

SENTIMENT PART II: THE UNLOVED TECHNOLOGIES

An examination of the investment and trading opportunities within two currently unloved subsectors of The Red Herring Technology 200: storage and enterprise computers.

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In last month's column, we introduced the sentiment indicator, a measure of negative perceptions about market issues. this month we apply the indicator to specific technology investments.

We'll show you the investment and trading opportunities we see within two currently unloved subsectors of **The Herring Technology 200**: storage and enterprise computers.

As we discussed last month, sentiment is a contrarian indicator. The higher the sentiment reading, the more hated the issue. As a reading becomes very high (approaching 100), the greater the likelihood that an issue is due for a sentiment shift. In high readings, we're looking for the unloved stock about to become loved again. For these stocks, buyer perceptions and stock prices have touched bottom. If we can identify that bottom juncture, we can buy at the low point and benefit as the price begins to rise.

The Sentiment on the Tech 200

Figure 1 shows a chart of our sentiment readings for each of the Technology 200's subsectors, for the overall market (as represented by the S&P 500) and for the technology sector (the Technology 200). Notice first that the macro message does not show a sentiment extreme. The reading of 47 for the S&P 500 indicates a rotational market. Some issues are in favor, some out of favor, but the overall market is trendless. The Tech 200, with a reading of nearly 40, is well beyond its bottom juncture as its trend inches higher. However, the sentiment numbers show two groups with extremely negative readings: storage (73.27) and enterprise computers (82.0). It is in these two groups that we are looking for low-risk, high-reward purchase candidates.

Figure 1: Sentiment Readings: The Herring TECH 200 Subsectors	
Tech 200 Subsectors	Sentiment Reading
Enterprise Computers	82.00
Storage & Peripherals	73.27
Retail/Wholesale Distributors	67.00
Local Area Networks	64.36
PC Software	60.00
S&P 500	47.00
Desktops & File Servers	44.44
Multimedia Enabling Technology	43.18
New Media Content	40.48
THE HERRING TECH 200	39.80
Computer Data Services	36.00
Enterprise Software	33.68
Semiconductor Equipment	20.00

Wide Area Networks	20.00
Video & Voice Services	15.00
Semiconductors	8.79
Communication Services	0.00

As we'll see, differing scenarios underlie the negative sentiment on the storage and enterprise computer groups. The negative sentiment about storage reflects a fundamental change in the nature of the disk drive business from a high-technology model to a more commodity-like market. In enterprise computers, manufacturers must weather an overriding secular change from the old computer industry to its new, post-1990 successor industry.

The Storage Group

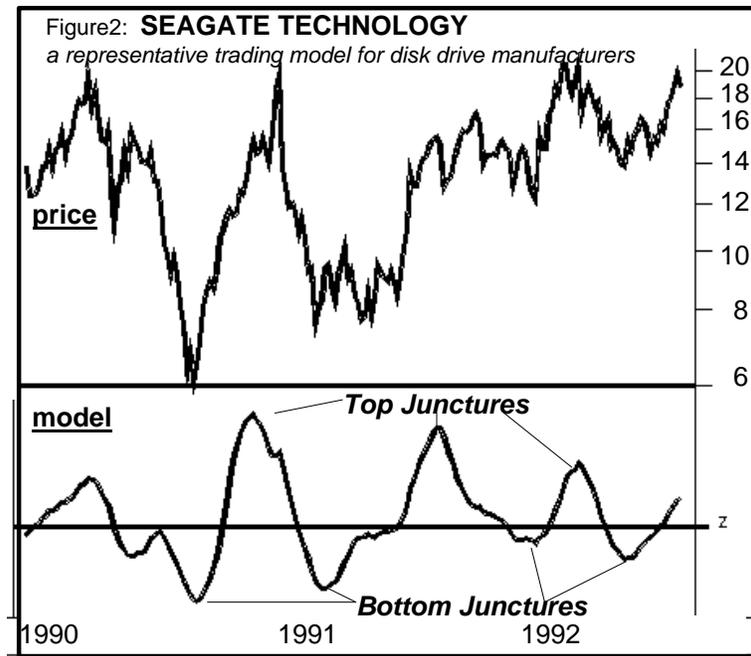
Taking a closer look at storage, we eliminated the peripheral manufacturers from the group. This let us focus on the plight of companies involved in computer storage, for nearly every member of this subsector is in a cyclical downtrend. In the first six months of 1993, while the overall market rose 3.4%, storage stocks lost an average of 38%.

The real-world scenario underlying the downtrend is the tremendous pricing pressure faced by storage. As PC sellers have engaged in price wars, they've tried to cut costs by using the least expensive components. Storage is one area where the PC seller can scrimp, because end-users know very little about the drives. Aside from the number of megabytes (MB), most PC buyers have no idea what drive is in the box, nor do they much care.

Manufacturers can differentiate products at the very low end (miniature drives for portables) and at the very high end (multi-gigabyte drives and disk arrays), but in the broad middle range of disk drive requirements, there is very little product differentiation. This broad middle can be defined as drives that use the IDE (integrated drive electronics) interface, with sizes ranging from 80 to 500 MB, and access times below 16 milliseconds (ms). Manufacturers can't charge premium prices for these devices since the market does not perceive the existence of premium features. Accordingly, drive prices in the middle range have fallen precipitously to about \$1 per megabyte, where they have appeared to have reached some sort of bottom. To make money at such prices, drive manufacturers must rely on volume. Their fortunes then rise and fall with supply and demand.

The negative sentiment on storage also derives from a certain decline in its technological "gee-whiz factor." Rotating drives are far from new technology. Indeed, they are the last moving parts in the computer. While the rest of the system consists of solid-state components, the drive's rotating platter and read-write head are descendants of the hi-fi turntable. In portables, rotating rigid storage is already being replaced with solid-state flash memory cards. And for higher-capacity requirements, research is ongoing for a replacement technology (such as devices that store the zeroes and ones of digital information encoded in the spin direction of individual electrons). Storage companies' stocks don't trade like high technology issues because, in many respects, today's hard drives are the computer's lowest technology components.

What we have in storage, therefore, is the classic definition of a commodity: One product seems as good as another, the buyer looks for the best price, and price fluctuates with supply and demand. Until a replacement technology for rotating rigid drives comes along, we see mid-range storage remaining a commodity business that offers trading vehicles, not investments.



When we examine the charts of the drive manufacturers, we find the classic commodity pattern. Figure 2 charts **Seagate** (SGAT - \$19), one of the largest of the PC drive manufacturers. (All stock prices as of 8/13/93.) If you bought Seagate as an investment in 1982, you have barely kept pace with the S&P 500. Yet, as a trading vehicle, Seagate has been superior. For example, since 1990, if you bought the stock at its bottom junctures and sold at the tops, your return would have been an astounding 525%. Currently, you would be long in Seagate, having purchased it at \$13.875 at its bottom juncture in April. Seagate is leading the storage subsector out of its downturn, and we detail here some of the trading opportunities we see developing throughout the group.

Quantum (QNTM - \$11.75) is a manufacturer experiencing the difficulties of trying to perform like a high-technology company in a commodity-like market. The company's profits for Q1 of this year were off 84% from a year earlier, and the company is engaged in layoffs. Quantum's plight, however, offers a trading opportunity. It is now at the bottom of a 4-year trading range. From its current level, it has the potential to go to \$18, which is the top of the trading range. At that point, we would re-evaluate our expectations for the stock. Note that if the price goes below \$9.50, the stock is not likely to advance. (As we go to press, Quantum has announced an agreement with **Silicon Storage Technology** which involves Quantum in the manufacturing and marketing of solid-state storage products. We believe that Quantum's involvement in newer technologies like solid-state storage adds credence to an upturn scenario for the company.)

We see another trading opportunity in **Komag** (KMAG - \$20.50). This issue is not showing the overall downtrend that the group as a whole is experiencing. Komag is not a drive manufacturer but a supplier of drive components to manufacturers. As such, it appears to have escaped the direct force of relentless, downward price pressures. If this issue goes through \$24.50, it could go as high as \$32.

Storage Technology (STK - \$24.625), a supplier of mainframe storage, also bears watching. Investors were disappointed in the delay of the company's Iceberg product, but the effect of that bad news could already be discounted in the price. The sentiment shift on this stock could still be

some 6-10 weeks away from our press time in mid-August. But, come September-October, we would evaluate this stock for evidence of a turnaround.

Enterprise Computers

The underlying challenge for enterprise computer makers is staying abreast of rapid technological innovation. The enterprise computer group, as defined by the Tech 200, contains many companies spawned in the "old" computer industry that existed before the '87-'90 period of secular change. That 1987-90 period saw the end of a generation-long secular down-cycle and the beginning of a new up-cycle, which divided the computer industry into two nearly separate industries, one succeeding the other. The old industry was characterized by proprietary architectures geared solely for the business market, while the new industry is based on fierce competition in standards-based systems and the development of personal computing. The old industry is in secular decline, but the new is still in ascendance.

When we apply numerical analysis to the enterprise computer group, we see issues in a secular decline. In short, we see companies whose overall movement is driven not by the rising curve of the new computer industry, but by the declining curve of the old. Since the subsector's peak in August 1987, while the S&P 500 gained 34%, the enterprise computer group declined 36%. As Figure 3 shows, new-industry companies (**Sequent** and **Pyramid**) have done well relative to the market, but, excepting **HP**, all the old players are struggling. The question for these companies is whether they can remake themselves into strong players in the new computer industry.

In our technology scenario, the prospect is not good for some of these companies, particularly those involved in supercomputing and mainframes. It will also be rough going for companies that have long been dependent upon proprietary architectures and are late entrants into the market for today's standards-based products.

Turning first to supercomputing, we believe that the rationale for these super-expensive, high-performance machines may be disappearing. The tasks of supercomputing are no longer being performed by single, powerful machines. Instead, supercomputing applications are being tackled by new combinations of software and hardware and by parallel processing using multiple standard chips like the 486 and Pentium. On the basis of technology, it is difficult to construct a turnaround scenario for supercomputer makers. However, **Cray** (CYR - \$20.75) presents a trading opportunity. The stock price is still moving towards its negative extreme, which we believe will be at \$19. If it can hold \$19, it could rebound to \$27.

The technological prospects are also poor for mainframes. **IBM** (IBM - \$41.625) controls this market, and Amdahl offers a "plug-compatible" alternative to IBM machines. As mainframes are replaced by networked computing architectures, it remains to be seen if these two companies will have a long-range future. IBM, in particular, may have within its huge technology storehouses the germ of many products that could succeed in the new industry: the PowerPC chip (jointly developed with **Motorola** and currently being manufactured by IBM), products for advanced networking technology ATM (asynchronous transfer mode), and parallel processing mainframes. However, no one knows if IBM can remake itself. If its stock price climbs back to \$46, this would be an early signal that the market believes IBM can make the transition. If the price goes to \$50 and stays there, it could indicate that the market has begun its shift towards a positive sentiment about IBM's future.

The best possibility for long-term growth lies with companies that can benefit from the move to client/server and networked computing. Among these are HP, **DEC**, Sequent and Pyramid. They offer an "open computing" alternative to the mainframe and were early participants in networked architectures. These enterprise computer makers have suffered during the recession, as buyer corporations put off purchases of capital goods like computer systems and instead shored up older systems with database software, packaged software upgrades, and connectivity products. With the recession over, two scenarios are possible. A positive scenario sees corporate buyers

purchasing enterprise computers as part of their move toward client/server solutions. A more cautious scenario sees them coming weakly out of the recession, spending slowly, and buying less-expensive, off-brand boxes wherever possible.

Some enterprise computer makers, including Hewlett-Packard and Pyramid, have already been beneficiaries of the positive scenario. However, we do not have a current trading recommendation on either. For example, HP (HWP - \$75.375) has outperformed the overall market since 1990, but its longer-term secular trend is still ambiguous relative to the market. If HP's stock price rises above \$90, that will confirm HP's secular leadership in the enterprise computer group.

We see good investment prospects in Sequent (SQNT - \$13.52). The company's large servers are the prime replacements for mainframes, and its new Windows NT server is just coming to market. Right now, our scenario makes a stronger case for Sequent than does our numerical analysis; the stock has been weaker than we would have expected. But the stock is near a bottom juncture, where it could be setting up for a turnaround. If the stock price holds at \$10, that could represent its bottom price for many years.

DEC (DEC - \$36.75) presents the best risk/return potential of the enterprise computer group. The company's share price is moving toward its negative sentiment extreme, and the market has not yet recognized DEC's potential. At press time (mid-August), we still have not received a turn signal. However, we are watching for a move above \$39 as a signal that the sentiment shift is underway. The longer DEC's stock price holds above \$35, the more likely that the sentiment shift has occurred. The first target price is \$50. Above \$50, a case can be made that the secular downtrend on DEC is over, and the stock could reach \$80 as the next objective. Beyond that, it's too soon to speculate.

**Figure 3:
The Secular Decline in the Enterprise Computing Group**

COMPANY	Stock price 8/25/87	Stock price 8/13/93	% Change
Pyramid Technology	\$8.25	\$19.00	130.30%
Sequent Computer	\$8.87	\$14.00	57.57%
Hewlett-Packard	\$68.25	\$75.37	10.44%
Stratus Computer	\$30.25	\$23.87	-21.07%
Tandem Computers	\$33.12	\$9.62	-70.94%
IBM	\$168.43	\$41.62	-75.29%
Convex Computer	\$15.25	\$3.75	-75.41%
Data General	\$34.25	\$8.25	-75.91%
Amdahl	\$21.43	\$5.12	-76.09%
Unisys	\$46.37	\$10.87	-76.55%
Digital Equipment	\$193.87	\$36.75	-81.04%
Cray Research	\$118.25	\$20.75	-82.45%
Average % Change -36.36%			
S&P 500 Index	336.77	450.14	33.66%

When we first saw highly negative readings for storage and enterprise computers, we hoped that we had located entire groups poised for rebound. But investing would be all too easy if every declining stock price meant impending recovery. The sentiment indicator cannot be applied mechanically. True sentiment shifts are relatively rare, and highly negative perceptions can be founded in real, ongoing problems within a company or subsector. A subsector can change its relationship to its industry and to the overall marketplace, as we've seen in the commoditization of storage. And some stocks never again achieve positive perceptions: some do indeed become "broken stocks" -- ones that never recover. This may be the case with some of the enterprise computer makers. As we said in our last column, it's not enough to know that an issue is unloved; we need to know if and when it will be loved again.

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