continues to be, dominated by Cisco. No company was more symbolic than Cisco of the rise of the Internet. Briefly, the company displaced Microsoft as the world's most valuable company – until the market crashed and GE returned to its traditional position, displacing both of them.

Once again, there is little good news here. Last quarter, Cisco broke even, and two of its main competitors – Juniper Networks and 3Com – recorded heavy losses.



Source: Hoover's, Company Reports

The key problem which has hit this industry is a simple one: a huge decline in revenue and associated inventory problems.

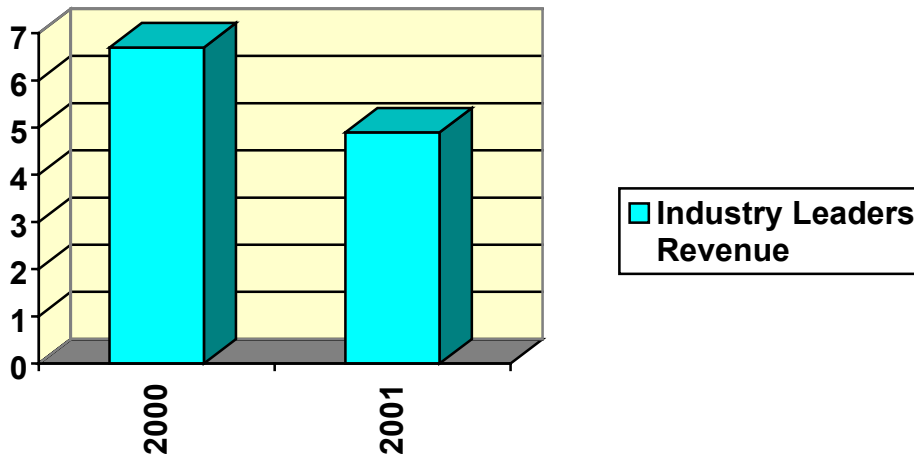
The cost structure of this industry does not make it particularly susceptible to a rapid loss of profitability. COGS are manageable at around 50% of revenue, and staffing and administrative costs are generally proportionately lower than in many other technology segments due to the relatively high average sale size.

The problem for this segment is a very simple one: how important are the products it makes?

This segment makes its money out of products which manage Internet traffic. The products detect when a network may be overloaded and route traffic accordingly, increasing the productivity of computer hardware and hence employees. There is no question that the market is a real one and here to stay.

What is less clear, though, is whether the networking market is as large an opportunity as was thought at the height of the Internet boom. Since mid 2000, companies have been deferring or canceling planned networking equipment expenditures. If we look at the most recent quarter sales figures for our three highlighted companies collectively, we see a very sharp fall in revenue.

Networking Leaders Revenue (\$B, US)
Most recent quarter 2001/2000



Source: Hoover's, Company Reports

The three leaders have seen their revenue decline collectively by 30%. Given that the industry and most analysts were predicting average annual revenue growth of 50% just over a year ago, it is little wonder that the segment has taken such a beating in the markets.

The problem is that it is difficult to see the catalyst that will make this segment bounce back.

In the computer hardware market, the likely consolidation will see less cut-throat competition and a more sensible approach to pricing. That segment is at a flashpoint and needs to get its house in order, and more sensible pricing and the sustainability that this will bring is a likely outcome.

The networking industry does not have such clear dynamics though. Margins remain fairly strong, with the exception of the ailing 3Com. Cisco still holds 80% of the market, though Juniper is making some inroads. There is no indication that the segment's customers are suffering from their deferrals and cancellations of purchases.

Simply put, it is hard to see what event will occur to make networking equipment move back up the business shopping list. Networks only need to be replaced every 5-6 years, and the switches and routers which manage traffic over them are similarly hardy. The current hope of the industry is that wireless networks based on 802.11 and other protocols will take off, requiring the purchase of networking equipment specifically designed for the wireless

environment – Cisco acquired Australian-based Radiata with this in mind last year. But the “wireless revolution” has been a long time coming, and is unlikely to ever account for more than 5-10% of all networks. To reach even that point will take many years.

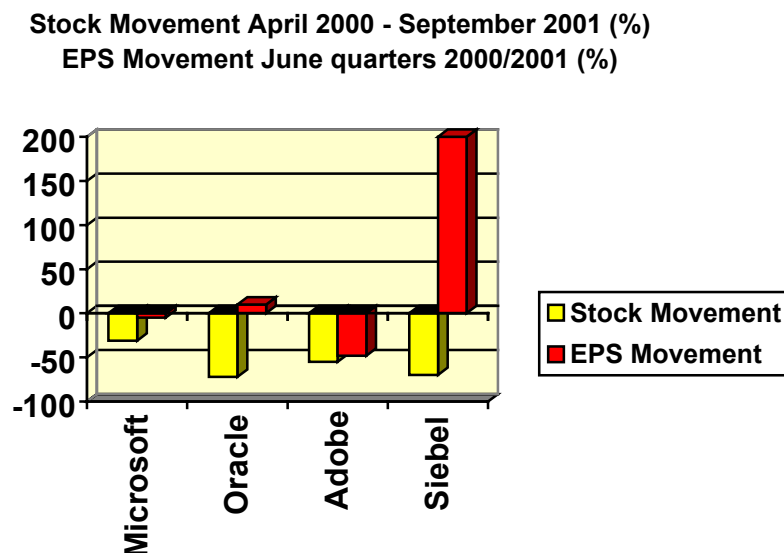
Despite a sound cost structure, we think this industry will continue to face problems as it struggles to re-ignite consumer demand.

Software

In our analysis of the software market we have focused on four companies. The two largest – Microsoft and Oracle – along with design software leader Adobe and the leader in the competitive CRM market, Siebel Systems.

The contrast with other segments in the technology industry is clear. While all other sectors have seen near-total loss of profitability over the past 12 months, software profits have held up quite well. Oracle and Siebel Systems have actually improved Earnings Per Share, while excluding abnormal investment losses, Microsoft’s profitability has only declined marginally. Of the selected companies, Adobe is the only one to see a significant fall in profits.

It is worth noting that despite these relatively strong results, stock prices have still fallen dramatically. Oracle and Siebel – both of which actually improved earnings during the period – saw their stock prices fall by more than 70%.



Source: Hoover’s, Company Reports

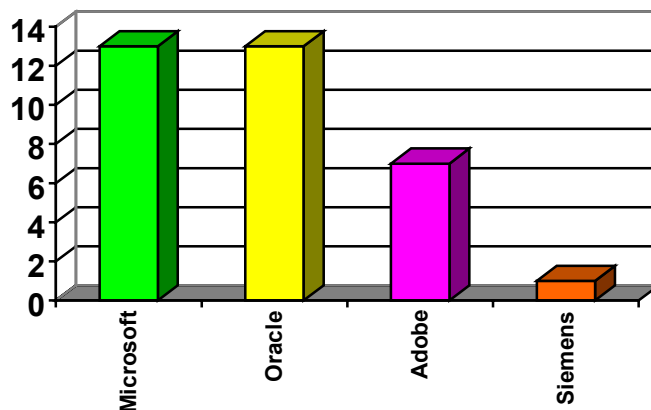
Neither the resilience of the software market – nor the market’s apparent failure to pick up on it – are particularly surprising.

The key distinction between the software business and most other technology sectors is its low cost structure. Computer hardware makers need to manufacture or purchase literally hundreds of components which make up their machines. Similarly, network integration companies work with complex and expensive inputs which allow them to build their products. And the peculiar requirements of the semiconductor industry mean that state-of-the-art manufacturing facilities need to be purpose built. Manufacturing chips requires sophisticated equipment and even more sophisticated infrastructure – all of it is expensive.

The higher fixed costs and cost of goods sold for the above segments means that margins are lower than in the software market. Computer hardware, the most mature of these industries, is characterized by extreme competition and shrinking margins. As discussed above, perhaps the most dramatic margin pressure of all is in the semiconductors segment where AMD continues to pressure Intel and both companies are slashing prices to clear enormous inventories. While this activity is likely to stabilize with COGS of around 50%, this is still a much higher figure than that enjoyed by the software segment.

Once a software product is created, the cost of producing another for sale is tiny – it is simply a matter of running off another copy. So the segment starts off with a key advantage over others in its low COGS. The highest COGS in the segment is 13%, while Siebel's minimal distribution costs and high average sale size produce COGS of a remarkable 1%.

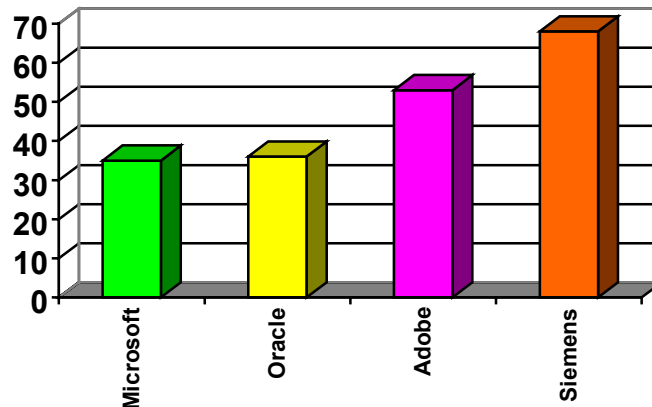
**COGS as % of Revenue Software Leader
Most recent quarter 2001**



Source: Hoover's, Company Reports, L21 Analysis
(Oracle estimate for software portion of business)

The low COGs mean that companies can put a large proportion of their operating revenues back into Sales & Marketing. Computer Hardware manufacturers could only dream about a cost structure which allows such an investment in future sales.

**Software Leaders Sales and Marketing
Expenditure as % of Operating Expenditure
Most recent quarter, 2001**



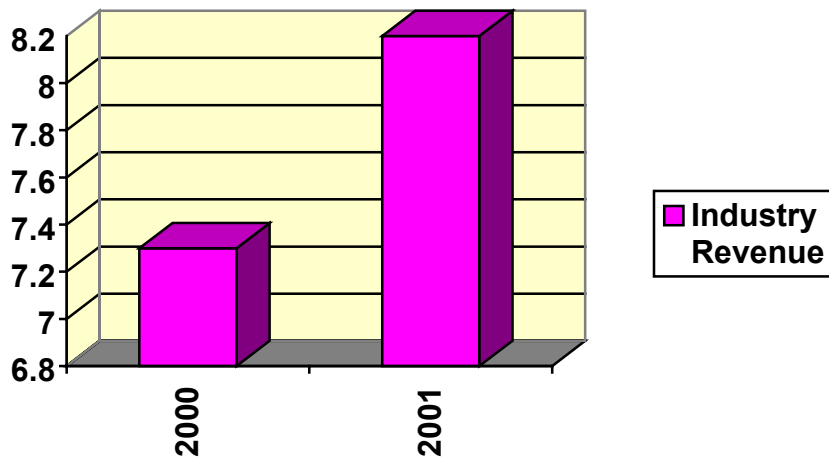
While the segment enjoys strong advantages on the costs side, its leaders are also particularly well placed from a demand perspective.

Because of the shared nature of many tasks involving software, a leadership position is hard to attack once established. For instance, co-workers preparing a presentation for an upcoming board meeting need to work on the same standard – once PowerPoint is established as the de facto standard, what incentive does a customer have to change? One of the more telling moments of the Microsoft Anti-Trust case came when the company admitted under cross-examination that it did not need to have regard to the pricing of any other software company when setting prices. Customers were effectively locked into the leader's products.

While no company enjoys the dominance of Microsoft, its privileged high margin position is not uncommon. Adobe has established leadership in graphics software – the PDF files we are so accustomed to have reached a critical mass where it is difficult to see its leadership being challenged. And similarly, Oracle has established such dominance through its various interlocking software and database products that it is very difficult to build a corporate network without purchasing something from the no.2 software company.

These advantages came together to help the spotlighted companies actually grow revenues in the last 12 months.

Software Leaders Revenue (\$B, US)
Most recent quarter 2001/2000



In the next issue of Worth Noting, we look at uses of technology by Australian companies to lower costs and increase earnings.